République du Cameroun

Paix-travail –Patrie

Ministère de l'Economie de la Planification et de l'Aménagement du Territoire

Republic of Cameroon

Peace- Work –Fatherland

Ministry of Economy, Planning and Regional Development

Regional Territorial Planning and Sustainable Development Plan

LOT 5: North-West Region

DIAGNOSTIC STUDY OF THE TERRITORY

Evaluation of the current situation and SWOT analysis

Volume I: Report






For The Ministry of Economy, Planning and Regional Development, Yaounde (MINEPAT)

From INFRASTRUKTUR & UMWELT
Professor Böhm und Partner, Darmstadt / Germany (IU)

geomer GmbH, Heidelberg / Germany

Cabinet-Projets-Assistance-Conseils, Douala (CPAC)

December 2021

Consulting Group

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner

geomer

CPAC

République du Cameroun

Paix-travail –Patrie

Ministère de l'Economie de la Planification et de l'Aménagement du Territoire

Republic of Cameroon

Peace- Work –Fatherland

Ministry of Economy, Planning and Regional Development

Regional Territorial Planning and Sustainable Development Plan

Diagnostic study of the territory

The diagnostic study of the territory is the second deliverable after the inception report and the first component of the Regional Territorial Planning and Sustainable Development Plan. This document describes the methodological approach used to perform the study and the results.

The focus of the diagnostic of the territory is the information that could be provided from the data collection. It presents the state of affairs of the North-West Region and from a retrospective evaluation, the historical developments that led to the current situation. The evaluations are concluded by a Strength-Weaknesses-Opportunities-Threat (SWOT) analysis from which key stakes and issues for the development of the North-West Region are formulated. These findings are the starting point for the next project steps, explicitly for the prospective analysis.

The diagnostic report consists of three parts:

Volume I:	this report
Volume II:	annexes, with additional data, figures and tables, and the results of the stakeholder field survey on regional planning sectors
Volume III	the cartographic atlas.

The results of the Diagnostic Study Report were presented and discussed on the Stakeholder-Workshop in Bamenda on 24th Feb. 2021 with ca. 200 participants (administrative, political, religious, traditional and other stakeholders). Based on the outcome of this workshop the report was reviewed and amended according to the requests and the agreements of the workshop. The final amendments were made in close cooperation with the Regional Delegate of MINEPAT in Bamenda.

Notice:

It has to be noted that the diagnostic analysis of this report was carried out according to the project implementation schedule from Oct. 2017 to July 2018. The completion of the diagnostic phase was difficult due to the crisis in the NW-region from 2018 to 2020. All changes in the region regarding the territorial situation, infrastructure (demolition and improvements), changing social situation and environmental impacts of the crisis are not reflected in this report. No update of the relevant data and analysis of the situation could be carried out yet. It is strongly advised to update this study and the relevant data before the territorial planning documents are developed.

Authors: IU / CPAC
Reference of the document: Cam_NW_Diagnostic_Report_VOL1_20211021.docx
Last updated: 18.10.2021
Submission date: 1st submission: 31.08.2018;
2nd submission: 31.12.2018
3rd submission: 20.02.2022 (with amendments according the results of the Stakeholderworkshop in 24 Feb. 2021 and comments and inputs of the Intergovernmental Commission of October/November 2021).

The expert team:

Dr.-Ing. Peter Heiland	Team leader Spatial Planning Expert	INFRASTRUKTUR & UMWELT Professor Böhm und Partner
Dipl.-Ing. Jacques Bimai	Deputy team leader	CPAC Sarl
Drs. Marnix de Vriend	International Coordinator, Lead expert - Environment, natural resources, and Climate Change	Aquae, Nijmegen Bifae Education, Shisong
M.Sc. Nicolas Specklin	International Coordinator Lead GIS Expert	INFRASTRUKTUR & UMWELT Professor Böhm und Partner
Prof. Dr. Zephania Fogwe	Lead expert - Urbanisation Regional scientific coordinator	University of Bamenda
Prof. Dr. Lawrence Mbanga	Lead expert - Social System	University of Bamenda
Ngu Valentine Nchotu Nji	Lead expert - Law	Lawyer, Bamenda
Dr. Ndamsa Dickson	Lead expert - Economy	University of Yaounde II University of Bamenda
Dr. Edouard Fochivé	Lead expert - Technical Infrastructur	Douala / CPAC
M.Sc. Pavel Yundze Vellen	Lead expert - Social Infrastructure	Bamenda
Aboubakar Moussa	GIS Expert	BET Geocompetence
Dr. Stefan Jäger	GIS Expert	geomer, Heidelberg
M.Eng. Che Beltous Che	Mining Expert	Belcom Industries Co. Ltd.
Dr. Saju Peter Apwa	Tourism Expert	Bamenda
Prof. Dr.-Ing. Hans Reiner Böhm	Monitoring and Backstopping	INFRASTRUKTUR & UMWELT Professor Böhm und Partner
Dr.-Ing. Sandra Pennekamp	Spatial Planning and Infrastructure Expert	INFRASTRUKTUR & UMWELT Professor Böhm und Partner
Anna Goris	Spatial Planning Expert	INFRASTRUKTUR & UMWELT Professor Böhm und Partner
Eugene Ateh	GIS Expert	Bamenda
Marcel Etomes	Forestry Expert	Bamenda
Yannick Félix Pegui	Socio-economist	Bamenda

Further key experts:

Prof. Dr. Valentin Tchomtchoua	Socio-economist	University of Douala
Dieudonné Njib Ntep	Forestry Engineer	Yaounde
Jean-Claude Medou	Agro-economist	Yaounde
Prof. Dr. Benjamin Ngounou Ngatcha	Hydraulics Engineer	University of Ngaoundere
Prof.Dr. Alexandre Dieudonné Tjouen	Lawyer	Yaounde

Project office Bamenda:

Mbonifor Kennedy Ngwa	Head of project office Bamenda	CPAC Sarl
Kiyla Dezantine Asemogha	Project secretary, Bamenda	CPAC Sarl

Editing team

Victoria Pasternak, M.Sc. Nicolas Specklin, Dr.-Ing. Peter Heiland	INFRASTRUKTUR & UMWELT
Drs. Marnix de Vriend	Aquae, Nijmegen

Table of content

ANNEXES

Report Volume II: Data, figures and survey results

Part 1: Tables, Data and facts regarding the diagnostic of the sectors (secondary data)

Part 2: Results of the Stakeholder field survey on regional planning sectors, April – May 2018 (NW Field Survey, 2018)

Report Volume III: Cartographic Atlas

Atlas of maps of the diagnostic study on all sectors

List of Abbreviations

ADSL	Asymmetric Digital Subscriber Line
AER	Rural Electricity Agency
AES	Applied Energy System Group
AFDB	African Development Bank
ANTIC	National Agency for Information Technologies and Communication
ARSEL	Electricity Sector Regulatory Agency
ART	Telecommunications Regulatory Agency
Art.	Article
BANDECA	Bali Water Committee
BCC	Bamenda City Council
BE	Big Enterprises
BEPC	Secondary school diploma
BEPHA	Bamenda Ecclesiastical Province Health Scheme
BUCREP	Central Bureau of the Census and population Studies
BUST	Bamenda University of Science and Technology
C.D.C.	Cameroon Development Corporation
CAEPA	Community Agriculture and Environmental Protection Association
CAMTEL	Cameroon Telecommunication
CAMWATER	Cameroon Water Corporation
CAR	Central African Republic
CATUC	Catholic University of Cameroun
CB	Commercial Bank
CBD	Central Business District
CCU	Cameroon Christian University
CDE	Camerounaise des Eaux
CDP	Council Development Plan
CDP	Community Development Plan
CEMAC	Economic and Monetary Community of Central Africa
CFA	African Financial Community
CIG	Common Initiative Group
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMA	Certified Medical Assistant
CO2	Carbon dioxide
COLTECH	College of Technology
CONAROUTE	National Road Council
CPAC	Cabinet-Projets-Assistance-Conseils
CRTV	Cameroon Radio and Television
CSPH	Hydrocarbons Prices Stabilisation Fund
CUB	Urban Community of Bamenda
DGPAT	General Directorate of Planning and Regional Development
DHS MICS	Demographic and Health Survey / Multiple Indicator Cluster Survey
DO	Divisional Officer
DPDC	Dibamba Power Development Corporation
Dr.	Doctor
DTC	Decentralised Territorial Council
DWS	Drinking Water Supply
e.g.	For example
ECAM	Cameroonian Household Survey
ECEAT	European Centre for Eco and Agro Tourism

EDC	Electricity Development Corporation
EESI	Cameroon's National Institute of Statistics
ENEO	Energy of Cameroon
ERA	Electrification Rural Agency
Etc.	Et cetera
ETP	Emergency Thermal Project
FC	Football Club
FCFA	African Financial Community Franc
FECA FOOT	Cameroon Football Federation
FEICOM	Special Fund for equipment and intercommunal Intervention
FENASCO	National Federation of School and University Sport
FENASU	National Federation of University Sport
FONJI	National Youth Fund
GDP	Gross Domestic Product
GESP	Growth and Employment Strategy Paper
GICAM	Businessman Associations
GIS	Geographic Information System
GLCF	Global Land Cover Facility
GPHC	General Population and Housing Census
GRA	Government Residental Area
GSM	Global System for Mobile Communication
GIZ	German International Cooperation
GW	Gigawatt
HEP	Hydro Electricity Power
HIPC	Highly Indebted Poor Country
HIV / AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
HYDRAC	Hydrocarbons Analysis Controls
HYSACAM	Cameroon Hygiene and Sanitation Coorporation
IBRD	International Bank for Reconstruction and Development
ICT	Information and Communication Technology
IHC	Integrated Health Centres
ILO	International Labour Organisation
INSET	Higher School of Technical Learning
IPU	Informal Production Units
IRD	Inland Revenue Department
IRGM	Institute for Geological and Mining Research
ITCZ	Intertropical Convergence Zone
IU	INFRASTRUKTUR & UMWELT Professor Böhm und Partner
IUCN	International Union for Conservation of Nature
KLM	Royal Dutch Airlines
KPDC	Kribi Power Development Company
KWA	Kumbo Water Authority
KWH	Kilowatt per hour
LAGOGENIE	National Civil Engineering Laboratory
LED	light-emitting diode
MBOSCUDA	Mbororo Social, Cultural and Development Association
MDG	Millenium Development Goal
ME	Medium Enterprises
MFI	Micro Finance Institutions
MHC	Medicalised Health Centres

MIDENO	North-West Development Authority
MINAC	Ministry of Arts and Culture
MINADER	Ministry of Agriculture and Rural Development
MINDCAF	Ministry of State Property and Land Tenure
MINEDUB	Ministry of basic education
MINEE	Ministry of Water and Energy
MINEPAT	Ministry of Economy, Planning and Regional Development
MINEPDED	Ministry of Environment, Protection of Nature and Sustainable Development
MINEPIA	Ministry of Livestock, Fishing and animal industries
MINESEC	Ministry of secondary education
MINFI	Ministry of Finance
MINFOF	Ministry of Forests and Wildlife
MINHDU	Ministry of Housing and Urban Development
MINMAP	Ministry of Public Contracts
MINMIDT	Ministry of Industry, Mines and Technological Development
MINPMEESA	Ministry of Small and Medium-size Enterprises, Social Economy and Handicrafts
MINPOSTEL	Ministry of Posts and Telecommunications
MINSANTE	Ministry of Public Health
MINT	Ministry of Transport
MINTP	Ministry of Public Works
MOMO	Mobile Money
MTN	Mobile Telephone Networks
NASA	National Aeronautics and Space Administration
NCCAP	National Climate Change Action Plan
ND	Not Declared
NGO	Non-governmental Organisation
NIC	National Institute of Cartography
NIS	National Institute of Statistics
NW Region	North-West Region of Cameroon
NWDA	North-West Development Authority
NWSFH	North-West Special Fund for Health
PADC	Community Development Support Program
PAJER U	Urban and Rural Youths Support Program
PDHUP	Peri-Urban Hydraulics of Cameroon
PhD	Doctor of Philosophy
PIG	North-West Regional Fund for Health Promotion
PIJMA	Project for the socio-economic insertion of youths for the creation of micro-enterprises in the manufacture of sports equipment
PLADDT	Local Territorial Planning and Sustainable Development Plans
PLC	Professional Limited Company
PLLC	Professional Limited Liability Company
PNDP	National Community Driven Development Program
PNV	National Youth Observatory Program
Prescraft	Presbyterian Handicraft Centre
PTA	Parents Teacher Association
PWD	People with disability
RDBMS	Relational Database Management System
RE	Eastern Isolated Grid
RGE	General Census of Business
RIN	Northern Interconnected Grid

RIS	Southern Interconnected Grid
RLA	Regional and Local Authorities
SCDP	Cameroon Petroleum Depot Company
SCE	Cameroonian Society of Equipment
SDO	Senior Divisional Officer
SE	Small Enterprises
Shumas	Strategic Humanitary Services
SIRDEP	Society for Initiatives in Rural Development and Environmental Protection
SME	Medium Size Enterprises
SNADDT	National Territorial Planning and Sustainable Development Plan
SNH	National Hydrocarbons Corporation
SNV	Smart development works
SONARA	National Refining Company
SONATREL	National Electricity Transport Corporation
SPI	Standardised precipitation index
SRADDT	Regional Territorial Planning and Sustainable Development Plan
SRTM DEM	Shuttle Radar Topography Mission Digital Elevation Model
SWOT	Strengths, Weaknesses, Opportunities, Threats
Toe/ ktoe	Tonne / Kilotonne of Oil Equivalent
ToR	Terms of Reference
U.N.V.D.A.	Upper Nun Valley Development Authority
UBa	University of Bamenda
UN	United Nations
UNDP	United Nations Development Plan
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UPLLC	Private Limited Liability Company
USGS	United States Geological Survey
VAT	Value added tax
VSAT	Very Small Aperture Terminal
VSE	Very Small Enterprises
WADA	Wum Area Development Authority
WHO	World Health Organisation
WMS	Web Map Service
WRS	Worldwide Reference System

List of Tables

List of Figures

List of References

Publications

- Bamenda City Council, 2014. “Bamenda City Council Report”
- Bamenda City Council, 1987 “Bamenda City Council Report”.
- Bamenda III Council, 2012. “Council Development Plan”.
- Bamenda High Court, 2016. “Complementary Fieldwork of the Legal Department”
- BirdLife International, 2018. “Important Bird Areas Factsheets”
- BUCREP, 2005. “3rd General Population and Housing Census”.
- BUCREP, 1987. “2nd General Population and Housing Census”.
- CAMWATER, 2012. “Master Plan of Urban and Peri-Urban Hydraulics of Cameroon – Zone 3”.
- IUCN, 2018. “IUCN Red List of Threatened Species 2016”.
- MINADER, 2012. “AGRISTAT Annuaire Statistiques du Secteur Agricole Campagnes 2009 et 2010”, *AGRIS-TAT Statistical Yearbook of the Agricultural Sector Surveys 2009 and 2010*.
- MINEE, 2018. “Rural Electrification in the North-West”.
- MINEPAT, PNUD, 1999. “Etude socio-économique régionale au Cameroun, Province du Nord-Ouest” *Regional Socioeconomic Study in Cameroon, North-West Province*.
- MINEPDED, 2014. “2nd National Communication on Climate Change”.
- MINSANTE, 2018. “Système National d’Informations Sanitaires”, *National Health Information System*.
- MINTOUL, 2015 “L’Annuaire des Statistique du Tourisme et des Loisirs 2015”, *Statistical Yearbook of Tourism and Leisure 2015*.
- MINTP, 2017. “Etat du Réseau Routier Classé au 31 Juillet 2017”, *State of the Classified Road Network by the 31st July 2017*.
- NIS, 2017. “Statistical Yearbook of the North-West Region 2015”.
- NIS, 2016. “Atlas des Statistiques de l’Environnement”, *Statistical Yearbook of Environment*.
- NIS, 2014. “Enquête Camerounaise Auprès des Ménages”, *Cameroonian Household Survey*.
- North-West Regional Fund for Health Promotion PIG, 2014. “Strategic Plan 2015 – 2017”.
- NW Field Survey, 2018. “Field Survey in the framework of the NW regional planning project, 2018”
- NWDA, SIRDEP, 2006. “Baseline Study of the North-West Province”.
- PACDDU, 2007. “Minimal Urban Local Development Scheme”

General information and data

- Regional Delegation of MINAC
- Regional Delegation of MINADER
- Regional Delegation of MINDCAF
- Regional Delegation of MINCOMMERCE
- Regional Delegation of MINEE
- Regional Delegation of MINEPDED
- Regional Delegation of MINEPIA
- Regional Delegation of MINFOF
- Regional Delegation of MINHDU
- Regional delegation of MINMIDT
- Regional delegation of MINPMEESA
- Regional Delegation of MINTP

Preamble

In 2014, the Government of Cameroon, through the Ministry of Economy, Planning and Regional Development, initiated a process to provide Cameroon with a National Zoning Plan and a National Territorial Planning and Sustainable Development Plan. In 2015, they were followed by a tender for the Regional Territorial Planning and Sustainable Development Plans of the East and South Regions that are currently being elaborated.

On October 4th, 2016 the Ministry of Public Contracts announced the restricted international invitation to tender n° 141 AOIR/MINMAP/CCPM-SPI/2016 of 04th October 2016 for the drawing up of the Regional Territorial Planning and Sustainable Development Plans of Adamaoua (Lot 1), Centre (Lot 2), Far-North (Lot 3), Littoral (Lot 4), North-West (Lot 5) and West (Lot 6) of Cameroon in emergency procedure.

The Consulting Consortium composed by the firms:

- INFRASTRUKTUR & UMWELT Professor Böhm und Partner, based in Darmstadt, Germany, represented by Dr.-Ing. Peter Heiland
- Cabinet Projets-Assistance-Conseils Sarl, based in Douala, Cameroon, represented by Dipl.-Ing. Jacques Bimai
- geomer GmbH, based in Heidelberg, Germany, represented by Dr. André Assmann

submitted its proposal in December 2016 and was assigned the North-West Region (LOT 5) in March 2017 with the Decision n°044 /D/PR/MINMAP/DGMAS/DMSPI/CE3/2017 of the 06th March 2017.

The contract was signed on the 13th of July 2017.

The MINMAP issued the order of service n°000221 OS/MINMAP/DGMAS/DMSPI/CEA3/lrv/ 2017 of the 13rd July 2017 requiring starting the work for the drawing up of the Regional Territorial Planning and Sustainable Development Plan of the North-West Region (Lot 5) that was signed by the MINEPAT and the Consortium on the 28th August 2017.

The Inception Report describing the set-up of the project and the fact-finding missions was first submitted on the 28.09.2017. It was then corrected according to the observations of the members of the Monitoring and Technical Receipt Committee which held its session on the 22.11.2017. The revised version was submitted on the 06.12.2017.

The diagnostic analysis was carried out and documented in this report (with text, maps and tables annexes) from October 2017 until July 2018. Thus the data are based on a temporal reference and topicality of the years 2017/2018. The final amendments were made in close cooperation with the Regional Delegate of MINEPAT in Bamenda.

The results of this Diagnostic Study Report were presented and discussed on the Stakeholder-Workshop in Bamenda on 24th Feb. 2021 with ca. 200 participants (administrative, political, religious, traditional and other stakeholders). Based on the outcome of this workshop the report was reviewed and amended according the requests and the agreements of the workshop.

Revised draft was presented to the **Intergovernmental Technical Monitoring and Approval Comission for the Regional Territorial Planning and Sustainable Development Plan of the North-West Region**, lead by the Ministry of Economy, Planning and Regional Development (MINEPAT), Minister Alamine Ousmane Mey, by 17th November 2021. The report was approved with some conditions and comments. After revision of the report according the conditions and comments the final report was submitted in February 2022.

Important Notice:

It has to be noted that the diagnostic analysis of this report was carried out according to the project implementation schedule from Oct. 2017 to July 2018. The completion of the diagnostic phase was difficult due to the crisis in the NW-region from 2018 to 2020. All changes in the region regarding the territorial situation, infrastructure (demolition and improvements), changing social and economic situation and environmental impacts of the crisis are not reflected in this report.

At present ca. 419 development projects on social and infrastructural improvements are uncompleted (according to the data of MINEPAT 2021). Social and technical infrastructures were vandalized from 2017-2020 and no proper documentation exists so far.

An update of the relevant data and analysis of the situation could not be carried out until the submission of this report. It is strongly advised to update this study and the relevant data before the territorial planning documents are developed. The valuable report "Strategies for the Socio-Economic Revival and Return to Normalcy of the North West Region of Cameroon" (Republic of Cameroon, Governors Office, NW-Region, Jan 2021) should be considered for the update.

Abstract / Executive Summary

1 – Background

The Republic of Cameroon has a development strategy to eradicate poverty and become a middle income country by the year 2035. National and Regional Territorial Planning and Sustainable Development Plans are an important instrument to achieve this goal. The plans are developed by the Ministry of Economy, Planning and Regional Development (MINEPAT). Guidelines were defined in the Law of 6th May 2011. The Regional Plan should be implemented by a, still pending, elected and decentralised regional authority together with local authorities that were elected for the first time in 2013. Regional plans aim to establish equal coverage of and equal access to government services for all citizens in all regions, strengthen the unity and democracy in the unitary Republic and rationalise all public investments by providing a framework for informed decision-making. Strengthening of the economy should take place in a socially acceptable and environmentally sustainable manner. Besides it should involve stakeholders and communities so that they take ownership of their own development.

The project started with an Inception Phase. There were two fact finding missions in April and August 2017. Senior specialists, mostly from the University of Bamenda, were selected to engage in the study complementary to the formerly selected key expert team. Moreover, there was a desk review and an orientation tour in November 2017 to meet and discuss with stakeholders in all divisions. The project was formally launched in Bamenda, on the 15th of November 2017, and an additional launch event in Kumbo, Bui Division, the 10th of December 2017. The inception report also containing a description of the methodology was approved by MINEPAT in Yaounde in November 2017.

2 - Methodological frame for the diagnostic study

The Diagnostic Phase that is hereby reported enables to identify key stake issues for the various sectors in society and define priorities for the regional development of the North-West Region. An analysis of facts and observations, a retrospective evaluation to define trends and a SWOT analysis (of strengths, weaknesses, opportunities and threats) for the various sectors, were the most important steps to achieve this goal.

In the agreed methodology, the diagnostic phase started with defining the information necessary to perform a consistent study. Then there was a threefold collection of data. First, there was an extensive review of the data already available: with the various regional delegates, based on publications of institutions like the National Institute for Statistics (NIS) and based on the community development plans. Secondly, a manual was developed for data collection and stakeholder involvement. A field survey was conducted in the frame of the project in the North-West Region based on a questionnaire. Finally, the remaining gaps of knowledge were specified, prioritized and where necessary for a thorough diagnosis, targeted by approaching specific stakeholders and/or specialists.

Each individual sector of concern was directed by a senior expert that met on a weekly basis, discussing the evaluations and any crosscutting issues. A template, an online project portal, the set-up of a geographical data base and a cartographic presentation, as well as a common project-office and secretary, provided the essential tools to structure the work and exchange the essential information between the various sectors. The experts drew conclusions from the quantitative data they assembled and analysed.

As for the stakeholders, due to the difficult circumstances in the first half of 2018 with the “Anglophone Issue”, the original plans of engaging the stakeholder by organising workshops in the various divisions had to be adapted to the actual safety conditions. Instead of this, a field survey was conducted based on the questionnaire that was prepared with the senior experts. It was sent to and answered by more than 700 of respondents from all divisions. The senior experts then integrated the results in their analysis

and defined stake issues for development in the various sectors. It is the intention of the project to involve stakeholders in the various divisions more actively during the prospective phase, if the circumstances make that feasible. It is of the utmost importance that the development issues are based on regional and sometimes local knowledge and that during the process of the project, ownership will evolve because of active bottom-up participation. Finally, that will ensure an effective implementation of the territorial planning and sustainable development plan in the North-West Region.

3 - Administrative System

The Republic of Cameroon (1961) originated from the original French and a part of the British trustee. The constitution (1972 & 1996) states that it is a unitary, bilingual, secular, democratic, to be decentralised state dedicated to social service. The executive powers are in the hands of the elected President, who appoints government and is the commander in chief of the army. The elected National Assembly and the Senate hold the legislative powers. Judicial powers are exercised by the Supreme Court, the Courts of Appeal and the Courts. The President is not required to consult the assembly, can veto legislation, and appoints judges/prosecutors.

The North-West Region is 17,300 km², has 1.95 million inhabitants and a growth rate of 8%. With 113 people/ km² it is the third most populated Region in Cameroon in 2015. The capital is Bamenda and there are seven Divisions, 34 Subdivisions and 34 Municipalities. All Divisions, Subdivisions as well as the Bamenda City Council are headed by a presidential representative. The Regional Delegates, representing the 33 Cameroonian ministries are appointed by their respective Ministers, and the Chief Justice of the Administrative Court is appointed by the President. The mayors of the municipalities are elected by the people. A regional public authority, with decentralised powers and budget has not been appointed yet. The principles for Territorial Planning and Sustainable Development make the MINEPAT responsible to draw up National-, Regional and Local Planning & Sustainable Development Plans. Land-use - and Urban Development are already decentralised. Meanwhile MINEPAT is engaging through the instrument of PNDP to train councils/ mayors in implementing decentralisation, set up micro-projects in villages and update the community development plans (CDP's).

As for land tenure, the Republic of Cameroon made land titles as the (only) means to hold property rights. However only a very small percentage is registered and half of it is held by civil servants. National land can be public or private state property. The State should administer land free of occupation in a way to ensure rational use and development. The State can allocate grant leases or assignments on conditions described by Decree.

4 - Environment, natural resources and climate change

Abiotic environment

The North-West Region is a mountainous area of volcanic origin with peaks (Mt Oku, 3,008 m), volcanic lakes, and a pre-Cambrium bedrock of granite, gneiss and basalt. Some of the soil is red-brown ferrallitic with iron and aluminium in the upper layers. Some of it is brown-black and of volcanic or alluvial origin. The Region is very fertile and also the climate with average temperatures of 22 ºC, a mean annual precipitation from 3,000 in Momo (southwest) to 1,500 mm in Donga Mantung (northeast) and a rainy season from mid-March until mid-November, make it a very favourable region for living and for agriculture. Some remaining forest and furrows prevent soil from run-off on steep slopes. Stress on the environment like intensifying agriculture, burning, overgrazing and deforestation enhance climate change impacts like rising temperatures, more intense rain and hail storms at the onset and at the end of the rainy season and a prolonged dry period at the start of the rainy season. This poses difficulties for farmers in predicting weather conditions and adapting their agricultural calendars. It also increases the frequency of landslides and causes land degradation, which is regarded as the major challenge and an environmental pre-requisite for any sustainable socio-economic development of the North-West Region.

Hydrographically one can distinguish the Niger, Atlantic and Sanaga basins, with abundant rivers and streams flowing west (in Menchum) or south. There are watersheds in the highlands and water catchments that are very important to supply the population with clean drinking water, but are threatened with deforestation, pollution, urbanisation and drought. Some of the rivers and streams during the recent decades contain less and less water or are even without water at the end of the dry season, due to decreasing precipitation, over-exploitation and sometimes caused by Eucalyptus plantations.

The pollution of the environment with harmful substances is increasing. Soil and water locally suffer from the use and run-off of pesticides, fertilizers and waste disposal, as well as human use of natural water for cattle and washing clothes, bikes and cars. The awareness on the impacts of water pollution is limited although lots of waterborne diseases occur. Bore holes and wells are made without taking into account the impacts on the groundwater and aquifers. The pollution of the air with particulate matter is problematic and well above international standards. This causes above average lung infections in the North-West Region. The cause is partly natural (fine dust from Sahara), but aggravated with dust from unpaved and/or not well maintained roads in populated areas, traffic, slash and burning practices in agriculture and bush fires, and the fact that 90% of the people is cooking on wood on a daily basis. Poverty (55% in 2017 compared to 38% in the rest of the country) and an increase of the population is creating more and more environmental stress on soil, water and air.

As for renewable energy the North-West Region is a frontrunner with hydropower, (only a few) wind turbines and gas production from biomass. Solar energy development is behind, but has a lot of potentials. For hydropower, besides building dams and reservoirs that can be hugely disruptive for local people (floods) as well as for the ecology, small scale hydropower in rivers and even at household level, seem especially to have potentials.

Quarrying and mining are (potentially) important for the socio-economic development of the North-West Region, but for environmental and social reasons, need close regulating and enforcement.

Biotic environment

The biotic environment of the North-West Region can be characterized as the tropical, wet Sudan Savannah type, with grassland, few shrubs, trees and remnants of forest. There are six forest reserves, three wildlife fauna reserves and one (enlarging) National Park: Kimbi-Fungom in Menchum Division. The protected areas cover 8% of the regional surface and 1.7% of the total protected natural area in Cameroon. Nature is relatively scarce because of an increasingly dense population, cropping and livestock. Most remaining areas are in Menchum and Donga-Mantung divisions. Endangered and threatened species, with lots of them endemic (14 mammals, six birds and 55 amphibians/ reptiles) are confined to the remnants of forest and protected by Law, based on the CITES Convention.

However, outside the protected areas as well as inside, there is an alarming decrease of both surface, quality of ecologically important habitats and the diversity of species of plants and animals. Forest burning, poaching, encroachment for cropping, urban development and overexploitation for timber are the major threats. Deforestation also enhances the risk for landslides and affects the water catchments, where the majority of the population depends on as a source of potable water. Kilum-Ijim mountain forest and plant life sanctuary (1,000 ha at Oku subdivision), which is the only forest reserve in Bui, but also Kagwene Gorilla Sanctuary in Momo Division, with the majority of the last approximately 240 Cross River Gorillas on earth and Bafut-Ngemba Forest in Mezam (4,000 ha of mountain forest, with endemic birds) are examples of nature protected areas that are severely threatened by various human activities. Abongphen High Forest (Mezam Division) is an example of a highly endangered area that is not (yet) designated as a protected area. It has huge ecological significance and its catchments provide clean water for hundreds of thousands of people. Yet the construction of a road and urban development might cause total destruction within a period of 5 years.

With the exception of some of the lakes it is not clear in what way Cameroon protects its wetlands of sometimes international importance. Swamps, rivers, streams and lakes do not only have an important ecological function, but are also important to provide man with water for agriculture and drinking. They are vanishing at an alarming rate especially in urban areas.

Both natural and man-made commercial forests can supply natural products like nuts, fruits, leaves, honey, ingredients for (traditional) medicines and timber. Some of these non-timber products like pygeum (Prunus Africana) and eru (Gnetum Africana) are harvested in either Bui and Boyo or the Centre Region and transported to Cameroonian cities and Nigeria. In natural forest durable hard wood like Mahogany ad Ebony can be harvested locally and in a sustainable way when the amount harvested is less than the natural productivity. In artificial forests wood is planted to serve specific purposes like wood for construction, fire wood or wood for poles. Eucalyptus was imported and planted because of fast and straight growth. However, it uses so much water that it can cause problems in natural forests and is even a threat for streams and water catchments. There are projects to replace them with indigenous species. Besides there is some limited afforestation. In 1994 government introduced the successful concept of community forests, where part of the forest policy was decentralised to enable municipalities to generate revenues and at the same time protect their forests. As for timber productivity in the North-West Region it is relatively low compared to other regions in Cameroon. In 2015 the productivity was nearly 33,000 m³. Most of the timber (nearly 60%) was produced or sold from Mezam Division, Bamenda serving as a hub for transport elsewhere. Momo and Menchum produce little wood. Eucalyptus (2015) alone delivers nearly 80% of the total legally sold amount of wood, while 25 other species of trees produce the rest.

It is obvious that more cropping, more livestock and also more planting of Eucalyptus, while maintaining the traditional ways of production, is rapidly going beyond the carrying capacity of the North-West Region. The process is aggravated by both poverty and climate change. This is already causing an alarming increase in the amount of degraded land and even desertification that will hamper not only the environment but also any socio-economic development.

Designation of new reserves and enforcement of regulations, communication and education as well as promotion of sustainable economic activities in forests (timber, honey, berries, bush meat) with extensive and well-regulated use, are necessary to stop the alarming decrease of nature in the North-West Region and to prevent huge problems with landslides and lack of potable water for the population. Divisions like Menchum, Boyo and Donga-Mantung, but also more urbanised regions like Bui and Mezam, all have huge potentials for (eco) tourism development and other economic activities related to natural forest (products).

Hazards and climate change

Hazards in the North-West Region are limited to fire, traffic, occasional floods and a lot of landslides. The latter two are natural phenomena getting more frequent and more intense by not only climate change but also by human activities. In 1986 there was a unique gas eruption from Lake Nyos in Menchum Division, killing all animal life and 1,724 people. Areas south of Bamenda in Mezam, north of Nkambe in Donga-Mantung, east of Kumbo in Bui, north of Ndop in Bui and around Fundong in Boyo Division combine steep slopes (> 30%) with low tree cover (< 20%) and the presence of soft volcanic soils. These areas are highly vulnerable for landslides. There caution with cropping, cutting trees, bush fires, road infrastructure and urban development is crucial. Afforestation and other measures to keep the soil together should have the priority in such areas.

With regard to climate change the emission of greenhouse gasses and therefore the contribution of Cameroon to global warming is low. However increased radiation on bare soil because of deforestation, slash and burning methods in agriculture and bush fires amplified by the drying up of streams, rivers and swamps, do have devastating impacts not only on the frequency of hazards but also on the local

climate and daily livelihood. The predictability of precipitation diminished over the past decades with more heavy outpours and storms with high wind velocities at the end and the start of the rainy season and prolonged periods of drought in March, April and May. Besides: temperature is increasing. On Bui Plateau the average annual temperature went up with 0.28ºC since 1982. All these changes in the regional climate disrupt the agricultural calendar and have huge impacts on ecology, the risks of hazards, livelihood and therefore on all aspects of the socio-economic development. Since 2012 government is identifying mitigation and adaptation measures in the framework of a National Climate Change Action Plan (NCCAP), which is based on assessments of risks and vulnerabilities and accompanied with programs for training and sensitisation. From the NW Field Survey (2018) it can be concluded that the respondents believe that sensitisation of the population, afforestation and adaptation of agriculture are the most important measures to combat negative impacts of climate change. Decreasing agricultural productivity, seasonal irregularities and decreasing volumes of water in rivers and streams are regarded to be the most important consequences of climate change by most of the stakeholders responding in the field survey throughout the divisions. With regard to mitigation of the impacts and adaptation to climate change the majority of the people voted for “tree planting”, “reduction of slash/burning in farming” and “mixed cropping / maintaining land coverage” as the most promising resilience strategies.

5 – Economy

Agronomy

Agriculture is the dominant economic activity in the North-West Region. The majority (80%) of the population is involved in farming. Crops, livestock and fish are produced or caught for their own and local consumption. There is also export to other divisions and regions of Cameroon, to Nigeria and to other neighbouring (CEMAC) countries. Transport is dependent on good roads. Plantations are relatively rare in the North-West Region. There are some palm oil plantations in Momo Division and two tea estates: one in Babungo in Ngoketunija Division (run by South-Africans) and one at Ndu in Donga-Mantung Division. Cocoa and Coffee used to be very important cash crops for the North-West Region but went down in the 1990-ies because of fierce international competition. For Cocoa the most important division is Mezam, with Momo coming second. Robusta coffee (information based on statistics of 1984) has the best potentials in Momo, Mezam and Donga-Mantung, while for the more valuable Arabica coffee Bui and Donga-Mantung have the best conditions. On the national level government tries to revamp coffee production by giving free seedlings to farmers. Potentials are high caused by drought in South American plantations and rising demand for coffee in the Western world.

Most agriculture in the North-West Region is done on a family basis. People produce food around their compounds and in their farms and sell the surplus, mostly local, in order to pay for school fees and hospitals. Each year a considerable part of the harvest is lost, because of bad roads in the rainy season and because of limited possibilities and knowledge on ways to process food and enhance its longevity. The dominant crops cultivated in terms of production in all the divisions of the North-West Region (in 2005-2010) are corn (maize), cocoyam, cassava, bean and plantain, Irish potato (especially in Boyo and Bui Division), yam (Bui, Donga-Mantung, Mezam and Momo Division) tomato (Menchum and Momo Division), palm oil and taro (colocosthea) (Momo Division) and okra (gumbo) in Ngoketunjia Division. The yearly productivity of these crops varies between 90,000 and 185,000 tons. Looking at the surface occupied, corn is the most dominant food crop in all divisions, only surpassed (2008) by beans in Ngoketunija and Boyo. With the exception of plantain and tomato it is evident that the yields per ha are much bigger for subsoil roots like yam, cassava and Irish potato, than they are for fruits and seeds like corn, bean and rice. Food processing in the North-West Region is hardly developed. Only palm oil and cassava (to flour and garri) are processed but on a household level. Coffee is processed by both farmers (pulping plucked berries and drying) and the cooperatives (picking, polishing and size gradation). Strong cooperations for Arabica coffee are still present in Elak Oku and Kumbo (Bui Division). Roasting and

packing industries that create a lot of added value are nowadays limited to only one enterprise in Bamenda.

Asked, during the NW Field Survey (2018), for the main difficulties in producing agricultural products 85-95% of the respondents complained of poor road networks, 65-85% on low market prices and 55-85% (with only Ngoketunija lower at 40%) about the long walking distances to the farm. From the respondents 58-92% considered the low availability/ affordability of fertilizers and improved seeds to be a constraint for productivity. Looking at the divisions, the percentages were low in Mezam, where access and affordability are high and also in more rural divisions like Donga-Mantung, Menchum and Momo. Apparently, the fertilizers are less useful because there is abundant natural manure available from animal husbandry and also more space for (shifting) traditional farming. Thus the possibilities to maintain soil fertility in a more natural, cheap and sustainable way are higher in these divisions. Limited labour force among youth is considered a problem by 40-80% of the respondents, with the highest ranking in Boyo Division. Low wages, access to water for irrigation and farming-grazing conflicts are mentioned by 5-25%. Limited access to water in Mezam and Ngoketunija (very populated and a lot of water needed for rice cultivation) seems to be more of a constraint (35-38%) than in other divisions. In addition, soil degradation and climate change (shifting periods of precipitation) are supposed to be important constraints in the region.

Livestock in the North-West Region, after a sharp rise (32-35% for goats-cattle) in 2013-2015, is composed of 530,000 cattle, 270,000 sheep (both mostly in Donga-Mantung, Bui, Boyo and Mezam Division), 220,000 pigs (Momo and Bui Division), 422,000 goats (Momo, Donga-Mantung and Bui Division) and 1.4 million fowl (chicken, dominantly in Mezam Division). A large (unknown) amount of meat from the North-West Region is transported to other Regions, Nigeria and other CEMAC countries. Most people in the North-West Region are poor and eat meat only on special occasions.

In the period 2016-2018 the Mbororo herdsmen were confronted with cheap cows entering from Nigeria, because the CEMAC currency CFA was expensive compared to the Naira in Nigeria. Besides in the spring of 2017 cattle suffered from a prolonged dry season, leading to an unusual mortality in various places like Bafut (Mezam Division) and Kingomen (Bui Division). In the Muslim tradition dead cattle is economically lost, because it is not allowed to slaughter a dead animal. In 2015 and 2016 also a lot of fowl died in the North-West Region, because of Bird flu, that affected birds worldwide.

As for animal products the production of dried skin in the period 2013-2015 (for Achu, a local dish) increased 74% to 29.000 kilo. Leather of the skin of cattle, sheep and goats, is only produced on a very small scale and is mostly imported from abroad. Eggs come primarily from Mezam. The numbers vary significantly between 40 and 200 million (2013-2015). Natural honey is produced in the North-West Region in quantities between 0.6 - 1.8 million liters. Especially Oku White Honey is famous, sold in the whole country and (from 2018) the first quantities will be exported abroad. Milk (2.7-4.4 million kilo) and dairy products like cheese (6,000 kg in 2015), yoghurt (2 million liters in 2015), butter (3,600 kg in 2015) and buttermilk, with a lot of economic added value, are processed in especially Mezam (Bamenda, Sabga) and Bui (Cooperative, Tadu applying Swiss technology). The potentials for growth of dairy products for both local consumption and export are huge.

Wild fish is caught in small quantities in lakes and rivers with baskets, nets and (especially in Menchum) with lines. The rivers and lakes in the Ndop (around Babessi in Ngoketunjia Division) and Mbo-nso plains (Bui Division) are of special importance for the local and regional fish supply. Fish farming of Tilapia, Carp and Catfish in the North-West Region is more developed than in the rest of the country. In 2016-2018 the number of fish farmers in the region increased from 616 to 870 and the production (in 2014) was 120 tons on a surface of 120,000 m². Thus, the mean productivity of fish ponds is about 1 kg/m². Cultivated fish provides people with healthy food, full of proteins at a relatively low cost and also serves as an alternative for the decreasing amount of sea fish that suffers from foreign industrialised fishery at the Atlantic coast of Cameroon. Mezam is leading for fish farming, with Momo, Donga-Mantung- and

Bui Division ranking next (2013-2015). The numbers in Mezam rose from 90 to 266 farmers, producing 40 ton in 2015. From the NW Field Survey (2018) it is obvious that most of the fish caught or cultivated is for self-consumption, but the selling of fish to local markets is also considerable especially in Ngoketunjia, Boyo and Donga-Mantung Division (42-60%). Ngoketunjia is the only division that also sells (10%) to an urban market (Bamenda). The most eminent barriers for the further expansion in all divisions seem a shortage of good material and facilities to conserve the fish.

The processing of fish is limited to the drying of caught fish. As for meat there is hardly any processing. Most meat is sold freshly. Poultry is facing severe competition from low priced fowl that enters Cameroon from Western industrialised and subsidised farms.

Mining and businesses

Mining has high potentials in the North-West Region, but is hardly developed. With less than 25% of the surface explored, it is clear that there are potentials for mining of bauxite, iron ore, sapphire, ruby, diamond, tin, gold, titanium, rutile, kaolin, zircon, kyanite, basalt, coal, sand, clay, pyroclastic materials, salt and others. Until now five exploration permits were issued, mainly in Donga-Mantung - and Menchum Division, but they expired (2016). Three non-industrial and one artisanal operator have permits to mine for kaolin in Mbengwi, Momo Division and for gold, diamond, sapphire and associated minerals in Donga-Mantung, but are on a standstill. Six industrial quarries extract basalt and about 157 domestic quarries (tax free, < 2,000 m²) are registered for sand, kaolin limestone, laterite or basalt in all seven divisions. Only six non-industrial, commercial companies are taxed, from which half is situated in the Mezam Division. Of the artisanal quarries 45 (27%) is in Mezam, 27 (16%) in Bui, 35 (21%) in Momo and 22 (13%) in Boyo Division. Menchum has only 5 (3%) of the permits. However, south of Wum in Menchum valley there are areas where sand extraction employs more than 50% of the young people. Some areas (like Bui) are poor in sand and rely on other areas (like in Bui, Babessi in Ngoketunjia and Bafut in Mezam Division) to import sand for building (plastering and concrete) activities. Mining can have enormous socio-economic benefits, especially in more remote rural areas with few possibilities for employment. However, mining needs strict regulations and strong enforcements, because unregulated it can have detrimental effects on the environment, nature, agriculture and the social structure of an area. Contamination of soil, air and water could hamper development perspectives. Yet if well regulated, monitored and enforced the importance of mining for the regional development in the North-West Region cannot be underestimated.

Businesses, transformative industry, ICT and artisanal activities were analysed based on the available statistics, the NW Field Survey (2018) and best professional judgement. However, a full objective analysis based on facts is not feasible, due to the dominant and large informal economy. Many small enterprises, especially in agriculture but also in transport and retail businesses avoid taxation and are not registered. This becomes most evident in figures on employment in the North-West Region. At 6,102 enterprises, registered in 2009, employment was 16,374, which is only 1% of the population. In reality, most people do work on their farms, with (taxi) bikes, in (small) trade, shops or other parts of the informal sector, but there are no data available.

Of the enterprises registered 100% are Cameroonian, 83% are active in the tertiary sector (services), followed by the secondary (manufacturing, food industry, water, electricity and gas) sector (16.8%) and 0.3% of the registered companies belong to the primary sector (agriculture). Within the tertiary sector, 64% of the enterprises are commercial oriented activities like wholesale and retailing, with information/communication subsectors second and banking/insurance ranked third. 88% of the enterprises in the North-West Region are very small, employing less than six people and have an annual turnover (before taxation) of less than 15 million CFA. A number of 21 enterprises, (15 in the tertiary sector), is defined as big, employing more than 100 persons and have an annual turnover of more than 1 billion CFA. Of these, 16 are in Mezam, two in Donga-Mantung, two in Bui and one in Boyo Division. In 2009

72% of the registered enterprises are in Mezam and 11% in Bui Division. Menchum had only 76 of the 6,102 enterprises.

From the small and medium sized (SME) enterprises (0-100 employees with a turnover of less than 100 million CFA) the NW Field Survey (2018) added some valuable information. The most dominant SME's are petty trading/ provision stores, according to the 95-98% of the respondents, in all divisions. This is followed by tailoring, carpentry, barbing/ hair dress saloons, and mechanic (92-68%). Food processing/ restaurants and wielding come next. Looking at the factors inhibiting smooth operations and growth of the SME's, 100% of the respondents named the limited access to roads, electricity, water and markets. Limited financial resources and knowledge, excessive taxation, low availability of equipment and irregular demand / not encouraging market prices come next as most important reasons to hamper development of SME's in most divisions. Surprisingly corruption is mentioned by 13% (Donga Mantung) to 33% (Mezam) of the respondents, being not in accordance with international research and national policy that put corruption as one of the major causes in Cameroon to hamper development.

97% of the transformative industry (secondary sector) is located in Mezam Division, with Donga- Mantung (6%) and Bui Division (5%) ranking next. Of these 3% is active in construction or food industry, and 94% in other manufacturing (2009). Of the 32 companies in the food industry three are big. In the period 2011-2015 the registration of enterprises in craft mining in the North-West Region grew significantly from 17 to 231, especially in the Bui and Momo divisions. Mezam Division comes third. It is obvious that the food processing industry has potentials for the socio-economic development of the North-West Region. Furthermore, registration of now informal enterprises should be encouraged.

As for Information and Communication Technology (ICT) in 2007-2015 and 2018 the subscriptions with a fixed phone line decreased, while subscriptions to a mobile phone increased from 117 / 1,000 inhabitants (2007) to 369 in 2014 and 379 / 1,000 for Cameroon. In the same period the number of computers / 1,000 inhabitants grew from 4 to 23, with the whole of Cameroon has 36 per 1,000 people. This trend is intensifying. The North-West Region had 28 radio stations in 2015, with 18 of them located in the Mezam and Bui Division. Mezam Division is the only division with (three) TV stations.

The number of local markets, being an indicator of economic activity, is biggest in Mezam (58) and Bui (20), hosting 46% of the periodic (week), 67% of the daily and 29% of the cattle markets (2015). Donga-Mantung is the first in cattle markets, hosting 7 out of 17 for the region. The number of markets in 2013-2015 increased in Mezam. In Bui, Donga-Mantung and Momo Division it decreased, a sign of economic stagnation or decline. The NW Field Survey (2018) indicates that most of the agricultural production is sold on local markets, where as Ngoketunjia (> 80%) and Bui Division (> 65%) respondents state that other markets in the region, as well as other cities in Cameroon (58 and 50%) are important too. For Menchum (50%), Donga-Mantung (32%), Mezam (28%) and Ngoketunjia (25%) the Nigerian market is important. Export to other countries (Nigeria, Equatorial Guinea and CEMAC countries) is mentioned for Ngoketunjia (22%) (rice from Ndop plain), Mezam (21%), Bui and Boyo Division (both 15%). Some markets or open sheds, located on junctions well connected to consumer markets and enjoying spatial freedom, have the potential to develop and contribute more to the economy in future, but depend largely on the quality of the road network.

Besides transformative industry and ICT there is significant artisanal industry in the North-West Region. In the NW Field Survey (2018) enquiry 100% of the respondents state that embroidery/ beading and knitting is important in all divisions. Weaving ranks second (83-89%) everywhere, except for Ngoketunjia (60%). Carving and Pottery (Boyo- and Bui Division) comes third, and Bamboo work, (Bui and Momo Division) is the fourth occupation. The artisanal products are mainly (75-90% of the respondents) sold on the local market or in neighbouring towns inside the Region. Especially in Boyo- (> 50%), Bui, Mezam and Ngoketunija Division 35-40% of the respondents state that other Cameroonian cities outside the region are important too, while Ngoketunjia, Momo, Mezam (all 5, 20%), Bui (28%) and Boyo-Division (46%) are known for export to other countries. Special artisanal craftsmanship that is worth mentioning

for the North-West Region are: the Presbyterian Prescraft, based in Bali, for pottery in Bamessing (both Mezam Division) and in several other villages. It has a shop with restaurant at Commercial Avenue in Bamenda and a variety of articles exported to Fair Trade shops in Western countries; Oku woodcraft shop, connected to the museum at the Royal Palace in Elak, Bui Division as well as the iron artefacts made at Babungo Palace and museum in Ngoketunjia Division. There is no information available yet on the Raffia industry, which is of particular importance in and around Bamenda. Regarding the main barriers and problems in expanding the handicraft activities the respondents (60-85%) saw limited financial resources, vocational training and working equipment as the main problems. A poor value of the activity and a little interest with youths is also ranked as an important barrier in most divisions. The absence of links with external markets was considered to be less of a problem in most divisions (38-50%) with the exception of Bui Division, where 65% of the respondents identified this as a major problem.

Tourism

Tourism is the most important source of income in 20 of the 48 least developed countries. Cameroon aims at 1 million international and 6 million national tourists in 2020. The North-West Region has a good climate, stunning scenery, rich cultural diversity, forest reserves with protected mammal and bird species, a national park, friendly, hospitable, English speaking population, waterfalls, crater lakes, an airport and reasonable transport facilities to international airports (Douala, Yaoundé) and until recent, a safe environment, new hotels at beautiful spots, yet there are only very few (international) tourists.

Cameroon has (2015) 2,000 hotels, with 32,710 rooms. A number of 660 is classified with one (458) to five stars (10). In the North-West Region there is only one hotel with a 3 star classification. There are four tourism related educational organisations (of 62 in Cameroon), few (31) classified restaurants and very few (10) travel agencies in the North-West, ranking the region as one of the lowest. In the region the employment in registered hotels is 1,228 (2015). Visitors (2014) concentrate in May, June, August and December. In 2014 nearly 130,000 visitors arrived, compared to two million arrivals for Cameroon. In 2013-2018 the number of arrivals decreased because of unsafety (Boko Haram and Anglophone Crisis) and more restrictive visa policies. The occupation percentage of beds in hotels is low: 30% in 2013, 31% in 2014, 27% in the first half of 2015 and further decreasing until 2018.

Of two million people registered in 2014 in Cameroonian hotels, 75% was Cameroonian. Many came from neighbouring CEMAC countries. About 70,000 came from other countries, like France (63%), Germany (24%), UK (23%), Belgium (19%), USA (19%), Switzerland, Canada, Russia, Netherlands, Asian, other African and Middle East countries. The majority of the arrivals was in the coastal regions (Limbe in the South-West and Kribi, South Region) and in Yaounde (Centre Region). In the registered hotels in the North-West Region the total number of Cameroonian visitors was 118,613. The number of foreign tourists, outside CMAC countries, was 5.448 people (2014), equalling 1.3% of the international tourists in Cameroon. Expenditure registered in the hotels in the North-West Region are 747 million CFA (2014) and 395 million CFA (first half of 2015), which is only 1.7% of the national expenditure. Most expenditure is for the room. Second is the (hotel) bar and restaurant. There is no information on expenditure outside the hotel. One third of the arrivals (2013-2015) of visitors is by airplane, while most of the visitors arrive by car and only a very few (3%) by boat. Of the air arrivals 43% comes to spend their holidays in Cameroon. The rest comes for business or to visit friends or relatives.

6 - Urbanisation

As from the 1960-ies people in the North-West Region migrated from the rural areas towards Bamenda, the regional capital, and (to a lesser extend) also to the divisional capitals, to improve their living conditions and economic perspectives. From 2004 onwards, laws and regulations were issued to ensure an orderly urban development. Urbanisation is presently concentrated in a bipolar axis around Bamenda in Mezam and Kumbo in the Bui Division. Between 1976 and 2005 the number of people in Bamenda increased by 460%, in Kumbo with 540%, while the population in the whole North-West Region grew by 76% to 1.7 million people. As a result of urban migration, the growth of the population in the rural areas slowed down. Nowadays (2018) the number of inhabitants is estimated at 394.000 in Bamenda and 1.9 million for the North-West Region. Presently urban growth rates for Bamenda and Kumbo are less than 5%, while in the period 1976-1987 they were 8-9%.

Looking at the demography and the urban demographic development in the period 1987-2005 it appears that the population in Mezam Division as a whole increased by 68%, which was mainly caused by the tremendous growth of Bamenda I, Bamenda II and especially Bamenda III (together 121%). The second in growth was the Division of Ngoketunjia that increased by 60%. All three subdivisions of Ndop, Babassi and Balikumbat contributed substantially. However, it must be noted that the (rural) division of Balikumbat ranked first with more than doubling its population. It should also be noted that the construction of the good road infrastructure from Ndop via Babessi towards the Bui Division started only after that period. Looking at Bui division with a growth of 48% in the period between 1987-2005 it can also be observed that its growth was partly due to the growth in Kumbo (58%) the divisional capital, but that the growth of a few remote subdivisions like Mbven and Noni was higher (80-95%). It can also be observed from the data that the remote and more rural Menchum Division showed a higher percentage of increase than in Bui. Inside Menchum Furu-Awa and Menchum Valley subdivisions, both remote places on the Nigerian border contributed most to that growth, both with an increase of the population of about 100%. Of course, these are percentages, but they clearly show that the rural areas in the North-West Region seem to manage quite well as compared to rural areas in other regions of the country. In real numbers Kumbo and by far Bamenda are the biggest urban centres of the North-West Region, while Bui and Mezam Division together host half of the entire population of the North-West Region. The other divisions as a whole exhibit a relatively low percentage of growth between 1987 and 2005: Donga-Mantung 19%, Boyo 9.5% and Momo even had a negative growth. The population in Momo in that period decreased by 3%, caused by an even bigger drop in the subdivisions of Ngie, Mbengwi and Njikwa, while Batibo and especially Widikum-Menka managed to have a substantial growth in that same period.

The average population density in the North-West Region in 2005, during the last census, was 99 compared to 37.5 inhabitants/ km² in the whole of Cameroon. It varied from Mezam Division with 301, to the least dense populated division, which is Menchum with 36 inhabitants/ km² (2005). Looking at the population size of the towns it is clear that in the North-West Region most of the 146 towns are relatively big and have between 5,000 and 20,000 inhabitants, while on the scale of the whole of Cameroon the big majority of villages are smaller than 5,000 inhabitants. The North-West Region by 2005 only had 7 towns with less than 5,000 inhabitants.

In 2005 19% of the people of the North-West Region representing 1.8% of the national population was from Bamenda, which by then was the third biggest city in Cameroon. At present Bamenda has 1,076 km² of surface and (2018) 392,835 inhabitants, now ranked as the 3rd most populated city in the country. Bamenda is expanding along the axes of entrance to the city and is urbanising at a rate of 50% with about 16,000 new inhabitants per year. In 2025 new districts probably towards Tubah in the northeast will have been developed, which would have made new peripheral roads (Banjah-Sabga and Nta Tawah City-Mile 90) and accompanying public and private investments in utilities like local road infrastructure, electricity, water, waste sewerage treatment, parks, playgrounds, and hotels necessary.

Looking at the demography for the North-West Region most of the population is under 20 years of age, while the proportion of elder people (> 60 years) is very small at 4.2%, constituting 2.4% of the urban population (2005). The dependency rate (116/100 inactive/active persons) is relatively high. The median age (largest group) in the North-West Region in 2005 was only 16.8 years, due to a decrease in infant mortality because of improved medical care. In the coming decade the percentage of the population below 15 years will decrease, while that of the group between 15 and 59 years of age will grow.

The sex ratio in the North-West Region is around 98% in favour of the female part. This is relatively low compared to Cameroon as a whole. In the past it was even lower, due to migration of men to other regions. The urban areas in the North-West Region are the only urban regions in the country where there are more females than men. It is also noted that the rural exodus in the North-West Region is smaller than in other regions in Cameroon, especially around the big cities Yaounde and Douala.

About 80% of the population is made of Christians (Catholic, Baptist, Presbyterian and others) and 20% of the Islamic faith. A small percentage of the population practices uniquely the traditional religion. However most of the people, especially those in the rural areas of the North-West Region practice both religions. Besides Christianity and Islam they also tend to maintain their traditional beliefs and related traditions that are strongly related to their cultural organisation. Religious organisations play a major role in both education and health. The ethnic origin of the people of the North-West region is varied. There has been a lot of movement and migration within the region and also with other regions and countries. The census in 2005 revealed that 18% of the resident population came from elsewhere, with Bamenda showing the highest percentages and Boyo Division the lowest. While in 1987 21,000 people moved elsewhere, this number had increased by 2005 to 314,000. Bamenda is a blend of ethnicity and cultural identities like the Tikars, Widikum, Nso and Fulani (Mbororo), reflected in its different quarters, like Meta, Awing, Pinyin and Hausa (mainly populated by Fulani Mbororo people).

The key factor driving land use dynamics in Bamenda is population growth and migration. But also natural disasters (flooding and landslides) and the presence of hospitals and institutes of (higher) education played a role. People created jobs in small enterprises most of them related to agriculture like dairy, bakeries, poultry production, slaughtering, animal food production and also carpentry, metal works, tailoring, embroidery, carving and crafts, mechanics, soap manufacture (unfortunately closed in 2016), printing industry, building industry, manufacturing of cement blocks and firing of bricks.

The built-up area in the North-West Region is 323 km², which is 1.9% of the total surface with Mezam (5.6%), Ngoketunija (3.3%) and Bui (2.5%) as the most densely built and Momo (1.2%) and Menchum (0.8%) as the least built up divisions. However: these data is based on building permits and it is well known that especially in rural areas like Donga-Mantung and Menchum people build without (paying for) permits. In 2015 the MINHDU delegation of Mezam issued 905 permits (while annual growth was over 16.000 people). The delegation in Menchum issued an average of 8 building permits per year over 2011-2015. The actual built up areas are therefore expected to be much higher. For land titles we see a rapid fall in numbers from an average of 970 in 2008-2010 to 376 in 2011-2013. The data shows that in 2011 in the whole North-West Region apparently only 62 landowners purchased a land title. These numbers clearly reveal widespread illegal ownership, a weak administration, deficits in reliable data collection/ interpretation or a combination of those three factors. Between 2006 and 2011, 35% of the population in Cameroon was expelled from illegal lodgings, while in 2001-2006 this figure was 4%. In 2011, 10% of the households in Cameroon were at risk of being expelled, while the percentage of people having no legal documents for lodging was 47-60%. For the North-West Region these numbers were 2% (2006-2011) and 6% (2001-2006) for people expelled and 68-62% for not having legal documents.

Housing quality in Bamenda is generally low in high density areas and better in the commercial business district and low density quarters. The quality of the housing in the North-West Region, where most houses are built with solid materials (blocks and bricks) with roofs of tiles, aluminium sheets (zinc), of

grass, is inadequate but on average better than in the rest of the country. While in the whole of Cameroon in 2011 10% of the people lives in “non-durable” lodgings this percentage in the North-West Region is 4%. From the accompanying data the following information about the state of houses in the North-West Region was derived: 50% only has an earth floor, 9% is in a poor state and needs at least two important repairs (of either cracks/ holes in the wall, windows or roof or the construction of windows, roof or security door), while only few houses are in narrow passages and vulnerable to accidents with electric (high tension) cables, or are they situated in a risk area, defined as being situated in four or more of the following zones: landslides liability, flooding liability, bank of a river, stiff flank of a hill, pile of waste, industrially polluted zone, railway, power station or an elevated bridge. Besides it is obvious that the social infrastructure as well as services such as drinking water, collective sewage disposal systems and sanitation are lacking behind, not only in the urban areas. This got worse during the economic crisis from the late 1990s and early 2000s and the following World Bank induced adjustment programs. This limited access to drinking water and electricity for large parts of the population. After that the situation gradually has improved. In 2014 half of the houses in the North-West Region have access to potable drinking water and 66% to electricity. About 5% of the houses have flushing toilets. These figures for the North-West are comparable to the national percentages. For waste collection and access to dustbins the national situation (21% in 2006) is much better than in the North-West (5%), while for houses that are constructed with definite material the situation in the North-West (43%) is a bit better than in Cameroon as a whole (39%). In 2014, 24% of the houses in the region are rented, slightly above the average of 22% for the country. While the percentage of people struggling to pay their bills is comparable (28% in 2007), the percentage of people suffering from cuts (water, electricity) is bigger in the North-West (25%) than it is nationally (17%). Finally, from the data it can be concluded that 16-17% of the Cameroonians as well as the people in the North-West Region live in overpopulated houses with more than 3 persons per room to sleep, while 65% has no security of lodging.

There is a Masterplan for the urbanisation of Bamenda. The first one dates from 1985 but was not properly implemented. The congestion in the inner city stimulated people to look for more quiet lodging outside. Combined with increased birth rates, a reduction of death rates and rural exodus, the increased population led to the urbanisation of former villages like Mankon, Nkwen, Mbatu, Nsongwa and Bamendankwe. Thus the old town (Nta-Mang) of 30 ha in 1961 grew tremendously towards former villages like Nkwen, Medankwe and many others that in only two decades all became interconnected to eventually cage into a cosmopolitan city that hosts 76% of all enterprises in the region. Mbengwi that became capital of Momo Division in 1969 was the first and only one in the North-West Region with an implemented Development Master Plan, covering 600 ha. The growth with many new offices soon covered 1,000 ha. After 1972 the population doubled and there was a lot of housing with urbanisation spreading to Mile 18, 17 and 16. Nkambe in Donga-Mantung Division developed a government station on 4 kilometres distance from the town, in 1949. Inbetween in Binju, a village producing fruits, wood and coffee, offices are set up, causing a spatial growth in a linear pattern. The same happens along the road to Tabenken where a government secondary school was built. Remoteness hampers rapid development. Kumbo, with its adjacent administrative headquarters in Tobin and St. Elisabeth Hospital in Shisong, quickly urbanised. It was first part of the colonial administration that groups Nso, Bafut, Ndop and Native Authorities to the Bamenda Eastern Federation of Native Authorities, as from the 1940s. The Nso Native Authority split up in 1960 and in 1961 the Nso Area Council was created and subsequently the subdivision of Kumbo became a division (1966) and got a council in 1977.

Projecting demography and improving health conditions from 2005 to the year 2050, it is obvious that the present urban areas like Bamenda, Kumbo, Mbengwi and Nkambe will grow by about 50%. Towns like Ndop, Bali, Batibo, Fundong and Jakiri will become densely populated urban centres. Processing facilities will help employability in urbanising axes, like: UNVDA in Ndop for rice in Ngoketunjia Division, CDC Tea Estate for tea at Ndu in Donga-Mantung Division, Elak-Oku for honey and handicraft cooperative in Bui Division, Prescraft and the Traditional Handicraft Cooperative Society Ltd in Bamenda (with

branches in Nkwen, Bafut, Bamessing, Bambili, Babanki and Babungo) and Bessi Soap for soap in Batibo in Momo Division. In the northeast of Bamenda (Bamenda III) the development and concentration of higher education also contributes a lot to employment as well as urbanisation. Besides, with the creation of the University of Bamenda between 2000 and 2015 the number of schools in that area increased from 15 to more than 50.

In 2005 based on the census, the demographical development and the factors influencing urbanisation a projection of the housing needs in the regional capital shows that in the period 2011-2027 Bamenda I (Upstation) needs to build 1,900, Bamenda II (Downtown and West) 12,500 and Bamenda III (East) about 7,500 houses. To involve affordable social housing the government started to build multi residential low cost houses in Banjah Bamenda with a 10% execution rate (2018). The building activities of residential areas by 2014 led to a percentage of 53% of the total area. Wetlands went down from 27% in 1984 to 6% in 2014, especially around Nkwen and the river Mezam. This development was intensified because of land speculation and rising prices for housing. Thus trees are cut indiscriminately, wetlands drained and backfilled with earth to build houses. Increased agriculture activities and dump of waste did the rest. Together these activities create an environmental disaster which has or will have serious consequences, not only devastating ecosystems and degrading land, but also increasing risks for landslides, mudflows (especially the uncontrolled building east of Bambili towards Sabga Hill) and pollution of aquifers, water sheds and water catchments, which will have detrimental effects on the availability of potable water and health. Vulnerable areas like Sisia and Abango are now already occupied.

The rapid expansion of housing is not accompanied by safe infrastructure for pedestrians, bicycles and motorcycles, neither by additional road infrastructures for vehicles causing massive traffic congestions and an increase of traffic accidents.

Attempts are made to relocate manufacturing activities: concentrate light industries at Bayelle Menda at Mile 4 (Nkwen, east of downtown Bamenda); medium and more heavy industries should be located in the Alankie and Altakoh areas along the road coming from Mbengwi in the Northwest of town, while motor repair garages should be allocated as much as possible to three places in and around the city centre at Mile 90 (Nsongwa), Mile 4 (Nkwen) and Mile 1 (Bamenda centre). New road infrastructures as well as means for mass public transportation as well as collective sewerage systems have to be developed.

With regard to poverty the percentage of people in the North-West Region (2014) that lives below the poverty line was 55% compared to 33% in Cameroon. In 1996 these figures were 66% and 53%. From 2007-2014 poverty in the NW Region increased with 4%, while nationally the situation further improved. As for crimes, most of the types in Bamenda are poverty related like theft and misappropriation. Not poverty related crimes like homicide or the consumption of Cannabis remain relatively low compared to other urban areas.

7 - Technical infrastructures

Road infrastructure is vital to all socio-economic development. There are no railways, major waterfronts and highways in the North-West Region. There is one airport (Bamenda / Bafut) with inland connections. Beside motor bikes, horses and canoes, all other transport depends on vehicles and thus on road infrastructure. The road network is poorly developed and not well maintained. In 2006 the total length of roads in the region was 3,300 km of which less than 8% was tarred. Communal (rural) roads comprised 2,300 km. Of the 3rd category divisional roads (390 km) none and of the (2nd cat.) regional roads only in Boyo, Donga Mantung- and Mezam Division 40% out of the 235 km was tarred. The 417 km of national road infrastructure, being the most important first category roads the tar percentage was 42% (2006). In 2017 the North-West Region had 360 km of paved roads, 2,000 km of unpaved roads and 8,300 km of other tracks, paths and trails (MINTP). Looking at the state of the main road network in the period 2013-2017 the quality is regarded as good on 14% of the roads, compared to an average of 18% in the whole

of Cameroon. More than 50% of the roads are in a bad state (very deformed with numerous potholes), while the rest is average (defined on an asphalt road as having obstacles and occasional potholes and on a dirt road as a state where 4x4 vehicles can reach a speed of 40-60 km/hour). Only the South-West, South and East Regions' roads are worse. The Ministry of Public Works (MINTP) is in charge of construction and maintenance of roads, while the National Road Council (CONAROUTE) is a forum for consultation and coordination of projects and policies under the direct responsibility of the Prime Minister. Municipalities are in charge of construction and maintenance of communal and rural roads.

The national road with number 6, that was partly (re)constructed in 2014, connects Mbouda with Bamenda and continues to Mamfe and Enugu in Nigeria, where it is a part of the Trans-African Highway. It is vital for trade and economy. The part Babadjou-Santa-Bamenda, connecting the North-West Region to the rest of the country is in a very poor condition but presently (2018) rehabilitated. The Ring Road structure Bamenda-Ndop-Kumbo-Nkambe-Wum-Bafut-Bamenda was identified a priority development project in 1983 is 358 km but only 30% is in a good state. The government is engaged in the funding process. At present, only the stretch between Ndop-Babessi-Jakiri-Kumbo (50 km) is good. Other stretches and important roads like the ones connecting around Wum, the stretch Bafut-Bamenda, the connection to Adamawa Region through Sabongari in Donga-Mantung Division, the road Nkambe-Ako-Abonshie with the crossing to Nigeria by boat along the river Abong, the connection between Furu-Awa in Menchum Division with Nigeria over the Katsina Ala river, the road between Jakiri and Foumban in the West Region, the roads from Ndop to Balikumbat and from Kumbo through Tobin and Tadu to Oku, are all in a bad condition. However, the roads from Babungo to Elak-Oku and the road towards Belo-Njinikom-Fundong are in a relatively good condition. In recent years the condition in particular of the roads of national importance have been improved considerably. However, the construction and maintenance is greatly suffering from the centralised approach, a lack of funds in combination with corruption, as well as the fierce environment with steep slopes, a lot of rain and an increasing number of landslides and mudflows.

The annual domestic energy consumption of a Cameroonian is 0.33 toe, while for the average global citizen it is 8 times higher. The total production is 2.3 GW, mainly from biomass (such as wood), 46% of fossils and 5% of hydropower (2014). The consumption of 11,000 ktoe in 1990, increased significantly until 2000 and then dropped down sharply until 9.800 ktoe in 2014. The potentials of hydropower are huge, estimated on 20 GW, which would make Cameroon the second producer south of the Sahara.

The Ministry of Water and Energy (MINEE) is primarily responsible for production, transport and distribution of both water and energy. The energy policy aims to guarantee a sufficient, clean and reliable supply for all with few impacts on the natural, cultural and socio-economic environment.

In 1998 the electricity sector was privatised. This failed as power cuts caused by deficits got more frequent. The state owned ENEO company is nowadays the main distribution and marketing institution. It operates three electricity grids. The North-West Region is served by the Southern Interconnected Grid (RIS) which connects to the Edea (277 MW) and Song-Loulou (384 MW) hydro electrical power stations and to thermal centres in several towns. In Bamenda since 2013 there is a 25 MW light fuel thermal power station. State institutions like ARSEL, AER and EDC promote investments, increase supply of energy to businesses and manage the electricity transmission network. Besides private companies are involved in energy production and transmission. Individuals have small scale generators, mini-thermal power plants, (seldomly) a windmill and or photovoltaic solar panels. There are 45 biogas installations, most in the Mende-Nkwe quarter in Bamenda. Biogas is used for industries, cooking, generators, heating (stables and houses) and light and side products can be used as disinfectant, fertilizer, pesticide and deodorant.

The transmission network connects the generating sources in the Centre and East Region to a single 36 MVA power transformer/ distribution centre in the North-West Region. From substations medium and low voltage transport reaches the individual consumer through pylons and conducting material. ENEO

supplies urban and peri-urban areas, while the Rural Electrification Agency (AER/ MINEE) is responsible for the distribution in rural areas.

In the North-West Region nowadays 496 out of 776 villages have no access to electricity. In NgoKetunjia (77%) and in Mezam Division (64%) most of the villages are electrified. In Menchum this is only 16% and in Boyo Division 27%. The other divisions are intermediate with 30-32% of the villages connected (2017). At the moment there is no high voltage in the region, hampering industrial development. Between 2006 and 2017 the number of low-voltage subscriptions in the North-West Region increased from 33,000 to 89,000. This is mainly due to the growing availability of cheap electronic devices like radios and refrigerators imported from Asia. The production of a hydroelectric plant in the region, which is now ongoing in Menchum in the Katsina waterfall (485 MW) will end the under production and deficit problems. If decentralised it could also lead to more affordable prices in the North-West Region.

The source of drinking water is surface- and groundwater. Rain, which is abundant in the North-West Region, is barely used. The region is part of two bigger hydrographic basins. The Niger and Sanaga basin, together account for almost 40% of the water surface area in Cameroon. The Menchum river, with Katsina-Ala and Kindi tributaries, the river Bui close to Kumbo and the river Noun, which starts at Mt Oku and flows through the Ndop valley to the Bamendjin Lake, drain large areas in the North-West Region. There are groundwater reserves in the basic geological zone as well as bigger ones in sedimentary formations. The North-West is midway between the Benue and Sanaga basins. The information on local groundwater reserves and movements is scanty. Access to clean drinking water is central in the government policy as one of the major Millennium Development Goals (MDGs). During the 1986-2006 economic crises a large part of the water sector was privatised. Policy aims at Integrated Water Resource Management, Public Private Partnership in urban water supply (and sanitation), rehabilitation of equipment to achieve the MDGs, strengthening of decentralised institutional frameworks and secure funding.

Water demand in the North-West Region is determined by the size of the population. The average consumption in urban areas is 50 liters per day per person and in rural areas it is 3 liters. Besides, water is needed for hydropower production, livestock and irrigation of plantations (rice and tea), fish farming, forestry, tourism, recreation and the environment. State managed CAMWATER developed a Hydraulics Master Plan covering (peri) urban areas in all of Cameroon. In the North-West Region this concerns Ako, Bali, Bamenda, Batibo, Fundong, Furu Awa, Jakiri, Kumbo, Mbengwi, Ndop, Njinikom, Njikwa, Nkambe, Nwa, Tubah and Wum. In all of these towns the decentralised municipalities, NGO's and private stakeholders cooperate to store water from rivers and sources. Most of them, with the exception only (2016) of Ako, Furu-Awa, Njikwa and Nwa purify the water before it enters the CAMWATER/ CDE or local network system with standing pipes to reach consumers. Kumbo, Tubah (Bambili and Bambui) and Bali have their own water authorities. There are also (public and private) boreholes, wells, sources, streams and swamps, sometimes also directly connected to the local population through standpipes. Catchments for drinking water are sometimes not well protected against cattle that pollute the water or against Eucalyptus that drains it. In many cases, like in Bamenda, water is conveyed from a river or stream, mostly (like for Bamenda Up Station) treated in a flocculation-decantation-filtration unit and then stored in tanks (Up Station) or artificial lakes (Bamenda Down Town) to serve (peak) demands. Connected households in Bamenda (11%) use 74 liter and not connected households use 0.4-2.6 liter per person per day (2012). Bamenda has approximately 237.1 km of pipes with a diameter of less than or equal to 400 mm. Except for the municipality of Bamenda 2, all towns have community water systems beside the CAMWATER/CDE connections. The number of subscriptions (2012) is almost 12,000 in Bamenda and over 4,000 in Kumbo. In the other towns that are part of the Masterplan the number of subscriptions varies between 244 (Nwa) and 1,850 (Bali). In 2012 there were 123 fountains registered, from which 53 in Bamenda. Deficits of electricity, lack of materials and maintenance as well as problems with governance give rise to frequent water supply cuts and/or poor quality of drinking water. People with a tap will then also turn to fountains or if they do not work either, they will ask their neighbours with

boreholes or go to local streams. There is reason to believe that ending the (peri) urban monopolies of CAMWATER/ CDE and an effective decentralisation will help to improve the situation of drinking water supply.

As for rainwater there are huge potentials for rain water harvesting from roofs and pavements that are however at the moment not developed at all. Only at times of water supply problems during the rainy season do people put buckets under the roof side. There are a lot of problems with insufficient drainage of rainfall. The capacity of drains, ditches and engineering structures (bridges, culverts) is not always enough, which can lead to floods and (natural) disasters. These problems aggravate with more heavy and frequent down pours due to climate change.

As for waste water industry is insignificant so most of it in the North-West Region originates from households, administrations and institutions. It is collected in septic tanks, sometimes with a deep suck away. The emptying of septic tanks is sometimes organised publically or private, but some households discharge it directly into streams and rivers. In some rural (and even urban) areas latrines are used that can sometimes affect sources of clean water and cause diseases. In some rare cases, institutions (like St. Elisabeth hospital in Shisong) collect their own waste water and purify it in a treatment plant.

Regarding the water quality it is obvious that the disposal of untreated waste(water), runoff from agriculture (fertilizers and pesticides) as well as the use of surface water for cattle and to wash clothes, bikes and cars causes heavy pollution of streams and rivers, the ecology and the health of the population, spreading water borne diseases and contaminating fish. Groundwater, surface water and (through catchments) also drinking water can be contaminated. Ecosystems of rivers, lakes and swamps, some of them being wetlands of international importance can be destroyed.

Telecommunication refers to the use of electronic (analogue or digital) equipment and networks for radio, television, (mobile) telephones and internet. It is an important part of the (global) economy. Fixed telephones with wired communication system are still used by businesses in the region but mobile telephony is the most wide spread system. It is privatised and develops quickly with (2018) four providers and (though still slow) 4G available to speed up GSM transmission. Television and (especially radio) remain the main source of information for most people. There are about 40 public and private broadcasting stations. Internet has many providers but yet it is still expensive, while the coverage in rural areas can be poor. It either uses the optical fibre passing through the region or VSAT (Very Small Aperture Terminal), a two-way satellite communication technique with antennas targeting a geostationary satellite. The Ministry of Post and Telecommunication (MINPOSTEL) is responsible for the development and implementation of telecommunication policies. Its National Agency for Information Technologies and Communication (ANTIC) and the Telecommunications Regulatory Agency (ART) among others promote ICT, and also regulate, control and monitor the activities of private operators in mobile telephony. Through CAMTEL the ministry controls radio, television and internet. Beside liberalising mobile telecommunication it is the official policy to disengage the state from the productive sector,

The telecommunication sector contributes nearly 5% to the gross domestic product of Cameroon. In the North-West Region there are four independent operators in the mobile market. Besides there are internet service providers and value-added services.

Privatised network providers for mobile telephones and internet (MTN, Orange, Nexttel and Yoomee) give the region one of the best coverages (90-95%) in the country. Only the West Region has a slightly better coverage. However, the transmission is relatively slow and providers are also rather expensive because they all use their own infrastructure like antennas. On the other hand the digital possibilities create ample job opportunities especially for young people. Problems and challenges remain with the coverage of physical transmission through optical fibres, which is now only partial. Besides there is no legal framework to protect against cybercrime, nor to secure individuals against unauthorised access to information systems by both hackers as well as public organisations. Small operators are not allowed to

have certain relay antennas. Finally, the network is interrupted frequently because infrastructure with poles and cables for telephone, in some cases combined with the internet, is heavily challenged by nature and not always well maintained.

Most of the waste produced (about 70%) in the North-West Region is solid household waste. Besides there is liquid waste (water, oil based) with more risks for the spreading of contamination through ground and surface water. Waste from hospitals, cemeteries and burial of corpses on private plots pose special challenges. Between 1994 and 2000 the amount of waste (water) increased with about 40%. The Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED) is responsible for waste management policies. There are several laws and regulations as well as international legal instruments to protect people, the environment and the country as a whole against the pollution of (imported) disposed waste.

In Bamenda the urban community collected garbage and disposed of it in a dump at Magaji Nkwen for a long time. In 2017 a contract was signed for Bamenda and Kumbo with HYSACAM, a company that now collects and disposes the waste, but only does that in the central districts of the towns. There is a shortage of garbage bins, but even when available the awareness of large parts of the population to collect garbage is very low. So, garbage including plastics ends up in streams and rivers, causing health problems to people and cattle and destroying ecosystems. In some other towns municipalities like Ndu and Tubah (recycling of plastics) are very active, but in most places people just have to manage their own waste. They simply throw it in the river or burn it, including plastics, harming their own health, polluting their environment and destroying ecosystems. Happily, because of poverty the amounts of waste are still relatively low. Many things are constantly repaired or reused (batteries, iron, building materials, wood) in another way, like paper bags for cement to carry groceries or vegetables. Also, people traditionally use leaves and grasses for natural packaging, especially of food. Organic waste is often reused on farms, turned into compost for small farmers or to boost the production of food industry or to produce biogas. In case it is dumped there are animals like goats and fowl that eat it. Therefore, and also because of the relative height and cool climate, the odours even close to landfills are relatively low. In the North-West Region in 2015 there were 130 manifestos for follow-up of delivered waste, concerning 1,920 tons of scrap (metals), 93 tons of waste from electricity companies, 68,000 liters of used oil and 2,700 kg of used filters.

Hospital waste poses specific problems to the environment and the people exposed to especially water pollution. In St. Elisabeth Hospital in Shisong patients are encouraged to separate household waste in three different types of baskets: one for plastics, one for metal and glass and one for organic waste. Incineration (at high temperatures), burial and also wastewater treatment are applied to minimize the burden for the environment.

Poor waste management does not only contribute to destruction of ecosystems, intoxication and epidemics, but also adds to CO2 production and emission of other greenhouse gasses that contribute to climate change. Decentralisation is seen as a possibility to develop a better policy with more insight in local situations. Obstacles are funding, social acceptance, and unavailability of modern technologies. Beside legislation, communication, education and enforcement are important tools to implement and improve the situation.

8 - Social infrastructures

Social facilities and services, like schools, hospitals, public offices and sport facilities are important for the well-being of the population. As for primary, secondary and higher education 59% of the 3,500 schools (2015) are government schools. They provide education to 73% of the pupils. The rest of the schools are private, in many cases religious. More than half of the schools are in Mezam and Bui division. The regional enrolment for primary education is 97%, substantially higher than the national enrolment of 89%. In the divisions, the enrolment is highest in Boyo and lowest in the Bui divisions. The other

divisions are intermediate in their enrolment of children in the primary education. The sex ratio in primary and secondary education is about 50/50, but in nurseries and secondary education there are more girls than boys. The number of pupils per teacher differs per division from 20 (Mezam) to 85 (Donga-Mantung Division), reflecting the preference of teachers to work in and around Bamenda. Various attempts of the government to distribute teachers more equal in the region, according to the need in the various divisions, have so far not been effective. Beside Donga-Mantung, also Menchum and Momo Division have a high number of pupils per teacher, while in Bui (except for primary education with more than 60 pupils / teacher) and Boyo the situation is more favourable and comparable to Mezam. Ngoketunjia has an intermediate position. Looking to the statistics on the number of pupils per classroom the variability is less, but expressing the same differences between the divisions. The policy to have less than 45 pupils in the classroom for primary and less than 60 for secondary school is, with the exception of private confessional schools, seldom achieved. In government schools over crowdedness is common, especially in urban areas in and around Bamenda and Kumbo. Many classes have twice the maximum number of pupils or more. In Kingomen Government primary school some years ago class 5 had 123 pupils and the teacher was qualified but a volunteer already retired teacher. There are classes in secondary schools with over 150 pupils.

The poorer families send their children to government primary schools that since February 2000 do not charge governmental fees. The government builds a few of the first classrooms, supplies teachers and one textbook per subject per level per pupil. The parents do have to pay for registration fees, books, school uniforms, and PTA (Parents Teacher Association) fees. The PTA fees vary per school. On average they make up 60% of the finance. PTA fees are used for the additional buildings, furniture and other facilities, and in many cases also to employ extra teachers to reduce the number of pupils per teacher. Private primary schools are more expensive. Most villages have a government and a Catholic or Islamic primary school. For public secondary education pupils have to pay a governmental fee. This is so at present as it was in the past. For public universities a governmental fee was first introduced in the 90-ies of the last century. For poorer families it is difficult to have access for their children to secondary and higher education.

Although in many cases private primary and secondary schools offer better facilities, the quality of the teachers is comparable. The quality of the contents (curricula) of the primary schools shows a big variation. In some the standard is relatively high. In others it may occur that children from class 4 are not even able to write their names. The children in primary schools take exams in class 8. People who do not have a diploma of primary education hamper their possibilities to find jobs. The language in schools in the North-West Region is English. French is taught from the primary level. However, the ability of the population as a whole to speak French is very low, although there are huge potentials of bilingualism that are not exploited. In a few selected urban schools there are experiments with bilingual education, but in Cameroon the methodology as well as the certificates are either Francophone or Anglophone. This hampers the communication between the people of the various regions as well as the mobility of students.

Higher education in the North-West Region had an enormous boost with the creation of the University of Bamenda in Bambili, Mezam Division as from March 2011, being the second English speaking university in Cameroon (after Buea in the South-West Region). There are about 25 Rural Artisan Training Centres for technical education in all divisions. Vocational training is offered by 46 private, confessional institutions for various subjects like carpentry, hair dressing, catering, nursing, business management and mechanics. There are 18 government and various confessional Teacher Training Colleges in the region, with the highest concentration in Mezam and Momo Division, training more than 3,300 students. With 4 - 12 students per teacher and an average of 41 students per classroom the facilities to train teachers are good. In Momo and Boyo Division the availability of classrooms is behind.

The last decades the number as well as the investment in building and infrastructure of schools has been greatly enhanced by government and Cameroonian as well as foreign NGO's. However, accessibility of schools in some isolated rural areas and also the quality and maintenance of school facilities remains problematic and needs improvement. Between 2003 and 2015 the number of primary schools has risen by 56% to 1979 schools with 373,726 pupils attending in 2015. In the same period the number of secondary schools has almost tripled with 206,032 pupils attending in 4,752 classrooms on 489 secondary schools (2015). A big problem at the moment is the corruption that has also mounted on all levels. Anti-corruption brigades yet have to improve that situation.

The rich cultural heritage of the North-West Region reflects centuries of history in traditions, food, dress, songs, arts and crafts, like beads, statues, masks and pottery. Fons, traditional rulers, heading ancient fon(king)doms with their palaces, noblemen and juju's (figures appearing from the palace at major events), nowadays still have a big authority over its citizens. They are respected and worshipped. Regalia, ceremonies and cultural festivals keep the heritage very much alive. There are 22 museums in the North-West region to display artifacts. Akum, Babungo, Mankon and Bafut are among the most important. Besides there are dozens of palaces like in Kumbo, Kom, Chomba, Babungo, Nkwen, Nkar and Mankon. The one of Bali is recognized as a UNESCO World Heritage Site. Most villages nowadays have a multifunctional village or community halls for parties, traditional festivities but also vaccination campaigns. Mezam and Bui are the only divisions with some private cultural centres too. As for cinema halls the Rota, Roxi and National Cinema were functional in the 1980s in Bamenda but were closed down in the early 1990s. At present there are none. The diverse ethnic background and also the influence of Nigeria and Western cultures are all reflected in a diversity of music activities that serve entertainment, social satire and creativity among the people of the region. Some musicians, singers and dancers like Francis Dom, Richard Kings and Ateh Bazor transformed traditional music in modern ways and became famous abroad. Cultural festivals like the ones in Bali, Kumbo and Babungo are very important events displaying traditional music, dance and artistic cultural treasures. Babungo in Ngoketunjia Division is an important craft artistic centre for sculptures and iron tools. In Oku in Bui Division there is a famous palace, museum and woodcraft shop. The Presbytarian handicraft centres of PRESCRAFT in Bamenda (shop), Bali and Bamessing (pottery) sell their products all over the region, elsewhere in Cameroon and through fair trade organisations also in Western countries, providing jobs and foreign money.

Cultural heritage is not only important for the economy (employment and tourism) and a pride of belong, identification and inner satisfaction for the local population. It also helps to respect and preserve the environment. Shrines in protected areas, sacred forests that are visited once a year, sacred lakes and raw materials for craftsmen, herbalists and traditional medicine practitioners help the awareness of sustainable exploitation among the people. The ministry of Arts and Culture actively promotes the culture of the North-West Region, both nationally and internationally.

For sports the Bamenda Municipal Stadium has been used to organise national annual games (FENASCO and FENASU) for decades. Since 2016 a new Bamenda Olympic Stadium with 2,500 seats and all modern facilities is under construction. Outside Bamenda the divisional headquarters have both public and private playgrounds for football, handball, basketball, athletics and tennis. There are clubs and competitions for several of these sports, football being the most popular. Kumbo Strikers and Young Sports Academy have won the Cup of Cameroon. Mezam Division has the highest number of affiliated clubs and recognized coaches and referees. In 2017 Bamenda hosted the university games. From Menchum and Donga-Mantung athletic clubs are among the top winners in Mt Cameroon's annual race of Hope.

As for health the state runs one regional hospital (1956) in Bamenda II subdivision and 19 district hospitals in the health districts. In Bamenda III subdivision a referral hospital is under construction. Besides in the smallest administrative health unit, the 229 so called health areas, there are 22 medicalised health centres (MHC), 198 Integrated Health Centres (IHC), 197 state (beside 17 private) pharmacies in the

North-West Region The state owned institutions are developed and managed under the three years development plan (2015-2017). Besides there are private confessional hospitals, like the renewed Banso Baptist Hospital in Kumbo, the Catholic St. Elisabeth in Shisong (both in Bui Division) and the Mbingo Baptist Hospital in Kom (Boyo Division). These private institutions offer better facilities and services, but at a higher price. St. Elisabeth Hospital also has a referral cardiac centre serving patients from other regions and even other central African countries. There is one hospital per 10,000 inhabitants in the North-West Region. The IHC's on average serve nearly 12,000 people, while a district hospital serves a population which is on average nearly 135,000. Especially in Menchum and Ngoketunjia Division the health care infrastructure is inadequate. Beside the number of centres the presence of laboratories, pharmacies, operation units (theatres), labor rooms are either poorly constructed or not adequately equipped. Donga-Mantung and Menchum Division lack mortuaries. In faraway health units like Sabongari, Furu-Awa, Ngie and Nwa most medical equipment is not available. Some of these centres are without medical assistance. Most patients from the interior prefer to visit hospitals in the (semi) urban centres, despite long travel distances and poor infrastructure. Drugs in state hospitals are subsidized but yet, due to poverty, many people cannot afford them. There are 1,355 doctors in the North-West Region. This is one doctor per 20,000 inhabitants. For Mezam Division there is one doctor for each 4,500 inhabitants. In other divisions the situation is much worse. In all divisions the number of doctors as well as nurses is far below the need. Because of a shortage of staff and the expenses for drugs many people resort to alternative traditional medicines. Malaria is the predominant disease, responsible (2015) for 97% of all consultations (172,000 patients with 47,000 children below 5 years). It is one of the major causes of death (20% of children below 5 years). Besides people suffer from hypertension, acute respiratory infections, diarrhoea, malnutrition, HIV/ AIDS (14.000 children & pregnant women), diabetes (10,000 among the same group), tuberculosis and injuries. Infant mortality is 42 per 1,000 births and 64/1,000 children die under the age of 5 years. In the whole of Cameroon these figures are 66/1,000 and 112/1,000 respectively. Life expectancy is 53 years (2015). People have to pay for consults, treatment, facilities, operations and drugs. Only children below 5 years get free treatment for Malaria and due to foreign funding HIV/AIDS tests are free for everybody. For the other costs, that are higher in the private hospitals where quality is better, two schemes emerged recently to reduce individual costs for health treatment. These are the Bamenda Ecclesiastical Province Health Scheme (BEPHA) and the North-West Regional Fund for Health Promotion (PIG). Members register, pay a fee and are insured for hospitalisation, operations, other treatment and drugs for a number of times per person and up to 75% of the costs. Unfortunately, these schemes are nowadays only operational in Mezam, Bui and Boyo Divisions and in total less than 40,000 people registered (2015). Other people resort to traditional ways of "insurance" forming groups of people that meet regularly, socialise and put in money collectively to fund eventual individual medical expenses.

There are 593 public buildings in the North-West Region for offices and lodging, that cost the state 490 million FCFA per year. Because every governmental service is presented on the divisional level, the need for accommodation is huge. Some of the buildings are in a poor condition and to some of the services the access is limited because offices share buildings or in a relatively remote area.

9 - Social system

As for employment, between 700,000 and 750,000 people in the North-West Region have a job. An estimated 44% of the population works in the formal sector (43% for private companies/ institutions and 1.2% for public authorities). The rest (56%) has an informal job, which is neither registered nor taxed. Churches and confessional institutions alone, including education and health institutions, have about 250,000 employees and thus form the majority of the formal sector jobs. Informal jobs in the primary sector like farming, livestock, forestry and quarrying of sand and stones are based on individual initiatives, while state cooperations for these sectors are absent. Income, production and manufacturing (small scale food processing and craft production in the secondary sector) as well as consumption are

largely local and create a circular local informal economy. Some craft production, dairy, soap and some agricultural products are sold inside and outside the region and create income for the region as a whole. The large informal sector is made up of diverse activities such as garages, wholesale and retail of agricultural products, retail shops and hawkers, catering and recreational services, maintenance and construction works, printing of documents and local publications, intra-urban transport by motorcycle, urban taxis as well as clandestine cars, informal money houses and transactions, roadside telecommunication services like mobile money and call box, etcetera. In the formal employment sector, where people have a salary the service providing sector is the most prominent: state services at regional, (sub)divisional level, state health and education institutions, regional authorities, (inter)national and local NGO's as well as (private) financial institutions, money transfer agencies, transport agencies, tourist facilities, construction companies, supermarkets and other wholesale businesses. A quaternary sector of young people engaged in higher education, research, consultancy and information technology is emerging in the North-West Region. In the past years jobs as a bike driver and in the call box sector (both informal) have rapidly grown. Annual income varies from 25,000 for a roadside vendor or bike driver in the informal sector up to 500,000 CFA for a top ranking entrepreneur or top civil Bamenda administrator. Mezam offers the most employment and also the highest top ranking salaries. In recent years government intensified the efforts to facilitate and accelerate the social economic and professional development of youth by introducing projects, funds and programs also to combat migration and rural exodus. The Urban and Rural Youths Support Program (PAJERU) has launched 17 development projects for youth between the age of 15 and 35, the National Youth Fund (FONIJ) is financing productive and innovative projects of youths and the National Youth Observatory Program (PNV) is promoting skills of youth for personal development.

About 5 to 10% of the inhabitants (80,000 people) of the North-West Region belong to the minority of the Mbororo Fulani pastoralists. These people with the Islamic religion arrived with their cattle in the grass fields during the late 1880ies. They came from Nigeria, eventually settled around Bamenda and Sabga and nowadays can be found in all subdivisions of the region. The Mbororo Social, Cultural and Development Association (MBOSCUDA) defends rights for grazing against cropping and urban development. More recently the Mbororo developed a more sedentary lifestyle, opened Islamic schools and engaged in (subsistence) agriculture, honey harvesting, diary production and other small scale activities. The population growth is immense. There are increasing conflicts with urbanisation, cropping agriculture and forestry. Because of increasing problems and hostilities a lot of Mbororo nowadays feel threatened, discrimised and marginalized. Based on the United Nation's Declaration on the Rights of Indigenous peoples (UNDRIP, 2007) and the Constitution of Cameroon, the government recognises the importance to protects the Mbororo nomadic pastoralist as a minority group, whose culture and socio economic activities should be preserved. Recently the Mbororo suffer from prolonged drought due to climate change.

As for the issue of migration it is clear that the population in the North-West Region is constantly on the move. Migrating people are primarily young people from rural areas towards Mezam Division and especially Bamenda, but also to other regions in Cameroon and especially the South-West and Littoral Region, in search for better living conditions, employment and especially in recent years also for safety. In the last census (2005) there were more than 310,000 migrants on a population of 1.7 million people. The migration index in 2005 was 18% for the region as a whole, mainly due to Mezam Division (34%) and a net annual influx of 60,500 people, primarily from Bui (30%) or Momo Division (22%). Many use Bamenda as a transit for other parts of the country. Ngoketunjia Division's migration index (2005) was 12%, with an annual influx of 2,400 people. Other divisions have lower indices (Donga-Mantung: 8%) and a negative migration balance. In the past important movements of people were caused by a natural disaster (Lake Nyos, 1986) and by new accessibility because of road infrastructure and/or the development of new fertile plains like Mbaw (Donga-Mantung), Menchum Valley (Menchum), Mbonso (Bui) and

Ndop (Ngoketunjia Division). The North-West Region received many migrants from other regions, especially business men from the West and South-West Region and (since 2011) Anglophone students from all over the country as well as from Nigeria, Gabon and Equatorial Guinea come to the University of Bamenda. On the other hand, also many migrants from the North-West Region left to other regions, mainly the South-West (37%), Centre (23%), Littoral (19%) and West Region (10%) to work mainly in plantations or in petty businesses in towns. As for foreigners the predominant nationality is the Nigerian with a large community in Bamenda and some in smaller border towns like Sabongari and Furu-Awa. The migration within the region is related to employment and education. Many especially young men and women move from one (sub) division to another for short or longer periods. They tend to stay with relatives or acquaintances. In Bamenda the organisation of town reflects the origin of the majority of migrants living there. Inside (sub) divisions there is also a rural exodus towards the administrative headquarters. Access to better education and health services and also water and electricity are the dominant motivation behind migration.

The North-West Region has 200 major businesses (2017) that deal with transnational trade into the region and thus into the country. Mostly these are Nigerian (electronics, drugs, building materials, fuel, cattle, bikes, etc) and arrive along the newly (2014) constructed Onitsha-Enugu-Ekok-Mamfe-Bamenda road. Some of the in many cases fairly used products come from Equatorial Guinea (wine) or Dubai (telephones, electronics, carpets), (spare parts of) cars and household equipment also come from Japan, Germany, Belgium, and the USA. Dresses and shoes come from the same countries, except for Japan, and also from China, Nigeria and Dubai. China is also among the countries exporting telephones and (spare parts of) cars. Goods from Asia, Europe and the USA arrive in Bamenda by truck transported from Douala port through Nkongsamba-Bafoussam-Mbuda-Santa road. The demand for and the import of fairly used products from western countries is growing but still, mostly because of the history, the common practice, the common language and the presence of a vast number of Nigerians in the North-West Region, still a lot of people prefer to buy Nigerian products. The export goes to other regions in Cameroon, as well as abroad to Gabon, Equatorial Guinea, CAR, Chad and Nigeria. For manufactured products there is a net import into the North-West Region, while for food and art and crafts products there is a netto export to EU/ USA/ Asia and other African countries, For agricultural primary products this concerns mainly vegetables, cattle, tea, coffee, honey, tomatoes, beans, corn (maize), potatoes, groundnuts, and palm oil, There is also some export of (limited quantities) of processed food like for cassava, palm oil (and soap from a Bamenda factory), tea, coffee and dried vegetables. Chad gets potatoes and plantains. Gabon, CAR, Equatorial Guinea and Nigeria import carrot, cabbage, leek, onion, huckleberry, tomatoes, potatoes, okra, parsley, green beans, pepper, lettuce, garden egg, bush mango (seeds), eru, other non-timber natural forest products, banana and other vegetables. Trade routes are directed from Bamenda to the east through the West, Centre and South Region (Bamenda-Santa-Mbuda-Bafoussam-Yaounde-Kribi-Campo), the north (Bamenda-Sabga-Ndop-Kumbo-Nkambe-Aku-Abonshi-Enugu) and (since 2014) to the west (Bamenda-Mamfe-Ekok-Mfum-Enugu). Along Aku-Abonshi annually the volume of goods exported is estimated at 1,000 metric tons and the amount imported is estimated at 3,000 metric tons (66% stays in Kumbo) with a total value of 5 billon FCFA, Along Mamfe-Ekok the volume of exports, only 3 years after the road was opened, is already estimated at more than 10,000 metric tons annually, with a value of more than 10 Billion FCFA. This makes clear that the potentials of transnational trade are huge. The fertile and hardworking North-West Region is producing abundant food, while neighbouring countries on the contrary are already facing a shortage of food for a growing population. In these circumstances investments in good and safe infrastructure will always be very beneficial to the economy. Nowadays some (parts) of the roads, especially north of Kumbo, but also around Ndop and on the stretch from Bamenda-Santa-Mbuda are in very poor conditions. Most of the transnational trade is carried out by small traders that in many cases share trucks and payment of customs. Along the road employment mounts for customs officials, security personnel, immigration officers, small shops and restaurants, (illicit) fuel trade and public agencies tasked with ensuring food safety, agricultural health, and/or quality standards. A good example that illustrates the impact of good

infrastructure and trade on the daily economy is the export of eru (*Gnetum africanum* and the *bucholzianum*) along the Bamenda-Enugu corridor. Eru is harvested in the natural forests of the Centre, South and East Region of Cameroon. Harvesters, packagers, intermediators and exporters reassemble the eru in Bamenda, load it on small vehicles that can each carry 500 kg of eru and sell it for a very good price of about 500,000 CFA in Ekok Nigeria, where the food is called Okazi, which is popular but rare and expensive.

10 - Summarising diagnostic assessment for the North-West Region

The final part of the diagnostic study summarises the sectoral evaluations and assessments in a summary and prioritisation of cross-sector strengths, weaknesses, opportunities and threats. Based on the SWOT key stakes for the further regional planning process are named. The identification of such key stakes builds up on assessment criteria that are derived from the UNDP sustainable development (or millennium development) goals. The main conclusions for opportunities focus on the synergies and interdependences between human assets, environmental qualities and limits, chances of circular economy and needs for reducing disparities in the health infrastructure and education. The framework of climate change impacts needs to be considered by adaptation of development while the administrative framework shows some aspects that can be influenced and improved from the perspective of regional development planning.

Finally land use conflicts and land boundary disputes were identified as weaknesses and threats for spatial development and land use organisation and regulation. Main land use conflicts are agriculture, -quarry located in protected area and farmer-grazer conflicts. Inter-village or boundary disputes cause difficulties and ineffective land use regulations and lead to negative impacts on different stakes, including environment, due to unregulated land use developments.

Seven key stakes are named to be further discussed beside other findings of the study, in the prospective phase. The agreement of the main conclusions and key stakes in a discussion with stakeholders in the region should be an important step when the project enters the prospective phase.

1 Introduction

1.1. The North-West Region - General information

The Region was created in 1972 with five departments: Bui, Donga-Mantung, Menchum, Mezam, and Momo. Today, it has seven divisions, the additions being Boyo, which was carved out of the Menchum division, and Ngo-Ketunjia or Ngoketunjia, split off from the Mezam division administratively, the Region is divided into seven Divisions, and thirty-four (34) Subdivisions

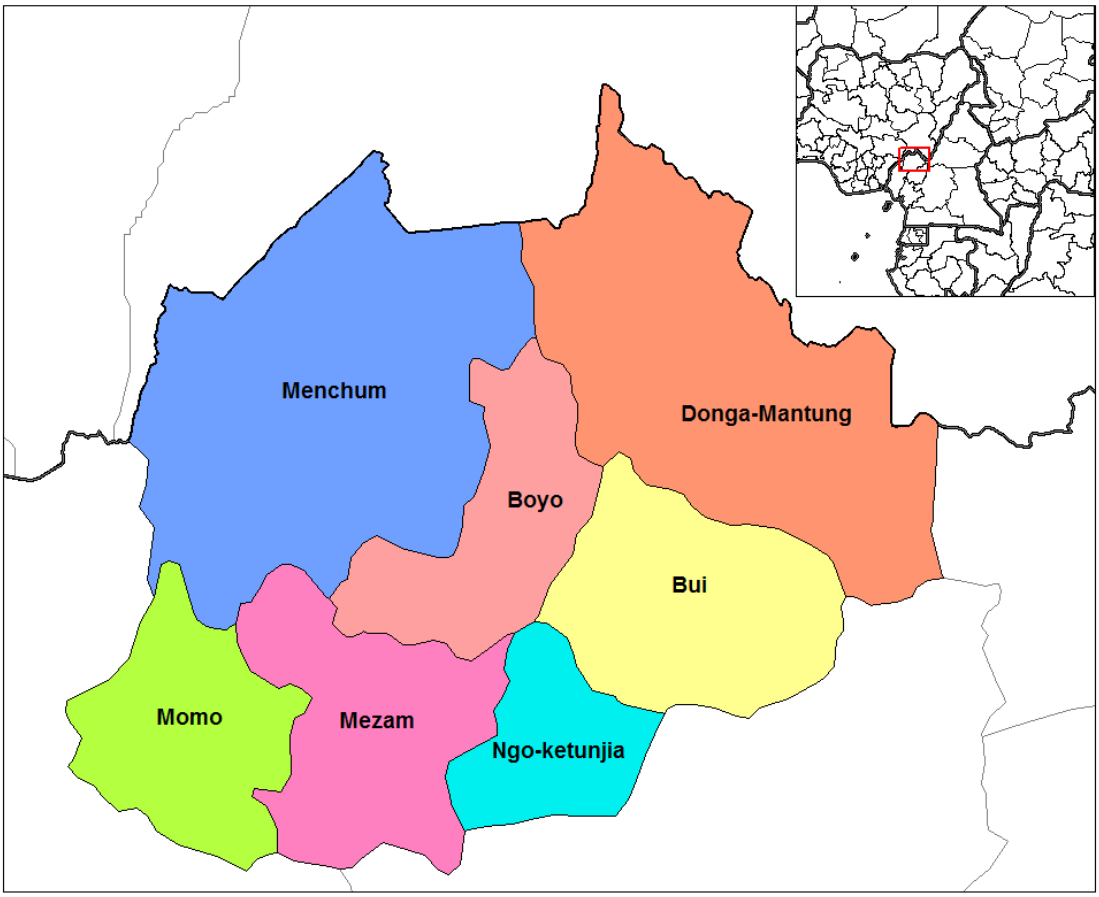


Figure 1: North-West Region Devisions

The topography of the Region is generally mountainous and undulating, characterized by abrupt escarpments towering, mountain peaks, deep valleys, broad alluvial plains. The highest point of the Region is mount Oki (in Bui Division) with an altitude of 3011 meters. The topography of the Region greatly influences the climate of the areas around. The high mountains and plains are either very cold or hot respectively. The Region has two distinct seasons. The dry season starts from mid-October to mid-March; and the rainy season begins from mid-March to mid-October.

In Bamenda, the climate is warm and temperate. In winter, there is much less rainfall than in summer. This location is classified as Cwb by Köppen and Geiger. The average annual temperature is 19.3 °C in Bamenda. The annual rainfall is 2 567 mm. The driest month is January. There is 9 mm of precipitation in January. Most precipitation falls in September, with an average of 380 mm. With an average of 21.6 °C, February is the warmest month. In August, the average temperature is 17.6 °C. It is the lowest average temperature of the whole year. The precipitation varies 371 mm between the driest month and

the wettest month. The average temperatures vary during the year by 4.0 °C. The month with the highest relative humidity is August (90.29 %). The month with the lowest relative humidity is January (38.85 %). The month with the highest number of rainy days is July (28.20 days). The month with the lowest number of rainy days is December (1.13 days). This rainfall and humidity distribution make the area around Bamenda favourable for continuous cropping throughout the year. Nevertheless, it poses critical problems on post harvest handling for crops with high humidity which require drying.

1.2. Context of the project – development policies and decentralisation

The Government of Cameroon initiated in 2008 a new development strategy to reach the objective of becoming an emerging, democratic and united country as well as the UN Millennium Development Goals. This strategy replaces the Poverty Reduction Strategy Paper of 2003 and is now expressed in the VISION 2035 and in the Growth and Employment Strategy Paper, both released by the Government in 2009. These documents describe the specific public policies that will shift Cameroon from a low to a middle-income country by the 2035 horizon. It is within this framework that the Government decided in 2011 to provide Cameroon with the Law of the 6th May 2011 to lay down guidelines for Territorial Planning and Sustainable Development and that defines instruments such as the National and Regional Territorial Planning and Sustainable Development Plans. Up to this day, the National Territorial Planning and Sustainable Development Plan as well as the National Zoning Plan are being elaborated while the Regional Territorial Planning and Sustainable Development Plans of the East and South Regions are ongoing since 2015. The overall objectives of the sustainable territorial planning in Cameroon are the reduction of the spatial inequalities in development, an equal coverage of the State services to ensure their access by all citizens and the rationalisation of the public investments by providing a framework for informed decision-making.

The macroeconomic policies of the Cameroonian Government are integrated with spatial planning also through the process of Decentralisation, which leaves parts of the spatial organisation of the territory over to the Regional and Local authorities. The Decentralisation was first initiated with the constitutional amendment 96/06 of the 18th January 1996 which establishes the Regional and Local Authorities at the level of the Regions and of the Municipalities. It defines the organs of the Regions, namely the Regional Council and its President as well as their roles. The specific skills transferred by the central State to the Regional and Local Authorities are determined in multiple subsequent laws and ministerial decrees as the amendment of 1996 only guarantees the “administrative and financial autonomy” of the Councils in the management of matters of regional or local interest. In particular:

- The Law Nº. 2004 / 017 of the 22nd of July 2004 on the Orientation of the Decentralisation.
- The Law Nº. 2004 / 018 of the 22nd of July 2004 determining the rules applying to the city Councils. The article 17 of this Law transfers to the Municipalities the competence of elaborating the Land-Use Plans and all Urban Planning Documents, while the article 18 specifies that all Municipalities will express their opinion on the SRADDT before its approval.
- The Law Nº. 2004 / 019 of the 22nd of July 2004 determining the rules applying to the Regions. The article 20 of this Law assigns to the Regions the task of drawing-up of the SRADDT.
- The Law N°. 2011 / 008 of the 6th May 2011 laying down guidelines for territorial planning and sustainable development also assigns to the Regions the task of drawing up the SRADDT (article 17) and to the Councils, the task of drawing up the PLADDT (article 20).
- The Law Nº 2019/024 of 24 Dec 2019 instituting the General Code of Regional and Local Authorities.

- By 2018, only the Local Authorities in the Municipalities have been elected for the first time in 2013. According to the Law N° 2019/024 of 24 Dec 2019 instituting the General Code of Regional and Local Authorities, the elections of the Regional Council in the North-West Region took place in December 2020. It should be noted that, in March 2020 the Mayor of the Bamenda City Council was also elected.

1.3. Project objectives

The project objective is to provide the North-West Region with a commonly agreed vision for its development, which can be concretely translated into the following goals:

1. Drawing up of a Regional Territorial Planning and Sustainable Development Plan for the North-West Region, that:
    - addresses the deficit of information on the regional territory
    - steers the spatial planning of equipment
    - organises the land use
    - creates a framework for informed decision-making and for the implementation of local planning instruments (Urban Master Plans, Land Use Plans, Sector Plans, and Town Planning Summary Plans)
    - translates, for the Region, the National Territorial Planning and Sustainable Development Plan and in particular its principles and long-term orientations for the development of the North-West that are currently being elaborated with the third phase
2. Identification of opportunities to implement the goals of the Vision 2035, the GESP and the UN Millennium Development Goals / Sustainable Development Goals. The goals of the GESP and Vision 2035 can be summarised as follow:
    - bringing poverty to minimal acceptable levels by ensuring a sustained annual average growth rate (5.5% to 2020) and by drastically reducing the informal employment and the income poverty
    - making Cameroon a medium-income and Newly Industrialised Country
    - strengthening the unity and democracy throughout the country to preserve peace and promote solidarity across all members of the civil society
    - the primary sector should be modernised and the secondary sector should be extended to provide processing capacities for the locally produced commodities (notably agricultural goods). The tertiary sector should provide job opportunities to the informal sector through the specialization of the activity
3. Strengthening the economic capacities in a socially and environmentally sustainable manner that preserves the environment and the natural resources
4. Involvement of the communities and the local authorities so they take ownership of their development

The project is designed to contribute to these objectives by creating a common knowledge basis of the regional situation in the different relevant sectors (diagnostic study), to develop a common development strategy (prospective study), common guiding principles (contractualisation) and finally by formalising the regional development plan.

1.4. Project outline

The project consists of 5 project phases of which this report completes and documents the second.

1. Inception Phase – completed Dec. 2017
   - Fact finding missions
   - Results and findings from the desk review
   - Conclusions, updates for the work plan, open questions
   - REPORT 0: Inception Report

2. **Diagnostic analyses – completed August 2018**
   - Inventory of the regional territory
   - SWOT-Analyses of the key sectors/themes
   - Formulation of key stakes and issues
   - Strategic diagnostic maps
   - REPORT 1: Diagnostic study of the regional territory

3. Prospective analyses
   - Description of the future of the territory
   - Identification of territorial development possibilities
   - Prospective Maps
   - REPORT 2: Prospective analyses of the regional territory

4. Contractualisation of the territory
   - Formulation and agreements on basic principles and guidelines
   - REPORT 3: Basic principles and long-term guidelines of territorial development
   - Specific planning and sustainable development objectives and the required actions to achieve them
   - Translation into five-years action plans
   - Cost estimation for the implementation of action
   - REPORT 4: Strategic objectives and action plan for the territorial development

5. Formalisation of the Regional Plan
   - Map production for the territorial Plan
   - Summary of the outcomes from the strategic diagnostic, the prospective analyses and the contractualisation
   - Implementation monitoring framework
   - REPORT 5: Synthesis of the Regional Territorial Planning and Sustainable Development Plan

1.5. Expected results of the diagnostic study

The end-product of the diagnostic study is the formulation of key issues and stakes for the development of the North-West Region ranked by priority. In order to reach those issues and stakes, the diagnostic study includes the following analyses:

- A presentation of general facts and observations collected for the sectors of investigation in form of qualitative information and quantitative data records
- A general and retrospective evaluation of the situation for the sectors of investigation
- An assessment of the Strengths, Weaknesses, Opportunities, and Threats (SWOT) of the sectors
- The specific stakes and issues for each sector, concluded from the SWOT analyses
- Analyses maps presenting the state of affairs of the sectors and also the evolution of spatial features such as land cover over the last decades and land use conflicts.

This workflow constitutes the core content of the Diagnostic Report. From these sector-specific analyses, the cross-cutting issues will be developed, which will again contribute to the formulation of the higher-ranked key stakes and issues of development in the conclusion of the diagnostic.

1.6. Findings of the inception phase and starting point of the diagnostic

The fact-finding missions of April/May and July/August 2017 allowed the team to formulate working hypothesis in the Inception Report, which serves as the starting point of the diagnostic study. They can be summarised as follows:

- The North-West is a Region of mountainous plateau shaped by its past volcanic activity. Crater lakes, high mountains, and fertile soils are the remainders of this geologic history.
- The North-West is the third most densely populated Region in Cameroon, which has major impacts on the natural landscape. The human activity has shaped most of the land into a mosaic of tree cover / savanna / farmland where the vegetation in its natural state would be the tropical montane cloud forest. Wildlife has drastically declined because of human-induced habitats losses (land being claimed for pasture and farming).
- The second consequence of the high population density is the frequent land use disputes between the two main economic activities: farming and livestock herding. As most of the occupied lands are so-called customary positions (only 2% of private lands are registered), the traditional rulers settle the disputes.
- The largest share of the economy is the agriculture (cropping as well as livestock herding), which production is mostly consumed locally due to the lack of transformation facilities that could process the goods into food products to be exported.
- The North-West Region is characterized by large disparities in the distribution of technical infrastructures. Water and power services tend to become less reliable the further one is from the urban areas of Bamenda and Kumbo. Road quality varies extremely from section to section.
- Affordability of health services and secondary education remains a challenge for many.

2 Methodological frame of the diagnostic study

2.1. Collection of data and information

The diagnostic study addresses existing deficits of information on the region and makes an inventory of its assets and available information. The information and data collection is therefore a crucial work because it lies at the root of the analyses and its outcome will strongly determine the findings and conclusions of all the follow-up phases and reports of the Regional Plan. The following steps were undertaken for the data collection:

1. Defining which information is ideally needed to perform a consistent diagnostic study
2. Comparing the information known to be available with the one we require
3. Collecting the data immediately available (at delegations or public institutions)
4. Designing a field survey questionnaire for the information that cannot be found in existing sources
5. Gap-filling with requests of information targeted at specific stakeholders or institutions

2.1.1. Design of the data collection manual

The information & data collection manual is the handbook that details the information to be elicited for each sector of investigation and that gives a proposal on where to seek it. It follows the thematic structure that was agreed for the diagnostic study by the experts during the inception phase, namely:

- Sector 1: Administrative structure
- Sector 2: Environment, natural resources and nature related hazards
- Sector 3: Economy
- Sector 4: Urbanisation
- Sector 5: Technical infrastructures
- Sector 6: Social infrastructures
- Sector 7: Social system.

The manual divides each sector in subsectors (e.g. 4-Economy, 4.1-Agriculture) and lists the investigation items which represent indicators for the experts' evaluations (e.g.: quantitative data on crop production, location of production areas). The manual was developed jointly by the experts and allows them to have an overview on the content they need to provide. It is completed by matrices in the annex that allow tracking the progress of the collection for each item (does information exist? could it be collected? is it actual?). The experts also listed the potential sources of information like for example the NIS, and the items for which no sources of information were known were added to the questionnaires of the NW Field Survey, 2018. The data collection manual comes as annex to this document.

2.1.2. Launch Workshop and orientation tour with stakeholder meetings in the North-West Region

Following the Launch Workshop held in Bamenda on the 15th of November 2017, the management and experts' team did a tour of the North-West Region during the last two weeks of the month. The purpose of the tour was to reiterate the commitment of the consultant to the stakeholders met on the Launch Event, to gather bottom-up information on different stakes, and also to announce the coming of field surveyors for the data collection. The consultant used the same approach with every stakeholder met. It consisted firstly in listening to the challenges they encounter in their activity and secondly to ask them

for their “one wish”, that is, if they could enhance one specific aspect of their situation, which one would it be and most importantly, why?

A summary of the locations visited and the stakeholders met is provided below (for the full report, please see the annexes):

16.11.2017	Upper Nun Valley Development Authority	Ndop
	The SDO of Ngo-Ketunjia Division, the DO, and the Mayor of Ndop	
17.11.2017	The SDO of Bui Division	Kumbo
	The Divisional Delegate of MINEPAT	
	The Headmaster of Mbuluf	
	St-Elizabeth Hospital	
	The NGO Greencare	
18.11.2017	The dep. SDO of Donga-Mantung, the DO of Nkambe, the Mayors of Nkambe and Ndu, the Divisional Delegate of MINEPAT	Nkambe
	Radio interview of the team and deputy team leaders	Ndu
19.11.2017	The Fon of Nso	Kumbo
	The Mayor and DO of Oku, Royal Princes of the Fon of Oku	Oku
	The Fulani community	Sabga
20.11.2017	The Fon of Chomba	Chomba
21.11.2017	The Mayor of Njinikom	Njinikom
	The SDO of Boyo and the Divisional Delegates	Fundong
	The dep. Mayor and the Lamido of Bafmeng	Bafmeng
22.11.2017	The dep. Mayor and the Secretary General of the Council of Wum	Wum
	The assistant to the SDO, the Divisional Delegates	
28.11.2017	The Mayor of Tubah	Tubah
	The SDO of Momo and the Divisional Delegates	Mbengwi
29.11.2017	The Mayor of Bali	Bali
	The Secretary General of Santa Council	Santa

2.1.3. Information from central offices and state delegations

As described above, the collection of data and information primarily focused on existing secondary data sources that could be acquired like for example official statistics and publications. It was complemented by the NW Field Survey, 2018, monitored from the PNDP office Bamenda.

The main part of the data collection was carried out by the consortium’s experts under the coordination of the international and regional coordination team (project office Bamenda, international offices) in order to fill-in specific gaps of information remaining from the assessment of published and internal documents. Especially the following information was sourced (see also bibliography):

- The CDPs of 2010-2011 with their consolidated data and annexes as well as the consolidated data of 2015-2016 for 31 city councils in the North-West (all subdivisions except Bamenda 1, 2, and 3). These documents were shared by the PNDP office Bamenda
- The “Statistical Yearbook of the North-West Region 2015”, the “Atlas of environmental statistics” and the “Monography on cross-border trade” provided by the NIS
- The volume on “Migratory movements” by the BUCREP
- The Town Planning Instruments for Bamenda from the city council (see bibliography)
- The Baseline Study of the North-West Province 2006 by the NWDA.

Moreover, the following institutions and Regional Delegations were approached by the experts to obtain information specifically required for their evaluation.

- The National Institute of Cartography (NIC) and the IRD (cartographic work)
- The MINMIDT and IRGM (Economy, mining)
- The MINEPIA and MINADER (Economy, agriculture and livestock)
- The MINTP, MINEE, and MINPOSTEL (Technical infrastructures)
- The MINDCAF, MINSANTE, MINESEC, MINEDUB (Social infrastructures)
- The MINHDU and the Bamenda High Court (Urbanisation)

Lastly, information was used from the Regional Delegations of MINAC, MINCOMMERCE, MINEPDED, MINFOF, MINPMEESA, and the MIDENO.

Generally, all information and data were assessed, wherever possible, on the level of the North-West Region and the level of divisions. Partly sub divisional data were used in addition, if available and if of special relevance for a sector or subsector. Partly also comparisons with neighbour regions in Cameroon or Nigeria served as information source to be able to assess the situation in the South-West in relation to the neighbour regions. If no adequate or reliable data could be gathered after deep going professional survey remaining gaps or expert doubts are explained in the report and other sources were used. If no relevant data could be made available assessments are complemented by expert judgements.

2.1.4. Regional survey: collection of primary local information

Socio-economist experts were hired by the consultant in Bamenda to design and carry out a field survey in order to gather information at the level of the subdivisions. They submitted a questionnaire to the experts for approval, which was then used by their field collectors recruited in the localities. The questionnaire does not follow the same structure as the manual as it is intended to gather cross-sectoral information. The experts then used the information they can source from its results as inputs for their evaluation in this diagnostic report. The items listed in the questionnaires are complementary to the ones of the manual since they are indicators which can hardly be found in publication or any secondary sources of information and therefore have to be retrieved on the field.

The survey took place from April to June 2018 and was carried out by field collectors posted in the Divisions, who travelled to the different Subdivisions and Councils. The respondents of the survey were mostly (see Figure 2 and annex part 2-2.1 Identification/Characteristics of the respondents for details):

- Civil servants in the general administration (SDO and DO’s offices) and in the technical delegations
- Actors of the private sector (farmers, grazers, traders, employee of businesses)
- Elected officials (members of parliament, senators)
- Civil society members (NGOs, Development Associations)
- Traditional and religious authorities.

The used questionnaire was divided in the following sections:

- Section A: land use, land conflict and climate issues
- Section B: current development issues of communities / local economy
- Section C: social system
- Section D: border areas (only for councils sharing border with Nigeria)

Each section contains a series of open or multiple choice questions. The documentation of the answers and results is quoted in this report in the relevant chapters and can be found completely in the annex part 2 in volume II of this report.

2.2. The processing and analyses of the collected information

2.2.1. Quantitative and qualitative data

A template for writing a standard diagnostic chapter containing the expected structure of analyses was provided to the experts to ensure a uniform and comparable evaluation method and documentation for all sectors.

The secondary data and information gathered during the collection phase were made available to all team members via the online project portal. A soft copy of every piece of documentation is stored in the project offices in Bamenda and in Darmstadt, while the hard copies are kept in the Bamenda office to be consulted by the experts. Based on the collected information, the experts were asked to sort out which inputs to use in the evaluation of their sector of investigation, to draw conclusions from the quantitative data records in tangible summaries, and to synthetize the qualitative information. According to the template they received, the experts delivered the following sections for their sector of investigation:

- general facts and observation for the region and for the divisions
- retrospective evaluation of the developments in the sector (if possible 10 – 15 years)
- evaluation of the current situation and evaluation by Division
- SWOT assessment
- key stakes and issues for the sector.

The experts held regular meetings from November 2017 to June 2018 to coordinate the evaluations, to mutually inform themselves on the advancement of the work and to communicate their needs for mutual inputs from each other. The 27th April 2018 was the first deadline for the experts to submit their draft chapters. Based on this in May and June 2018 additional research was done to fill remaining gaps in the evaluations. In June to August 2018 assessments were done by the international and regional expert teams and editorial work was carried out by the editing team.

In order to grasp the cross-cutting issues and to deliver integrated cross-sectoral analyses of stakes and issues, experts' workshops were held during the month of April to June 2018. The purpose of these exchanges was to perform the SWOT analyses for each sector, to develop the cross-cutting issues, and to formulate the final stakes and issues for the development of the North-West. The outcome of these experts' workshops constitutes the second half of the sector chapters and the conclusion.

2.2.2. Diagnostic maps: geospatial data and cartographic production

Geospatial data were retrieved from the following sources:

- the file-geodatabase of the National Plan provided by MINEPAT for various vector data such as administrative units and boundaries, mining permits, protected areas, classified forest areas
- the NIC for vector data of surface water bodies
- the consolidated CDP data of the PNDP 2010-2016 for point vector data such as health facilities, road facilities, trade facilities
- the USGS for Landsat imagery and SRTM DEM
- the GLCF of the University of Maryland for Tree Cover layers
- the OpenStreetMap project for vector data such as roads or diverse amenities
- the online portal OneGeology for WMS-layers of geological units and bedrock age

Furthermore, geospatial features were digitalised based on:

- the cartographic atlas of the Diagnostic Study of the National Plan for point vector data on mineral potentials

- own acquired knowledge from site visits, double-checked with Google Satellite Imagery for point vector data on cultural and natural heritage
- information from PNDP officers in the municipalities for the areas of land-use conflicts
- some specific vector features such as areas of land use conflict were also created through geometric processing of other land-use features.

Attribute tables were also created from:

- the consolidated CDP data of the PNDP 2010-2016 for topics such as health, transport, energy, water, trade
- the statistics tables from the “Statistical Yearbook of the North-West Region 2015” for topics such as population, education, water consumption, road quality, electrification, and postal coverage
- the presidential decree project on the creation of an “Official Geographic Code” of the localities of Cameroon

The first step was to create a geographic data infrastructure to organise and manage the large amount of data from various sources. The Relational Database Management System (RDBMS) used is PostgreSQL 9.6 with its extension for spatial data PostGIS. The software used for the cartographic production is QGIS 2.18. The vector data and the attribute tables were imported in PostGIS and were normalised:

- the possible information contained in the fields was cleaned (text removed from numeric fields and vice-versa, use of Boolean datatypes)
- qualitative information was categorised (e.g. type of trade facilities simplified with 7 entries)
- any data related to (or fully contained in) an administrative unit was assigned a subdivision code from the presidential decree
- all codes for divisions, subdivisions and councils were gathered in a look-up table
- duplicate information (columns) between the datasets are removed and instead the data are linked together over the codes of division, subdivisions, and councils

As all the raster data used for the cartographic work eventually come from the NASA, they are organised according to the WRS-2 path/row system. The North-West Region lies between four WRS-2 scenes: path 186 rows 55, path 186 row 56, path 187 rows 55, path 187 row 56. All raster data therefore underwent the same process of mosaicking and clipping using a 1km-buffer around the shape of the Region as a mask.

2.2.3. Diagnostic assessment of the situation: the SWOT analyses

2.2.3.1. SWOT analyses – method

The SWOT (for Strength, Weaknesses, Opportunities, Threats) is an assessment tool commonly used for qualitative analyses that cut across a wide variety of topics. It is used to assess the current situation or certain settings in each individual sector or subsector (“What is strong in this sector in this region?”, “What is weak?”) and to determine chances or limits for the development of a specific sector that depend on framework conditions or external impacts (“What could cause better development?”, “What causes limits for better developments?”). The SWOT factors are defined as follows:

- Strength: describes the direct, intrinsic, and beneficial positive consequences of the sector or it’s settings at the time of study
- Weakness: describes the direct, intrinsic, and detrimental consequences of the sector or it’s settings at the time of study

- Opportunity: describes a factor external to the sector, that may turn it into a strength in the near or mid-term future or can have positive impact on the sector
- Threat: describes a factor external to the sector, that may turn it into a weakness in the near or mid-term future or that is the critical factor that limits positive development.

The SWOT analyses are carried out per sector and subsector and are based on sector wise defined assessment criteria. An assessment criterion can be any parameter, which has an impact on development. Depending on the sector or topic of investigation, it may be a physical property (e.g. soil fertility, availability of a natural resource), a socio-demographic indicator (e.g. median age of the population, average level of education) or an economic indicator (e.g. agricultural productivity, production output). At the time of study, based on the current state (or value) of the criterion and based on estimations about its future evolution, its impact on development is expressed in terms of Strength, Weakness, Opportunity and Threat.

An assessment criterion can be both a strength for a development option and a weakness for another, or can yield more than one strength or weakness.

The product of a SWOT-analyses is an overview of the four components, which allows to quickly drawing conclusions on the most promising factors for a positive or negative development and it opens the view on external challenges and needs for support if one sector needs improvements. The SWOT is therefore a potent tool to assist policy-makers with informed decision-making.

2.2.3.2. Assessment criteria for the different sectors

The following criteria were used to assess the sectoral situation. The assessment criteria are based on objectives or guidelines for the development of the region as laid down in policies, guiding documents or laws. If possible the assessment of strengths and weaknesses is supported with orientation at quantitative parameters (complementary to the expert judgement). These parameters are also documented below including categories for negative, neutral and positive parameters.

3 - Administrative situation

Assessment Criteria	Parameters / Objectives / Examples for the assessment
3.1-3.2 Administrative structure in Cameroon and in the North-West Region	
Institutional frame	• Independence of the institutions • Transparency and accountability of the administration • Human resources and capacities in the administration • Political awareness of the regional development policies
Implementation of the decentralisation	• Administrative autonomy from the central power • Financial autonomy of the local authorities • Distribution of the legal competences between the appointed state officials and the elected local councils (clear vs. overlapping)
Involvement of the civil society	• Awareness and participation in local development
Involvement of traditional authorities	• Role fulfilled by traditional authorities • Legitimacy of the traditional authorities on their people
3.3 Land tenure system	
Accessibility of land titles	• Land tenure system is existing, is transparent and well implemented to allow reliable developments and to avoid land use conflicts • Ease to obtain a land title from a customary position

4- Environment

Assessment Criteria	Parameters / Objectives / Examples for the assessment
4.1 Abiotic environment (categories from weak/negative to strong/positive)	
a) Geology, geomorphology, soil and mineral resources	
availability/ of the scenery	• Qualitative, 3 categories: fine / beautiful / extraordinary
Availability of fertile soil	• Qualitative, 3 categories: < 40 % / 40-60% / >60%
Steepness of slopes	• Semi-quantitative, 4 categories: <40% / 40-50% / 50-60% / >60%
Availability of economically potentially interesting mineral deposits (link to sector economy)	• no prospects / some prospects (isolated places, exploration) / (exploration large areas, expectation of relatively large deposits, commercially productive
b) Land cover	
Percentage of natural forests	• Quantitative: <5% / 5-10% / 10-20% / 20-40% / >40%
Existence of sustainable (climate smart) agriculture	• Qualitative / expert judgement
Percentage of degraded land	• Semi-quantitative: < 5% / 5-10% / 10-20% / >20%
Chance of success in regenerating degraded land	• Expert judgement: not possible / possible (for example by reforestation of reintroducing shifting agriculture or more extensive use) / already on the way to practice
c) Water and Hydrography	
Naturalness of streams/ rivers	• Qualitative / expert judgement
Proportion of people taking water from a protected water catchment / people affected by not (well) protected water catchments	• Qualitative (comprehensive data are not available) / expert judgement
d) Climate	
Temperature	• No qualitative assessment
Number of meteorological stations to assess temperature and precipitation	• Semi-quantitative; none / some, but not enough or no measurements / good spatial coverage and data available; • Additional: length of the time line of recording (available data)
Amount of precipitation in relation to land use	• Qualitative assessment based on precipitation data and local experience in regards to land use: too much (agriculture, hazards) / adequate, not problematic / too little (agriculture, drinking water etc.)
Predictability of precipitation	• Semi-quantitative based on expert judgement: variability is high (prediction difficult) / intermediate variability in rainfall / relatively low variation (good prediction possible)
e) Quality of soil, water and air	
Amount of soil contamination of 3 sources: mining, pesticides, waste (solid & liquid)	• Expert judgement based on information on contaminations from former or ongoing land use or emissions: highly contaminated (with problems for the biotic environment) / little contaminated or unproved suspicions / no contamination
Proportion of people that reach a critical maximum in terms of environmental stress	• Expert judgement based on available data: big chance or already existing / some chance or some stress at present / low chance and no stress at present • Additional: negative impact on environmental stress if appearing in correlation with poverty (due to negative impacts of poverty on the adaptation-capacities)
Proportion of households using wood for cooking on a daily basis	• Qualitative, expert judgement based on available estimations; high / medium / low
Number of polluted streams/ rivers	• High (due to waste water or solid waste impacts; e.g. in and around towns medium or big sized town) / almost clean (scarce human activity/ cattle) / pollution known (e.g. below slopes with intensive agriculture due to contaminated runoff) / clean or no pollution known

Degree of particulate matter in the air according to international (WHO) standards	• Cannot be assessed due to missing data / reliable estimations are not possible for this
Prospects for non-mineral energy resources	• Expert judgement: low / medium / high
4.2 Biotic environment	
Quality of nature, biodiversity, forest resources and wildlife	• Actual level of biodiversity: variety of natural species compared with the historic (natural) number of species in the specific ecosystem • situation of sustainable forest and landscape development including protection of species (flora, fauna, habitat) • Quality of habitats in regard to other land use requirements • Situation of vital conditions for the biotic environment like availability of clean water, soil and air.
Governance of the biotic environment	• Existence of effective environmental policies and laws according the development and protection requirements • Situation of governance in the environment sector (implementation of environment policies and laws, quality of the management of protected areas also in regard to conflicts with competing land uses) • Effectivity of control mechanisms for protected areas and environmental policies and protected areas • Level of public awareness and acceptance of the values of the biotic environment including environmental education and training activities.
Potentials of the biotic environment for regional development	• Potential and sustainable use of biotics for medical, scientific, nutrient and other social and economic purposes • Potential and accessibility for sustainable tourism.
4.3 Hazards in the environment	
Potential hazards	• Existence and level of potential hazards from climate change (explicitly heavy rain events, flash floods, landslides, river floods), natural gases and seismic activity • Level of hazards that occur from the combination of natural impacts and adverse or not adapted land uses (like deforestation and heavy rain or flash flood that cause slides; or: settlements in flood risk areas; or: vulnerable economic uses in flood risk areas).
Vulnerability of the environment / vulnerability of land uses	• Adaptation capacity and actual level of adaptation of land use and nature development to hazard from the environment • Overlapping of risk areas and living areas of socially disadvantaged persons (poor quarter, poor subdivisions) which reduces the adaptation capacities and raises the vulnerability • Fragile biotic and abiotic environment with high vulnerabilities (such as water resources areas, fragile habitats, fragile soils etc.).
Governance and management of hazards in the environment	• Policies and their implementation regarding adaption of land use management to existing hazards • Information, education and awareness raising of hazards in the environment in the public, spatial planning and towards decision makers • Level of public awareness for the need and the options to adapt land uses and constructions to hazards of the environment.

5- Economy

Assessment Criteria	Parameters / Objectives / Examples for the assessment
Resources / inputs	• Existence of agriculture practice and livestock adapted to the needs of first regional people and in addition second for export; adapted to the environmental conditions (sustainability) • Availability of resources/inputs for transformation and processing
Production Variety / choice	• Variety of producing many products in the region to employ neighbouring markets and replace dependence on importation. • Production and production sites chosen in respect to markets, accessibility, environmental conditions and legal framework. • Availability of adequate sites / land for sustainable development of economic activities in terms of accessibility, land use conflicts, distribution of job in the region, environmental conditions etc. (procedures to optimize the site-selection are in place); for all sectors: agriculture, forestry, different sized businesses etc.
Policy / programs	• Government policy and programs to support efforts in agriculture, livestock, fishing, business and industry. • Administrative and economic system implemented, including funding sources, to allow the development of local enterprises, farming and other economic initiatives. • Regulation of economic activities considers sufficiently the social need and condition in the region / divisions / sub-divisions (employment, nutrition, poverty). • Regulation of economic activities considers restrictions of urbanization and technical infrastructure.
Outlets/markets	• Knowledge of marketing channels and markets to evacuate products are assessed, known. • Knowledge of and accessibility of markets
Employment generation and decency	• Enterprise creation Job and decent job creation • Spatial coverage of job opportunities in regards to improving living condition in the rural areas.

6 - Urbanisation

Assessment Criteria	Parameters / Objectives / Examples for the assessment
6.1 Demography	
Rate of urbanisation	• Towns with population of at least 10, 000 people • Some divisional and sub divisional headquarters • Availability of utilities and services such as the market centres, educational, health, socio-cultural facilities • High road densities, hotel, and communication facilities
Population density variation	• Number of inhabitants per square kilometre
Demographic sprawl and incidence	• Comparative directional spatial growth
Age composition	• Ratio of youth/adults/aged
Sex composition	• Male/Female ratio
Urban heterogeneity	• Residential mobility • Distribution of ethno-linguistic groups
6.2 Housing	
Regulatory instruments	• Existence of laws and periods
Housing quality	• Low, medium, high (depending on quality of materials used)
Master Plans	• Existence or not
New growth points	• Inner versus outer city characteristics
Current trends	• Projections from current to 2025 and beyond

6.3 Poverty level indicators	
Dominant economic activity and degree of planning	• Comparing income sources from economic sectors
Land use changes	• Classification according to urban district
Residential expansion	• Direction and rate
City quarter age	• Colonial and post-colonial towns
Facility density	• Enterprise facility for income generation

8 – Social Infrastructure

Assessment Criteria	Parameters / Objectives / Examples for the assessment
8.1 Education	
Capabilities	• Creation of Schools at every cycle • Enrolment of pupils and students • Teaching and research capabilities • Internationally recognized certification • Various Programs offered • Quality assurance
Affordability	• Cost of education at the reach of all • Financial reserves for schools • Scholarships possibilities for students • Waiver for underprivileged • State subvention to private schools
Infrastructure	• Adequate and enough classrooms • Libraries for students • Administrative blocks • Security and Infirmary for first aid • Hygiene and sanitation • Water and electricity
Pupils and students will	• Willingness to learn • Quality and relevance of recruited students • Quality and relevance of graduating students • Professional insertion of graduates • Attraction of external students
Teachers	• Teachers in various fields available • Curricula development • Quality of training offered • A good Pedagogic approach used • Presence at job site
Parents' contribution	• Vision of PTA • Good governance • Community development activities • Marketing of school performance and activities • Individual efforts in education sector
8.2 Culture	
Cultural infrastructure	• Availability of cultural centres • State and standards of cultural traits • Arts and craft markets for cultural artifacts • Development of cultural sites • Size of cultural spaces

Physical endowments and markets	• Available raw materials for cultural arts and craft • Local transformation skills • Available local markets • International marketing • Natural resource management
Human endowments	• Arts and crafts skilled population • Local Musicians developing cultural rhythms • Regular performances or artist • Craftsmanship in other fields • Production of original pieces
Conservation of culture	• Museums for conservation of cultural artifacts • Festivals to showcase cultural activities • Strategic sectorial development plans for conservation • Transmission of culture to younger generations • Electronic conservation and online visit of museums
8.3 Sports	
Sports infrastructure	• Availability playgrounds in several fields • Acceptable standard and state of playgrounds • Access and security of fans and players • Regular maintenance of playgrounds • Good management of playgrounds
Talents	• Development of youths and sports programs • Detection of talents for follow up • Insertion of local developed talents into national and international sphere • Availability of talents in every sports discipline • Official registration and respect of channels in evolution of practitioners
Sports Academy	• The availability of sports academies in several disciplines • Cost of training at the reach of the population • Interest of parents to send children to sports academy • Local and international marketing of academy • Performance of ex trainees at the national and international levels
Sports events	• Regular local competitions in every discipline • Involvement of local clubs in national competitions and at all levels • Involvement of local clubs at international competitions • Good facilities and equipments for sports events
8.4 Health	
Capabilities	• Distribution of health facilities • Prevention and treatment services offered to the population and to patients • Research and innovation constantly carried out • Local and international response possibilities • Special centres available for special care • Patients satisfaction after treatment
Health staff	• Available professional, knowledgeable and experienced health staff • Presence of training and research centres on health biomedical sciences • Presence of staff at various health units • Recycling of staff especially fin new technologies

	• Adaptation of staff to new situations and conditions
Infrastructure	• Adequate and technical infrastructure available • Distribution of health infrastructure • Available Administrative blocks • Security and Infirmary for first aid • Hygiene and sanitation services • Water and electricity facilities
Health service	• Wide range of services offered • Quality of services offered • Patients assurance of services received • Outcome of services offered • Patients appreciation of services
8.5 Public building	
Capabilities	• Construction of public buildings for all administration and services • Rented buildings to host some services • Distribution of public buildings for services and lodging • Security in public buildings • Quality of services offered
Quality	• Adequately constructed public buildings • Adapted public buildings constructed for other purposes • Rehabilitation, renovation and maintenance of old and dilapidating buildings • Size of public buildings • Facilities for hygiene and sanitation
Accessibility	• Site of public building • Location of public building in relation to other areas • Vertical or horizontally constructed • Access by physically challenged persons • State of access roads

9 – Social System

Assessment Criteria	Parameters / Objectives / Examples for the assessment
9.1 Employment	
Workforce	• The nature of the population • The quality of the population • Training and apprenticeship opportunities
Formal employment	• The number of large employers • The existence of employment institutions • Equal opportunities in employment • The number of small employers • The assurance of employment after training
Informal employment	• Small businesses and service provision • A very large roadside activities sector • State subvention of private initiatives for self-employment • Innovation activities • High occupancy rate of commercial areas
9.2 Minorities	
Rights and insertion	• Education in the minority group • Formal employment in the minority group

	• Informal employment in the minority group • Integration into majority groups • Protection of the minority group
Environment and Activities	• Preferred sites of the minority group • Natural resource exploitation and management • The lead socio economic activity of the minority group • Other socio-economic activities
9.3 Migration and rural exodus	
Migratory population	• The number of migrants • The specific sex and age groups in migration • The education status of migrants • The marital status of migrants • The push and pull factors of migration
Migratory movements	• Internal migration movements • External migration movements • Force migration • Voluntary migration
Duration	• Permanent migration • Temporal migration • Based on reason for migration
9.4 Transnational flows	
Demand and supply	• The external market demand • The internal market demand • The external market source • The available local produce • The available imported goods
Cross-border activities	• The state of trade routes • Formal and informal trade activities • Small and big businessmen • Other stakeholders involved

2.2.4. Cooperation and coordination in the expert group

The expert group consists of international, national and regional experts from the different fields of this study (see list of experts in the introductory part). The work organisation was based on a joint project management and project implementation plan. Each expert conducted the data acquisition and the assessments as well as the reporting in his specific field of expertise, based on a commonly developed and agreed manual and on joint method discussion. The international and national experts and coordinator prepared the overall methodology. The regional scientific coordinator and the regional experts adopted the approaches to the specifications of the region and the divisions based on their extensive knowledge base of the region. Thus, the project team ensured that international and national standards for the Regional Planning Project and regional specifications are reflected in the methods and the results.

Regular expert workshops and expert meetings were held in Bamenda from September 2017 to July 2018 (mainly in the project office of the consortium) to coordinate the sectoral work, to exchange knowledge and to clarify upcoming questions. The most intensive phase with weekly expert meetings was from end of March 2018 to July 2018. The expert meetings were chaired and coordinated by the regional coordinator Prof. Fogwe from the University of Bamenda and of the team leaders. All experts participated as often as possible according to their availability. Complementary web-meetings and telephone conferences were organised to discuss and coordinate the progress on purpose.

2.3. Stakeholder involvement

Adequate participation of stakeholders in the regional spatial planning process is essential for consequent and sustainable implementation of actions of all subjects that may and have to contribute to positive future developments. Involvement of stakeholders on the national, regional and local levels are crucial for the success of the regional planning project. The involvement activities in the diagnostic phase shall primarily ensure the consistency and completeness of data and information that are gathered and assessed. In addition, they contribute to raise awareness and acceptance of the stakeholders and the public for the ongoing spatial development process in the region. In the next phases (explicitly prospective phase) the stakeholder involvement aims at the discussion of development lines and development scenarios with stakeholders of the region and the divisions.

As one objective of the regional planning process is a combined bottom-up (driven by local and regional knowledge and stakes) and top-down, orientation (driven by the national and interregional coordination of the country's development) participation of regional and local stakeholders plays an important role. The regional development plan must be based on and informed by regional level planning to be realistic and implementable. It shall be both, nurtured by local development planning and national and regional development strategies. This means in practical terms, that the project has to review and analyse both, the national level conditions, priorities and development strategies as well as the regional and local ones. On the other hand, different decision makers, development experts and institutions have different views on the sectors and priorities for development. For these views, the project shall provide a forum for fruitful exchange. Therefore, it was of high importance to initiate and facilitate a stakeholder dialogue to collect, analyse and prioritise development options and their spatial dimension. Participation also creates ownership and thus enhances the implementation of the jointly identified strategies and their positive impact on development in later stages of the project.

After some preliminary research of online documentation and materials provided by the MINEPAT (in particular the National Territorial Planning and Sustainable Development Plan) the consultants started a raw list of stakeholders (stakeholders analyses) consisting mainly of national public institutions. This list was then refined after the first mission in the North-West to include regional stakeholders of the public administration and of the civil society known to the national and regional coordinators and that the consultants had the occasion to meet in May and August 2017.

State and political organisations
The Governor of the North-West Region
The Regional Delegations of the Ministries
The Technical Delegations of the Ministries in the Divisions
The Senior Divisional Officer and the Divisional Officers
The Mayors
The City Councils
The Members of Parliament (Senators and Deputies)
FEICOM Regional Council Support Fund for Mutual Assistance
NEF (National Employment Fund)
AER (Rural Electricity Agency)
NIS (National Institute of Statistics)
BUCREP (Central Office for Census and Population Studies)
IRAD (Institute for Research and Agricultural Development)
CRMG (Geological and Mining Research Centre)
IRGM (Institute for Geological and Mining Research)
CRH (Hydrological Research Centre)
ISSEA (Sub-Regional Institute for Development)
PNDP (National Community Driven Development Program)
MIDENO (North West Development Authority)
Teaching institutions
The University of Bamenda
PAID (Pan African Institute for Development in Central Africa)

Organisations of the civil society
SIRDEP (Society for Initiatives in Rural Development and Environmental Protection)
Plan International
SHUMAS (Strategic Humanitarian Services)
Associations of Farmers (ex: Cameroon Cooperative Union League (CAMCUL))
Common Initiative Group (CIG)
NOWEFOR (North-West Farmers' Organisation)
NOWECA (North-West Craftsmen Association)
Traditional and Religious Authorities
Private actors and corporations
ENEO (ENERGY OF CAMEROON SA)
CAMWATER (Cameroon Water Utilities Corporation)
HYSACAM (Veolia Group)
MTN (Mobile Telephone Network)
Orange
CAMTEL (Cameroon Telecommunications)
Regional Banks

2.3.1. Involvement of the national stakeholders

The executive staff of the Directorate for Territorial Planning (DGPAT) of the MINEPAT formed a platform of the representatives of the Ministries as a Monitoring Committee (MINDCAF, MINADER, MINFOF, MINEPDED, MINTP, MINMIDT, MINHDU, MINDEF, MINMAP), representatives of the Public Authorities in the Region and the executive staff and key experts of the Consortium. Many of the representatives attended the Launch Workshop in November 2017, organized by the MINEPAT. In November 2017 a monitoring committee meeting was held at the MINEPAT to discuss the findings of the inception phase and to agree on the further implementation plan.

During the data acquisition phase, the project experts contacted and involved many different ministries according to data gathering and discussion of the situation in the North-West Region in the different sectors. E. g. the Ministry of Transport, Ministry of Energy and Water Resources, Ministry of Industry, Mines and Technological Development and many others gave important inputs to the diagnostic analyses. The most relevant sources gathered in close cooperation with these national stakeholders are documented in the study.

2.3.2. Involvement of the regional and local stakeholders in the North-West Region

Following the first expert workshop in Bamenda (September 2017), the Consultant organised smaller workshops and meetings with the expert team. In some of the meetings representatives of regional organisations were present to give input to the data collection and gave additional information.

The start of the broader involvement of regional and divisional stakeholders was the Launch Workshop in Bamenda in November 2017. There, information on the project was given to a broad audience (150 participants) and the project as well as expectations of stakeholders were discussed. The participants were mainly:

- Civil servants of the Regional or Divisional Delegations of Ministries
- SDO, DO or their representatives
- Mayors or their representatives
- Traditional rulers or their representatives
- Members of the civil society: workers in businesses and NGO, grazer, journalists
- Teaching and student staff of the UBa

After the launch workshop a contact tour all over the region with many of the international and regional experts was organised. On this tour several meetings in the six other divisional capitals of Wum,

Mbengwi, Ndop, Kumbo, Nkambé and Fundong were held. Complementary to the central meetings in the divisions, additional stakeholders like majors, associations and representatives of social or economic entities were visited. Also, traditional rulers and assemblies of traditional groups were visited to discuss the purpose of the project and to collect information and expectations. Finally. in December 2017 a focused stakeholder workshop with broader divisional participation was held in Kumbo in which a similar program of the Launch workshop was repeated due to strong needs of stakeholders to bring in their interests.

The purpose of these stakeholder involvement campaign and the meetings in November and December 2017 was to ensure an equal dissemination of the project information throughout the region but also to make contact with stakeholders of lower divisional, sub divisional and communal levels. The role of the stakeholders in the region and the divisions in the further process of data and information gathering was:

- the release of data and the sharing of field knowledge
- the formulation of inputs for the diagnostic study (stakes, local issues of regional relevance)
- the formulation of needs and of specific development objectives for the subsequent project phases (prospective analyses and contractualisation of the territory).

The following public organisations on regional level shall be named as explicitly essential for the diagnostic phase in terms of very relevant data and information inputs as well as involvement in the whole process (key organisations for phase 1):

- the Regional Delegations of the relevant Ministries
- the PNDP, regional office Bamenda
- the MIDENO
- the Divisional Officers offices
- the Decentralised Territorial Councils (DTC) in the municipalities.

The DTCs and the PNDP had a major role since they organised the spatial planning on local level, they elaborate the Council Development Plans (CDP) and are the closest public level to reach the communities. However, the level of detail of communal planning goes beyond the scope of the Regional Plan. Thus the local inputs were filtered according to their regional relevance.

Beside the public authorities, traditional authorities are included in the regional planning process due to their important role for the overall development of the region and in order to generate public acceptance for the project. The following traditional rulers can be short-listed as explicitly important:

- the Fon of Bafut
- the Fon of Nkwen (Mankon)
- the Fon of Fundong (Kom)
- the Fon of Kumbo (Nso)
- the Fon of Bali

Furthermore, the following Fons were consulted during the diagnostic phase:

- the Fon of Chomba
- the Fon of Nkambe.

The above said does not mean that key stakeholders of Phase 1 do have a stronger impact on the results of the whole process of the project. And stakeholders generally should be treated in an equal approach when it comes to comments and stakeholder workshops. However, it is important to set priorities in the starting phase to be able to organise one step after the other. In so far in the first phase of

information and data collection the focus will be on those organisations that can make information and data on the territorial situation and the recent developments available in a most effective way.

During the next phases the stakeholder approach will be adjusted to the objectives of the phases (e.g. stakeholders give statements on development options and scenarios in phase 2, the prospective planning will be discussed with the stakeholders in phase 3 etc.).

2.3.3. Involvement of the local NGOs

The objective and strategy for the involvement of the NGOs is to share their knowledge on the needs and priorities of the people of the North-West with the Consultant so their inputs can be taken into consideration especially in the later phases of the Regional Planning Project. During the diagnostic phase the focus was on stakeholders who can give input to facts and figures that is not available with the administration on the different national, regional and local levels. However, the involvement of NGOs shall be intensified in the next stages.

2.3.4. Involvement of other institutions in the area

Other institutions like the Department of Geography and Planning of the University of Bamenda and other institutes of the University (economy etc.) have been involved to provide expertise and excellent regional knowledge. Scientific staff of the University of Bamenda was involved as regional experts into the project team to ensure the integration of regional expertise. The regional experts took over major parts of the data collection and the assessment of the situation. In the next phases they shall support the formulation of key stakes for the Region and the definition of basic principles for the development of the Region (see chapter 1.3). Furthermore, students of the UBa from various Divisions were involved to support both, integration of young qualified persons into the collections and development of the project and explicitly to support capacity building in the region regarding the expertise of spatial planning and regional development within the expert team of international and regional experts.

Other institutions such as electricity companies or infrastructure operators or the NDOP rice cooperation were contacted on purpose to gather data and to discuss the situation and stakes or expectations and recommendations for the study in their specific fields. This stakeholder involvement should be intensified in the prospective phase.

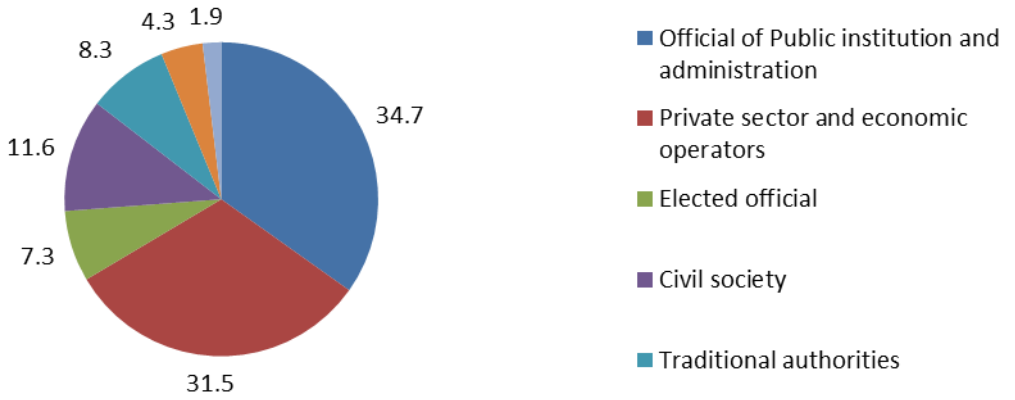
2.3.5. Involvement of the private sector

The companies relevant for infrastructure services should also be contacted in the diagnostic study in order to ensure a complete collection of data and an accurate description of the Region’s stakes.

2.3.6. Complementary stakeholder involvement by field survey

Complementary stakeholder involvement was realised in the context of the field survey that took place from April to June 2018 (see chapter 2.1.4). It was initiated by the project consortium for the regional planning project and was carried out by recruited field collectors posted in the Divisions. By this ca. 700 additional stakeholder representatives participated by contributing to the field survey (see Figure 2 and annex part 2 section 2.1 Identification/Characteristics of the respondents).

Figure 2: Origin of the respondents of the field survey in %, total number 701



Source: NW Field Survey 2018

Details on the spatial distribution, the profession, the age and further details as well as the results of the participation activities can be found in annex (volume II of this report). The activities aimed at both, information and awareness raising regarding the regional planning project and gathering of ideas, views and recommendation towards the regional situation in the different sectors. The results are considered as important input in the sector assessments although the experts of this study have to state clearly that the survey is not representative and the interpretation of qualitative results shall not be overestimated. The reasons are that the participating persons (voluntarily responding) persons do not necessarily cover scientifically representatively the spatial, social, economic, political or cultural distribution of the society in the North-West Region nor is representative spatial coverage of the whole region with the divisions ensured. However, from the consultant's point of view this field local participation activity and the field survey contribute very well to the objective of stakeholder involvement in the regional planning project and was well conducted by the experts.

The created awareness and the created interest for the project shall also serve for further participation activities in the next project phases.

2.3.7. Stakeholder Workshop February 2021

The results of the Diagnostic Analysis were presented and discussed on a Stakeholder-Workshop in Bamenda on 24th Feb. 2021 with ca. 200 participants (administrative, political, religious, traditional and other stakeholders). MINEPAT officials, the govenor and the regional expert Prof. Fogwe Zephania Nji Upon opened the workshop and presented the report. Consultant team leader Dr. Peter Heiland, who was unavoidably absent because of COVID19 travel restrictions, presented online to the audience the analysis results and the further recommendations. In a question and answer debate session a wide range of questions were discussed under the moderation of the Secretary General of the North West Region on behalf of the Governor. Based on the outcome of this workshop the report was reviewed and amended according to the requests and the agreements of the workshop. The final amendments were made in close cooperation with the Regional Delegate of MINEPAT in Bamenda.

2.3.8. Web-page for additional stakeholder communication

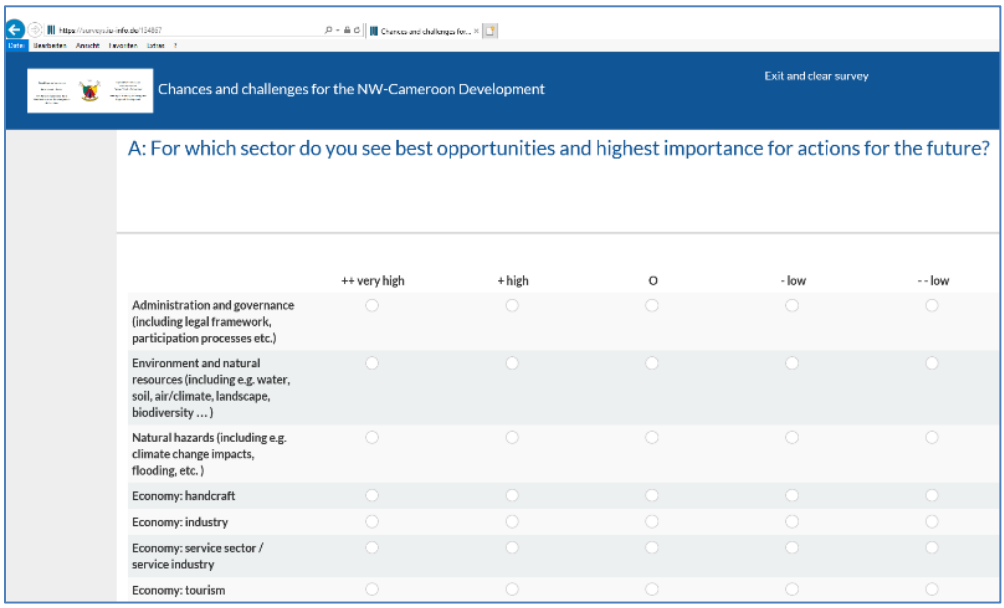
To open the stakeholder participation platfom for a wider target group the consortium offered a joint E-Mail address for the communication with stakeholders in the region. The Mailadress was presented in the Launch event and is published with all communication on the project in the region (www.nw-region@iu-info.de).

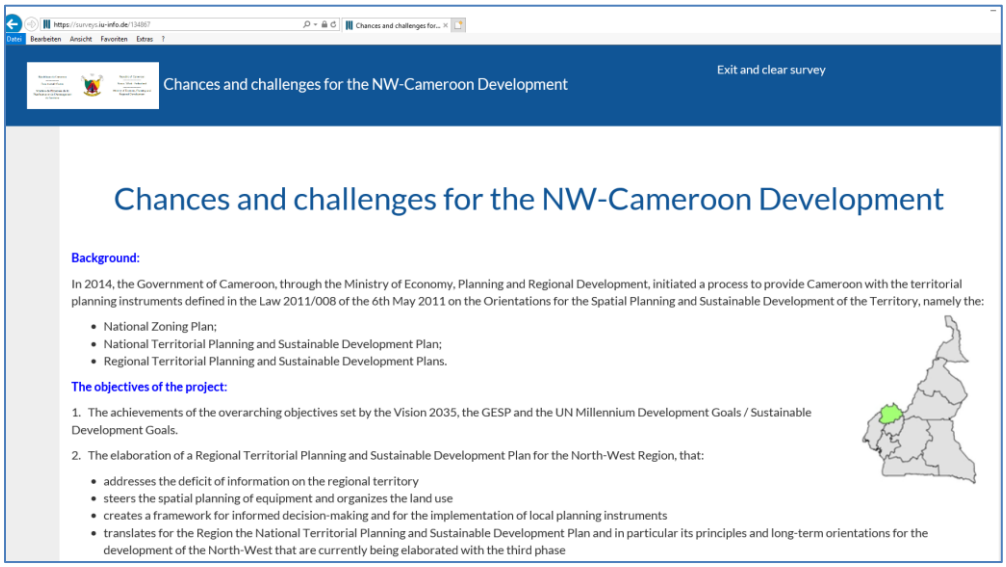
Further the consortium opened a web forum to discuss the chances and challenges for the development of the North-West Region. First visitors of the web-page find an online survey on their views and ideas

on the future development of the sectors in the region and the necessary conditions. This also shall contribute to increase the level of involvement of people and stakeholders although it is known that not all social groups and all localisations in the region have the same possibilities to access the internet and this communication platform.

Target groups for the communication platform are beside regional stakeholders that are already involved in the process and those who are not yet involved also North-West Cameroonians in the diaspora who can give important ideas from their outside views. Of course, these ideas just serve internally as catalysators and need to be carefully reflected by the expert team.

The web-address is: https://surveys.iu-info.de/134867?lang=en





Until today the number of users of both the central project mail-adress and the web-page communication platform is very limited. Consequently, results are not presented in the diagnostic report. However, the goal is to improve the awareness and the use of these participation offers.

3 Administrative structure (with respect to territorial development)

3.1. General administrative structure in Cameroon

Cameroon is a decentralized unitary Republic. The Head of State is the President of the Republic elected by universal suffrage. According to the Constitution the President defines the orientations of the Government's policies and is the keeper of the State's integrity. The national territory is divided into 10 Regions which are subsequently divided into 58 Divisions and into 374 Subdivisions. The latest have the same geographic extent as the Communes, but their administrative organisation differs. The smallest unit of administration is the village. The Regions are placed under the authority of the Governors, the Divisions and Subdivisions are under the authority of the Senior Divisional Officers and Divisional Officers respectively. All are appointed by the President of the Republic and are his official representatives. As such, they are charged with the law enforcement, maintaining public order and the coordination of the State Services. The Deconcentrated State Services are placed under their authorities but the Ministers appoint their Delegates of Services in the Regions and Divisions. Two or more villages make up a sub division. There are First class, Second class and Third class villages depending on their surface area and population. The heads of the villages act as auxiliary to the administration.

The contemporary administrative structure organisation of the Republic of Cameroon derived its legitimacy and basis from Law Nº 96/06 of 18th January 1996 on the revision of the constitution of 2nd June 1972. The present dispositions were adopted by the national Assembly then promulgated into law by the President of the Republic, after a long consultation of all the strata of Cameroon society. This constitutional disposition affirms the characteristic principle of the Republic of Cameroon. It is "a decentralized unitary state, it is unique, indivisible, secular, democratic and social."

The constitution of Cameroon constitutes the three main organs of the state, i.e. the executive, legislative and judiciary. The country is governed by a democratic multi-party system. In Cameroon the president of the Republic is at the helm of power. He is supreme and all branches of the government are answerable to the president, i.e. the Executive, the Legislative (National Assembly and Senate), the Judiciary, the Prime Minister, the Economic and Social Council. The National Assembly debate projects of laws which are submitted to the Senate after vote. The Senate does same. The laws project adopted by the Senate are promulgated by the Head of State. The judicial power is exercised by the Supreme Court, Courts of Appeal and Tribunals and is independent of the executive and legislative powers. Magistrates of the bench are expected to carry out their duties governed only by the law and their conscience. The President of the Republic guarantees the independence of the judicial power, appoint members to the bench and legal department assisted by the Higher Judicial Council which shall give him its opinion on all nominations for the bench and on disciplinary action against judicial and legal offices. The Supreme Court is made up of the administrative, judicial and audit benches.

The judiciary powers are vested in the courts of law, special tribunals, Administrative Courts and Customary Courts/Traditional Law Courts. The competence and jurisdiction of these courts of law and special tribunal are defined by law. The judicial system is under the Ministry of Justice and the Minister of Justice directs, coordinates and supervises government policy with regards to the administration of justice as well as oversees and supervises its key actors. Art. 37(2) of the constitution appears to provide for a separation of powers marked by what it refers to as "Judicial Power". It provides that the judicial power shall be independent of the executive and legislative powers.

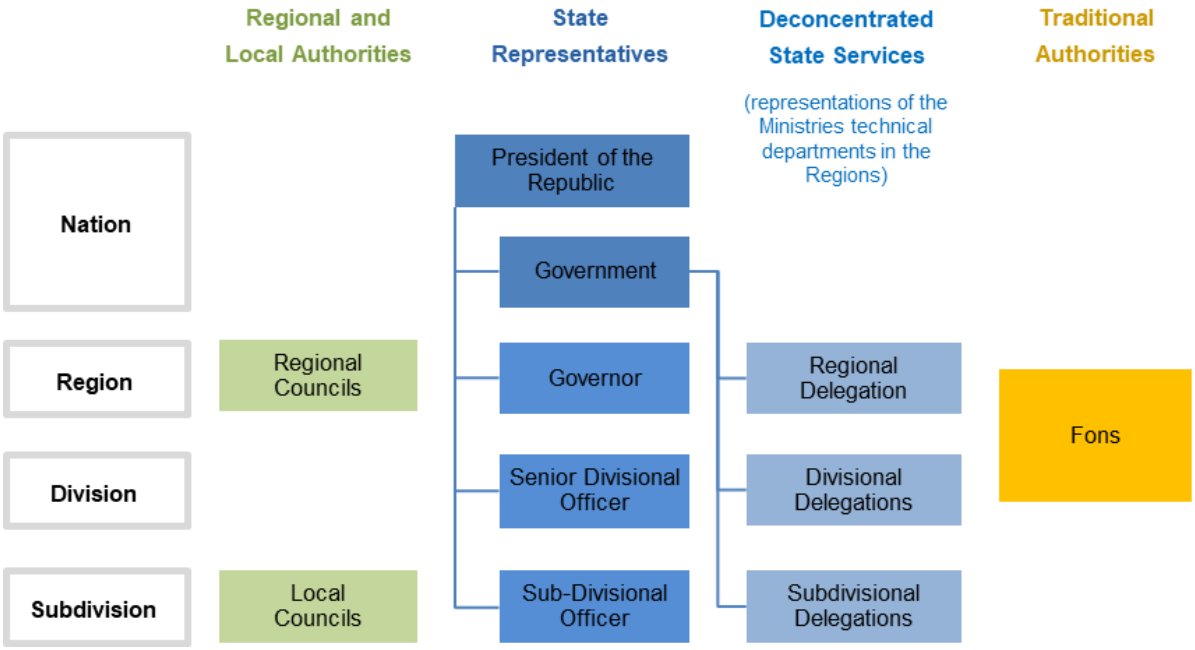
The President is vested with absolute powers to appoint the Prime Minister and on proposal of the Prime Minister, appoints the 35 members of government that make up the Council of Ministers. The President appoints the Governors, Judges, Government Delegates of some main towns and cities, Prefects, Sub-

Prefects, Heads of Cameroon parastatals, and at least 30 Senators out of 100 etc. He also fixes the attributes and functions of the appointed persons. He has the powers to promote and dismiss them, the power to obligate or disburse expenditures, approve or veto regulations, declare states of emergency and appropriate and spend profits of parastatal firms.

The power of the executive is provided in Art. 5, 6, 7, 8, 9, 10,11,12,13 of the 1996 constitution. The Republic of Cameroon practices a dual parliamentary form of government. As per Art. 11 of the 1996 constitution the government is accountable to the National Assembly. The Legislative branch of the state is vested in two chambers, the National Assembly which is the lower house with 180 seats and the Senate the upper house with 100 seats, 30 members appointed by the President. All Local Government Officials are employees of the Central Governments Ministry of Territorial Administration from which local governments also get most of their budgets. There are 374 local government councils having 360 municipal councils, 14 city councils and 42 sub divisional councils within cities.

Figure 3 shows the overview on the political and administrative structure.

Figure 3: ***Organisation of the Cameroonian State***



Source: own figure

The strength of the administrative structure in Cameroon hinges on the constitution of 2nd June 1972 as amended by law n° 96-06 of 18th January 1996 which has largely been subject to attack by citizens of the two English speaking Regions that joined the Republic of Cameroon in 1961. By 2018 the Regional councils were not functional.

3.2. Administrative structure in the North-West Region

3.2.1. General facts and data

The North-West Region is situated in Cameroon. Its administrative headquarters is Bamenda. The North-West Region is found within the Western Highlands of Cameroon. It lies between Latitudes 5°40' and 7° North of the Equator and Longitudes 9°45' and 11°10' East of the Prime Meridian. It is bordered to the East by the West Region, to the North-West by the Federal Republic of Nigeria, and to the South by the South West Region. The region has a total land surface area of 17,300km² (6 680sq.mi) and its

close location to Nigeria and the West Region is of strategic importance to the economic development of the region. Key facts and figures of the North-Wet Region are listed in Table 1.

Table 1: Key facts and figures for the North-West Regions

	Facts	Comment
Area	17,300km^2 (6,680sq.mi)	
Population	1,728,953 (2005) 1,950,667 (2015, projection)	Projection for 2015 based on 2005 census. 3rd-highest populated region in Cameroon.
Population density	99.94 inh. per km^2 (2005) 112.76 inh. per km^2 (2015)	National average of 37.5 inh. per km^2 National average of 46.1 inh. per km^2
Governor (2018)	Adolphe Lele L'afrique	2012 - today
Growth rate	8.4% (2010-2015)	National growth 12.9% (2010-2015)
Rural growth rate	1.16%	Equal to the National rate

Source: NIS, 2017

3.2.2. Formal administrative system

The specific skills transferred by the central government to the Regional and Local Authorities are determined in multiple subsequent laws and ministerial decrees as the amendment of 1996 only guarantees the "administrative and financial autonomy" of the Councils in the management of matters of regional or local interest. In particular:

- The Law No. 2004 / 017 of the 22nd of July 2004 on the Orientation of the Decentralisation. This law defines the general organisation and attributions of the Decentralised Councils, defines the modalities of the transfer of competences as well as the relations between the Councils and the State Representatives.
- The Law No. 2004 / 018 of the 22nd of July 2004 determining the rules applying to the city Councils. This law defines the attributions of the City Councils, its organs (the Municipal Council and the Executive branch of the Commune) and lists the legal competences transferred to them.
- The Law No. 2004 / 019 of the 22nd of July 2004 determining the rules applying to the Regions. This law specifies the functions of the Regional Councils and presents a list of legal competences transferred.

In practice the administrative system in the North-West Region, with regard to spatial planning, is at present characterised by the general administrative structure in Cameroon (see chapter 3.1) and the regional development of the past decades. The North-West and the South-West Region (West Cameroon) were joined to East Cameroon as a Federated state in 1961. The Federal constitution was abrogated in 1972 and since then there has been constant agitation by the population in what is now referred to as "the Anglophone crisis". Presidential decree of 12th November 2008 instigated the change from what use to be known as province to Region. Each Region is headed by a presidentially appointed governor who implements the national strategies, reports on the general situation and conditions of the Region, administers the civil services, keeps peace and oversees the heads of the smaller administrative units.

The Region is sub-divided into Divisions (departments). These are headed by Divisional officers appointed by the President. The Divisions are again Sub-Divided into Sub-Divisions (arrondissements) headed by Assistant Divisional Officers (Sous Prefets). See Decree n° 2008/376 of 12th November 2008 on the administrative organisation of the Republic of Cameroon. The chiefs/Fons who are traditional rulers are described as auxiliaries to administration (See law n° 77/245 of 1977 relating to the organisation of traditional chieftaincies as amended by Decree n° 2013/332 of 13th September 2013).

There is a total of seven Divisions in the North-West Region and a total of 34 Sub Division. The basic unit of local government is the council and there are 34 councils in the Region. In the North-West Region

there is one special urban community: the Bamenda City Council headed by a Government Delegate appointed by presidential decree.

The administrative units of the North-West are listed in Table 2 and shown in Figure 4 (map 1.1 a-g):

Table 2: Administrative units of the North-West Region

Division	Subdivision	Council
Mezam	Bamenda I	Bamenda
	Bali	Bali
	Tubah	Tubah
	Bafut	Bafut
	Santa	Santa
	Bamenda II	Bamenda
	Bamenda III	Bamenda
Bui	Kumbo	Kumbo
	Jakiri	Jakiri
	Mbven	Mbiame
	Oku	Elak-Oku
	Noni	Nkor
	Nkum	Nkum
Donga-Mantung	Nkambe	Nkambe
	Nwa	Nwa
	Ako	Ako
	Ndu	Ndu
	Misaje	Misaje
Momo	Mbengwi	Mbengwi
	Batibo	Batibo
	Njikwa	Njikwa
	Ngie	Andek
	Widikum	Widikum-Boffe
Menchum	Wum	Wum
	Furu-Awa	Furu-Awa
	Fungom	Zhoa
	Menchum Valley	Benakuma
Boyo	Fundong	Fundong
	Bum	Fonfuka
	Belo	Belo
	Njinikom	Njinikom
Ngo-Ketunjia	Ndop	Ndop
	Babessi	Babessi
	Balikumbat	Balikumbat

Source: "Code Officiel Géographique"

Figure 4: Administrative units of the North-West Region

Data source: based on MINEPAT data of the SNADDT

The Ministries in Cameroon were defined by decree n° 2004/320 of December 5th, 2004. There are at least 33 Ministries. The Ministries have Regional departments (regional delegations). Some of the Ministerial Regional Departments are in the headquarters of the North-West Region headed by a Regional Delegate.

The Regional Delegates are sub-divided into Divisional Delegations and Sub Divisional Departments headed by Divisional and Sub-Divisional Delegates.

The Judiciary is organised by law n° 2006/015 of 29th December 2006 on judicial organisation as amended and supplemented by decree n° 2011/27 of 14th December 2011. See also law n° 2006/022 of 29th December 2006 on the organisation and functioning of Administrative Courts. The head of the judiciary in the Region is the chief justice of the Region appointed by the President of the Republic.

3.2.3. Local governance

The LAW No 2019/024 of December 2019 Bill institutes the general code of regional and local authorities. The local authorities of the republic are regions and councils. The North-West and South-West Regions have a special status based on their language specificity and historical heritage. The two regions are organized and administered in accordance with the provision of the Law.

The North-West Region has one City Council (Bamenda City Council) with three councils. (Bamenda 1, 2 and Bamenda 3). The North-West Region is administered freely by organs under the conditions of this law.

The organs of the North-West Region are:

- The Regional Assembly
- The Regional Executive Council

The Regional Assembly is a deliberated organ by the laws in force. The Regional Assembly is composed of 90 (ninety) Regional Councilors elected for a five-year term of office. It has two houses:

- The House of Divisional Representatives with 70 members, and
- The House of Chiefs with 20members.

The Regional Executive Council is the executive organ of the region. It comprises 8(eight) elected members. The president of the Regional Executive Council is the Chief Executive of the Region. The Mayor of the Bamenda City Council and Mayors of the 34 councils in the region are elected.

3.2.4. Territorial planning in the administrative system

The institutional organisation of the Republic of Cameroon attributes the role of territorial planning to several institutions at various levels of intervention. Territorial planning for development in Cameroon is done at various levels.

The first level of territorial planning in Cameroon is policy formulation. Several ministerial institutions involved all work in synergy. The Ministry of Economy, Planning and Regional Development, the Ministry of Decentralisation and Local development, The Ministry of Agriculture and Rural development and several others are in charg of policy formulation. The Planning Institution at the State level is the MINEPAT. It is tasked with enacting the standards and rules of territorial planning and monitoring the national and regional planning programs. The Regional and Local Authorities are to be involved in the development of the SNADDT and SRADDTs and the Laws on the rules applying to the Councils transferred many competences to them in the field of spatial planning and public works. Indeed, the article 20 of the Law No. 2004 / 019 of the 22nd of July 2004 assigns to the Regions the task of drawing-up of the SRADDT beside the realisation of Regional Development Plans. Similarly, the article 17 of the Law No. 2004 / 018 transfers the competence of elaborating the Land-Use Plans and all Urban Planning Documents to the Municipalities, while the article 18 specifies that all Municipalities will express their opinion on the SRADDT before its approval. Furthermore, all DTCs have the competence to procure Contracts Plans for the realisation of development objectives.

The second level of planning involves operational institutions like PNDP, PADC, MIDENO/GP Derudep, FEICOM, Councils, etc in charg of executing policy at the grassroots level and putting in place instruments like the LDP, etc. They operate under the supervision of the Ministries. Most important local and regional spatial planning is the national community driven development program (PNDP), who is supervisory Ministry is the MINEPAT. In the Regions, the PNDP is represented by a Regional Coordinator that collaborates with the City Councils forming the Deliberative Body of the PNDP. Their work revolves around three activities:

- The first task of the PNDP is to assist the Councils in the implementation of the Decentralisation by training the mayors and the Council staff.
- The PNDP also assists the realisation of micro-projects in the villages with the support of the sectorial delegations of the Ministries in the Division and Region.
- In the North-West, the PNDP is currently updating the Council Development Plans (CDP). The CDPs are an assessment (relying on the SWOT method) of the challenges, the needs, the resources and the potentials of the villages and are conducted by the Councils. With the updates, the CDPs will include land use and land management plans.

The modern planning system in Cameroon has been introduced by law with the Law of the 6th May 2011 to lay down guidelines for Territorial Planning and Sustainable Development. This law foresees the following planning instruments:

- The National Territorial Planning and Sustainable Development Plan of the Territory (SNADDT);
- The ten Regional Territorial Planning and Sustainable Development Plans of the Territory of the Regions (SRADDT);
- The Sectorial Territorial Plans;
- The Local Planning and Sustainable Development Plans of the Territory (PLADDT);
- The Plan Implementation Agreements.

Whereas the SNADDT and the SRADDT determine respectively the long and medium term orientations for the sustainable development of the territory, the PLADDTs are the translation of the SRADDT on the communal level as the municipalities are in charge of implementing the planning operations of the PLADDT on their territory. The Sectorial Plans are subsets of the SNADDT with the purpose of developing a specific sector of activity consistently across the Regions while the Plan Implementation Agreements define the allocations of resources and responsibilities between the State and the regional and local authorities in the implementation of an action plan.

The third and last level is the grassroots. There are grassroots institutions like the Village Development Associations and every other civil society organization working as partners at the grassroots level. Each is guided by law. For example, the 1990 law on the liberty of Association. The Law on NGOs, the lawon CIGs, etc.

3.2.5. Traditional authorities

Besides the formal administrative structure, the North-West Region has its traditional authorities and traditional rulers (see Figure 3). The Fons and their respective families are ruling the area since many centuries. For example, the Bafut kingdom originates from the 16th century and the Nso kingdom from Kumbo has the same ruling family since the 14th century. The inhabitants are still very loyal to their traditional rulers. The kingdoms are well organised and through ancient systems of communication the wishes and challenges of the inhabitants are regularly discussed in the respective palaces. Most of the Fons cooperate closely with the senior divisional officers, representing the present Cameroonian presidency, in actually addressing the needs of the population.

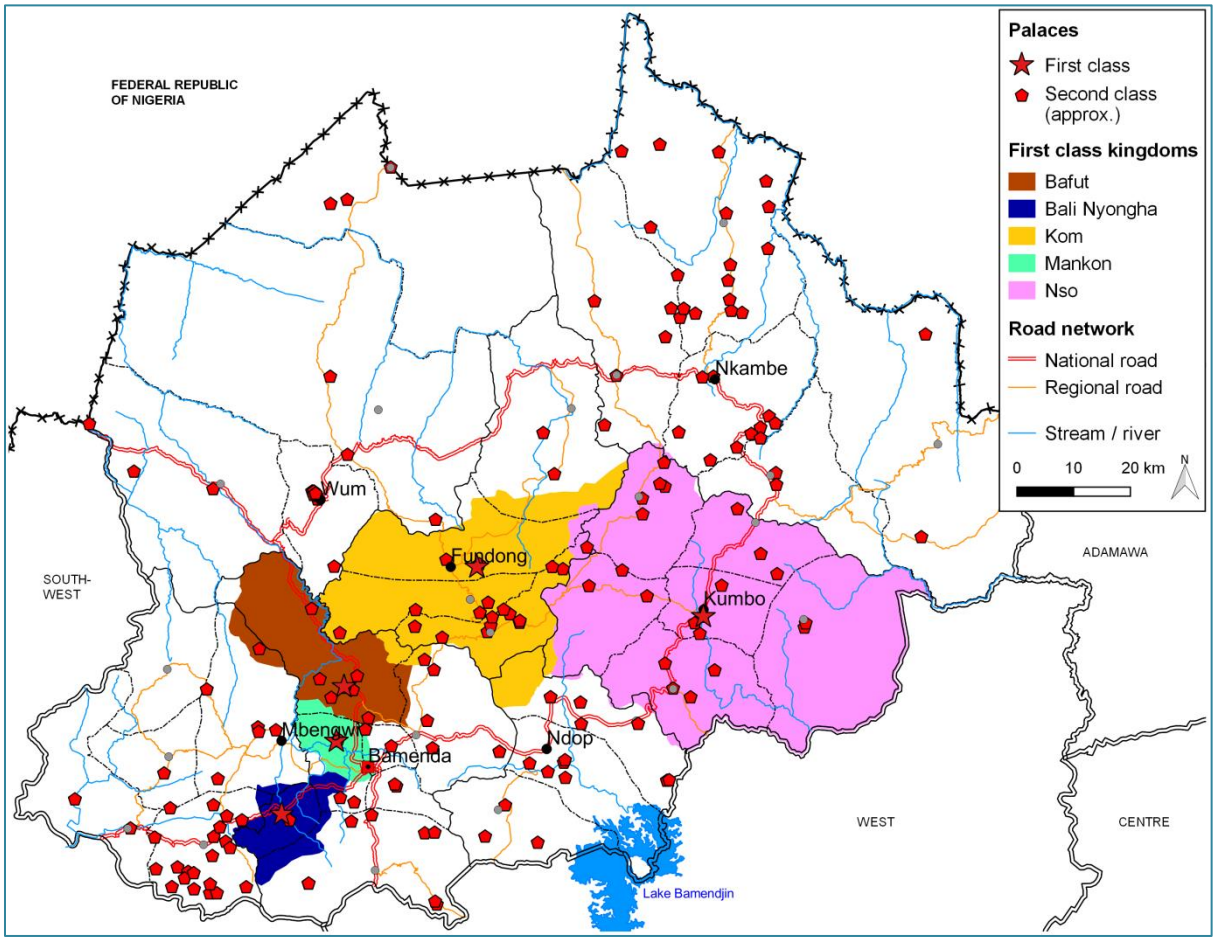
The Cameroon Chieftaincy Law contained in decree No 77/245 of July 15, 1977 organizes traditional communities into villages or chiefdoms. And according to the decree, traditional chiefdoms are organized on a territorial basis and they comprise First class chiefdom, Second class chiefdom and Third class chiefdom. There are 121 chiefdoms in the North-West Region distributed as on Table 3. Figure 5 shows the localities of the First class kingdoms.

Table 3: Number of Fons according to categories in the North-West Region

Division	First class	Second class	Total
Boyo	1	7	8
Bui	1	9	10
Donga-Mantung		30	30
Menchum		13	13
Mezam	3	23	26
Momo		21	21
Ngoketunjia		13	13
Total	5	116	121

Source: NIS, 2017

Figure 5: First and second class Kingdoms of the North-West Region



Data source: field survey IU/CPAC/geomer 2018

In any case it can be stated that parallelity, the linkages and the mutual impacts of the traditional and formal authorities create a special situation for regional and urban spatial planning and even more for implementation of the plans. For good governance the legitimation of political, economic and administrative management and decision making is fundamental. There are two strands of legitimised authority: one based on democratic national government and defined by constitution and specific laws and the other the second based on legitimation by tradition, by traditional societal and cultural values and by acceptance of the people in the believe that the traditional authorities act for the welfare of the people. “In a nation that is essentially a collection of ethnic groups, traditional authority is the foundation of governance to most people.” (Checka, 2008).

Traditional authorities have clear competences in ruling the developments in the region, based on specific regulations in law. For the regional planning process in the North-West Region the traditional authorities will play a major role in the participation process and regarding the later phases of contractualisation of the regional plan because they are important or even decisive for the implementation of actions.

3.2.6. Situation of decentralisation in North-West Region

The meaning of Art 1 of the 1996 constitution is that decentralised units would be delegated some degree of power and resources to manage their affairs (see law n° 2004/17 on the orientation of decentralization). The situation of decentralisation in the North-West Region is as complex as the evolution of the state itself which saw itself split and ruled by the British and French colonizers after the defeat of imperial Germany. The main impacts stem from law n° 2004/018 of July 22, 2004 laying down rules

applicable to councils. Though, a unitary decentralised state, the decentralisation in the North-West Region has not been implemented yet in some respect like decentralized decision making for regional matters or decentralized budgets for regional projects etc.

Art 115(1) of the aforecited law puts into question the principle of free administration of decentralised local entities, albeit by the creation of city councils with special status (e.g. the Bamenda city council, North-West Region). Although the principle of the free administration of local authorities by officials locally elected by direct universal suffrage is the goal of decentralization in practice Government Delegates are appointed. The 2004 law lays down a centralized approach as the President of the Republic has the powers to create, rename, and re-delimit geographical boundaries of local authorities. Government financial resources are centralized according the principle of a “unicité de caisse” (single till) instituted by the financial law of 1962. In 2005 the Minister of Finance compelled the local councils to close the accounts held by them in high street bank and transfer the proceeds into the National Treasury. Thus local councils cannot save own financial resources.

For regional territorial development planning the situation of decentralisation means that regional planning is first done in the top-down approach as the responsible regional planning authorities are part of the central administration with regional and divisional delegations. A real bottom-up approach, based on regionally structured planning authorities is not yet in place. Local planning exists, also supported by central-authority driven agencies like the PNDP, but some kind of self-organised municipal local planning and local prioritisation of projects is existing (local development plans). In practice the local development plans do not form the basis for regional planning as bottom-up inputs.

However, since one objective of the regional territorial planning process is to involve stakeholders and actors of the region, this shall give the opportunity to add a bottom-up input in addition to the top-down structured administration. This shall be considered already when developing scenarios for the regional planning in the next phase.

For the implementation of actions as result of the regional territorial planning process the not far reaching decentralization approaches in the North-West Region can mean a weak point because regional and local initiatives suffer of competence and financial means to realise projects and other actions.

The following difficulties have been identified in the diagnostic analysis regarding the implementation of decentralization in the North-West Region:

- Inadequate specific financial resources in most of the regional and local authorities (RLAs)
- Shortcomings in local governance and participatory democracy culture.
- Limitations in qualitative human resources at local level.
- Poor organization of civil society which should be an important partner of RLAs.
- No adaptation of state de-concentrated services which are called upon to support RLAs in the realisation of their development goals.
- The top-down approach at regional level without bottom-up counterparts.

In the face of these problems the state opted for a pragmatic and gradual approach. The subsidiary status principle states that authority is transferred and exercised at the territorial level which is most suitable and closest to the people concerned. As such the authority devolved on Regions is different from that devolved on councils, not forgetting those devolved on the state. The additionality principle states, that authority transferred by the state does not exclude the fact that the latter continues to exercise concurrently by the State, Regions and Councils.

As to transfer of resources, the state is called upon to provide RLAs with necessary resources to exercise the authority conferred on them. Such resources include:

- Human resources with respect to graduation principle
- Material resources
- Financial resources especially through the transfer of taxes, the grant of subsides or both.

Beside the financial deficiencies, the effective implementation of the decentralisation will have to overcome political and social barriers. The omnipresence or authoritarian presence of Divisional officers and Senior Divisional officials emphasizes the limits of decentralisation in the Region. The rare effective transfer of power and capacity deficits of local authorities to mobilise their own revenues pose as crucial challenges in the Region particularly as municipal income of local authorities are controlled by the central government.

Decentralisation in the North-West Region is ongoing but there seem to be differences in the strategies of national agencies and local governments regarding the pace of decentralisation and resource distribution issues, among central agencies themselves regarding the scope of decentralisation between municipal authorities and de-concentrated administrative units. This constantly creates limitations in efficiency and conflicts. Stakeholders and population on the grassroot level face a low level of transparency in participatory processes accompanied by a high level of bureaucracy within the local political and social procedures. The analysis in this project showed some over lapping and incoherence in power sharing between the City Councils and Sub-Divisional Councils in the Region as the city council is seen as carrying out the main activities while the sub-divisional councils basically do the “finishing”.

The progress of decentralisation is also slowed by the disunity among opposition political parties and by the state of passiveness among civil societies organisation especially in participating or organising and encouraging citizens in activities that concern them principally at the local councils. There exist some lacks in transparency and information flows on the activities of the state and local authorities.

The implementation of the decentralisation policy is still in progress but seems, at presence, to partly lack of effective transfer of power and resources to local authorities within the North-West Region and of improving participation in local governance processes. E.g. local authorities do not engage citizens in their activities. In fact, a negligible percentage of the population participates in council session, budget session, or makes any suggestion to their municipal council concerning development of their area.

There are inadequacies in the capacity of local actors that are stakeholders in the decentralisation process at the local level.

3.3. Land tenure system

The Land Tenure System in Cameroon is governed by laws and ordinances, decrees and orders, circulars and instructors. See in particular ordinance n° 74/2 of 6th July 1974 to establish rules governing state lands. See Decree n° 76/165 of 27th April 1976 to establish the conditions for obtaining land certificates amended and supplemented by Decree n° 2005/481 of 16th Dec. 2005.

3.3.1. Evolution of the land tenure system

Southern Cameroon had its independence by joining La Republique du Cameroun in 1961. In 1963 the new government of Cameroon repealed all laws that recognised customary tenure system. It made land titles and leases the only legal means of holding property rights in land. Most lands however are still managed informally through local arrangements whose bendy rules create uncertainty, foster land conflicts, and hamper local development. As of the year 2000 less than 2% of Cameroon’s land was registered.

The government urban elites, agro-industrial companies and powerful traditional leaders acquired more and more land. This was supported by Decree n° 2005/491 of 16th Dec. 2005 that simplified land titling by reducing the number of steps and departments involved as well as limiting the time frame to one year within which to obtain a land title. Unfortunately, this decree failed to address significant hurdles including contradictory laws, poor record keeping, administrative bottlenecks which leads to corruption, unpredictable costs which discourages low income earners, women in particular, poor and incomplete geographic information, coordinates and references.

Formal registration of land rights is more common in urban areas according to MINDAF lands Division (AFDB 2009), 60% of land titles are in urban areas, 40% in rural areas. Civil servants hold 50% of titled lands. Only about 3% of women hold titled land in Cameroon with 0.1% in the North-West Region (AFDB 2009).

Individuals and communities are eligible to apply for land certificate on land they effectively occupied and used before 1974. On lands occupied and used after 1974 as well as lands deemed vacant, they must apply for provisional concession. Section 1(1) of ordinance NO 74/1 of 6th July 1974 was to establish rules governing land tenure. The state guarantees to all natural persons and corporate bodies having landed property the right to freely enjoy and dispose of such lands. The state is the guardian of all lands (see S. 1 to 21st of Decree n° 2005/481 of 16th Dec. 2005 for the procedure to apply and obtain land certificate in Cameroon).

Resolution of dispute is handled by administration and the ordinary courts depending on the nature of dispute. Farmer-grazier disputes are a principal concern in the Region that is settled administratively. See Decree n° 78/263 of 3rd July 1978 to establish the terms and conditions for settling farmer-grazier dispute.

3.3.2. Categories of Land

The three categories of land properties (public, national, private) are characterised in the following because they are important for all spatial planning and development processes.

State property / public property

Ordinance n° 74/2 of 6th July 1974 (S. 2 and 3) establish rules governing state land particularly public and private property of the state and other public bodies. Also S. 4 to 13 of ordinance n° 77-2 of 19th January 1977 add to it. Accoding to the ordinances public property comprises of all personal and real property which by nature or intended purpose is set apart either for the direct use of the public or for public service. It is divided into Natural and Artificial public property. Natural public property shall comprise coastlands, waterways, subsoil and air space.

The Artificial public property of the state shall comprise (see in particular S. 3(1) (2) (3) (4) of ordinance n° 74-2 of 6th July 1974 and also S. 4(a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) of ordinance n° 77-2 of 10 January 1977 on the artificial property of the state):

- Motorways and land extending 100 m on either side of the centre line of the highway etc.
- National and provincial highways and land extending 40 m on either side of the centre line of the highway etc.
- Divisional roads and lands extending 25 m on either side of the centre line of the road etc.
- Local tracks passable for vehicles and land extending 10 m on either side of the centre line of the track etc.
- Tracks which are not passable for vehicles
- Railways and land extending 30 m on either side of the centre line of the track.

- Commercial sea or river ports, their connected installations and land fixed on the basis of a special study for each port.
- Military sea or river ports, their connected installation and land fixed on the basis of a special study for each port; all works connected with the National land air and sea defence.
- Telegraph and telephone line and their connected installations and land extending 200 m around telecommunication centre.
- Alluvium deposited downstream or upstream of works constructed for general use.
- Public monuments and buildings set up and maintained by the state or other public bodies in particular covered and open markets, cemeteries, museums.
- The concession of traditional chiefdoms and property relating thereto and more especially in the provinces where the concession of chiefdom is considered as the joint property of the community, the chief having only the enjoyment thereof.

Private Property

The following categories of lands shall be subject to the right of private property (see S. 2of ordinance n° 74-1 of 6th July 1974 to establish rules governing land tenure): Registered lands (titled land) like

- Freehold lands
- Lands acquired under the transcription system
- Lands covered by a final concession
- Lands entered in the land register.

Ordinance n° 77-1 of 10th July 1977 (S. 10(1) (2) (3)) states that National persons and corporate bodies of foreign nationality or incorporation wishing to invest in Cameroon may conclude lease agreements or purchase landed property, except in the border areas.

National Lands

These are lands which at the date on which the respective ordinance (see S. 14-18 of ordinance n° 74/1 of 6th July 1974) enters into force are classed into the public or private property of the state and other public bodies. National land is sub divided into two categories:

- Lands occupied with houses, farms and plantations and grazing lands manifesting human presence and development.
- Lands free of any effective occupation.

It is administered by the state in such a way as to ensure rational use and development. National land can be allocated by grant lease or assignment on conditions to be prescribed by decree.

3.3.3. Impact of the land tenure system on the territorial development

The land tenure policy has had a positive and a negative impact on territorial development in Cameroon as a whole and in the North-West Region in particular. Traditional and modern rights to land ownership prevail and overlap. Traditional land ownership rights were instituted by traditional authorities who are the custodians of the land over which they rule. Though the traditional ruler is the overall manager of land, the land is owned by the entire village community. The traditional ruler shares the land to the several clans that make up the village community. The clan head (Fon, Chief) in turn shares the land to the members of his small community. The traditional ruler can also identify any portion of the land for the construction of a social amenity like schools and hospitals. This has led to the distribution of land especially in rural areas to various clans that make up the villages. Most of this land is used for agriculture while a small portion is used for human settlement construction like houses and socio collective amenities. The land can also be handed as a gift to the churches. Traditionally, individuals acquire land

through inheritance from parents. This explains the high percentage of land acquisition by buying. Following the 2005 land tenure reforms in Cameroon, many villages in the North-West Region that used and occupied land before 1974 have titled their customary land and this gives them protection from eviction. Despite the law's intent to encourage land titling, and, by the early 2000s, less than 2 % of Cameroon's land was registered or titled.

According to the 1974 law, land is divided into three categories in Cameroon (see chapter 3.3.2): registered land belonging to the State, registered private land (with a title deed) and national land. (former traditional lands which are neither private nor belong to the State). The Ministry of State Property, Surveys and Land Tenure is responsible for managing the land tenure procedures in respect of Ordinance No 74-1 of 6-7-74 to establish rules governing land tenure in Cameroon. Ordinance 74-1 is related to private and public property and national lands while the Ordinance 74-2 is related to public domain in Cameroon. They are usually presented together to explain the land tenure system which is based on land registration. It states clearly that all privately-owned land must be registered because all unregistered land is deemed to be either public land held by the state on behalf of the public or national land, i.e. all unoccupied and under traditional law lands. The limited implementation capacities of the Ministry of State Property, Surveys and Land Tenure have not allowed for effective enforcement of these laws. Like elsewhere in Cameroon, only a small number of lands have ever been registered. Two important documents to be acquired are the Building Permit and the Land Certificate. The very long and difficult centralized procedure of land title acquisition was reviewed in 2005.It was simplified and the number of steps reduced as well as the number of services and departments involved. Unfortunately, it did not contribute significantly to improve on the contradictory laws, poor record archiving and reliance on traditional authorities to allocate land rights. Land title and building permits make land development formal or authorized. The records of these documents show an increasing evolving trend.

In the North-West Region, several hundreds of new houses are constructed every year and this is expected to be increasing. Several other infrastructures are put in place. Many are without building permits. It is estimated that only one out of every ten houses constructed is authorized. The weak land tenure policy is a driving force for settlement expansion in the North-West Region. It allows for formal and informal settlements to be constructed. There is a very weak control mechanism that paves the way for the proliferation of unplanned settlement. As a whole the weak land tenure has led to poor, disorderly territorial development with roads, electricity and water facilities put in place after houses have been constructed with no respect of the laws and procedures in Cameroon. This is the prime cause of the urban territorial renewal actions taking place in towns like Bamenda where houses in quarters like Ntambag 1, 2 and 3 are destroyed fully or partially to extend the width dimension of roads and quarters like Sissia 1, 2 and 3 have to undergo expensive upgrading for facilities like water, electricity and roads. In the rural areas where there is still vast virgin lands, the errors in the land tenure policy execution can still be easily corrected.

3.4. Assessment of the administrative situation

Table 4: SWOT Summary of administrative structure

SWOT summary: Administrative Structure	
STRENGTH	**WEAKNESSES**
• Availability of well-educated human resources. • Strong political awareness and maturity. • Development-oriented institutions exist. • Considerable political good will. • Traditional authorities are accepted by stakeholders and people can support formal system. • Civil Society, including NGOs cooperate closely with formal administration and partly fill gaps in administrative tasks. • The existing land tenure system generally governs the legal regime in which land is owned by an individual although there are weaknesses in the transparent implementation.	• Few decentral (local / regional) competences to develop and implement regional approaches. • The administrative system is rather based on central decision making than on regional decision making (top-down rather than bottom-up approach). • Planning system not market oriented. • Appointed personnel as opposed to elected personnel in the decentralisation process. • No regional budgets for regional / local projects that are management by regional authorities. • Full independence of the judiciary is not always guaranteed in practice which can result in intransparent decision making with impacts on spatial development. • Number of qualified staff in planning issues is low.
OPPORTUNITIES	**THREATS**
• Further improvements of the regional planning capacities. • Decentralisation of planning tasks with regional authorities. • Organised chiefdoms and traditional authorities can add value to development and fill gaps of formal authorities.	• Limited capacities and structure for Intensive communication and coordination (vertical and horizontal) of planning methods and strategies. • Corruption. • Limited willingness to distribute planning competences to the local and regional levels. • Absence of regional council limits decentral decision making and planning on regional level. • Harmonisation of planning systems (vertical and horizontal) • Too many disputes handled by administration. • Administrative bottlenecks / limit capacities. • Disrespect of cultural and linguistic differences.

4 Environment, natural resources and climate change

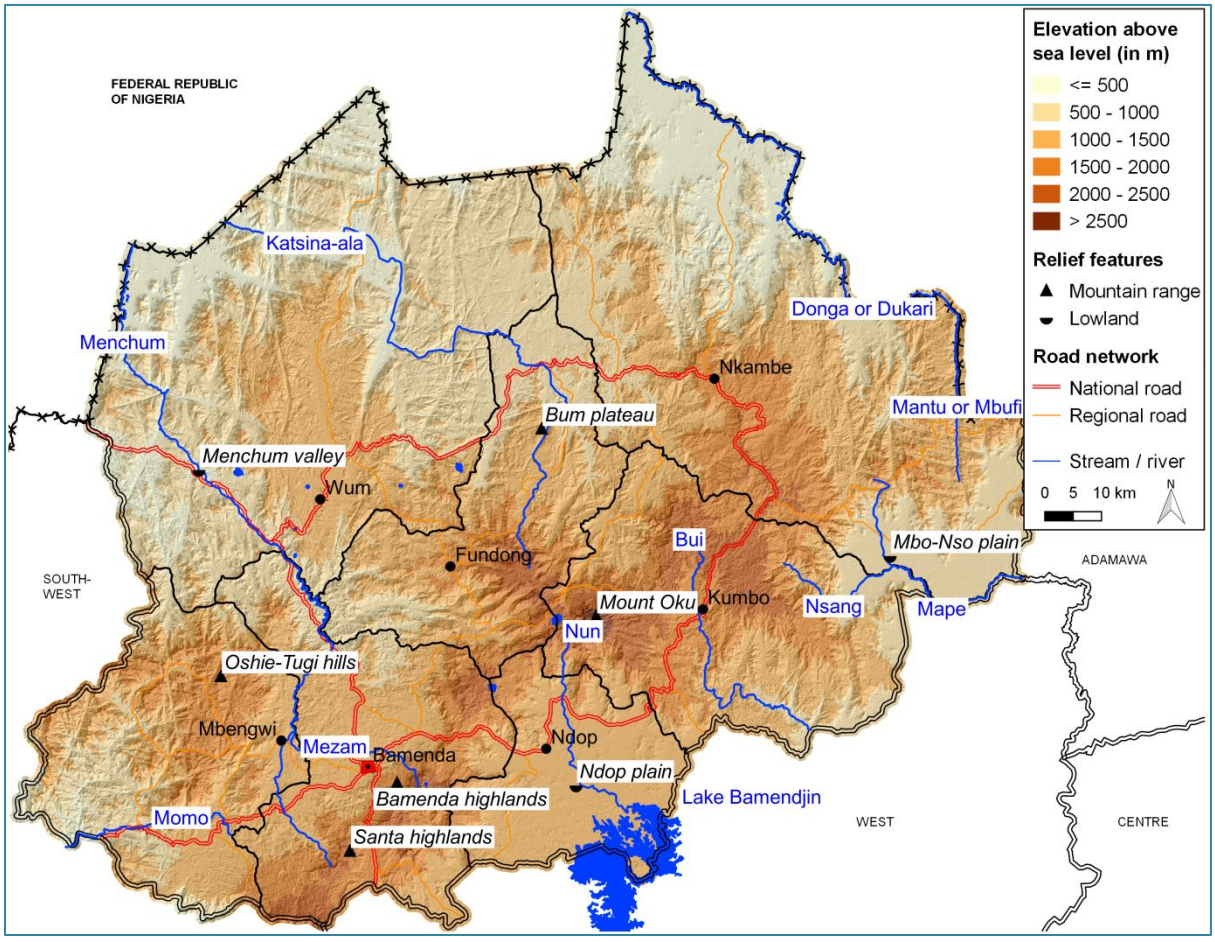
4.1. Abiotic Environment

4.1.1. Geology, geomorphology and soil

The North-West Region of Cameroon is known as the Western Highlands. Situated at an average altitude of 1,550 m (NIS, 2017, Statistical Yearbook 2015), it is dominated by a range of mountains, with the highest peak at Mt Oku (3,008 m) (Figure 6).

The relief, covered with grassy vegetation and some forest, offers a captivating view characterized by panoramic contrasts with plains surrounded by mountains with solid masses, deep valleys with streams, rivers, waterfalls and numerous crater lakes.

Figure 6: ***Detailed map of North-West Region with altitudes and the names of divisional headquarters, mountains, plains and rivers***



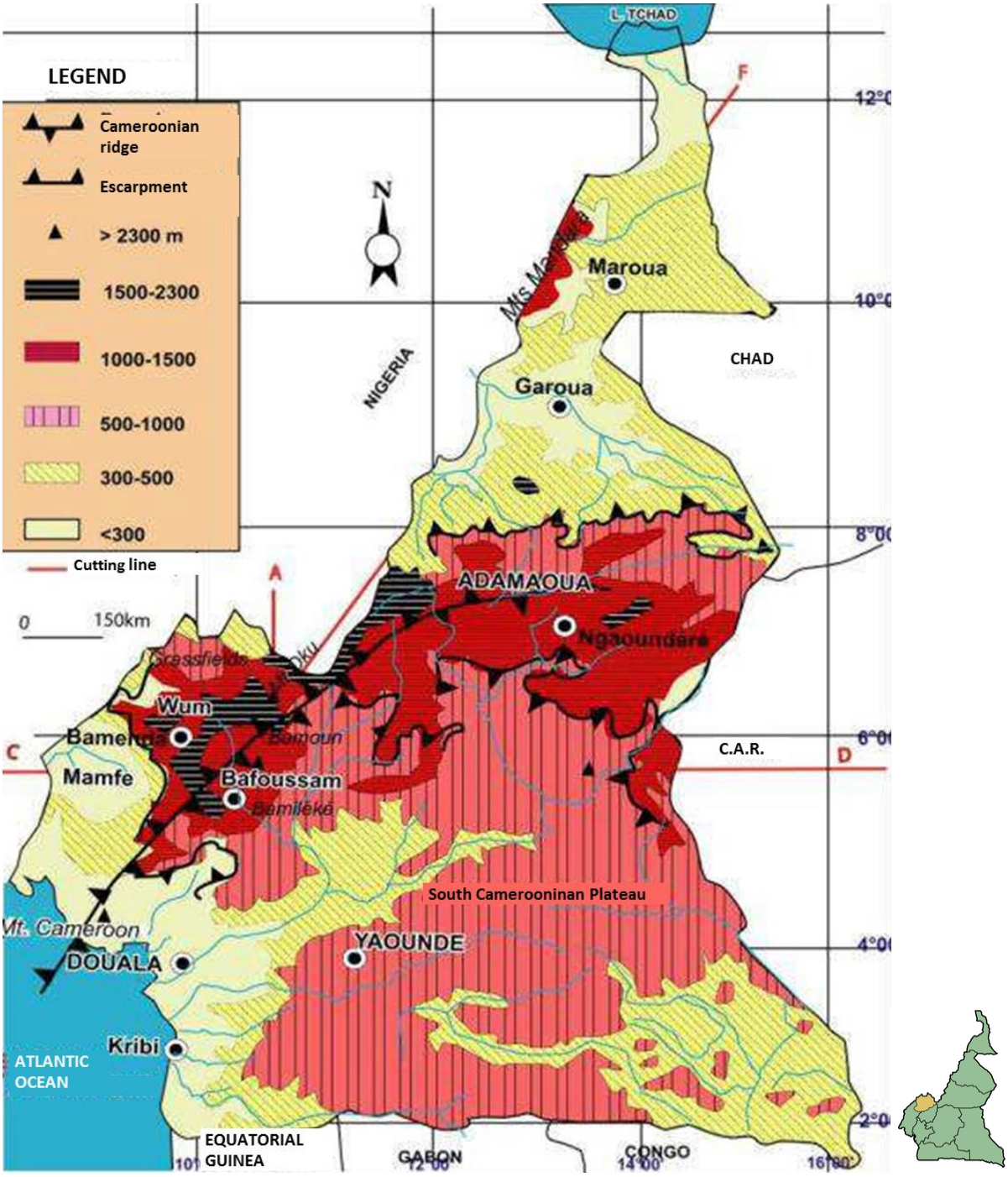
Data source: based on SRTM DEM, NIC data, and field survey IU/CPAC/geomer 2018

The mountains are situated along the so called Cameroonian Ridge (Figure 7). Geologically this is a tectonic fracture line, creating a lot of, mostly passed, volcanic activity, reaching from the Southwest (Fernando Po and Sao Tome islands in the Atlantic), via Mt Cameroon and the Mandara mountains in Adamawa, towards Lake Chad in the North of Cameroon. Nowadays on the Cameroonian territory only Mt Cameroon is still an active volcano.

The underlying bedrocks in the North-West Region are mostly granite rocks from the Pre-Cambrium, dating back from more than 500 million of years. The bed rocks are covered by either sedimentary

materials from the Cretaceous and Tertiary eras or by volcanic soils, thrown out in ancient eruptions. Later in the Quaternary era in some areas new sediments were deposited on older layers, like in the Mamfe depression (partly in the North-West - and in the South-West Region).

Figure 7: ***Location of North-West Region and the whole of Cameroon along the major geological fracture lines with altitudes from see level***



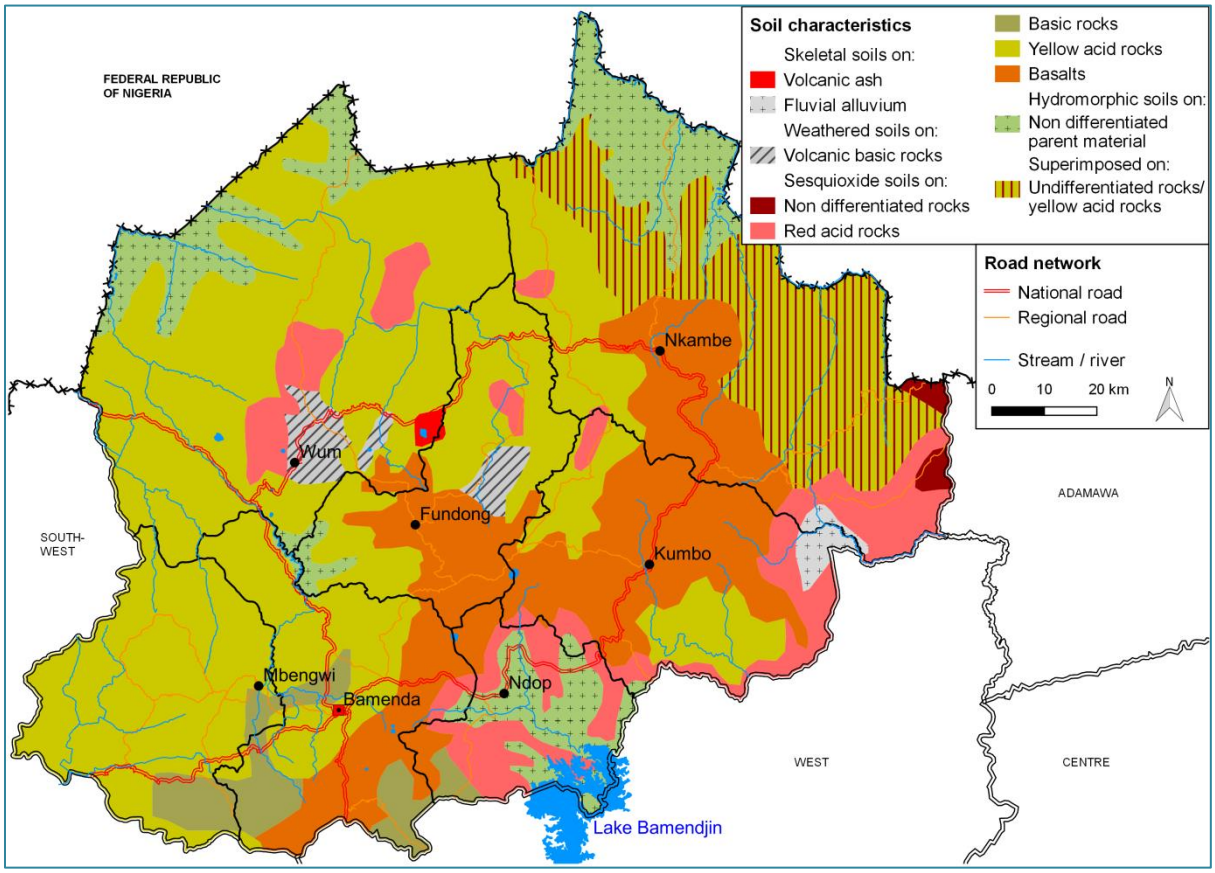
Source: NIS, 2016

The kind of parent rock, climate, the topography and the occurrence of plants and animals together determine the type of soil (Figure 8). The relatively wet and humid climate in the North-West Region favours weathering, organic deposition and leaching. A rich vegetation and wildlife deliver organic matter to the soil and protect the soil against erosion and solar radiation. Small animals and decaying organic

matter raise humus. Different soil horizons with more or less nutrients and varying possibilities for passage of air and water determine the soil fertility. Steep slopes hamper soil formation, but vegetation and especially time (millions of years) managed to create abundant new soil.

During the rainy season soluble components leach, while in the dry season the water with dissolved components, like iron and aluminium, comes to the (sub) surface again by capillary action in a precipitated form. Thus iron- and aluminium oxides accumulate either in the upper layer or on the surface of the so called lateritic brown or brownish-red soil. This type of soil is very well suited for cereals and groundnut cultivation. Some of the soils, originating from crystalline rocks such as granite, gneiss or sedimentary rocks, are red or red-brown and are called ferralitic soils. These are less fertile and take a longer period of farming and the addition of manure, than the black or brown soils in the more direct volcanic regions that result from basalt rocks. Alluvial soils in plains like in Ndop in the Ngo-Ketunjia Division and in Mbo-Nso (Bui Division) and Menchum valley (Menchum Division) sometimes consist of black clay and are also very fertile and suitable for cropping. Looking at the different soils in the entire region (Figure 8) you find a mosaic of different types depending on the type of bedrock and past volcanic and fluvial activities.

Figure 8: Soil types in the North-West Region, reflecting the geological origin and relief (Basalt)



Data source: based on NIC data

The North-West Region has a large surface of (very) steep slopes, where soils are easily washed away, especially at the end of the dry and the start of the rainy season on land that has already been cleared (and sometimes already planted with seeds) for agricultural purposes. The soils with a volcanic origin are especially susceptible for landslides, which usually can take place in case of a (temporarily or permanent) scarce and/or degraded cover.

On the (very) steep slopes farmers yet manage to plant and crop their corn, beans, Irish potatoes and other vegetables, creating ingenious patterns of ridges (furrows) that follow the topographic height and

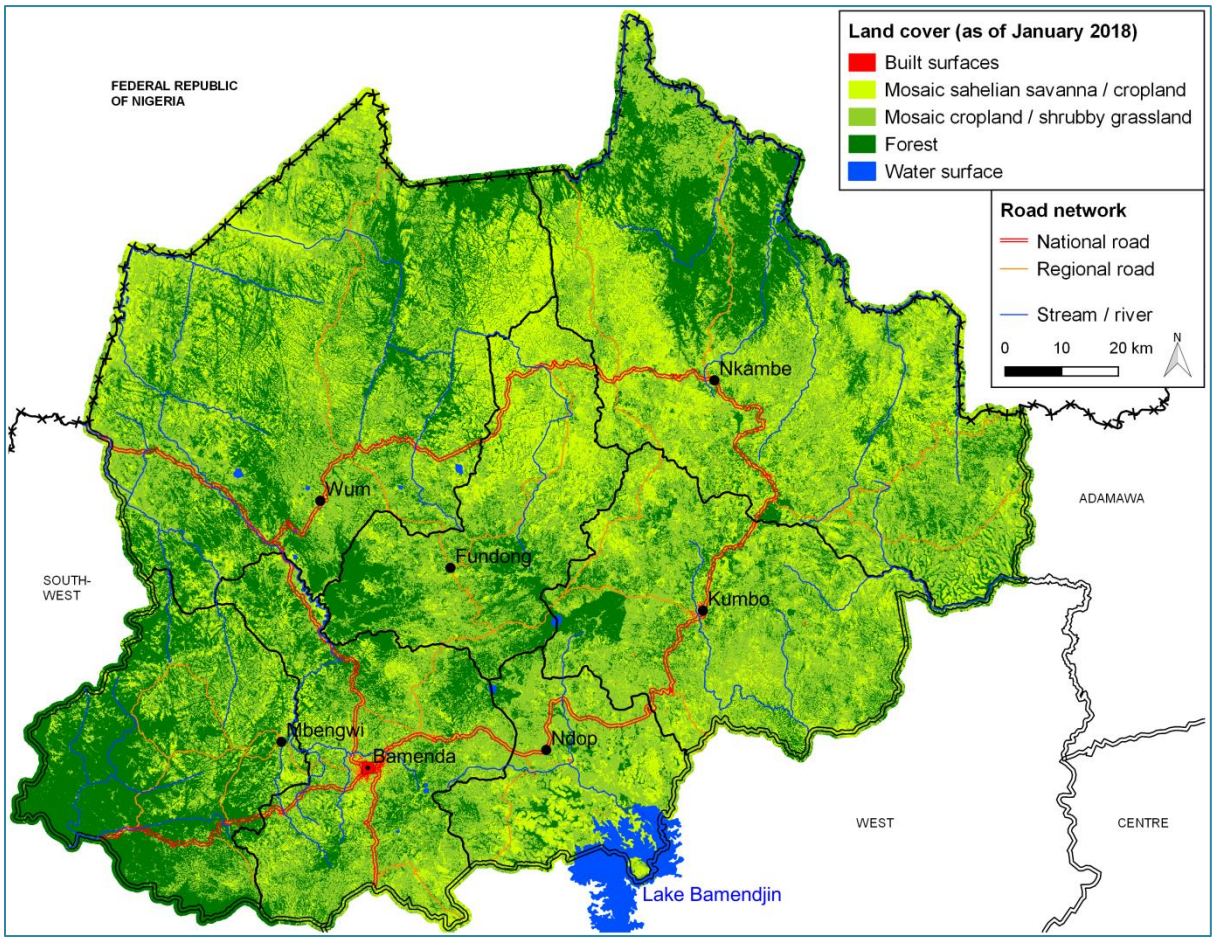
direct the right amount of rainwater, in the different stages of the rainy season, towards the seedlings or plants on the furrows. The access water follows a system of smaller and bigger gullies towards the river. The activities aim at combining maximum yields while prevent soil from being washed away.

Soil fertility is becoming a problem. Usually, at the end of the rainy season, cleared grass and remains of plants are arranged on furrows, covered with some soil and burned to form some manure. Formerly this “slash and burning” method was combined with shifting cultivation, where less fertile lands were left to nature for at least a few years. However, this practice is becoming rare. Loss of soil fertility is now often compensated with the application of fertilizers. Not all farmers can afford that. Moreover, being applied on steep slopes, the fertilizers are easily leached by the abundant precipitation and are also partly washed away, thus having a negative impact on the ecology of soils, streams and rivers.

4.1.2. Land cover

The surface of Cameroon is 475,442 km². According to a World Bank study (2007) 91,600 km² (19%) of the surface is used for agriculture, while 200,805 km² is forest and 173,060 km² is used for other purposes. Within agriculture 65% is arable farming land, but only 22% (12,000 km²) is pasture and grassland for livestock and 13% (10,000 km²) is used (suitable) for permanent cropping. A substantial part of the last two categories (pasture and cropping) is confined to the North-West Region.

Figure 9: Land cover types of the North-West Region in 2018

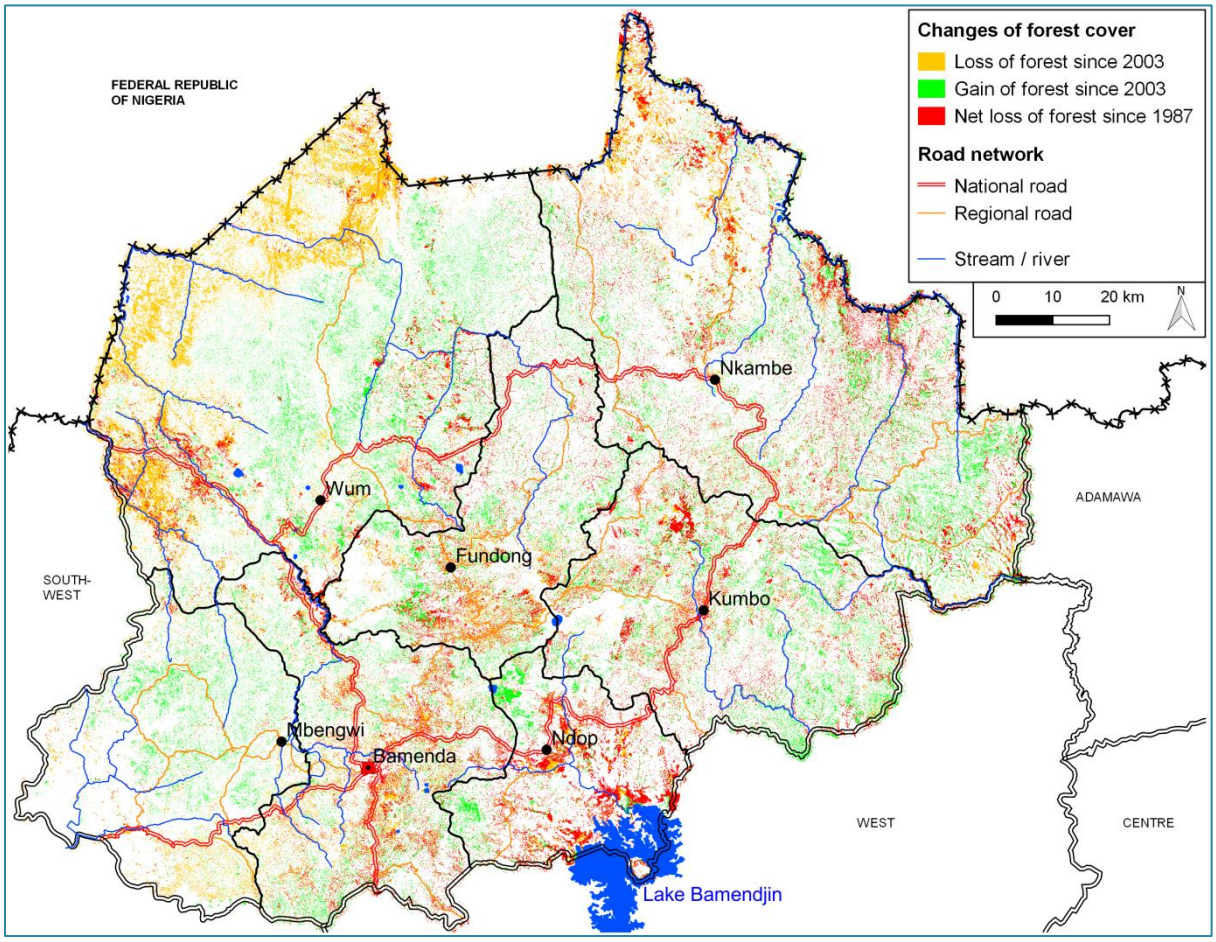


Data source: classified from a Landsat-8 image

Looking to Figure 9 one can see that nowadays a mosaic of either shrubby grassland with cropping or in the dryer areas a mosaic of Sahelian grassland with cropping, are the prevailing land use categories, while bigger remaining patches of forests are limited to the Northern-, the Central- and the South-West

Divisions of the region. Deforestation, increasing agriculture (cropping and livestock) and urbanisation have changed the land cover tremendously over a relatively short period of time in just a few decades. This is an ongoing trend. It is intensified by the growing demands of food, housing, and natural resources (like wood and water) of the growing population in the North-West Region. Figure 10 shows the change of land cover since 1987 (for further maps see volume III - cartographic atlas, section 2 - Environment).

Figure 10: Changes of land use in the North-West Region between 1987 and 2018



Data source: compared from a Landsat-8 and a Landsat-5 image

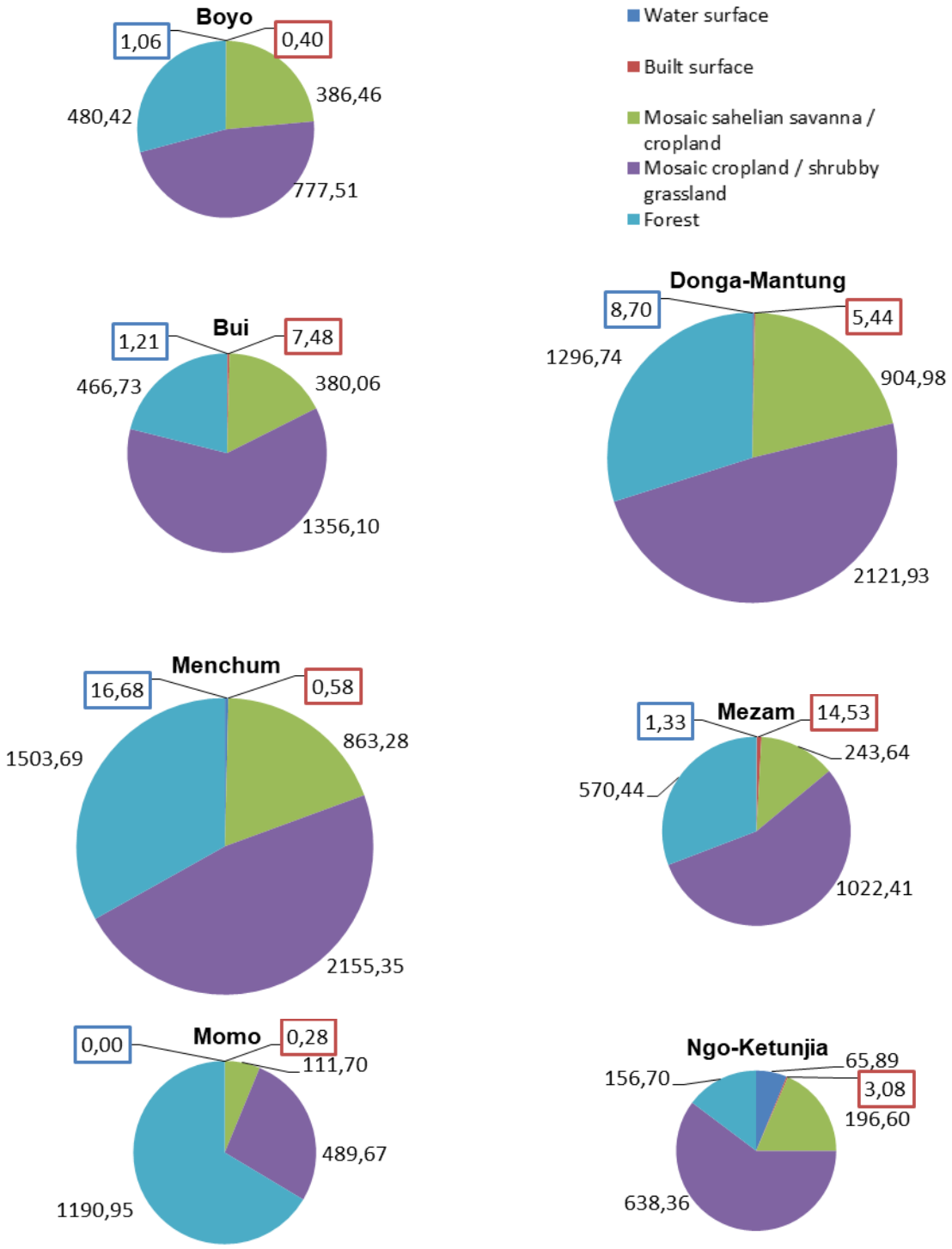
For land cover/ land use in the North-West Region it is evident that during the past decades there has been a serious degradation of land, due to a combination of population growth, building of houses and infrastructure, climate change and overexploitation of naturalness. Deforestation, intensifying agriculture on sometimes very steep slopes as well as overgrazing have depleted the soil, especially in the more densely populated divisions of Mezam, Ngo-Ketunjia (destruction of wetlands and swamps for rice production) and Bui Division. Attempts to reforest with indigenous species (like in Momo, Boyo and Bui) or put into place “climate smart sustainable agriculture”, that is not on steep slopes and without applying pesticides, artificial fertilizers or excessive manure, have not taken such a big pace that you could speak of serious compensation. Serious regeneration of already degraded areas will take generations. Therefore, prevention of degradation should have a high priority.

During the NW Field Survey, 2018 a 100% of the stakeholder/ respondents declared farming to be of the highest importance in their division. Grazing (54%) and urbanisation (44%) came second and third, while forestry (18%) and protected areas (2%) were only 6th and 8th in line.

The following figures present quantitative details of the distribution of the main categories of land cover per division as of January 2018. Two divisions stand out as being the most cultivated: Bui and Ngo-

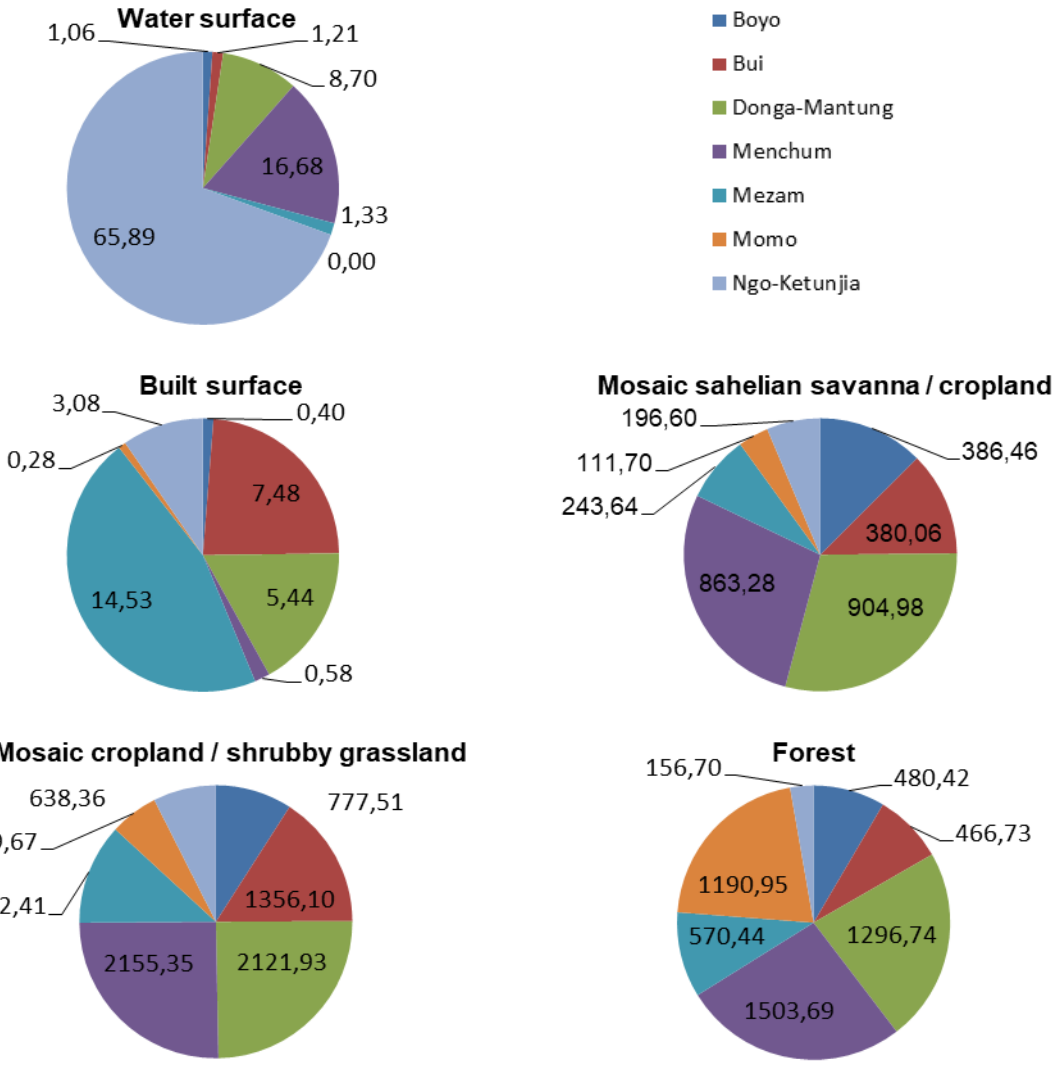
Ketunjia with 61.3% and 60.1% of their surfaces being a mosaic of cropland/grassland. The division of Menchum contains the largest share of cropland and forest due to its size, and Momo stands out as being the most forested division of the Region. As for Mezam, it contains almost half of the built surfaces of the Region.

Figure 11 a-f: Land cover types in km² in the Divisions



Data source: based on a classified Landsat-8 image of January 2018

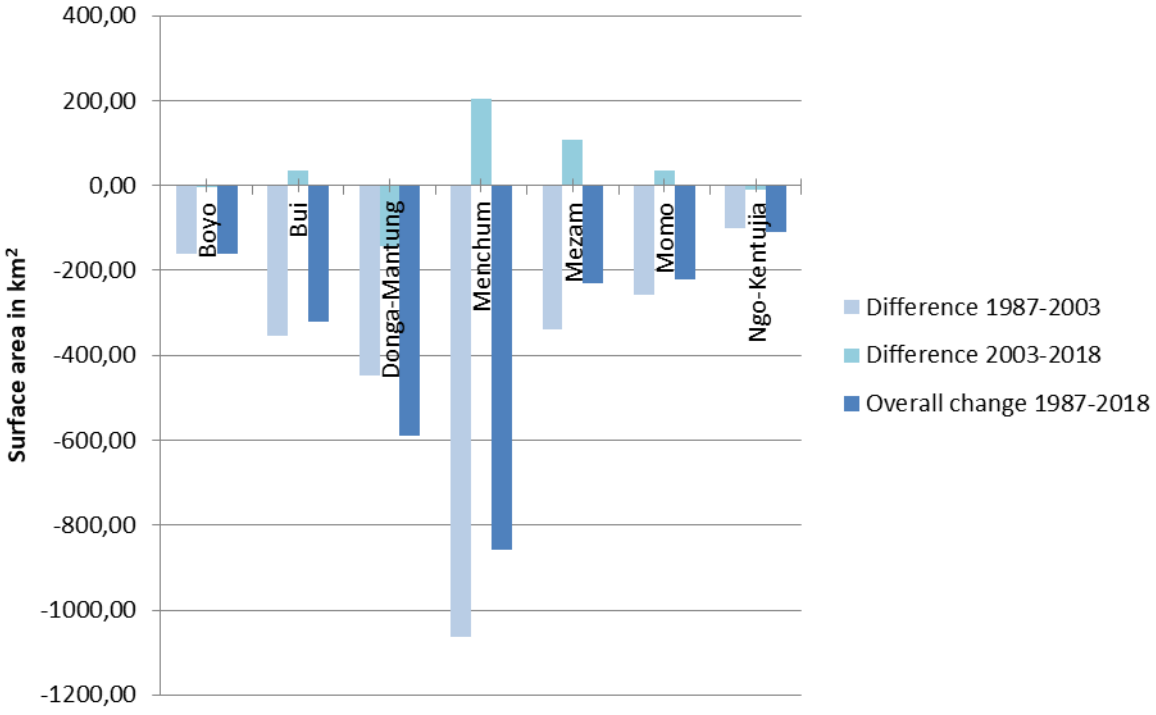
Figure 12 a-e: Distribution of land cover types in km² in the Divisions



Data source: based on a classified Landsat-8 image of January 2018

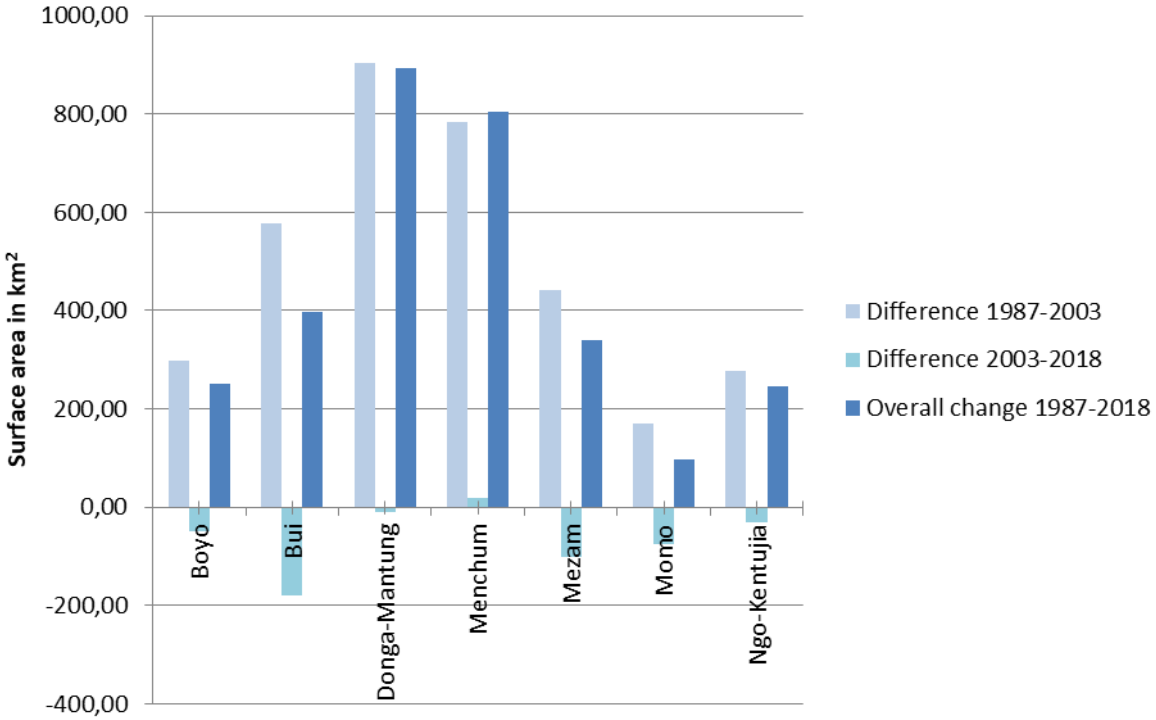
The following figures represent the evolution of the major land cover classes as defined above. It is possible to trace with it the evolution of deforestation per division. Two divisions stand out: Mezam division where sustained deforestation occurs since 1987, and Momo which has gained forest since that time. In all other divisions except Menchum, the most significant loss of forest occurred between 1987 and 2003 and they partially re-grew between 2003 and 2018. A possible explanation may be the rural exodus increasing the pressure on Mezam while relieving it in the rural divisions over the last decade. It should be noted though that for Ngo-Ketunjia, the development of Ndawara Tea Estate accounts for most of the observed increase in forest over the period 2003-2018 (the tea being erroneously classified as forest for 2018). Throughout the region, we see a decline of sahelian savanna, which is dry grassland, in favour of an intense growth of cropland and pasture areas.

Figure 13: Mosaic sahelian savanna / cropland Surface area



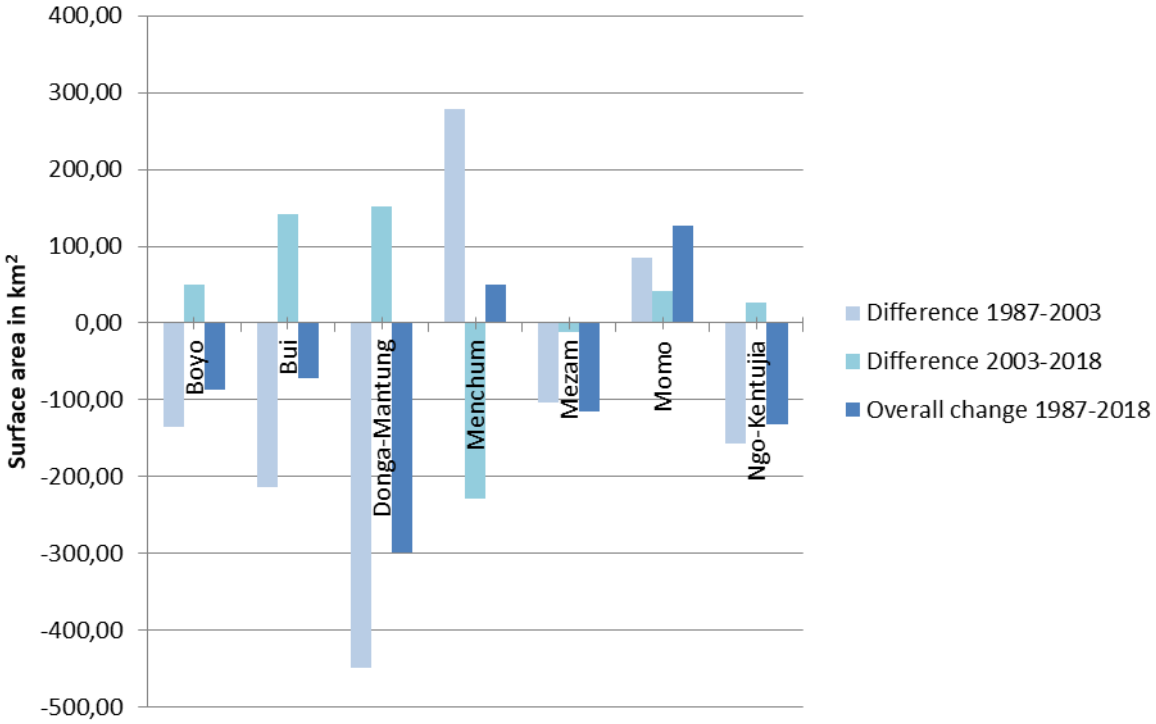
Source: own GIS analysis based on a classified Landsat 8 image of January 2018

Figure 14: Mosaic cropland / shrubby grassland Surface area



Source: own GIS analysis based on a classified Landsat 8 image of January 2018

Figure 15: Forest Surface area



Source: own GIS analysis based on a classified Landsat 8 image of January 2018

The land cover classes are derived from the classification of a Landsat 8 image and were defined as follows:

- Water surface: water body, lake or river, large enough to be detected with the resolution of the sensor
- Built surfaces: these surfaces do not contain vegetation and represent fully artificial, sealed-off surfaces. They correspond to the most densely built areas. Very few surface units fulfil these criteria as most built area still contain an important vegetation which makes them fall in the next categories
- Mosaic sahelian savanna / cropland: these surfaces correspond to very dry herbaceous vegetation. They represent the lowest concentration of green biomass, but may contain cultivated parcels.
- Mosaic cropland / shrubby grassland: these surfaces regroup the humid grassland and shrub landscapes as well as most of the cultivated or pasture areas. They represent a medium concentration of green biomass.
- Forest: these surfaces display the highest concentration of green biomass and correspond to the dense humid forests.

4.1.3. Water and hydrography

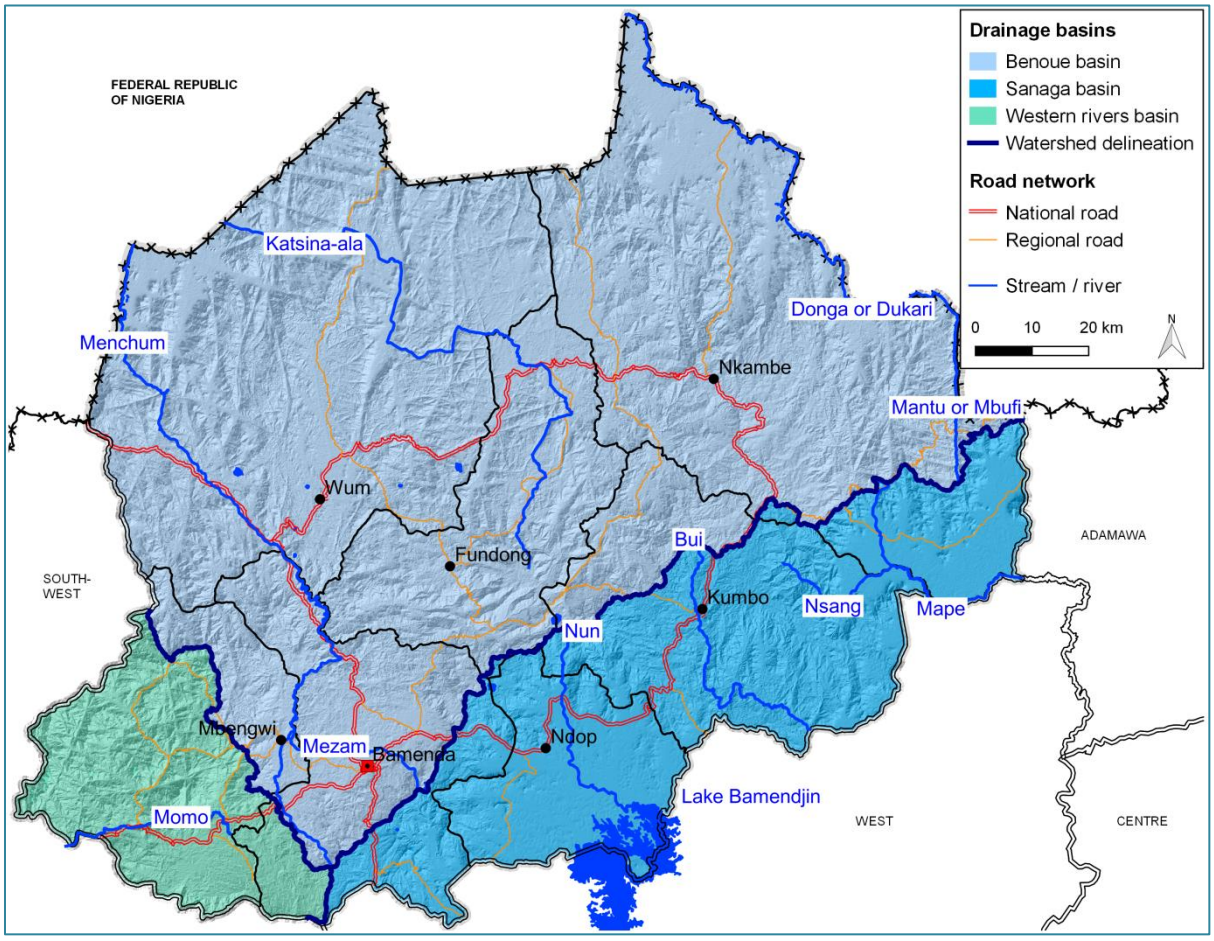
The relatively high amount of precipitation, the geomorphology and the soil structure cause a dense network of rivers all over Cameroon. Most of the rivers in the Western Highlands have rapids and falls. Only parts of the Katsina-Ala river in Menchum Division towards Nigeria are navigable. The rivers do

supply a lot of fish in towns like Babessi (Ngo-Ketunjia Division) and Mbo-Nso (Mbven Sub Division in Bui Division).

An important watershed between the Benoue and Sanaga drainage basins (for their location see Figure 16) is on the southern side of the Adamawa Plateau northeast of the North-West Region. There are smaller but important other watersheds in the Manenguba Mountains in the south of the North-West Region as well as in the Bambutus- and the Bamenda highlands (Figure 6).

The rivers flowing in the southwest direction in the North-West Region, mostly originate from the Adamawa Plateau and belong to the Atlantic (Mungo and Sanaga Hydrographic) Basin, flowing towards the Noun, Sanaga and the Wouri river, but some of the rivers like the Katsina-ala in Menchum are an effluent of the Niger and belong to the Niger Hydrographic basin (Figure 16).

Figure 16: Hydrographic basins of the North-West Region



Data source: calculated from SRTM elevation data

Table 5 contains a full overview of all major waterbodies (lakes, rivers, falls) in the North-West Region, including some remarks on the potentials, as depicted in a baseline study in 2006. In the North-West there are a lot of crater lakes, originated by volcanic activity like Lake Nyos, Oku, Awing, Wum and Befang, all surrounded by very steep slopes mostly covered by forest. They all have strong ecological, cultural and touristic significance.

Table 5: Overview of all major waterbodies in the North-West Region, including remarks on the potentials as envisaged in a baseline study conducted by the Ministry of Agriculture and Regional Development in 2006

Division	Name of water body	Locality	Potentials / Remarks
Mezam	River Mezam	Bamenda, Bafut, Bali Sub Divisions	Farming activities are being carried out along the banks of this river as it cuts through Mendankwe, Mankon, Bafut and eventually joins river Menchum
	Lake Bambili	Bambili	Touristic sites
	Lake Awing	Awing	Fishing
	River Matarzin	Santa	
Boyo	Chimney fall	Juaffet River	Could be used to generate electricity
	River Koini	Fundong / Njinikom	Riverbanks are wet / fertile hence could be used for farming
	River Mugheff	Fuanantin / Mbu-ene	
	Mbi crater lake	Mbi	Needs rehabilitation
	Mughem	Belo / Njinikom	Two falls
	River Kimbi	Fonfuka	Do not have bridges; many people get drown in them
	Mungong River	Mungong	
	River Njimga	Ndangsi	
	River Nguma	Mbamlu	
	River Sajou	Ngonakimbi	
Bui	River Bui	Kumbo	Overflood its banks in rainy season
	Lake Oku	Oku	Traditional site for sacrifices, high touristic potential though not yet developed, no access road especially in rainy season
Donga Mantung	River Donga	Ako	Irrigation in farming, potentials for minerals, fishing and sand exploitation for the entire Subdivision
	River Assam		
	River Akon		
	River Mbuwa		
	River Arbong		
Menchum	Lake Wum	Wum	Electrical energy can be generated from Menchum fall, as well as eco-tourism or irrigation
	Lake Illum	Wum	
	Lake Oshien	Agulli	
	Lake Atwe	Atwe	
	Menchum fall	Bangwe	
	River Menchum	Agulli	
	River Kimbi	Sobum / Nyos	
	Lake Nyos	Nyos	
	River Katsina Ala	Nsei / Nkep	
	Lake Nyamashi	Befang	
	River Bakere-Baworo	Baworo	
	Lake Benakuma	Benakuma	
Momo	Abbi Fall	Mile 18 Bome village	Touristic site, could generate electricity
	River Momo	Gwofon	
	Echibit Waterfall	Echitbit Village	Sustainable for electric power generation
	Feg / Unep	Feg / Unep	Fast flowing river
Ngoketunjia	Bamenjing dam	Bambalang	Fishing, power generation
	Wetgwaah	Balikumbat	Flowing river

Source: NWDA, SIRDEP, 2006

The Bamendjim Dam in Ngo-Ketunjia and the West Region was constructed in 1974 and created the big artificial Bamendjin Lake, guaranteeing abundant water for the southern part of the Noun and for the downstream Sanaga to ensure electricity supply at the hydropower dam in Edea in the dry season. The water was also used to convert the Ndop plain and make it suitable for rice production. At Menchum falls there used to be a hydro electrical power station too, that was closed down by the government in

the 70-ies. At the moment a hydropower station is under construction in the Katsina Waterfalls in Menchum Division. The potentials for hydropower (see also Figure 16) are extensively described in chapter 7 (Technical Infrastructure).

Most of the rivers belong to the tropical equatorial zones. Normally they have a regular flow, even in the dry season as they grow considerably in volume in the rainy season. Sometimes during heavy rains like the Bui in Kumbo Sub division, Bui Division, these rivers can flood the banks and cause damage to human assets.

However, during the past decades it is observed that the volumes of rivers and streams are going down, especially in the dry season (Figure 17). Bigger rivers may still maintain a substantial flow in the dry season, but the smaller ones are observed to be much smaller or even dry up totally, causing problems for humans, cattle and crops. This phenomenon is also connected to deforestation, intensifying land use practices, urbanisation and/or more droughts through climate change. An example is the river Mezam in Nkwen/ Bamenda that is nowadays just a small stream, while the accompanying swampy wetlands with high natural values, have almost completely disappeared. Chapter 6 on urbanisation gives more information on the threats to wetlands of international importance in urban areas.

Figure 17: Pictures from a river and a waterfall in the North-West Region of Cameroon

Source: NWDA, SIRDEP, 2006

Places with water that are of a particular interest to socio-economic development and also to the Millenium Development Goals (MDGs) are watersheds and water catchment areas. They serve most of the population with potable (drinking) water. Downpipes flow to consumers from there. Water authorities from a local or state level are responsible for the protection of the water catchments against drought and pollution and for the maintenance of pumps, pipes and other infrastructure. Chapter 7 on technical Infrastructure explains the technicalities as well as the governance. As for this chapter on environment it is important to identify the catchments and to evaluate their status in terms of quantity and quality. Table 6 from a baseline regional development study (2006), lists all major water catchment areas, including surface, amount of people served, the protection status and some specific remarks on especially threats and possible solutions in dealing with these threats and improving the protection. The absence of the actualization of these data (2006-2018) is considered to be one of the most important gaps of knowledge in the Diagnostic Phase. During the prospective phase this actualisation must be elaborated in close contact to local authorities as well as to other stakeholders. It should be determined if these catchments are still functional and can cope with the increased population. Also new catchments and other sources of drinkwater supply must be listed and analysed on actual threats and challenges in order to improve and safeguard access to clean and reliable drinkable water (see also Ch 7 on Technical Infrastructure).

Table 6: Major watersheds and catchments in the North-West Region in 2006: surface, estimated number of people served, state of protection and remarks on threats/ solutions

Division	Watershed/ catchment	Surface (ha)	Population served	Protected?	Remarks
Boyo	Wainchai water catchment	2	2,000		Uncontroled farming and grazing activities
	wombong water catchment	2	1,000		Burning vegetation/ unsustainable farming
	Belo-Anyanjua watershed	20	12,000	No	Water is tapped for tea irrigation
	Ijim Mountain forest		38,000		
	Mbi crater		30,000		
	Konene	2	15,623		
Bui	Kumbo watershed	200	28,923	No	Highly degraded / ecologically fragile zone.
	Tobin watershed	5	3,552	Yes	Catchment well protected but in dry season still rely on KWA
	Njingali water catchment	5	6,000	Yes	The catchment is maintained
	Melim water catchment	3	2,626		
	Berlem water catchment	5	1,000		
	Tadu water catchment	5	2,000		Serves Shishong hospital only
	Ndenshwai water catchment	2	800	Yes	
	Noi water catchment	9	1,000		
	Mbiame watershed	20	7,000	No	Farming, grazing and planting Eucalyptus
Donga Mantung	Kopfu watershed		20,000		Farming along the catchment/sheds
	Lower Mbot	2	1,000		
	Sehn-Wowo	5	3,500		Planting of Cypress trees along catchment
	Ntumbaw	10	2,500	No	
	Binka	10	6,000		
	Misaje-Ndumbu	20	1,000		
	Mbu-Warr	20	3,000		
	Nkambe	5	15,000		
Menchum	Kesu, Ukpwa	18	12,600	No	Domestic waste disposal and pollution problems
	Befang Demo farm	20	2,000		
Mezam	Tubah watershed	200	12,000		These areas are protected but still risk degradation because of human intervention
	Bamendakwe water catchment	3	1,500	No	
	Bambili watershed	3	6,000		
	Kedjom-keku water catchment	3	5,000		
	Chuku water catchment	2	6,000		
	Sabga water catchment	2	1,000		
	Laide water catchment	1	100		
	Ntamandam	20	3,500		
	Kapcho water catchment	1	2,000		
	Gadiwalla water catchment	2	2,500		
	Pinyin	8	10,000		
	Buchi water catchment	1	1,000		
	Tinkwen water catchment	3	20,000		
	Ndzah water catchment	3	3,000		
	Chomba water catchment	7	6,000		
	Guzang	115	10,000		Farming activities around theses areas
	Nyen	3	2,500		
Momo	Njiniba	2	2,500	No	Grazing
	Kai, Njah-Etu, Zang Tabi	15	18,000		
Ngoketunjia	Babessi	10	4,000		Needs reforestation
	Nsei Bamessing	17	8,000	No	Springs are drying up
	Bamunka	3	5,000		
	Balikumbat	10	4,000		

Source: NWDA, SIRDEP, 2006

The North-West Region has 5 hydrometric stations, 3 meteorological stations and 11 rain gauging stations. Most of these stations are down and need rehabilitation.

Table 7: Hydro-meteorological stations in the North-West Region

Nr.	Code	Name / location	Basin	Type	Latitude	Longitude
1	1050005700	BAMBUI	Niger	Meteorological (agro)	6,0225	10,2228
2	1050005600	BAMENDA	Niger	Meteorological	5,9369	10,1619
3	1053204003	AKWEN	Cross River	Hydrometrical	5,7667	9,0667
4	1052399121	BABANKI	Sanaga	Hydrometrical	5,9742	10,3456
5	1052305005	BAMENDJIN RE-TENUE S 10	Sanaga	Hydrometrical	5,6834	10,51
6	1051706503	MBENGUI	Niger	Hydrometrical	5,991828	10,04446
7	1051707003	MBENGUI	Niger	Hydrometrical	6,001652	10,017187
8	1050025200	KOUNDJA (ME-TEO)	Sanaga	Meteorological	5,6353	10,7481
9	1050127300	BABESSI (BAMESSI)	Sanaga	Precipitation gauging	6,0347	10,5875
10	1050127500	BABUNGO	Sanaga	Precipitation gauging	6,0653	10,4486
11	1050129400	BALIKUMBAT	Sanaga	Precipitation gauging	5,8931	10,3597
12	1050130000	BAMUNKA	Sanaga	Precipitation gauging	5,9736	10,4625
13	1050005500	BANBALANG	Sanaga	Precipitation gauging	5,8931	10,5417
14	1050007100	BANSO BAPTIST HOSPITAL	Sanaga	Precipitation gauging	6,1833	10,6833
15	1050381000	FUNDONG	Niger	Precipitation gauging	6,2792	10,2847
16	1050041400	NDOP N.A. SCHOOL	Sanaga	Precipitation gauging	5,9903	10,4397
17	1050953000	WIDIKUM	Niger	Precipitation gauging	5,8667	9,7833
18	1050054900	WUM	Niger	Precipitation gauging	6,3986	10,075
19	1050044700	NKAMBE	Niger	Precipitation gauging	6,5889	10,6708

Major waterfalls are located in the following areas:

Menchum Division:

- Menchum waterfall and Karsina-alah

Momo Division:

- Abih waterfall

Donga/Mantung:

- Adere waterfall
- Bongom waterfall

The waterfalls in the region are not used until today for any purpose of energy production or in another way. If they could contribute to improve the energy supply would need further exploration.

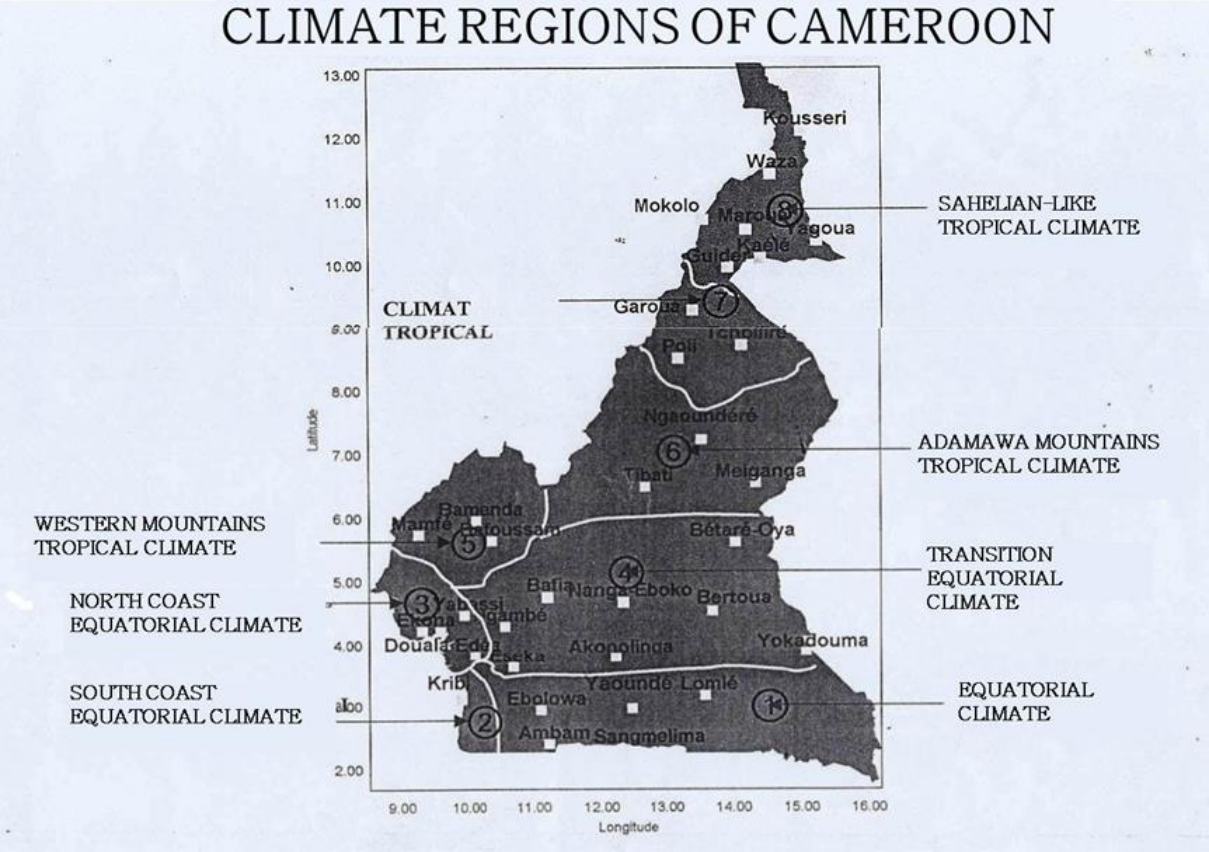
4.1.4. Climate and meteorology

Climate in Cameroon is in the intertropical zone but it is not uniform. In the south of the country temperatures and air humidity are relatively high and constant throughout the year, but as one moves north the temperatures go down in the mountainous areas and rise again in the North of the country while the humidity decreases. In the Western Highlands of the North-West Region the topography and especially the altitude exercise much influence on the local climate. It is much cooler in the higher areas and the daily temperature range can be much higher too, with relatively cold nights and warm days with a lot of insolation. The amount of precipitation is highest on the coast with tropical forests and decreases going north (Figure 19).

The Intertropical Convergence Zone (ITCZ) has the nature of a shifting front between two air masses, one on the Atlantic south of Cameroon and one coming from the Azores through the Sahara. The prevailing Trade Winds caused by the convergence of high pressure areas in low pressure centres, determines the climate in that period. When the Harmattan, the North East Trade Wind dominates it provokes

high temperatures and drought, while the Monsoon coming from the south carries a lot of precipitation and creates the rainy period where the Monsoon dominates over the Harmattan. As a result, the climate in the North-West Region is very particular. It is characterized as the “Mountain Cameroon type” of climate with moderate relatively pleasant temperatures attracting human activities. However, going north the climate gradually turns into the harsher tropical dry Sudan climate with more drought and higher temperatures (Figure 18).

Figure 18: Climate regions in Cameroon

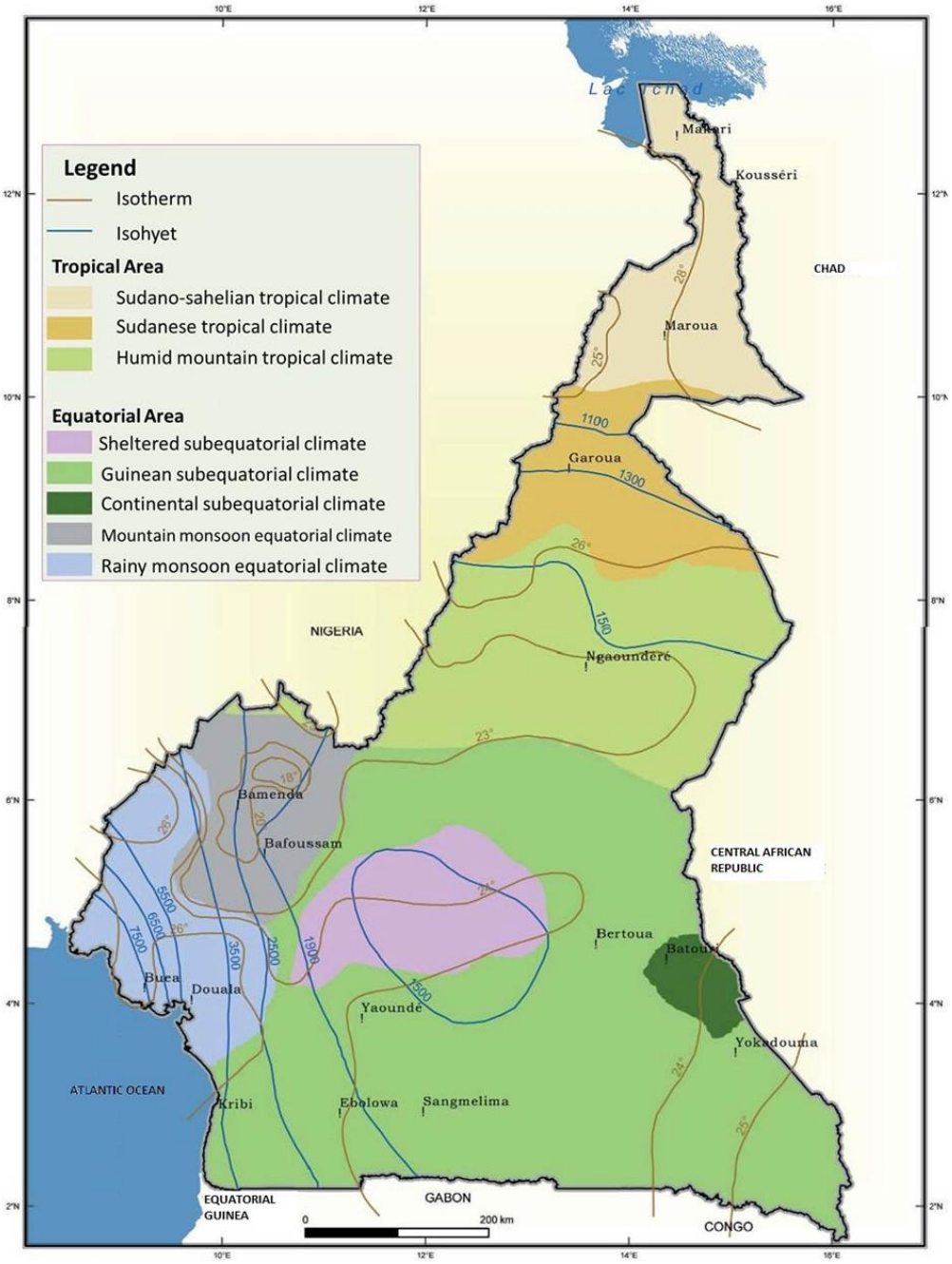


Source: NIS, 2016

In the South- and Central Region of Cameroon there are four climate seasons, but in the North-West Region there are only two. It rains a lot from about mid-March till mid-November. After that the dry season follows, creating more and more dust instead of the mud that characterizes the rainy season.

The moderate climate of the North-West Region is relatively fresh with temperatures that oscillate around 22°C (NIS, 2017. Statistical Yearbook 2015). From Table 8 it is clear that there are big differences between average maximum and minimum temperatures in the different divisions of the region. The altitude seems to be a determining factor (Figure 19). Mbengwi has very low average minimum temperatures while the maximum average temperature for Bamunka (Ngo-Ketunjia Division), Nkambe (Donga-Mantung) and Kumbo (Bui Division) are relatively high. In the period 2012-2015 the average maximum temperatures in both Mbengwi and Bamenda Up Station were relatively low.

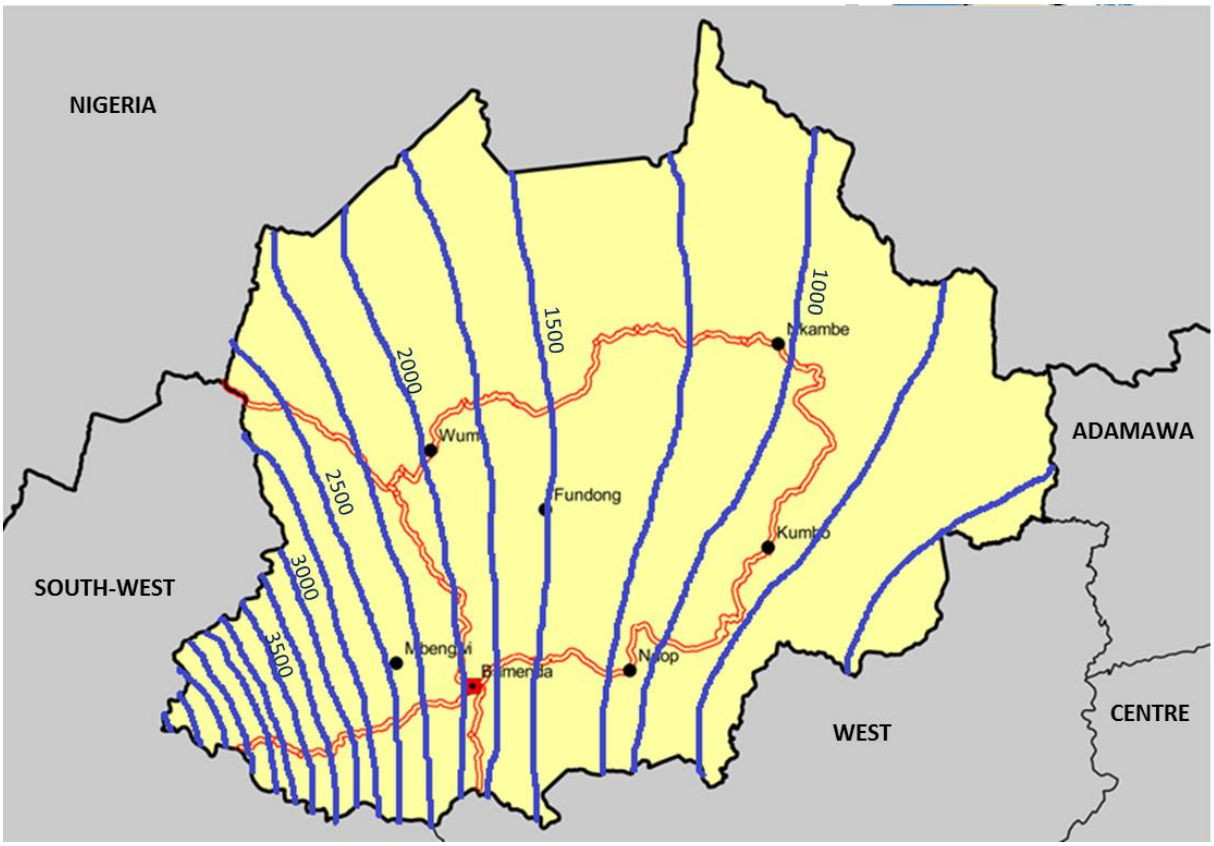
Figure 19: Isotherms (temperature) and isohyets (precipitation) in the different climatic zones of Cameroon



Source: NIS, 2016

Precipitation decreases in Cameroon going from Southwest to Northeast (Figure 19 and Figure 20) and the same applies to the North-West Region. Nkambe has less precipitation than Bali. Besides, highland areas receive more rainfall than areas at a lower altitude. Bamenda Up station has more rain than Bamenda (Bafut) airport (Table 8).

Figure 20: ***More detailed isohyets (connecting places with comparable precipitation) within the North-West Region of Cameroon***



Source: NIS, 2016

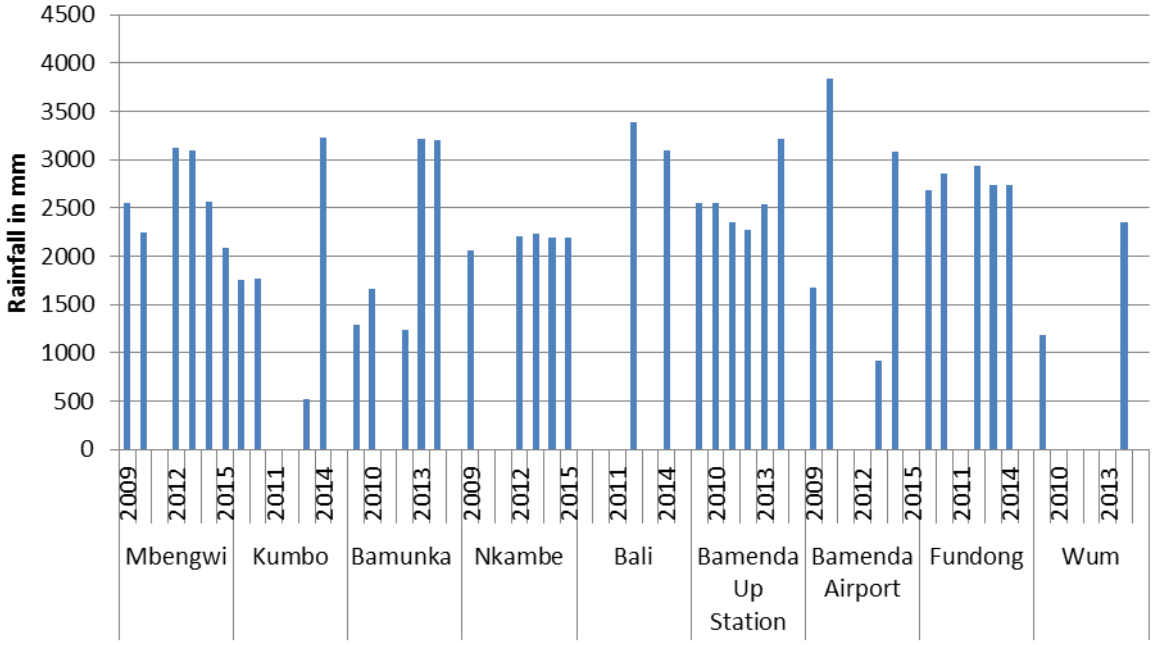
Table 8: ***Data on average temperatures in degree Celsius (°C) in some localities of the North-West Region during the cropping season in the period 2009-2015***

Locality	Data	2009	2010	2011	2012	2013	2014	2015
Mbengwi	Average maximum T°	33.7	31.5	-	25.5	27.1	24.1	27.1
	Average minimum T°	11.3	10.8	-	11.4	11.8	10.2	10.1
Kumbo	Average maximum T°	33.3	33.4	-	-	33.9	-	-
	Average minimum T°	17.1	17	-	-	17.2	-	-
Bamunka	Average maximum T°	42.4	43.3	-	33.3	42.3	-	-
	Average minimum T°	17.5	17.6	-	20.9	-	-	-
Nkambe	Average maximum T°	35	33.9	-	34.3	34.8	35.3	35.3
	Average minimum T°	14.3	-	-	19.5	17.1	16.4	17.4
Bamenda Up-Station	Average maximum T°	-	-	-	24.8	24.2	27.9	-
	Average minimum T°	-	-	-	17.9	16	15.6	-
Bamenda Airport	Average maximum T°	27.8	-	-	43.1	27.9	-	-
	Average minimum T°	15.5	-	-	-	15.7	-	-

Source: MINADER/Department of Agri-Surveys and Statistics/AGRI-STAT N°015 and 016/Regional Service

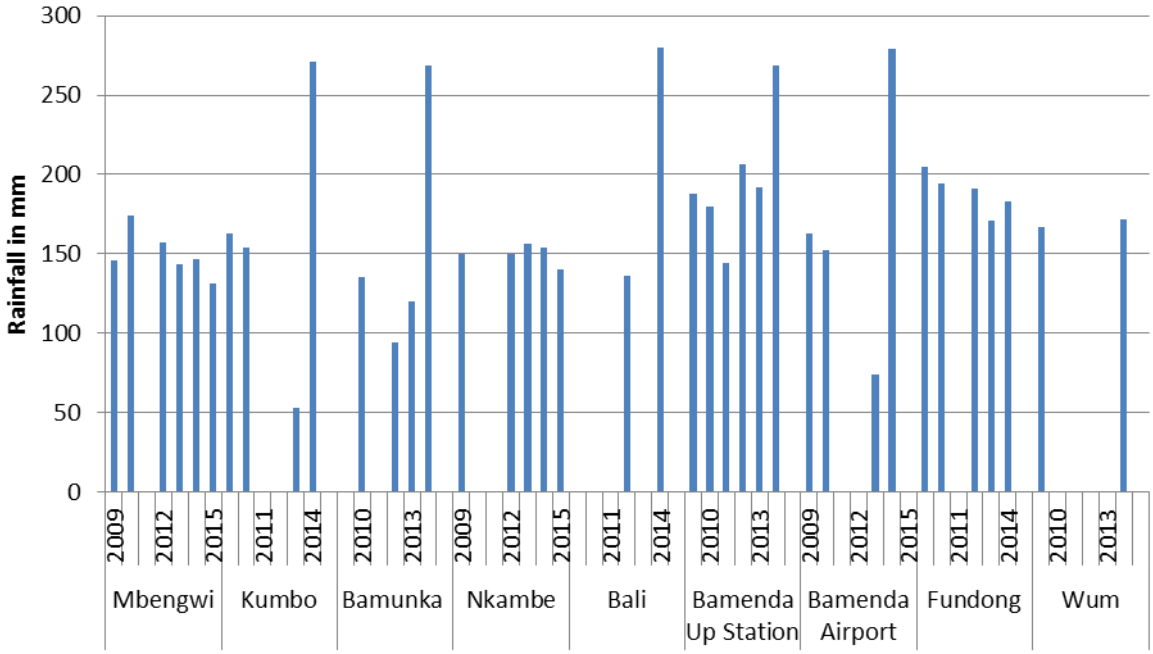
Douala on the Cameroonian coast has an average precipitation of more than four meters (4,000 mm) while Bamenda Up station has 3,200 mm, Bamenda town 2,500 mm and Kumbo 1,800 mm (Aaron Neba, 1999. Modern Geography of the Republic of Cameroon). On a local scale, the exposition of the slopes also determines the amount of precipitation. Slopes that are exposed to the south get relatively more precipitation, while the northern slopes have less rainfall (and less sunshine) and thus they also have differing possibilities for farming.

Figure 21: ***Heights (in mm) of rain in some localities of the North-West Region during the agricultural campaigns of 2009 to 2015***



Source: NIS, 2017

Figure 22: ***Number of days of rain in some localities of the North-West Region during the agricultural campaigns of 2009 to 2015***

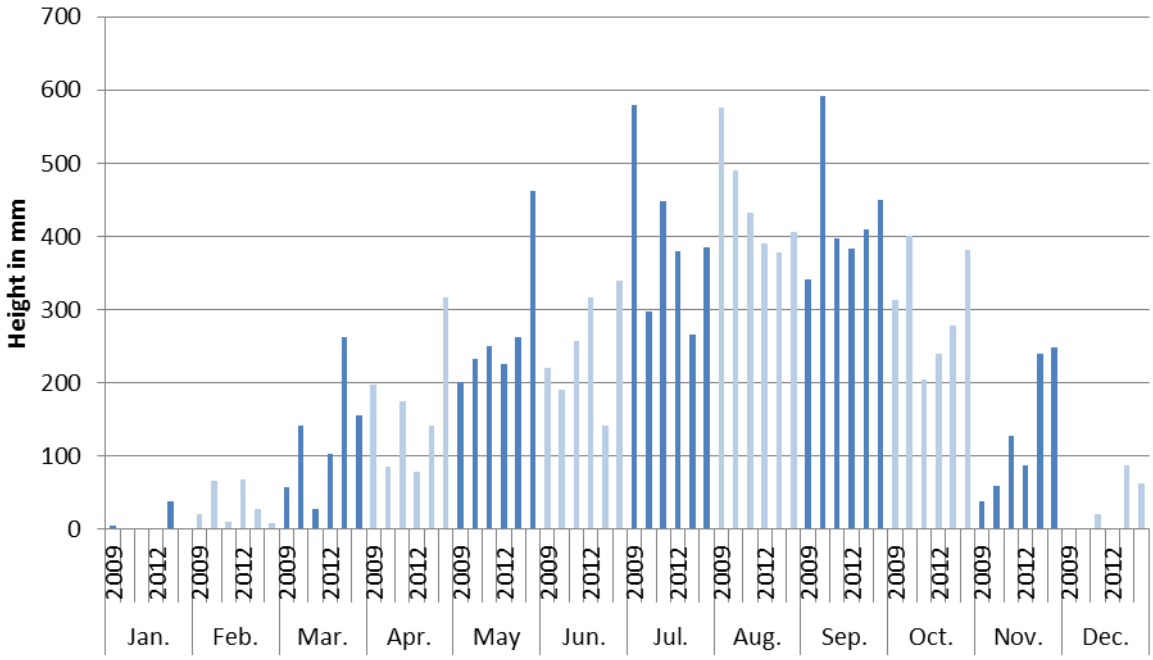


Source: NIS, 2017

Looking at the information in Figure 21 and Figure 22 the variability of the amount of precipitation as well as the number of rainy days is striking. Again, height and exposition seem important factors that cause more rain. However, there are exceptions, like in 2010 when Bamenda Airport got much more rainfall than Bamenda Upstation. Also, the variability of the amounts between years is huge. In some locations like Bamunka, Bamenda Airport and Wum the variation can be 100% or more. Nkambe, Bali

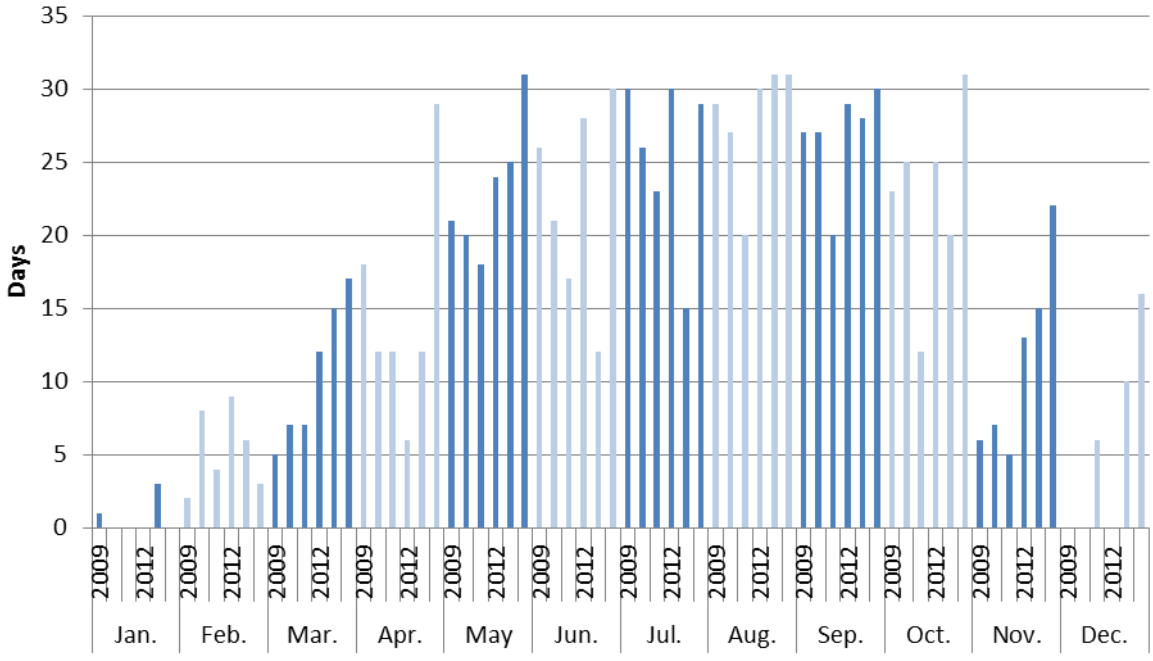
and Fundong seem to get a steadier amount. Kumbo, Mbengwi and Bamenda Upstation show an intermediate variability. The year 2014 was extremely wet. Bali in Mezam Division gets most rain (> 3,000 mm), followed by Fundong in Boyo and Mbengwi in Momo Division. Wum in Menchum Division and Kumbo in Bui Division get the least amount of rainfall (1,700-1,800 mm), while the other places in Mezam, Donga-Mantung, and NgoKetunjia Division are intermediate. In Bamenda, Bali, Kumbo and Bamunka it rained 269-280 days, leaving the number of days without rain at only 85-96.

Figure 23: Monthly amount of rainfall (mm) in Bamenda Up Station from 2009 to 2014



Source: NIS, 2017

Figure 24: Monthly number of rainy days in Bamenda Up Station from 2009 to 2014



Source: NIS, 2017

From Figure 23 and Figure 24 it is also clear that the year 2014 was exceptionally wet. In that year January was the only month without any rainy day in Bamenda Up station. Besides during the period of 1st April until 1st November 2014 there were only 4 rainless days.

It also seems clear from the table (added with own observations in the years 2006-2008 and 2015-2018) that the general pattern with a rainy season from 15th of March until 15th of November is shifting. From the data in this table it seems that the rains start earlier and prolong for a longer period. The number of rainy days in December in Up station of 10 and 16 in 2013 and 2014 respectively are very high compared with only 6 days in 2011 and none at all in 2005-2008 (consultant's observation), 2009, 2010 and 2012. For March the number of rainy days seems also rising, although in some years like 2012 and 2017 (consultant's observation) April was extremely dry.

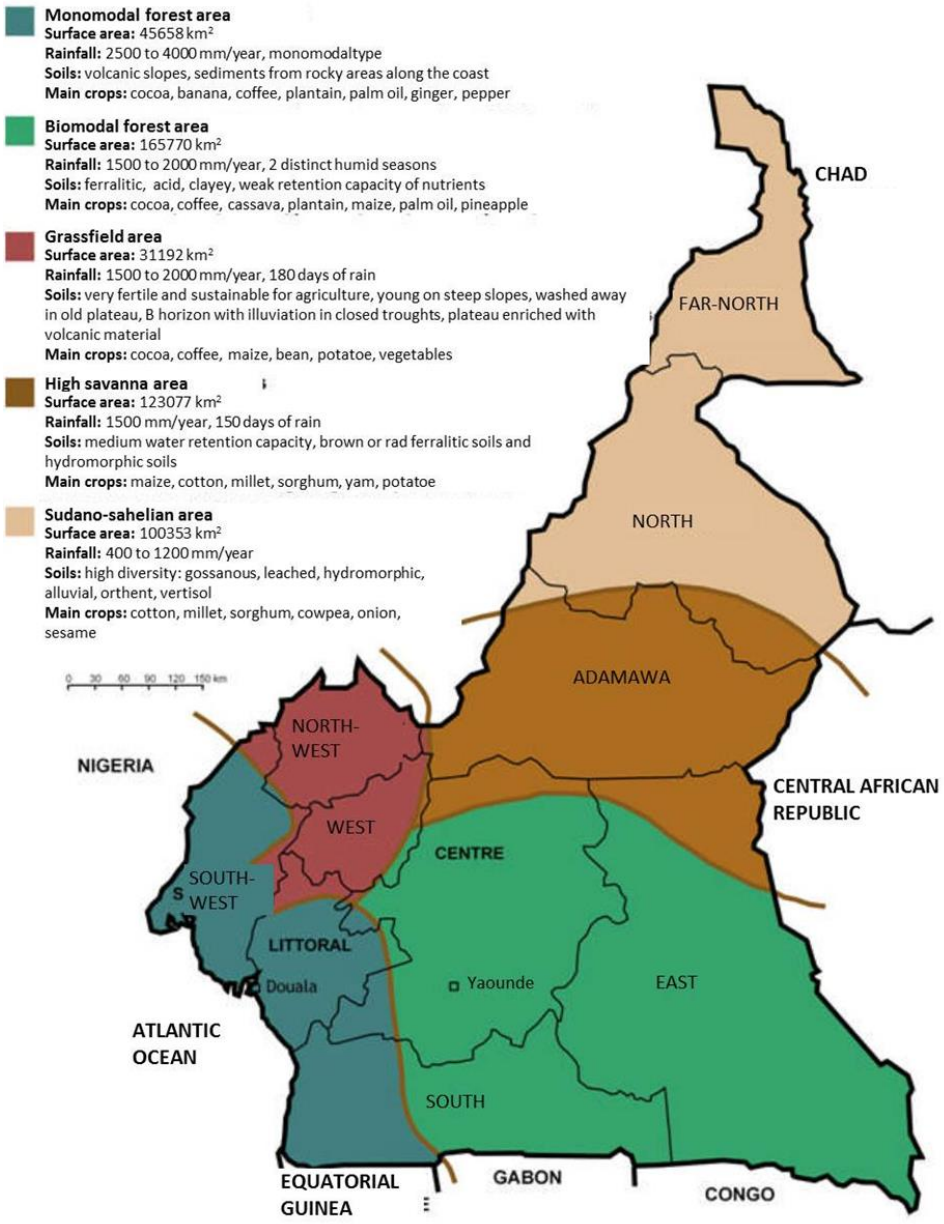
Of course, the amounts of precipitation influence the possibilities for cropping as well as grazing practices. These can also be affected by heavy rainfall occurrences that seem to become more frequent especially at the start and the end of the rainy season due to climate change. In subparagraph 4.3.2 of this chapter the results of an extensive study are presented on the impacts of climate variability on agriculture.

4.1.5. Quality of soil, water and air

Land degradation

The environment in the North-West Region is determined by physical characteristics, geographical position, climate change (vulnerability) and impacts of land use. In the previous paragraphs of this chapter we have seen that, due to the geology, the geomorphology, the soil and the moderate climate, the North-West Region is the most fertile region, especially in the rural areas one of the most densely populated areas of the country.

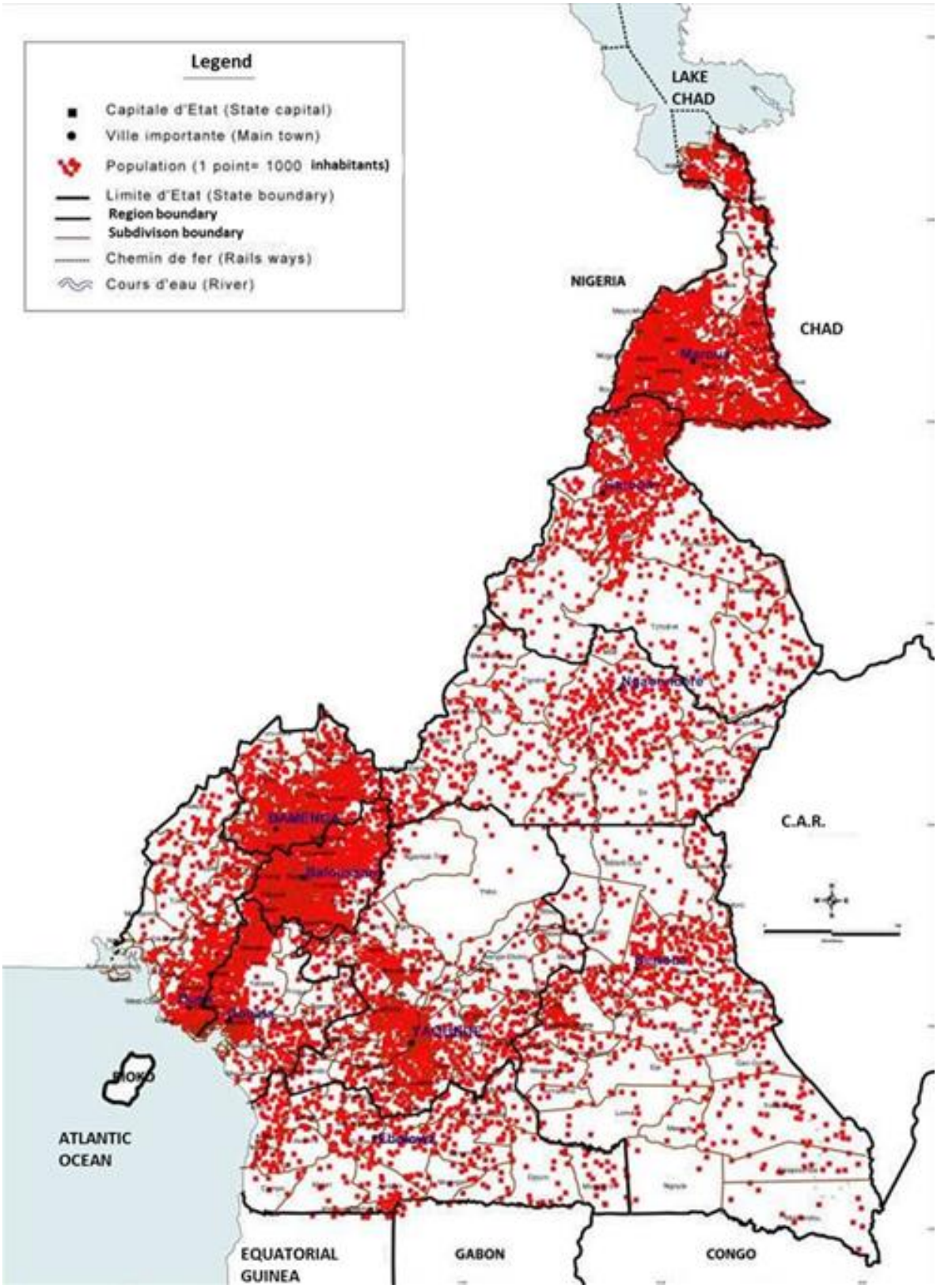
Figure 25: Picture from the "Atlas des Statistiques de l'Énvironnement" illustrating the special position of the North-West (and West) Region in terms of Agro-Ecological possibilities



Source: NIS, 2016

Figure 25 and Figure 26 illustrate these phenomena. In parts of the dry (mid) north, the densely forested central, south and east of Cameroon, temperatures and amounts of precipitation are much less favourable. The Grassfield area (Figure 25) is defined as an area with moderate rainfall of 1,500-2,000 mm and on average 180 rainy days per year. The soil is very fertile and sustainable for agriculture, mainly for cacao, coffee, maize (corn), beans, potatoes and vegetables. As a consequence of the favourable conditions people migrated to the North-West Region from all directions, as from early history. This explains also the rich cultural legacy, its attraction to foreigners (nowadays tourists) and its large production of both agricultural crops and livestock that are exported to the rest of the country and abroad. The relatively high number of people per square kilometer (Figure 26) and the relatively high pressure on the (natural) environment in the North-West, as compared to other regions of Cameroon, are a fact. This puts a burden on naturalness, the environment and on the use of limited natural resources, such as (natural) fuel, building material and water.

Figure 26: ***Picture from the "Atlas des Statistiques de l'Environnement", illustrating the population density among others in the North-West Region of Cameroon***



Source: NIS, 2016

In paragraph 4.2 on the biotic environment (nature, wildlife and natural forestry) it is explained how (early) deforestation has already destroyed a huge amount of naturalness in the North-West Region.

The presence of soft soils, steep slopes and deforestation in combination with dense population and poverty can provide the dangerous cocktail that can lead to the complete loss of soil fertility and or landslides that cause serious degradation of areas.

Figure 27: Pictures of areas where degradation because of land-use is obvious

Below two pictures from the Baseline study 2006 (Source: NWDA, SIRDEP, 2006) and above examples of landslides caused by deforestation and overgrazing on steep slopes in Sabga Hill, between Bamessing in Ngoketunjia and Sabga in Mezam Division (pictured by author June 2018)

Such areas need very careful management in order to prevent further degradation and/or natural hazards and start regeneration where feasible. Table 9 gives an overview of degraded areas in the North-West Region in the year 2006. No assessment has been done since then, but due to personal observations the contents of the table still seems to be actual. It should however be actualised in the prospective phase.

Table 9: Major environmentally degraded areas in the North-West Province in 2006

Division	Prominent degraded Communities/Villages	Type of degraded area	Causes of Degradation
Boyo	Konini Valley	Roads	Road construction
	Fujua	Natural sites	Human settlement
	Mentang Hill	Farms	Soil erosion
	Fundong Hill	Natural sites	Landslide
	Ebaichi Baiso	Natural site	Over grazing
	Mugheff hill	Farms	
	Kikfuini hill	Farms	
	Boyo/Iso Hill	Farms	
	Ndawara	Natural site	
	Mbesa	Road	
	Fonfuka, Saff, Mbuk, Kimbi	Water sites	
Bui	Yeh village in Kumbo	Water shed	Unsustainable farming and grazing practices, Rampant bush fire by community members, Planting of eucalyptus at water source. Illegal and unsustainable harvesting of Prunus and other medicinal plants, Neglect of Sanctuary, No clear management policies, Bush fires, water erosion, over grazing and deforestation, Poor farming practices, landslides
	Kilum Mountain (Oku)	Watersheds, Community forests, Natural sites & Plant life sanctuary	
	Mbiame	Community forest	
Donga-Mantung	Binka	Natural sites	
	Mbot, Awunti	Farms	
	Tabeken	Water sites	
	Nyang	Natural site	
	Mbiyeh	Natural site	
	Berabe	Farms	
	Ngarum, Njimakang, Nguutu, Yafa, Akwaja, Dumbu, Abunshe, Kakar	Farms and water sites	
Menchum	Wum, Mmen, Abar, Esu, Befang, Munkep	Forest ecosystems	Bush fires, encroachment by farmers, poor farming practices, water erosion, deforestation, overgrazing and unsustainable exploitation of resources, landslides, gas eruption
	Baworo, Ndzen		
	Weh	Catchments	
	Kumfuru-Nyos road	Roads	
	Befang-wum road, Wa-abong road	Roads	
	Mekaf-Wum road	Roads	
	Nyos area, Zoa	Natural sites	
	Lake Nyos	Water sites	
Mezam	Sabga hills	Water catchment, Natural sites-Grazing lands, Farmlands-Tree savannah, Major road passes through hills	Excessive grazing, bush fires, over cropping, encroachment of farmers and grazers, poor farming methods, illegal/uncontrolledhunting, human settlements, pollution from waste dumping, unsustainable exploitation offorest resources, underlying landscape (natural cause), erosion, landslides, deforestation, invasion by eucalyptus, excessive use of inorganic fertilizers
	Bambui Forest	Natural site	
	Lake Bambili	Water site,-Wetland	
	Bali-Ngemba forest	Natural forest,-Grasslands, Watershed	
	Bamenda station hill	Natural forest,-Grasslands, Watershed	
	Mulang swamps	Swamps,-Wetlands	
	Mankon sacred forest	Natural site, Sacred/traditional forest, Watershed	
	Mendakwe	Watershed	
	Mbatu-Chomba	Watersheds	
	Mundum	Forest-Farmlands, Savannah	
	Bafut-Ngemba Forest Reserve	Protected forest area	
	Santa-Mbe Village	Farmlands	
	Santa-Mbe forest	Forest area Water catchment	

Division	Prominent degraded Communities/Villages	Type of degraded area	Causes of Degradation
Momo	Bonabufei	Natural sites	Farming activiites, deforestation, erosions and floods, natural of slope, overgrazing and bushfires, floods, uncontrolled irrigation, erosion,-deforestation, human settlement, over grazing- bush fires
	Ashong/Bamumbu	Natural sites	
	Acha-Tugi	Roads and natural sites	
	Zang Tabi sacred forest	Natural sites	
Ngo-ke-tunjia	Bambalang	Farmlands, Natural sites	
	Bamunka	Roads, water sites	
	Baba 1	Roads and natural sites	
	Babungo	Farms and roads	
	Balikumbat	Water sites, farms, roads	
	Bafanji	Natural sites, roads	

Source: Ministry of Agriculture and Rural Development – North-West Development Authority: Baseline Study of the North-West Province, GP-DERUDEP

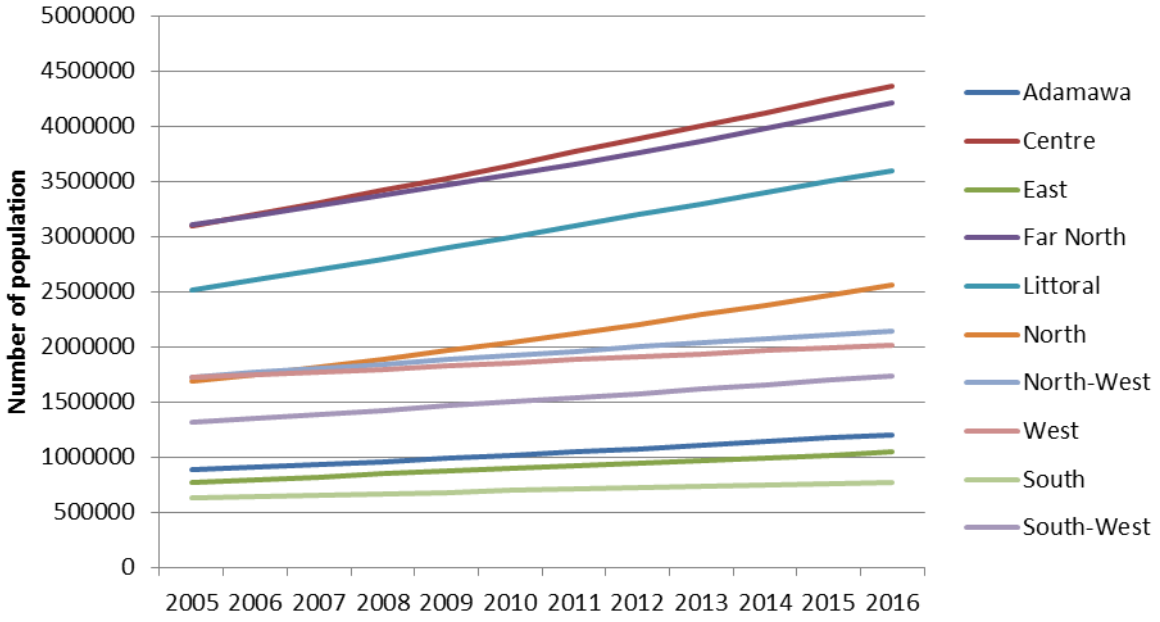
In this subparagraph herunder first the threats that poverty and the growing demand on natural resources pose for a rising environmental stress are described. The next part of subparagraph is about the more intrinsic qualities of soil, water and air.

Interdependence of environment, demography and poverty

The environmental stress in the North-West Region is aggravated by a combination of poverty and demographical development. In the "Atlas des Statistiques de l'Environnement (NIS, 2017)" these impacts on the everyday environment of people are the main topic. Besides indirectly affecting the quality of soil, water and air, for example the use of surface water and wood for everyday household purposes can also pose direct (health and economic) risks for the population.

In terms of demographic development in the North-West Region the population growth in the decade between 2005 and 2015 has been 22% (based on data in the annex part 1 section 3 Urbanisation and demography). This is high, but comparable or lower than in the other regions of the country, due to rural migration to the cities (Figure 28). The population growth for the whole country was 25.5 % in the same decade. The degree of urbanisation in the North-West region has sharply risen since 1976 from 15% to 42% in 2010 but is still below the national average of 52% (NIS, 2017).

Figure 28: Evolution of the population of Cameroon by region from 2005 to 2016



Source: NIS, 2016 (made from table)

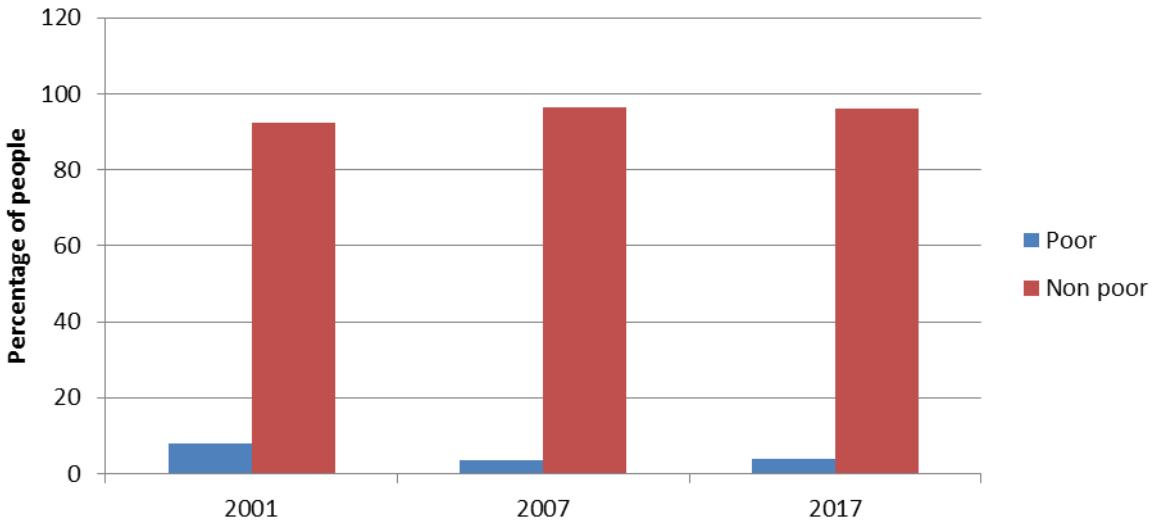
Eradication of poverty is one of the aims of this project. Statistics on population living below the poverty threshold (found in annex part 1 section 1.2 Demographics on poverty) show that in the North-West Region in 2017, according to the definition of poverty used by NIS, more than half (55%) of the population was poor. This percentage has been slowly rising since 2001 and is above the national average of 37.5 % and much above the values of the cities of Douala and Yaounde (4.2% and 5.4% respectively). Only the North and Far North have a higher percentage of poverty and a sharper rise of poverty than the North-West Region.

As a consequence of the relatively high poverty percentage in the North-West Region many people have poor housing, use natural water, use firewood for cooking, dispose of dirty water in the environment and throw waste in natural areas, mostly rivers. This causes a lot of local stress for the environment and also creates health problems, which can be best illustrated by two phenomena related to poverty: waste disposal and firewood for cooking (table can be found in the annex part 1 section 1.2 demographics on poverty).

While in 2017, 96% of the non-poor population used an ordered and organised way of disposing waste, 96% of the poor population discard their waste directly on the own compound or in nature (Figure 29). Although these statistics reflect the national situation, a similar inequality of waste disposal based on poverty can be observed in the North-West Region.

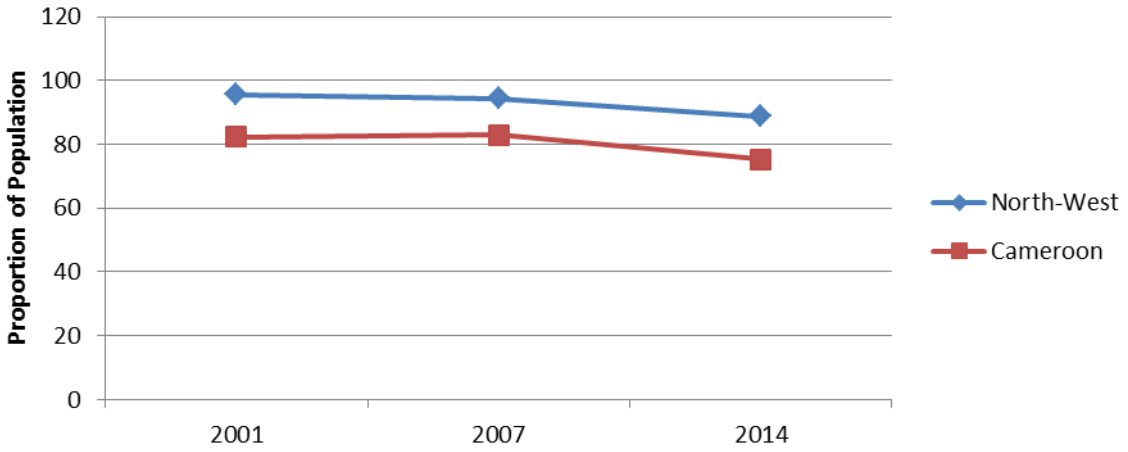
Firewood for cooking is still used by almost 90% of the population in the North-West Region in 2014, causing a lot of stress on the environment as well as on health (Figure 30). The percentages are far above the national average of 75% and very far above the percentages of 28-38% in the big cities. Since 2001 this percentage in the North-West Region declined only little (by 7%). This shows clearly that a growing sensibility, especially about health implications is clearly out ruled by poverty. People in rural villages understand that there is a shortage of wood and many of them realise that cooking on fire affects the lungs and enhances the chances to get cancer. Yet they continue doing it (consultant's observation in Tyimenkan, Shisong).

Figure 29: ***Waste disposal in an ordered manner among the poor and the more wealthy part of the urban population in 2001, 2007 and 2017***



Source: INS_ECAM 2, 3, 4

Figure 30: Proportion of the population using solid fuel (wood) and the development from 2001 to 2014



Source: NIS, ECAM, 2, 3, 4

Intrinsic pollution of soil, water and air by harmful substances

Pollution is a consequence of human activity where chemicals that are harmful to living things get into the environment. This can be any contamination direct or indirect of soil, water or air that threatens the health, security and wellbeing of living organisms, including man of course. The amount of pollution, compared to western industrialised countries, in Cameroon and in the North-West Region is still relatively low. There is a vast amount of naturalness. In the North-West Region there is practically no industry around and the amount of cars although rising sharply, is still relatively low. Besides at present there are much less chemicals around in everyday life like food additives, antibiotics and other drugs for both people and animals and until recently also very few fertilizers and pesticides. The reason is mostly because they were not affordable for most of the people. Recycling of material because of poverty, the endless repairs of small items and even cars, the recycling of natural building materials and the multitude of small animals like fowl (chicken) and goats that eat organic leftovers, make the total amount of waste minor as compared to the amounts in western societies. As a result of this, the degree of pollution of soil, water and air is very low in a very high percentage of the country, compared to global standards, with the only exception being the amount of particulate matter in the dry season, which partly has a natural cause (coming from the Sahara with the Harmattan winds). The relative cleanliness of the environment is reflected in a different pattern of diseases: for example, Malaria being much more eminent than cancer. Yet locally environmentally waterborne diseases like Cholera, Dysentery and Typhus do occur. In spite of the relatively clean soil, water and air on the regional scale, looking on a more local scale, it can also be observed that environmental degradation is becoming more and more a serious barrier to economic development and also to poverty reduction. Loss in soil fertility, pollution of soil, water and air and waste management in particular are seen as mounting and serious threats to the environment on the local level in the North-West Region. All livelihoods are affected.

In a bid to protect the environment, the state of Cameroon banned some products. Refrigerators containing chlorofluorocarbons, halons, aerosols, foams, propellants and solvents (found in some paints) are banned. Plastic of less than 61 microns is also banned.

During recent years it is observed that the use of pesticides is increasing dramatically. This has, together with the disposal of waste and locally the mining and quarrying of materials like sand, a direct strongly negative impact on the health of the user, the quality of the soil as well as the quality of the water. For water this concerns both natural surface, groundwater and through contamination of watersheds and

water catchments also on potable drinking water. Water is locally also heavily polluted by cattle, waste disposal (see also Figure 31 below), washing of clothes, bikes and cars in streams and rivers. However, there is a huge gap of knowledge as this pollution and its impacts on man and the fluvial ecosystems is hardly studied and qualified/ quantified. The quality of the rainwater is the only local (unused!) source that can be trusted, due to the very low levels of industrial air pollution, as compared to western industrialised societies. Acid rain as it posed problems in the West is an unknown phenomenon.

Figure 31: Municipal waste dump in the village of Shisong (Kumbo council, Bui Division).

Source: NW Field Survey 2018

Air pollution is very high, especially along not paved roads in urban areas or along the ring road with relatively intensive traffic. At the end of the dry season, the dust from the roads combined with bush fires, slash and burning practices in agriculture and all the particulate matter already in the air through the prevailing Harmattan winds coming from the Sahara, leads to very serious air pollution. In 2018 the World Health Organisation published an alarming report, stating that death caused by particulate matter in the atmosphere worldwide is higher than even Malaria. Cameroon is among the highly exposed risk areas.

In spite of the existing local environmental problems, the data on the prevalence of illnesses among children under the age of 5 do show (Table 10) that children live in a comparatively healthy and clean environment. Malaria, the most common disease in Cameroon, affects only 5.6% of the children < 5 years in the North-West Region. In other regions this percentage is between 9.9% (Centre Region) and 30.6% (in the Far North Region). This is also due to the combination of relatively low temperature and less humidity in the region. When you look to other diseases like Typhus and eye diseases the North-West Region takes a more intermediate position.

Table 10: Declared prevalence (in %) of certain diseases in children less than 5 years in 2014

Location/ Disease	Malaria	Diarrhoea	Typhoid fever	Acute resp. infection	Eye diseases
Douala	13.3	2.8	0.2	6.1	1.7
Yaounde	13.8	3.1	0.0	4.2	1.3
Other cities	17.7	3.7	0.7	3.9	1.0
Urban areas (total)	15.2	3.2	0.3	4.7	1.3
Rural areas (total)	20.4	3.8	0.3	4.3	0.8
Adamawa	16.2	4.0	0.3	6.4	0.6
Centre (exclusive Yaounde)	9.9	7.3	0.0	7.5	0.9
East	14.3	5.2	0.7	5.6	0.5
Far North	30.8	4.9	0.4	6.2	0.6
Littoral (exclusive Douala)	16.3	3.0	0.0	1.1	1.2
North	26.2	3.0	0.2	1.7	0.7
North-West	5.6	0.8	0.4	1.9	0.7
West	14.0	2.7	0.6	3.2	1.6
South	15.5	5.9	0.3	2.4	0.9
South-West	17.3	2.1	1.6	3.8	1.0
All of Cameroon	18.6	3.6	0.3	4.4	1.0

Source: NIS, 2016

However. when regarding illnesses that are connected to air pollution (Table 11), like lung infections, the situation in urban areas (Bamenda and Kumbo) in the North-West Region is vice versa and the worst of all regions (4.3% in 2001; 5.0% in 2007). It is even considerably worse than it is in the big cities of Yaoundé (1.4%; 2.9%) and Douala (2.2%; 1.7%). This indicates that probably the geomorphological situation of Bamenda (situated in a pit) combined with the poor condition and dusty roads and the proximity to the desert regions in the North are the primary causes of this bad and seemingly deteriorating situation (degrading of roads, more slash and burning, burning of forests and more cars).

Table 11: Declared prevalence of diseases related to air pollution (acute and chronic respiratory infections) (in %) in children less than 5 years

Region of investigation	2001			2007		
	Urban	Rural	Total	Urban	Rural	Total
Douala	2.2		2.2	1.7		1.7
Yaounde	1.4		1.4	2.9		2.9
Adamawa	3.3	0.6	1.5	3.9	8.3	7.3
Centre (exclusive Yaounde)	2.4	9.1	8.5	5.7	5.1	5.2
East	2.7	4.1	3.9	2.8	0.3	0.7
Far North	0.9	0.3	0.6	2.2	1.0	1.1
Littoral (exclusive Douala)	2.4	1.2	1.7	1.7	0.4	1.0
North	2.8	3.6	3.4	2.9	2.3	2.4
North-West	4.3	2.0	2.5	5.0	3.3	3.7
West	3.4	3.8	3.7	6.7	8.9	8.2
South	2.8	5.5	5.2	3.6	5.6	5.4
South-West	1.4	2.9	2.5	3.5	2.1	2.5
Cameroon	2.0	3.1	2.8	3.1	3.5	3.3

Source: NIS, 2016

Natural water and natural sustainable energy resources (water, wind, sun and biomass)

People use plenty of natural water. This occurs especially in the dry season or in the case that piped water cannot be delivered, mostly caused by either technical or governance reasons or a combination of the two. Washing their clothes, bikes and cars, dumping their waste in rivers with drinking cattle and goats, create serious hygienic and health problems. In Menchum close to Wum this led to Cholera in 2017. Besides, people drill more and more bore holes and wells to be assured of enough and a constant potable water flow. However the possibility of pollution of (ground)water is neglected, while the impacts

on withdrawing water downstream or on the ground water table in aquifers are not taken into account. These are important gaps of knowledge.

Water can also be stored and falling water (waterfalls, rapids and storage dams) can be used as a sustainable energy resource, but at the moment beside Lake Bamendjing, there are only small scale examples of hydropower generating electricity. At the moment the Government is constructing a hydropower plant in the Katsina Waterfall in Menchum. For a full descriptions on the technical possibilities for hydropower production you can read Chapter 7 on technical Infrastructure. As for describing the natural (energy) resources in paragraph it will only be about the environmental impacts of applying these resources.

When you look at the production of energy in Cameroon as a whole, the building of the Bamendjing Dam and the creation of the huge artificial lake with the same name on the borders of the North-West and the West Region enabled Cameroon to produce a lot of clean sustainable electricity, which does not contribute to the global CO2 production. However. This came at an environmental and social cost (flooding of villages and disrupted flow of water and sediments). The North-West Region had been producing hydropower at the Menchum falls before the independence in the former West Cameroonian-mandate. However. This came to an end during the Republic. Yet a lot of potentials in using the power of waterfalls and/or creating barriers and artificial lakes are still available. Over the border in Nigeria a barrage was built in an upstream part of Menchum River. Because of massive precipitation and the presence of this barrier serious flooding in Menchum Valley occurred in 2017.

In everyday life the energy supply is not functioning well. Although quite cheap (a few thousand CFA's monthly) there are regular power cuts in all of the country and in the North-West Region. Candles, torches and small solar lamps are an everyday necessity, especially in rural areas. Yet most of the villages remain to be connected to the electrical grid. In the connected villages and areas the number of subscriptions is still low. People sleep early and get up with appearing daylight to safe expenses for artificial lighting. More information on electricity can be found in chapter 7 on Technical Infrastructure.

From Table 12 it is clear that the North-West is the most developed and frontrunner region, when it concerns the use of small scale hydropower, aeolian (wind) energy as well as biogas production. Although smaller than the case of small scale water and solar power, the North-West has a lot of biogas facilities, like in Nkwen, Bamenda and Kumbo. At Kingomen in the Bui Division, Shumas Integrated Organic Agricultural school and farm has biomass reactors standing at the piggery and supplying the school kitchen with gas, while during the hours in the evening when the generator is off, a switch in the dormitory connects the bulbs to a small windmill producing energy from the wind that at the about 2,300 m altitude is usually blowing.

Although solar, wind and biogas are yet less developed these techniques are very promising indeed as they become more and more developed in terms of efficiency and affordability and they can be applied on a very small (local or even household) level. Also. The experiences in the North-West region might be exploited as the knowledge could be made available to other Regions in Cameroon.

Table 12: Power output of the installed renewable energies production units by Region in 2013

	Small hydro (kW)	Solar (kWp)	Wind (m/s)	Biogas (m^3)
Adamawa		170		
Centre (exclusive Yaounde)		152.3		10
East		330.4		
Far North		171.7		
Littoral (exclusive Douala)		63.3		10
North		151.5		
North-West	123	71.6	4.4	28
West	70	31.1	1.8	13
South		149.3		
South-West	110	12.96		

Source: MINEE Yearbook 2014

Development of solar power in the North-West Region, that has a huge potential like in the other regions of the country, is far behind. In 2015, the North-West Region had installed only 77 KWH of solar power. Only the West and South-West Region had less, while the rest of the divisions had installed between 125 (Littoral without Douala) and 351 (East) KWH (Table 13). It is not clear why so far the North-West Region is less familiar with solar energy.

Table 13: Photovoltaic capacities in KW-peak installed by Region for a total of 1683 kW end of 2015

Region	Photovoltaic capacities in kWp
Adamawa	223
Centre (exclusive Yaounde)	207
East	351
Far North	193
Littoral (exclusive Douala)	125
North	212
North-West	77
West	36
South	238
South-West	21

Source: NIS, 2016

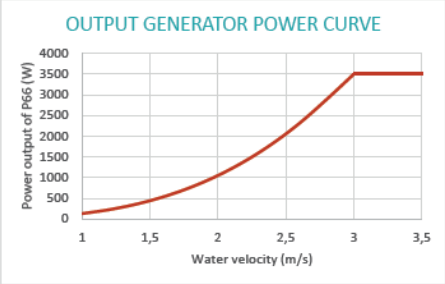
In applying small scale hydropower techniques, the state of the development situation is much better than it is with solar energy. The North-West installed more (123 KWH in 2014) than anywhere else in Cameroon. In seven Regions of Cameroon, the production of this kind of energy is even not in the statistics (Table 12). At present, there are already some local small scale initiatives in villages that are not connected to the electric grid. For example, in the village of Bambui close to Bamenda in Mezam Division in 2017 small wooden rotors were placed in streams and supplied the village with electricity (consultant's observation, 2018). The techniques can also be applied on a larger scale. In 2018, a company of Brest (Brittany, France) was in Cameroon to raise interest in testing and developing of hydrokinetic turbines. It can be applied in tidal areas, as well as in big rivers, with abundant water depth and velocity, like Menchum, Katsina-ala or Bui river. To generate electricity with water current power seems promising, especially for development of more remote regions like Donga-Mantung and Menchum, which are on the end of the national electrical grids.

Figure 32: Potentials for fluvial energy production with large turbines in rivers

Potential in hydropower generation with turbines in rivers in Donga Mantung and Menchum Divisions. Hydrokinetic energy can be recovered by current turbines. This free energy resource is fully predictable, renewable and quite easy to catch at low voltage and at low operational cost. At the production site a minimum mean current speed and a minimum water depth are required, depending on the turbine power which ranges from low power (3 kW ==> P66) to medium power (20 kW ==> P154) and large power (250 kW and more).

Auditing the potential production sites along the rivers in order to measure current velocity and depth water remains the first task to be performed. According to a specific design managing the key parameter of the current speed, those turbines are ducted turbines which allow them to recover twice more energy than un-ducted turbines. The floating design includes strong debris protection, and an aluminium frame to guarantee turbine performance. The hydrokinetic turbine can be anchored at the bottom of the river, at a bridge, or to the river bank.

P66 GENERAL DATA	
Nominal Power	3500 W (4.69 hp) at 3 m/s
Minimal water depth	1.5 m (59 in)
Current speed range	1.2 - 3 m/s (1,94 - 5.83 knts)
Dimensions	1500x1000x1000 mm (59.5x39.37x39.37 in)
Weight	90 kg (198 lbs)
Frame material	Aluminium (5000 series)
Flood protection	Emergency electrical brake
Power conversion	Ask for P66 Technical details



Source: Guinard Energies, 2017

Hydrokinetic turbine technology (Figure 32) is more sustainable and environmentally friendly than the building of barrages and artificial lakes, because the latter seriously disrupt land use (often displacing people and agriculture) and the natural environment, by changing the natural flow of both water and sediments and creating barriers for fish passage. Hydrokinetic turbine systems leave the naturalness of the flow of rivers and streams intact.

Mineral resources

As for the extraction of mineral resources the North-West Region has only some exploration permits in large areas in the north (Donga-Mantung and Menchum). Small scale (mostly artisanal) mining activities concern rubia (Menchum, Donga-Mantung), wolfram and gold (Momo and Menchum Division), bauxite (Mezam Division), stone (quarries, in all divisions) and sand (from rivers, a lot in Ngoketunjia and a bit in Bui Division). The technical aspects of mining and quarrying are described in chapter 5 on economy. Small scale mining can be detrimental to the environment and to health, when chemicals are used (like mercury in artisanal gold mining), while large scale, especially open pit mining, without precautionary measures, can lead to a disruption of nature, both temporarily (explosions, removal of forest or agriculture) and a more permanent destruction of natural resources like forests, water and soils. If not governed

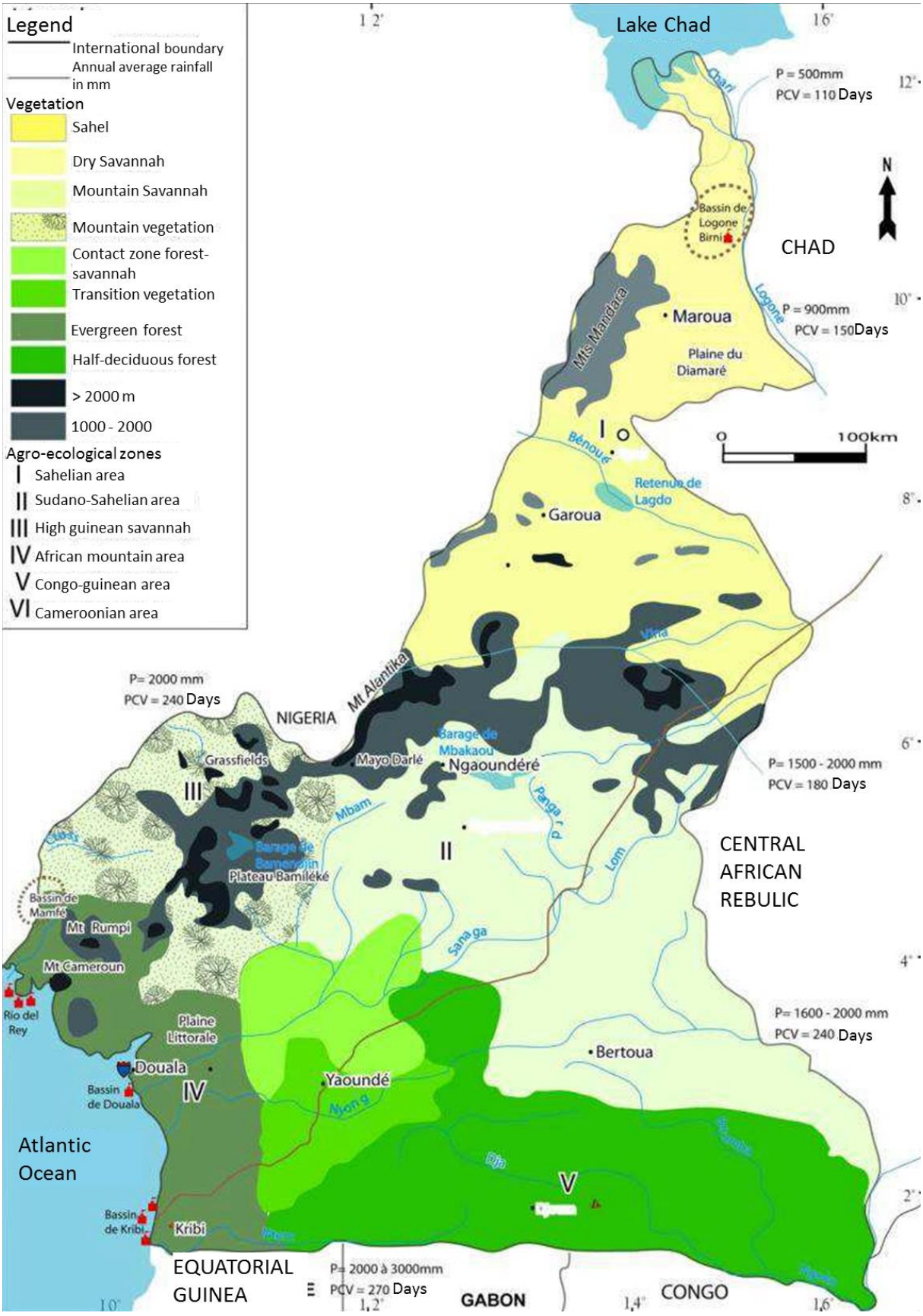
orderly, including environmental impact assessments, restrictive permits and regulations as well as adequate enforcement, open mining, like it is presently done by foreign concessionaires (South-Korea, China and USA) in the East Region, can be devastating, not only to nature and wildlife, but also to the socio-economic perspectives of the local inhabitants. However, if the precautionary measures, regulations as well as the economic and development prospects are well managed, mining might also bring prosperity and development to remote regions and be a long year supplier of jobs and income for local populations. Therefore, it should be a prominent aspect in the framework of the prospective phase of this project on Territorial Development.

4.2. Biotic environment

4.2.1. Nature, biodiversity and protected areas

Nature in the North-West Region follows the tropical climate zone and can be generally characterized as the relatively wet Sudan Savannah type. The vegetation is predominantly savannah with shrubs dotted here and there. However, dense forest of the tropical nature can be found in certain parts of the Menchum and Momo divisions, especially on the border with the Nigeria. MINEPDED (2014) calls it the Guinea Savannah type (Figure 33). The grasslands in the Western Highlands consist of a wooded humid savannah, with shrubs and occasional trees. In the west of Menchum Division and the east of the Bui Division some of the grassland is of the dryer Sahel Savannah type, with a more scarce vegetation. Some of the trees shed their leaves to survive the dry season and bush fires. Some of the areas, especially in the southern part of the region, are supposed to have been occupied by much more dense forest, which is nowadays degraded by agricultural and other human related activities. The Savannah type of vegetation also covers a large part of the Adamawa Region and the West Region of Cameroon. The adjacent Littoral, Centre, East, South and the whole of the South-West Region are of the Tropical Equatorial kind (Figure 33). An inventory of ecological zones made by the Ministry of Environment and Forests and the World Bank in 1996 describes the North-West Region as a composition of Savannah Woodland, Lowland, Mountain forest zone, Afro-Alpine and Crater Lake zone. The region has legally protected areas in all the divisions. These are all listed below in Table 16 with status, name, time of designation and surface. They are mapped in Figure 35. These are Kimbi-Fungom National Park, Bafut-Ngemba forest reserve, Mbembe forest reserve, Oku mountain forest and plant life sanctuary, Kangwene Gorilla sanctuary, Bali-Ngemba forest reserve, Kom-wum forest reserve, Tubah forest reserve and Mbi crater game reserve. Some other forests have important values too and can be considered to be potentially protected areas, but they are not yet classified. Some examples of these potential to be classified forests are Abongphen Forest in Kedjum-Keku, Mezam Division, Lake Nyos in Menchum Division and Nwa forest in Donga-Mantung Division.

Figure 33: Vegetation types in different climatic zones in Cameroon including the North-West Region



Source: NIS, 2016

4.2.1.1. Endangered species and legal instruments to protect wildlife

The state of Cameroon has put in place measures to protect and manage forests and endangered species of plants and animals. In the forestry administration, forest is classified according to classification of land by the Ministry of Lands. The law 94/01 of 20th January 1994 on Forestry, Wildlife and Fisheries Regulations, defines forest as any land covered by vegetation with a predominance of trees, shrubs and other species, providing non-agricultural products. In this law there exist classified (protected) and unclassified forests, that can be either in permanent or non-permanent forest estate. The national law implements the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Important legislature based on the Law are the Decree No.95/466/PM of 20th July 1995 with conditions for the implementation of wildlife regulations, Order N° 0648/MINFOF of 18th December 2006 setting the list of animals in classes A, B and C and Order N° 0649/MINFOF of the same date, listing the animal species and the conditions under which limited killing can be authorised in the hunting permit.

From Table 14 it is clear that Cameroon hosts a lot of endemic (only occurring in Cameroon) as well as threatened species. The numbers of endemic species are very high: 17 mammals, six birds and as many as 55 species of amphibians and reptiles (2016). In Figure 34, you can see the pictures of four of the endemic species.

Table 14: Number of threatened and endemic species of plants and some taxa of animals in Cameroon in 2016

	Category of species	Number of species
Plants	Endemic	0
	Threatened	91
Mammals	Endemic	17
	Threatened	44
Birds	Endemic	6
	Threatened	27
Amphibians and reptiles	Endemic	55
	Threatened	68
Fish	Endemic	0
	Threatened	119

Source: IUCN Red List of species 2016

Table 15: Biodiversity in Cameroon in 2016 with number of species and the degree of threat of extinction

	EX	EW	CR	EN	VU	NT	LC	DD	Total
Plant species	1	0	88	132	271	63	318	19	892
Animal species	0	0	52	106	127	82	2,572	218	3,157

(EX=extinct; EW=extinct in the wild; CR=critically endangered; EN=endangered; VU=vulnerable; NT=near threatened; LC=least concerned; DD=data deficient) (Source: IUCN Red List of species)

Source: NIS, 2016

It is also obvious (Table 15) that a lot of these species are endangered. For plants there are 892 and for animals even 3,157 species are threatened in some way. Of these in 2016, a number of 220 plant species and 158 animal species are endangered or even facing extinction.

Some protected animals in the North-West Region: Cross river gorilla (Figure 34), Chimpanzee, Drill, Gibbon, Bonobo, Baboon, Guenon, Python, Gabon Viper and Tortoise (mammals, mostly in class A = very rare, endangered and/or vulnerable), Bannerman's turacco (Figure 34), Banded Wattle-eye (Figure 34), Green parrot, Green turacco, Giant kingfisher, Sun bird and Tullberg's wood pecker: bird species, most of them endemic to the Bamenda high-lands in patches of mountain forests and other thick forests. They are classified in category A, B or C under both the CITES Convention and the Cameroon Wildlife Law:

- Class A species: in critical danger of extinction, in danger or vulnerable according to IUCN classification. Total protection: may not be killed, captured. Subject to authorisation by the Ministry of Forestry and Wildlife (species under CITES classification and belonging to groups settled out of the wild);
- Class B: protected but may be hunted, captured or killed, only when granted in a hunting permit;
- Class C partially protected. Capture and killing regulated by conditions, specified by the Ministry of Forest and Wildlife.

Figure 34: Some endemic species that can only be found in the North-West Region of Cameroon

Bannerman's turacco Tauroco bannermani (picture up left, source: IUCN) with its most important population in Kilum-Ijim Mountain Forest & Plant Life Sanctuary, also spotted in Bali-Ngemba forest reserve and on Mount Mbam; the Banded wattle eye Platysteira laticincta (top right, WWF, 2007) endemic in several forest reserves of the Bamenda highlands, Oku clawed toad Xenopus longipus (down left, by Joel Sartore, 2016) endemic to Lake Oku at Kilum-Ijim Mountain Forest & Plant Life Sanctuary and Cross river gorilla Gorilla gorilla diehli (below right, source: WWF) endemic to the cross border area of the North-West Region, the South-West Region and Nigeria, with the most important subgroup in the Kagwene Gorilla Sanctuary

4.2.1.2. Protected areas

From Table 16 it is clear that by 2018 the total surface of protected natural areas in the North-West Region is 139,893 ha (equal to 1,398 km^2). This is 8% of the total surface (17,300 km^2) of the North-West Region, and only 1.7% of the total surface of protected areas in the whole of Cameroon, which comprises a total of 8,227 million ha. According to generally accepted international standards used in Western countries, a surface of ca. 10% of the total area is regarded as the minimum to maintain sustainable nature and provide a viable ecological skeleton for species to survive (IUCN), while the Cameroonian government has put its policy goal on 30% of naturalness in the country as a whole.

Table 16: Permanent forest reserves (above) and Permanent forest-wildlife reserves (below)

Forest Reserves	Created in	Communities	Subdivision	Division	Surface (ha)
Mbembe Ako Forest *	1934	Ako, Mbembe, Dumbu, Kwei, Gimbeu, Mayo Binka, Berabi, Bogu, Gife Hill, Mount Kinka, Ndaka	Ako	Donga-Mantung	28,470
Kom-Wum Forest	1951	Mentang, Mbongkisu, Mughom, Baiso, Mbengkas, Aghem, Kom	Fundong & Wum	Boyo, Menchum	8,029
Bafut-Ngemba Forest	1953	Bangba, Sananga, Mendankwe, Akum, Neshele, Nshielu, Benjon, Santa	Santa, Bamenda I, Tubah, Bamenda III	Mezam	3,238
Bali-Ngemba Forest	1953	Bali, Ngemba	Bali	Mezam	1,147
Tubah Forest	1953	Bambui, Babanki	Tubah	Mezam	85
Kilum-Ijim Mountain Forest & Plantlife Sanctuary	2004	Elak, Belo	Oku, Belo	Bui, Boyo	1,000
Total					**41,929**
Wildlife reserves	**Created in**	**Communities**	**Subdivision**	**Division**	**Surface (ha)**
Mbi Crater Game Reserve	1964	Mbingo, Foleshele	Belo	Boyo	370
Kagwene Gorilla Sanctuary	2008	Kagwene, Mbulu and Njikwa	Njikwa, Mamfe	Momo (70%), Manyu (30%)	1,944
Kimbi-Fungom National Park	2015	Gayama, Kimbi, Wum, Nyos, Nkang, Esu, Fungom, Fonfuka, Dumbo, Kwep, Akum	Fungom, Fonfuka, Misaje	Menchum, Boyo, Donga Mantung	95,380
Total					**97,694**

** The Mbembe Ako forest is a forest reserve but in the strict sense, it is a Forest Management Unit (FMU) consisting of land permanently allocated to forest and/or wildlife habitat and dedicated to timber production.*

Source: Regional Delegation of Forestry and Wildlife, 2018

Table 17: Number and surface of protected areas for wildlife in the different regions of Cameroon

Region	National parks		Wildlife reserves		Zoological gardens		Sanctuaries		Total protected areas	
	Nber	Surface	Nber	Surface	Nber	Surface	Nber	Surface	Nber	Surface
Adamawa	1	77,760	0	0	0	0	0	0	1	77,760
Centre (exclusive Yaounde)	2	513,992	0	0	1	4	0	0	3	513,996
East	4	817,818	2	682,672	0	0	0	0	6	1,500,490
Far North	3	175,900	0	0	0	0	0	0	3	1,759,000
Littoral (exclusive Douala)	0	0	2	164,000	0	0	0	0	2	164,000
North	3	730,000	0	0	1	2	0	0	4	730,002
North-West	1	95,380	1	370	0	0	1	1,944	3	97,694
West	0	0	1	7,000	0	0	0	0	1	7,000
South	1	264,064	0	0	0	0	1	27,723	2	291,787
South-West	4	280,997	0	0	1	1	3	75,187	8	-
Cameroon	19	2,955,911	6	854,042	3	6	5	104,854	33	

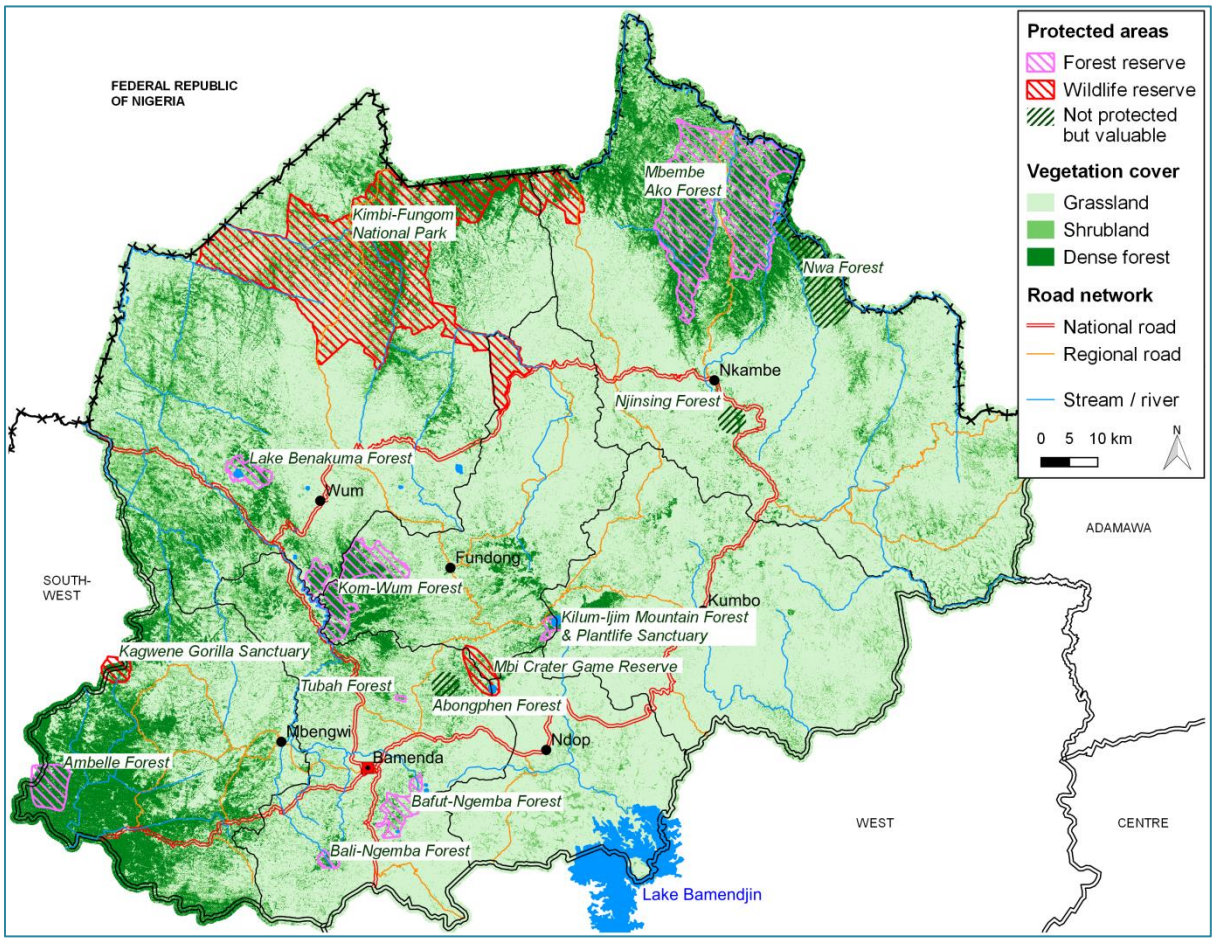
Source: NIS, 2016

Nature is relatively scarce in the North-West region. From an ecological standpoint, the region is among the poorest in the country. Only Adamawa and the West Region have less surface of protected areas for wildlife (Table 17). Deforestation is immense and ever more increasing with the growing demands of

a growing population. Deforestation takes place outside as well as inside (because of a lack of enforcement of regulations) protected reserves. Fragile habitats and threatened species are getting rarer at an alarming speed. In the dry season natural streams and rivers are short of water or even completely dry. “Natural” hazards, like landslides and floods are occurring more frequently, caused by a combination of climate change and deforestation, intensifying agriculture and urbanisation, especially on vulnerable soft soils and steep slopes.

Looking at the different divisions, there are big differences in the percentage of coverage by natural forest. Menchum Division is the top area for naturalness in the North-West Region, with Donga- Mantung as the second Division, rich in biodiversity. Together these divisions host more than 90% of the protected areas of the whole North-West Region and host a lot of rare endemic species of fauna and flora in its habitats. Menchum is also the division with the only National Park in the North-West Region (Kimbi Fungom). Part of that park, as well as Mbembe Ako Forest in Donga-Mantung were designated more than 80 years ago and have since been legally protected and managed as natural areas. Other divisions and especially Momo and Bui divisions (both only 1 protected area, respectively Kagwene Gorilla Sanctuary in Njikwa and Kilum-Ijim Mountain Forest & Plant life Sanctuary in Oku) have only a few strongholds left, while in Ngoketunjia there is not even a single protected forest or wildlife reserve. Boyo and Mezam are both intermediate and have 3 or 4 different (parts) of protected areas, that together comprise 1,000-s of hectares. In the table above (Table 16) and the figure below (Figure 35) all the protected areas and other valuable (to be protected sites) are listed. Hereunder you will find short descriptions of the characteristics of these sites. In the annex (part 1 section 1.3 Protected areas) to this chapter more extensive descriptions can be found.

Figure 35: Protected areas in the North-West Region



Data source: based on data from MINEPAT / MINEPDED and Landsat Tree Cover 2015

4.2.1.3. Characteristics of protected reserves in the North-West Region

1. **Mbembe Ako Forest** (Donga Mantung, Ako subdivision) is one of the oldest (1934) and biggest (28,470 ha) forest reserves in the country, famous for its rich plant biodiversity, with 2,500 plant species in 54 families. In the strict sense it is a Forest Management Unit (FMU) consisting of land permanently allocated to forest and/or wildlife habitat and dedicated to timber production. Seven plant species are endemic to the Mbembe Ako Forest reserve, and 14 are medicinal and well used by local communities. The threat of overexploitation is a cross border one with Nigeria.
2. **Kom-Wum Forest** (Menchum, Wum subdivision and Boyo, Fundong subdivision) is also designated as a protected area for a long time (1954), is quite big and home to the Nigerian-Cameroonian Chimpanzee (Figure 38). However, as a result of poaching and logging of timber as well as agriculture the number of protected animals as well as the size of the forest is diminishing rapidly. The ongoing training of eco-guards, education of the population and eco-tourism should put the decline to a halt.
3. **Bafut-Ngemba Forest** (Mezam, Santa, Bamenda I, Bamenda III and Tubah subdivisions) is a big almost 4,000 ha mountane forest (1,800-2,500 m altitude) with three crater lakes: Awing, Bambuluwe and Bambili. The forest contains some endemic bird species and is threatened by rapid deforestation.
4. **Bali-Ngemba Forest** (Mezam, Bali subdivision) is also a submontane and montane forest that suffers from encroachment by agriculture that completely surrounds it. It is located in the valley of the Alatening stream, southwest of Bamenda. There are large Eucalyptus as well as Arabica Coffee plantations. Above 1,600m there is a patchwork of farms and on steeper slopes remaining natural forests with some endemic tree species (especially on the higher northern edge). A lot of forest is cleared for coco-yams, corn, plantains and potatoes. To date, 185 bird species have been recorded, with the endemic Tauraco bannermani (Figure 34 and Figure 38) common above 1,800 m, breeding in shade trees above cocoyam plantations. In the year 2000 the presence of 32 triggering bird species were registered which makes the reserve an Important Bird Area, according to IUCN standards.

Figure 36: Nature protected areas in Mezam Division

On the left up Lake Bambili (Bafut-Ngemba Forest), landscape in Tubah Forest (middle left) and (middle right) forest at Mbi Crater Lake wildlife reserve. Photo on the right: Kagwene Gorilla Sanctuary (Momo and Manyu Divisions) (Source: Regional Delegation MINEPDED). Below a picture of the nesting habitat of the Cross River Gorilla in Kagwene Gorilla Sanctuary in Momo division (Source: WWF)

5. **Tubah Forest** (Mezam, Tubah subdivision): the last few years substantial parts of the relatively small (80 ha) so called Tubah Upland forest were lost through cultivation for agriculture, settlements, charcoal processing, logging and hunting. The present vegetation of Tubah forest reserve consists mainly of savannah ecosystem and is partly natural and partly cultivated. The cultivated vegetation consists of planted trees like cola nut, eucalyptus, raffia palm and fruit trees. International environmental conservation organisations have focused on Tubah in raising awareness about the forest exploitation and the detrimental impacts it has on the diverse habitats of animals such as the Nigerian Cameroon Chimpanzee (Figure 38). In 2013, the Community Agriculture and Environmental Protection Association (CAEPA) Cameroon liaised with farmers, grazers, hunters and students to engage in forest exploitation and the importance of conservation and restoration. Recently there are a lot of reforestation efforts with thousands of trees planted to connect the remaining patches of forest.
6. **Kilum-Ijim Mountain forest and Plant life Sanctuary** (Bui, Oku subdivision): From 2,200-2,800 m the natural vegetation is montane forest, while at higher altitudes Mount Kilum (3,011 m) supports afro-subalpine prairies on thin soils, with rare endemic species in waterlogged areas. Some of the forest has been cleared and burned in recent decades. It is an excellent example of a high level of endemism supporting endemic plants, amphibians, reptiles, birds and mammals. Leopards, elephants, buffaloes and antelopes became extinct because of hunting. The animals still present comprise among others: Olive baboon, Green monkey, African civet, Serval, Duiker, six bird species of the highest category of protection (like Bannerman's turacco and Banded wattle eye and two endemic amphibians of which one is the Oku clawed toad (Figure 34).
7. **Mbi Crater Game Reserve** (Mezam, Belo subdivision): this is a relatively small reserve (370 ha) but adjacent to a bigger privately owned forest. Around the Crater Lake, at 2,060 m, there is a mosaic of montane forest, grassland, a swampy area and rocks. There are about 120 species of birds recorded. The bird species Bannerman's Turaco Tauraco bannermani (Figure 34 and Figure 38) and Platysteira laticincta, both endemic for the Bamenda Highlands, are widespread as are other restricted species. There are a few endemic plant species under investigation by the Royal Botanic gardens at Kew, London. There have been found nine species of medium sized mammals, the Bushbuck (Tragelaphus scriptus) and Blue duiker (Cephalophus monticola) are the most abundant. The population depends on the reserve for water, medicinal plants and bush meat. The Government is advised to adopt a participatory management approach, establishing a joint anti-poaching team, to provide alternative sources of protein to local people to reduce unsustainable hunting and to establish a compensation mechanism for those whose crops are constantly raided by animals from the reserve and to organize mass sensitization programs for local communities on the importance of wildlife conservation.
8. **Kagwene Gorilla Sanctuary** (Momo, Njikwa subdivision and South-West Region, Mamfe subdivision): this rugged and for about 50% forested area, between Mbulu and Njikwa forests is a small (19.4 km^2), but a very important site for a genetically distinct group of the subspecies Cross river gorilla (Figure 34). It is the highest site (2,037 m) out of the known, remaining, 11 sites, where this most rare gorilla species survives in an area of about 12,000 km^2 along the Nigerian-Cameroonian border, with 70-90 individuals in Nigeria and 150 in Cameroon (Oates et al. 2003). There are nine surrounding villages and about half of the area is occupied for agriculture, while on the other half the Mbororo herdsmen have their cattle and occasionally burn protected forest to have more grass. The gorilla nesting habitat preferences have been analysed, including how they nest with respect to

the available top- and under vegetation layer habitats in the sanctuary. This map is useful for elaborating management strategies.

9. **Kimbi-Fungom National Park** (Menchum, Donga-Mantung and Boyo, in Fungom, Fonfuka and Misaje subdivisions): The Fungom Forest Reserve (1932), being the oldest forest reserve in the North-West Region, merged in the year 1964 with the Kimbi River Game Reserve. In 2015 this biodiversity hotspot was classified as the National Park of Kimbi Fungom, an IUCN Management Category II park of 95,380 ha. It is now (2018) in the process of being extended considerably until approximately 150,000 ha. The government has already approved this, but still has to limit and define the exact borders. After that Kimbi-Fungom National Park will easily pass the threshold of 100,000 ha (100 km²) and all other requirements to become a Category I National Park (source: Ministry of Forestry and Wildlife, Cameroon, 2018). It is by far the largest protected nature reserve in the North-West Region. After the extension Kimbi-Fungom will account for 77% of the total surface of protected forest in the North-West Region. It is the only National Park in the region, listed among other important National Parks, like: Korup, Bakossi, Campo-Ma'an, Mount Cameroon, Mbam-Djerem, Waza, Faro, and Bouba-Njida. There are over 81 wildlife species observed at Kimbi-Fungom National Park. The natural values are challenged by illegal, partly trans-border, exploitation activities. The park and its peripheries are full of attractive touristic sites unique in location, form and structure (Shancho Ndimuh, June 2017), like: a python cave at Gayama in the heart of the National Park, the triple river confluence at Kimbi that looks like an ocean, the picturesque Katsina water fall and the gentle flowing river downstream, navigable towards Nigeria, the cable bridge at Nkang Kwep Akum/ Kimbi Gayama built by the Germans in the early 1900s, a 60-100 m long crossing over the Katsina through a very narrow and spectacular gorge.

Figure 37: ***Tree in Tubah Forest in Mezam Division (left), Lake Nyos in Menchum Division (middle) and botanical research in Kagwene Gorilla Sanctuary in Momo Division (right photo)***

Source: Regional Delegation MINEPDED

4.2.1.4. Further areas of ecological importance that should be classified and protected

Beside the already protected forest and wildlife reserves, there are other areas of ecological significance and/or importance for vulnerable and endangered species that need legal protection. In this subparagraph, seven of these areas are listed and described shortly. The annex (part 1 section 1.3 Protected areas) provides a more extensive description. A closer investigation during the prospective phase of this study might reveal other areas of ecological importance that should be protected too.

10. **Abongphen High Forest**. This is a (communal) not yet classified forest, as well as a watershed, with more than a 100 springs, directly serving water for about 100,000 people. It is situated in Tubah subdivision, Mezam Division, close to the village of Big Babanki, separated by the secondary road from the protected Tubah Forest Reserve. It is important for the Nigerian Cameroonian Chim-

panzee (Figure 38), about 100 (partly endemic) birds and a good number of endemic reptile, amphibian, insects and plant species. The recent construction of a road, grazing activities, an adjacent plantation, poaching and the selling of forest by villagers for farming purposes and residential development, will soon lead to a total destruction of the forest, expected to take place within the next five years, according to the Kedjom-Keku organisation, that is mobilising the local community for its protection.

Figure 38: Species found in the protected areas of the North-West Region

Preuss's monkey Cercopithecus preussi (top left, source: IUCN), Bannerman's turacco (top right, source: WWF), Prunus Africanus (down left, source: IUCN) and Nigerian Cameroonian chimpanzee (down right, source: WWF)

11. **Njinsing Forest Tabenken**. A 200 ha area of montane forest at an altitude of 1,800-2,200m in Donga-Mantung Division, close to the village of Tabenken. It has a high biodiversity and the endemic birds Tauraco bannermani and Platysteira laticincta have their northern most habitat on this last patch of natural forest in the area. It is completely surrounded by agriculture and heavily exploited for agriculture, timber, fuelwood and medicinal purposes. If not for a local taboo it would have been disappeared already.

12. **Mount Mbam**. Also known as the Mbam Hill Forest, is an abrupt mountain massif between Foumban (West Region) and Jakiri (North-West Region, Bui Division). It includes about 2,000 ha of montane savanna grassland, mixed with large patches of gallery forest on the plateau and the slopes, where they line the numerous streams, some of which are seasonal and some permanent. It is an Important Bird Area with 137 species recorded among which the largest population of Tauraco bannermani after Mount Oku. On the hill there are small settlements of Fulani (Mbororo herdsman) and at its foot there are 10 villages.

13. **Nwa forest**. The enclave of Nwa forest and its difficult terrain punctuated with rocks, hills and bumpy roads is also a potential fauna and flora area of special ecological significance. The Sardauna local government area of Nigeria's Taraba State equally shares a long border with Nwa Sub Division.
14. **Atwe forest and Itiaku forest**. Potentially to be classified and protected patches of forests in Menchum Division, Wum subdivision that are used mostly for medicinal plants and home to many species of wild animals. Itiaku Forest also hosts a hot-spring with touristic potentials. The Wum council forest has a potential for providing wood, timber and poles. These patches of forest in addition to savannah and shrubs host a good number of species of wildlife. The area plays a host to many protected species, most of whom are threatened. There are species such as antelope, hare, porcupine, cane rats, monkey, deer and chimpanzees. Most of these animals are hunted by poachers for food or as an economic activity.
15. **Lake Benakuma**. This is a lake in Menchum Division, close to Wum, with an elevation of 603 meters surrounded by ecologically interesting forest and also touristic values.
16. **Ntem Forest**. The Ntem Forest (close to Nkambe, Donga Mantung Division, Nkambe subdivision) is believed to hold some populations of the Nigeria-Cameroon Chimpanzee.
17. **Lake Nyos**. In Menchum Division, a crater lake not far from the ring road where the natural disaster took place (1986). It will probably be a part of the extended Kimbi Fungom National Park.
18. **Ambele Forest** In Momo Division with a particularly high biodiversity.

4.2.1.5. Other areas of ecological importance like wetlands

This list above of valuable, not yet (but to be) protected areas is based on the knowledge of the authors when drafting this document. It does not claim to be complete. It is to be expected that through the contact with local stakeholders more areas of ecological importance will be identified. A group of areas of particular interest are the wetlands. Among the areas listed there are only a few wetlands (lakes), while from past inventories it is known that there are (or were) a lot of other wetlands that were considered to be very important not only for nature and the ecology but also as sources of potable and clean water for lots of people.

Figure 39: Other areas of ecological importance like wetlands

Menchum Fall (left, source:author) in Menchum River in Menchum Division, Lake Oku (middle, source: Momchil Vasilev, February 2018) in Bui Division and Itiaku Hot Spring close to Wum in Menchum Division (photo on right, source Regional Delegation MINEPDED). These areas are just a part of many ecologically important wetlands in the region, that have until now not been thoroughly examined

Lots of swamps, rivers and lakes are under constant pressure and threat of extinction because of intensifying agriculture, road construction and urban development. Examples are the areas around Mezam River in mile 3-4 Nkwen Bamenda and extensive areas in Tubah municipality around Bambui- Bambili

filled with soil, both in Mezam Division. As Cameroon is a signatory to the Ramsar Convention for the protection of Wetlands of International Importance the country has certain international legal responsibilities to ensure the protection of wetlands that fulfil the criteria. It is not known at the moment of writing this diagnostic phase of the report, if inventories exist and neither how Cameroon implements its obligations from the Ramsar Convention. In the baseline study that was conducted for the development of the North-West Region in 2006 and that was cited before, there is a table listing all the wetlands in the region. It is presented hereunder as Table 18 and it should be actualised in the prospective phase of this study.

Table 18: Main wetlands in the North-West Province in 2006

Division	Communities/Villages	Type of Wetland	Potentials
Boyo	Baaiso	Raffia/Lilies	Raffia palm cultivation, Off-season cropping, Swamp rice
	Mbengkas		
	Mughom		
Bui	Mbonso	Flood plain	Farming (Rice, Maize, Beans, Oil palm, etc), Transhumance zone for cattle, Irrigation, Fish breeding area
Donga Mantung	Sabongari, Mbem, Mfe Fam, Kwar, Dumbu, Ntong	Swamps	Farming
Mezam	Lake Awing, Tingoh valley, marshes along river Mezam in Nkwen and Mankon	Swamps, marshy ares, Lakes	Farming, fishing
Menchum	Bu	Marshy area	Rice cultivation. Could be source of potable water supply and irrigation during the day
	Aguilli ridge	Marshy area	
	Lake wum, Lake Atwe	Lakes	
	Wum Raffia land	Raffia lands	Source of wine
	Befang, Modelle, Benakuma	Marshy area	Rice cultivation
	Lake Nyamashi	Lake	Water source
	Yemnge	Marshy area	Rice cultivation
	Lake Nyos, Lake Nji (Ipalim)	Lake	Water source
	Weh	Raffia land	Wine source
	Tchaah Mmen	Flood plain	Fertile farmland
Momo	Ku	Swamp	Agriculture (Fish, Rice Groundnuts, Maize)
	Abbi valley, Bessi Fomukong, Kai, Efitt, Bassa, Mengom valley, Munam valley	Swamps	Farming (Groundnuts/maize) Rice cultivation
	Andek	Pond	Fish production
Ngoketunjia	Ndop, Babungo, Bambalang	Flood plains	Rich in biodiversity Fish and rice production
	Bangolan	River flood plain	Rice Farming
	Babessi	River flood plain	Off season
	Balikumbat	Marshy area	Farming
	Bamunkumbit, Bafanji		

Source: NWDA, SIRDEP, 2006

4.2.2. Forest resources and exploitation

Forestry can be done both in natural and in artificial (man-made) forests. The surface covered by forests in the North-West Region is only limited compared to other parts of Cameroon like the Centre, South, East and South-West regions. The natural tropical (rain) forests found in the North-West Region are Tropical Equatorial (evergreen) forests (rare), Montane forest (at high altitude e.g. Kilum Ijim mountain forest and plant life sanctuary), Savannah forest and Gallery forest (near rivers, streams, lakes, and other fresh water bodies, like in the Kimbi Fungom National Park). Some of the natural forests also

provide durable kinds of hard wood, such as savannah Mahogany and Ebony to be used for construction wood, fuel wood, wood for crafts, etc. If this is harvested on a local scale and the harvest is lower than the natural growth and regeneration of these trees, harvest could be sustainable. The natural forests are protected as we saw in the previous paragraphs. Other forests like the one Northeast of Nkambe are largely man made commercial forests. Around Nkambe wooden stems of Eucalyptus are harvested and exported to other regions of Cameroon as well as to other (central) African states to be used as poles for telephone and electrical wires. Man-made artificial forest plantations are used to grow species that are adapted to particular needs or demands of the North-West people as well as species that can serve for more than one purpose. These plantations provide wood with specifications that our natural forest cannot provide e.g. for constructions, fuel wood (high calorific value needed), poles (straight and tall, durable and can resist attack from termites and wood borers). Eucalyptus was chosen for the Cameroon Savannah regions. This was done because it has a high ability to grow very fast, tall and straight. It provides construction timber, electric poles, intermediary products like poles and firewood. However, its ecological and environmental impact can be quite devastating, because it drains a lot of water, in some cases this water is derived from wetlands and watersheds that are meant for (drinking) water catchment. The Eucalyptus' tap roots penetrate to the water table and can bring about water shortages in the short, but also in the long run. In Bamenda, Kumbo and Nkambe shortages of water caused by Eucalyptus have already been observed, Therefore Eucalyptus should not be introduced in water catchment areas, but instead indigenous tree species like Savannah mahogany, Prunus african and other bee friendly exotic species like Calliandra, (Neem).

Table 19: List of beneficiaries from the support of reforestation in the North-West Region (financed in 2014 and realised in 2015)

Division	Reforestation beneficiaries	Support amount (FCFA)	Surface area reforested	Number of trees planted	Success rate (%)
Boyo	Fundong council	7,000,000	17.5	7,000	95
Bui	Tabwand support Network (T N S)	3,000,000	12.5	3,000	95
Donga-Mantung	Ako council	5,000,000	12.5	5,000	80
Menchum	Wum council	7,000,000	17.5	7,000	80
Mezam	Tubah council	7,000,000	17.5	7,000	88
Momo	-	-	-	-	-
Ngoketunjia	-	-	-	-	-
Total	**-**	**29,000,000**	**77.5**	**29,000**	**-**

Source: NIS, 2017

There are programs in the North-West Region to replace Eucalyptus with indigenous species, especially in water catchment areas and forest reserves. Besides to combat deforestation there are reforestation plans carried out in the region, though still limited. Table 19 gives an overview of reforestation efforts in the region in 2014-2015. This concerned in total 80 hectares of reforestation in all divisions, except for Momo and Ngoketunjia.

Concerning the subsidies allocated for the creation of plantations and their maintenance the following table provides an overview on the support that is generally given to Communes, Urban Communities, ICGs/NGOs/Associations and Chiefdoms.

Table 20: Subsidies for the creation of plantations and their maintenance in the North-West Region

Year	Amount of support (FCFA)	Amount allocated to plantation maintenance	Target number of trees	Target area (Ha)
2015	77 000 000	6 000 000	77 000	192,5
2016	14 500 000	6 000 000	14 500	36,25
2017	41 000 000	1 914 891	41 000	103
2018	41 000 000	4 000 000	41 000	102,5
2019	0	638 297	0	0
2020	20 000 000	0	20 000	37,625

Sources: MINFOF statistical yearbooks

Beside protecting and regulating state forests and stimulate reforestation, the Forestry Law introduced the concept of community forests in 1994. Some of these forests (2006) are shown in Table 21. Most communities saw the introduction of community forests as an opportunity to preserve forests and at the same time generate some revenues from the exploitation. In 2006 the majority of communities listed in total 13,711 ha, according to SIRDEP in the Baseline Study on the Development of the North-West Region.

Cameroon has a new strategic steering instrument, the National Forest Plantation Development Program (PNDPF), whose main actors are the Decentralized Territorial Communities (CTD) and the National Forestry Development Support Agency (ANAFOR). The said Program integrates Forest Landscape Restoration (FLR) within these activities to be financed. Similarly, the law on the General Code of Decentralized Territorial Authorities gives a central role to the regions in the management of natural resources, particularly forests and wildlife. This is not well reflected in the territorial diagnostic report of the North-West Regional Plan for Sustainable Development and Planning (SRADDT du NO). MINFOF is disseminating this program (PNDPF) to the Decentralized Territorial Collectivities, Associations and Cooperatives, NGOs, Forest Concessionaires and development partners with the aim of having them take ownership of it and implement it through projects dedicated by these actors.

Table 21: Community forests in the North-West Province in 2006

Division	Name of community forest	Locality	Surface area (ha)	Potentials	Major threats
Boyo	Abuh	Abuh	300	Prunus Africana,	Bush fires
	Muteff	Muteff	430	Honey	Farmer/grazier encroachment
	Ajung	Ajung	904	Medicinal Plants,	
	Akeh	Akeh	300	Alphine Bamboos	
	Mbi	Mboh-Bo-lem-Liung	331		
	Laikom	Liakom	532		
	Juambum	Jaumbum			
	Ijum	Mbesa	N/A		
	Afua/Aboh	Afua/Aboh			
Bui	Mbiame	Rifem	N/A	Fuel wood, Medicine, Water catchments	Unsustainable exploitation
	Mfveh-Mii	Oku	2,500	Fuel wood, medicine, water catchments, prunus, thatch grass, fruits, bush meat, honey, research, bio-diversity conservation	Unsustainable exploitation Farmers/graziers encroachment Bush fires Deforestation Landslides
	Kedjim Mawes		1,750		
	Kilum	Oku	600		
	Upper Shinga		1,500		
	Bikov		2,040		
	Mbai	Mbai	484		
	Nchiy	Nchiy	974		
Donga Mantung	Buku	Buki	30	Bush meat, honey, medicinal plants, bush mango and timber	
	Ndaka	Ndaka			
	Abafum	Abafum			
	Mbiyeh		45		
	Mbaa		40		
Mezam	Baba II	Baba II	53	Improve livelihoods, tourism Improve livelihoods Eco-tourism, timber, non-wood forest products (NWFPs) (Njansang, bush pepper, bush mango, bush meat, bitter cola, etc)	Over grazing, unsustainable farming, bush fires, over exploitation of non-wood products, fires, illegal grazing, poaching, deforestation, farming encroachment, illegal exploitation. The community depends on the non-timber forest products for their daily up keep
	MBECOFOM	Mbei	48		
Momo	Ashong	Ashong/ Njen			
	Olorunti proposed community forest	Olorunti	850		

Source: NWDA, SIRDEP, 2006

The community forests seem to be a way to locally sensitize the importance of maintaining forests, prevent bush fires, illegal exploitation, overgrazing and encroachment by farmers. Figure 40 gives some pictures from the 2006 development report.

Figure 40: Pictures about community forestry

Source: NWDA, SIRDEP, 2006

Legal framework for forest landscape restoration

The Cameroonian legal framework is favorable to forest landscape restoration (FLR). Although the financing of FLR projects remains difficult to address, the recommended approach could be based on the integration of FLR into ongoing national programs, including programs aimed at integrated rural development. However, in the Northwest region, private reforestation initiatives exist, such as ENEO Cameroon S.A., which has invested "massively" in eucalyptus plantations for the production of electricity poles. Currently, this company buys about 100,000 poles per year from private individuals.

The North-West Region has the greatest potential for landscape restoration, with fairly favorable climatic and soil conditions. There is also a dynamism and a local know-how around the tree. But the great challenge remains the integration of agro-sylvo-pastoralism. In this region, private eucalyptus production plantations; reforestation of hills to protect the watersheds of drinking water sources; restoration of forest reserves (Kilum Ijum Mountain); and the development of agroforestry are the axes of intervention to be favored.

The main direct causes of degradation identified are unsustainable logging, illegal cutting for charcoal and grazing in the forest. As for deforestation, the main direct cause is the conversion of forests into crops (land clearing) with shifting cultivation and small-scale illegal logging in protected areas.

Decentralization represents an important opportunity to implement the FLR concept despite the weak capacities of the CTDs for integrated planning at the local level. At the local landscape level, the Regions need to deepen local institutional analysis in order to create local leadership and lead relevant stakeholders in a coherent and participatory consultation process. It is therefore important to set up consultation frameworks at the landscape level with the support of research.

In practice, it is necessary to seek to restore degraded landscapes by first identifying them through a participatory Forest Landscape Restoration Opportunity Assessment (FLROA) methodology.

In the prospective phase of the Regional Sustainable Development Plan of the North-West Region should consider the needs and potentials for the restoration of the landscape of the region. The PNDPF develops a whole axis on the restoration and protection of watersheds and slopes, hence the need for the MEOR study to choose options according to the levels of degradation, especially since many landscapes in the region are degraded due to anthropic action.

Forest products

Products from the forest can be timber, nuts, fruits, honey and (parts of) plants for medicinal purposes. Table 22 gives an overview of products produced in forests in the different divisions in 2006. Figure 41 gives an overview of the non-timber forest products in transit or exploited in 2014.

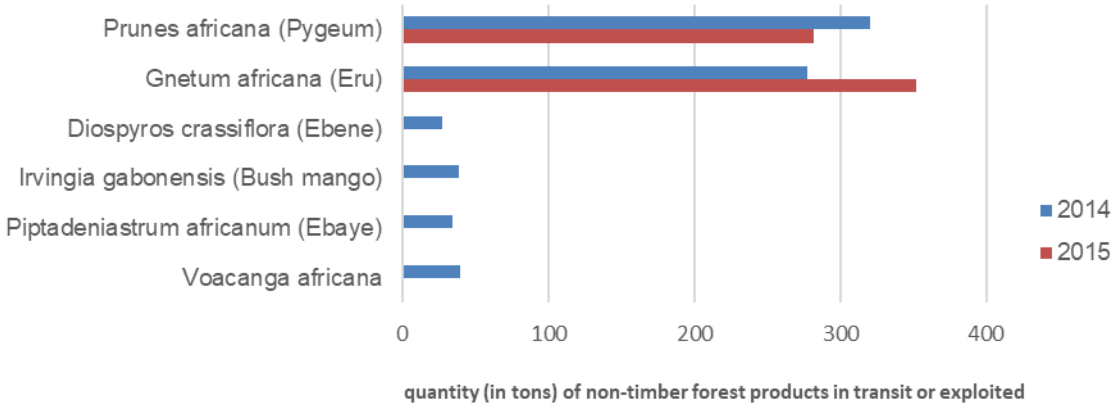
Table 22: Forest products and non-wood forest products of the North-West Province in 2006

Divisions	Locality	Forest Products	
		Type of timber	NWFP (Species)
Bui	Oku (Kilum Mt.)	Khaya grandifolia (Mahogany)	Prunus Africana, Animals (Rats, Black monkey, Antelopes, Squirrels, Rare Birds-Bannerman's Turaco, Banded wattle-eye, Bannerman's weaver etc), Honey
	Mbiame		Prunus Africana, Honey
	Anyanjua		Prunus Africana
	Djichami		Cola acuminata (Kola nuts)
	Ngonakimbi	Obeche	Voacanga africana
		Khaya grandifolia (Mahogany)	Canarium shweinfurthii (Aiele)
		Khaya senegalensis (Khaya)	Gnetum africanum
		Milicia excelsa (Iroko)	
Donga Mantung	Mbande, Nzibe, Babilon, Jafor, Jeyu, Buku, Ndaka, Abafum, Abunshe	Mahogany, Milicia excelsa (Iroko), Albizia adianthifolia (Albizia), Lophira alata (Azobe)	Ricinodendron heudoletii (Ngangsang), Garcinia cola, Irvingia gabonensis (bush mango), bush species, orgaba
Menchum		Khaya grandifolia (Mahogany), Milicia excelsa (Iroko), Entandrophragma cylindricum (Sapele)	Prunus africana (Pygeum bark (Medicinal)), Mushroom, Gnetum africanum (Eru), Ricinodendron heudoletii (Njangsang), Aframomum alboviolaceum, Aframomum melegueta (Bush Pepper), Roots (Lezanga), Honey, Hyparrhenia hirta (Thatching grass), Garcinia cola (Better cola), Bush meat
	Ambelle clan	Paper wood, Milicia excelsa (Iroko), Khaya grandifolia (Mahogany), Diospyros crassiflora (Ebony), Lophira lanceolata (Lophra), Baillonella toxisperma (Moabi), Lophira alata (Azobe)	Ricinodendron heudoletii, Cyperus bulbosus (Bush onion), Garcinia cola, Ricinodendron heudoletii, Cola acuminata (Kola nuts), Aframomum melegueta (Bush pepper)
Momo	Kai, Zang Tabi, Tinechung, E-banyang	Entandrophragma cylindricum (Sapele), Khaya grandifolia (Magohany), Khaya senegalensis (Khaya), Milicia excelsa (Iroko)	Garcinia cola (Bitter Kola), Aframomum melegueta (Aligator pepper), Prunus africana (Pygeum)

Source: NWDA, SIRDEP, 2006

Figure 41 and Table 23 give an overview of the non-timber forest products in transit or exploited in 2014 and 2015 (for details on the years and months see detailed tables in annex part 1 section 1.3 Protected areas). The main non-timber forest product in the region is ‘prunus Africana’ harvested commonly in Bui and Boyo divisions. It is used in the region but also finds outlets in other regions like the Centre and West regions.

Figure 41: Quantity (in tons) of non-timber forest products in transit or exploited in 2014/2015



Source: Regional Delegation of Forestry and Wildlife

Table 23: Observations on the non-timber forest production 2014 / 2015

Products	Total 2014 [tons]	Total 2015 * [tons]	Observations / comments
***Prunus africana* (Pygeum)**	320.6	282.0	Harvested products in Bui and Boyo divisions destined for Bafoussam and Yaounde
Gnetum africana (Eru)	277.7	351.8	Harvested products in the Centre region destined for Nigeria
Diospyros crassiflora (Ebene)	27.2		Harvested products in the Centre region in transit
***Irvingia gabonensis* (Bush mango)**	38.2		On transit from East, Centre and South West Regions
***Piptadeniastrum africanum* (Ebaye)**	34.0		
***Piptadeniastrum africanum* (Ebaye)**	39.4		

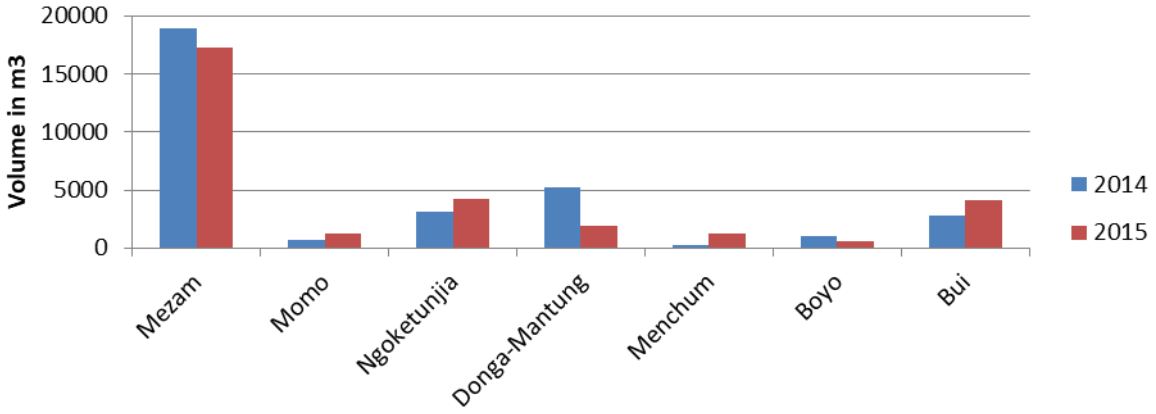
** limited data for 2015 available*

Source: Regional Delegation of Forestry and Wildlife

Figure 42 and Figure 43 give the quantities of timber produced and sold in 2015 for the different divisions in the North-West Region as well as for the different trees, and thus also an idea of the economic importance.

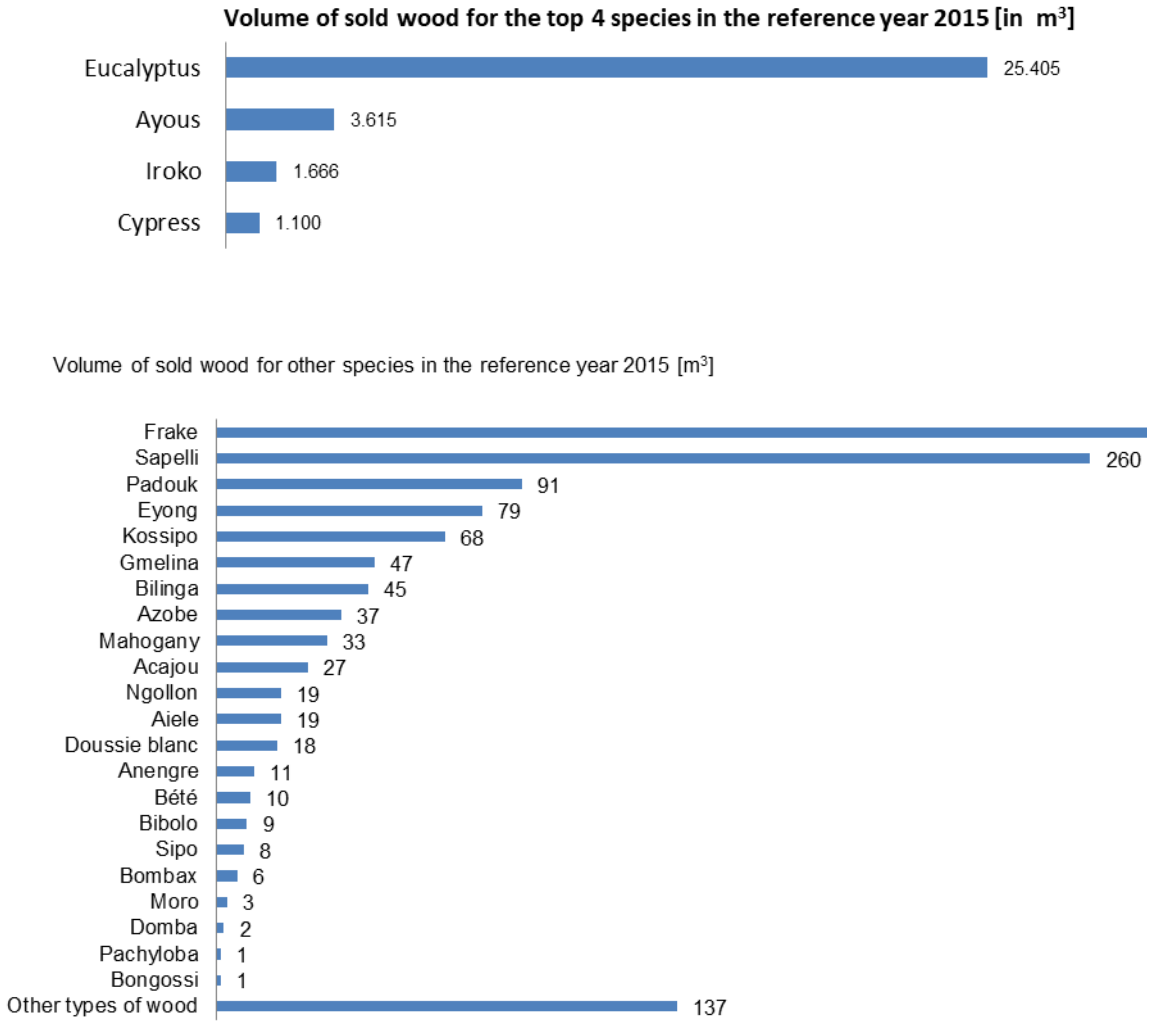
The overall commercial timber productivity is far lower than in the Centre, East, and South regions that have vast forests. It is the highest in Mezam Division, with nearly 19,000 metric tons, which is 59% of all the timber sold in 2015 in the North-West Region. However, it must be noted that a very substantial part of the wood that is in fact produced in other divisions but sold in Bamenda, is included in these figures for Mezam. In fact, a lot of that wood comes from Ngoketunjia, Boyo, Momo and Bui Divisions. Bamenda serves as a major hub for the collection and selling of wood before it is being transported elsewhere. In January 2018 Donga-Mantung Division had the highest productivity of all divisions, while over the whole year it delivers the second highest productivity in legally sold timber (16% of the total), while Ngoketunjia with 10% and Bui with 9% range 3rd and 4th. Menchum and Momo produce and sell only small quantities of wood.

Figure 42: Statistics of legally sold woods (volume in m3) in 2014 and 2015



Source: NIS 2016, NIS 2017

Figure 43: Volume (in m³) by specie of wood legally sold in the North-West Region in 2015

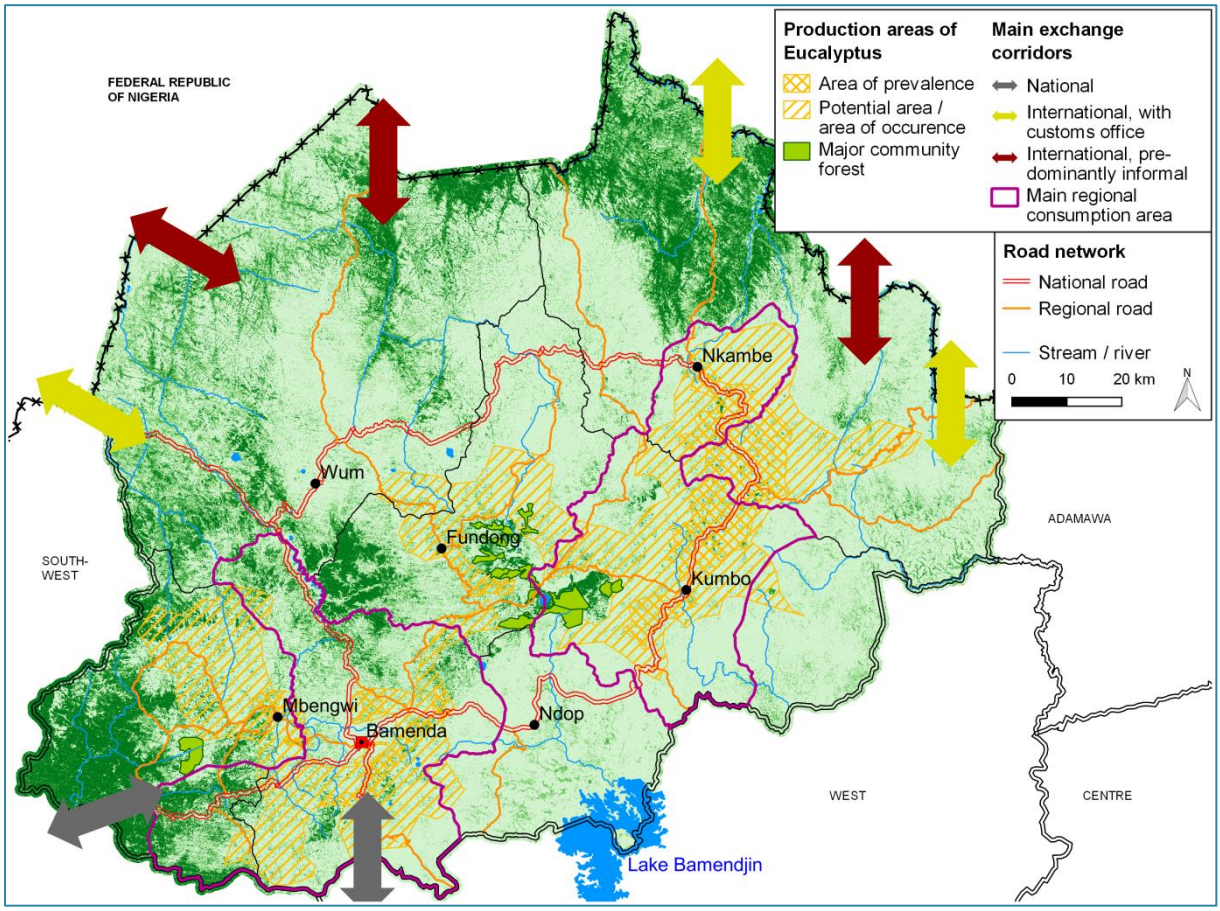


Source: NIS, 2017

Looking at Figure 43 the importance of Eucalyptus for the commercial exploitation of timber in the North-West Region is striking. Of the total volume produced in 2016 of nearly 33,000 tons 77% was Eucalyptus. Ayous (11%), Iroko (5%) and Cypress (3%) also produce substantial quantities, while the rest of the

metric tons (4%) is produced by as much as 22 different species of trees. When interpreting these absolute numbers it should be taken into account that they are only reflecting the legally sold quantities. There is a lot of corruption when it comes to timber production and the illegal selling of wood.

Figure 44: ***Production areas of Eucalyptus tree and export corridors (for larger map see volume 3, section 3 - Economy)***



Data source: field survey IU/CPAC/geomer 2018

The locations of forestry and specifically for Eucalyptus can be characterised by looking at Figure 44. While forests generally cover parts of all major valleys Eucalyptus forestry takes place in specific parts of some divisions, mainly along the ring road where better access ensures transport of wood.

4.2.3. Carrying capacity of land and forests

Intensified traditional animal husbandry and traditional crop farming have negative impacts on biodiversity and on ecosystem services such as food and water availability through trampling, muddying of streams, destruction of streams banks, burning, clearing, overharvesting of non-timber forest products and indiscriminate felling of trees (J.H. Ibrahim, researcher of the agro-pastoral program of MBOSCUDA, 2016).

It is obvious that with the growing numbers of people, as well as cattle and cropping areas the conflicts in different kinds of land use will increase and the carrying capacity of forests and nature is threatened seriously. The impacts are already there, will grow and boomerang on all sectors of the socio-economic development of the North-West Region. Figure 45 shows what happened in and around Shisong in 2016-2017, what will happen there soon again and in many other places, if the carrying capacity of our natural system is over asked.

Figure 45: ***Water scarcity and land degradation in and around Shisong in Bui Division in January/ February 2016.***

Above: water hunt and the Shwai stream completely dry for the first time in a lifetime. Below: Land degradation in the hills around (December 2016). All pictures by John Paul Suiven

Increasing poverty and climate change add to this alarming cocktail of land degradation and even desertification. It is evident that besides communication, information and education to inform people on what is happening; mitigation and adaptation measures will have to follow. To name a few: keeping small stocks of cattle, engaging in other income generating activities, intensifying climate smart agriculture, introducing harvest and smart and use of rainwater to tackle some of the drought, introducing ranching, cross breeding and pasture improvement as well as paddocks for cattle on a larger scale, saving and replanting the forests with indigenous species replacing Eucalyptus and intensifying the use of non-timber forest products in a sustainable way, protecting watersheds and water catchments, (as well as stimulate tourism, prioritizing the investments to accelerate the improvement of roads, electricity, water, health and educational infrastructure), etc. In other words: plenty of threats and the same number of challenges for the next prospective phase of this project.

Environmental based development needs to consider environmental protection such as:

- Re-afforestation / Afforestation
- Protection of green areas or areas to improve the creation of green cities
- Creation of waste disposal facilities.

4.3. Hazards in the natural environment and climate change

4.3.1. Natural hazards

Naturally induced hazards in the North-West Region are relatively rare and are mostly confined to landslides on steep slopes and occasionally flooding along rivers and streams. At present in Cameroon only Mount Cameroon in the South-West Region is still recently and regularly volcanically active. In the North-West Region no volcanic activity or accompanying earthquakes have been observed since many centuries.

On the 21st August 1986 a natural disaster took place around the crater Lake Nyos in the Menchum Division of the North-West Region, killing all life around it, including 1,724 human beings. The most plausible explanation is that a gas cloud (carbon dioxide and sulphur dioxide) erupted from the volcanic lake. Some scientists predict that the physical characteristics of Lake Awing, another crater lake, some five kilometres south of Bamenda Upstation in the Mezam Division, make it vulnerable for under water explosions that might lead to changing water quality, gas emissions and breaking of the wall, which could cause serious flooding in a village down in the valley and other housing areas downstream.

The presence of soft soils, in combination with building activities (housing, roads) or agriculture, with the more regular occurrence (due to climate change) of very intensive precipitation, especially at the beginning or the end of the rainy season, enhance the risks of landslides. On the steep slopes from Nkwen / Bamenda to Upstation a large landslide covered a road. On Sabga Hill in Mezam and on the steep hills at Tobin/ Kumbo, close to the Ring road towards Mbelim, several smaller landslides were observed (2018, Figure 46).

Figure 46: Small landslides at Kumbo/ Tobin in Bui Division

27th of March 2018, two left pictures) and on Sabga Hill in Mezam Division going down to Bamessing (26th of May 2018, two right pictures), caused by an excessive precipitation event and respectively cropping on too steep slopes and overgrazing (NW Field Survey 2018)

The NW Field Survey, 2018, that has analysed the return of over 700 questionnaires, confirms not only the occurrence of landslides but also a rising trend in almost all divisions (see annex part 2 section 3.2 Climate issues).

The next paragraphs will first bring a closer look at natural hazards and then will describe climate change and especially the impacts on agriculture and ways to adapt.

Natural hazards have always occurred. Some of these hazards are induced or aggravated by certain kinds of land use, like it is the case with landslides and agriculture on steep slopes. Others like volcanic or gas eruptions from lakes are independent of landuse. In Table 24 and Figure 46 natural hazards that occurred in the North-West Region are listed.

Table 24: Disasters and other emergencies registered in 2013

Region	Fires	Traffic accidents	Strong winds	Sinking	Collapsed buildings	Outbreaks/ food poisoning	Floods
Adamawa	4	5	0	11	2	1	0
Centre (exclusive Yaounde)	5	18	2	1	1	0	2
East	6	8	0	2	1	0	0
Far North	4	2	1	1	0	1	0
Littoral (exclusive Douala)	22	29	1	4	4	0	4
North	0	1	0	0	0	0	0
North-West	1	3	2	1	0	0	0
West	5	9	0	0	0	0	0
South	6	26	5	0	1	1	0
South-West	1	3	0	0	0	0	0
Cameroon	54	104	11	20	9	3	6

Source: NIS, 2016

From the table one can conclude that compared to other regions in the country, the North-West Region (at least in 2013) was relatively unaffected with only one fire compared to 54 in the country and few traffic accidents. These however are not natural hazards in opposition to strong winds creating a lot of damage. It occurred twice, which is almost 20% of the occurrences nationally. In 2013 there were no floods. However, floods are known to occur. In Figure 47 floods are registered in Ndop Plain (flood risk zone with frequent floods) as well as in Widikum (1997), Ber (1999), Rom (2000) and Menchum Valley (1997). The latter one was aggravatedd by the overflowing of a hydropower Dam in Nigeria. Besides local information revealed that there were several urban floods, like in downtown Bamenda by heavy precipitation and in Kumbo (banks of river Bui). At present there is no information on increasing frequencies, although the heavy outpours seem to happen more often due to climate change. During the NW Field Survey, 2018 people were asked about the occurrence of flood events. The results are presented in Table 25. This table confirms that flooding in the North-West is not a main issue compared to other regions of Cameroon, although of course the local impacts can be very big.

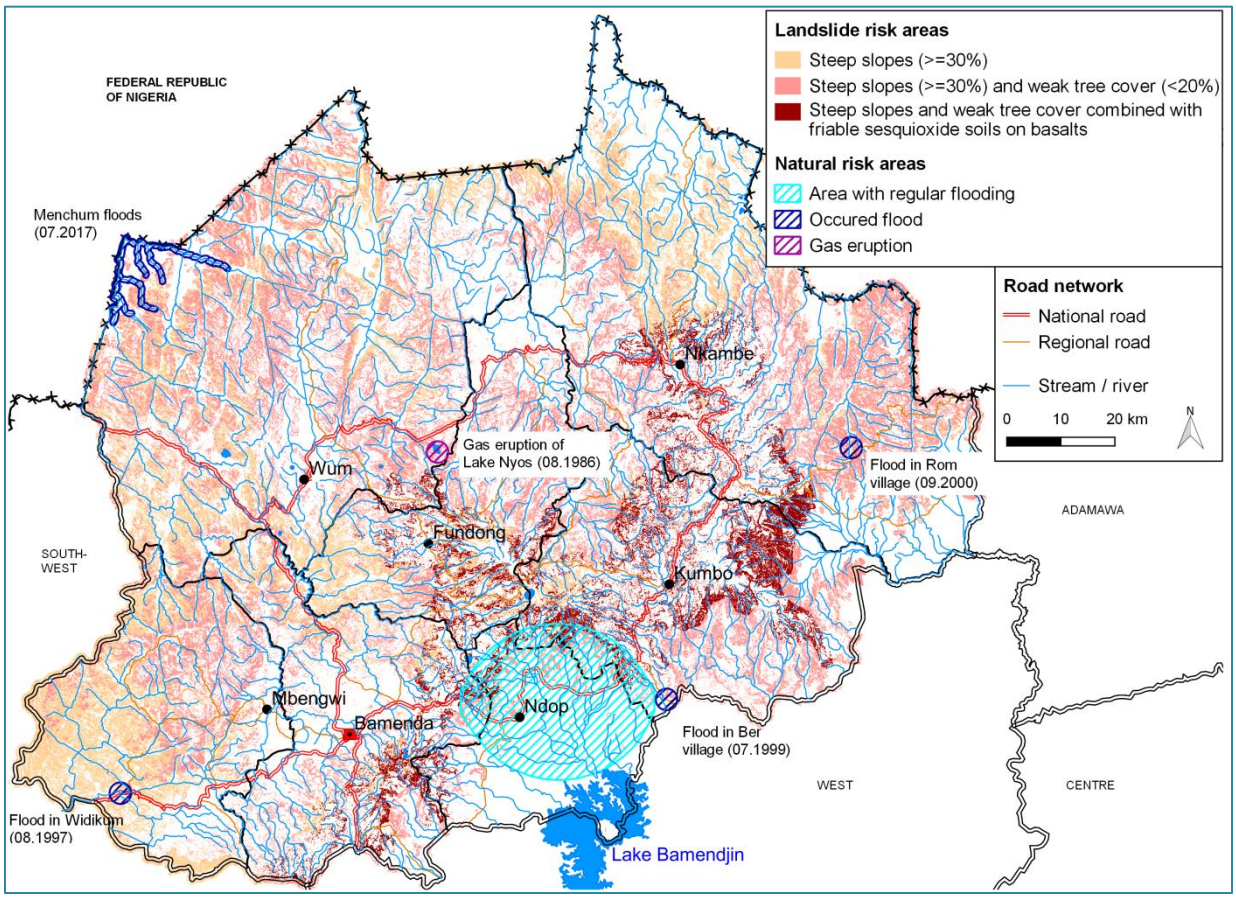
Figure 46 also shows the areas with the steepest slopes (> 30%) which is in fact the most of the area. In some places this is combined with a weak tree cover (< 20%) and in a smaller portion beside the week treecover there are friable volcanic soft soils as well. These areas (coloured brown on the map) are considered to be much more susceptible for landslides. It concerns areas southeast of Bamenda in Mezam Division, around Foundong in Boyo Division, north of the Ndop Plain and east of Kumbo in Bui Division and north of Nkambe in Donga-Mantung division. The rest of Donga-Mantung, Menchum, Momo and NgoKetunjia. Figure 46 also depicts the unique gas eruption from Lake Nyos that was described in the previous paragraph.

Table 25: Floods frequencies in the rainy season over the course of the last 12 month

Residence	Has been disrupted by floods in the last year				
	Yes, regularly	Yes, from time to time	Rarely	Never	Total
Douala	14.0	8.8	6.8	70.4	100
Yaounde	4.9	4.0	3.1	88.0	100
Other cities	3.7	6.3	3.5	86.4	100
Area of residence					
Urban	7.5	6.4	4.5	81.6	100
Rural	3.6	4.4	2.7	89.3	100
Region of investigation					
Douala	14.0	8.8	6.8	70.4	100
Yaounde	4.9	4.0	3.1	88.0	100
Adamawa	1.2	3.6	0.8	94.3	100
Centre	1.6	1.7	1.5	95.2	100
East	1.8	1.9	2.2	94.0	100
Far North	5.9	8.3	6.0	79.9	100
Littoral	4.3	4.4	2.7	88.6	100
North	4.7	7.6	3.7	84.0	100
North-West	1.0	1.8	1.8	95.3	100
West	2.1	1.8	1.6	94.6	100
South	5.6	4.7	2.9	86.7	100
South-West	6.1	7.3	1.7	85.0	100
Cameroon	5.3	5.3	3.5	85.9	100

Source: NW Field Survey, 2018

Figure 47: Natural risk map of the North-West Region



Data source: based on data from IRGM

4.3.2. Climate change, mitigation and adaptation

As far as the contribution of activities is concerned in Cameroon towards Climate Change, it can be stated that the contribution to green house gasses compared to western industrialised countries is very small when looking at the contributions from industries, agriculture and traffic. However, in the North-West Region the so-called surface albedo that is related to the radiation on earth did change considerably because of massive deforestation activities. As a result, at least the regional climate seems to be affected. It also increased the roughness of the surface and thus the latent heat flux and the runoff of water, including rivers. Normally the natural highland vegetation is very resistant to prolonged drought periods. Slash and burn farming methods cause the destruction of soil and organic matter and which often leads to bush fires during the dry season. Bushfires can have severe consequences for the environment including loss of vegetation and wildlife and these fires also cause changes to the atmosphere such as increased levels of CO2 in the air through large volumes of smoke and ash and localised change in weather. The impact of bushfires on the people of the region is devastating. Some of the affects are lasting health problems, poverty resulting from loss of livelihood, rural exodus, and social displacements in families, intra-and inter-community conflicts from competition over scarce natural resources and many other negative effects such as insufficient pasture for cattle. Overgrazing also triggers more pressure on stunted vegetation. This makes the Northwest Region of Cameroon highly vulnerable to climate change like most areas in sub-Sahara Africa.

Climate change-related impacts in the North-West Region of Cameroon include temperature fluctuations from year to year, desiccation of natural habitats and more frequent droughts and floods. Such changes can have a negative impact on agricultural productivity and food security. Similarly, the sustainability of some (rural) infrastructure would also be negatively impacted by climate change. The health of people in the area could be worsened by climate variability (drying up of water resources and flooding are closely related to an increase in water-borne diseases such as cholera).

Other extremes of (also naturally occurring) hazards induced or aggravated by climate change are flooding (see paragraph 4.3.1), landslides, mudflows and rock falls, emanating from heavy rainfall. Some of these local realities have been caused by erratic rainfall, especially the onset of rain at the beginning of the wet season and the end of the prolonged dry seasons.

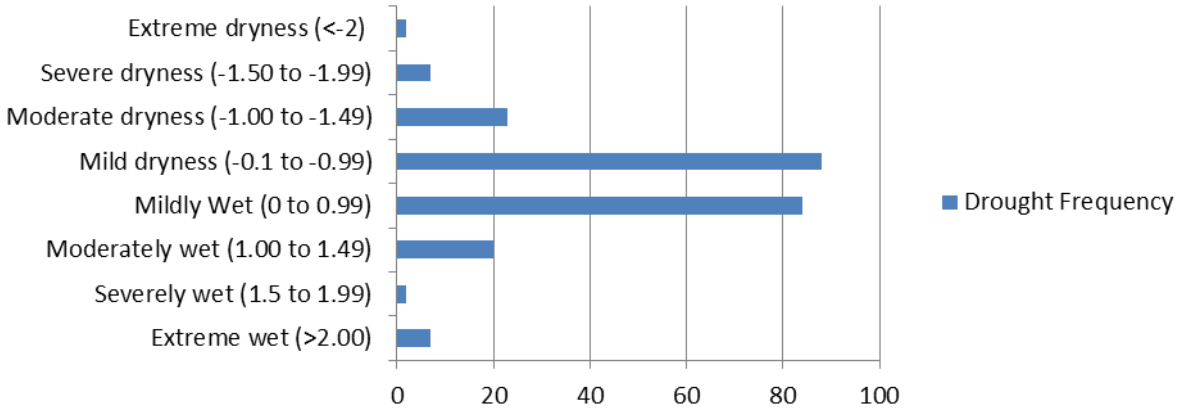
The variations in the climate have greatly disrupted the agricultural calendar and created multiplier effects like drying up of some annual springs (Figure 47), frequent droughts during the rainy season, increasing local temperatures, poor harvests of staple crops like corn (maize), beans and Irish potatoes, incessant water crisis throughout the year, reduction in volumes of rivers, springs and other water bodies. The impacts of climate variability on agriculture on the Bui Plateau, that seems representative for other similarly elevated parts of the region, were extensively studied by the University of Bamenda and given the importance of agriculture for any socio-economic development they are summarised in the annex (part 1 section 1.4 Impacts of climate change) of this report and presented hereunder.

Impacts of climate variability on agriculture on the Bui Plateau

The **predictability of precipitation** is of the utmost importance for farming and thus for the socio-economic development of the North-West Region. In the annex (part 1 section 1.4 Impacts of climate change) to this chapter the vulnerability of farming for variations in the climate is described for Bui Plateau in Bui and Donga-Mantung Division and is considered to be representative for other divisions as well. It is based on unpublished data for the draft PhD of J.P. Suiven of the University of Bamenda. These were obtained from meteorological stations in Jakiri (1961-2006), Ndu (1957- 2015), Oku (1986-1997), Tobin (1998-2009), Shisong (1975-2015), Takui (1997-2016) and Mbo Nso (1975-2015).

From the study it is clear that the precipitation is changing in amounts, intensity and periodicity. There is a tendency towards a prolonged dry season with consistent rains only prevailing from July. This disrupts the traditional agricultural calendar, where people expect the rainy season to start from mid- March, ultimately April. Prolonged drought can affect seedlings, cause a higher vulnerability to pests and enhance the chances for a necessary replant. The probability of the occurrence of extreme wet and extreme dry periods was analysed by determining the standardised precipitation index (Figure 48) for the period 1957-2016. The results show that the frequency for (extreme) wet and especially for mild and severe dryness increased significantly. By looking at the total rainfall in periods of ten years one can observe that since 1957 four out of six decades show a decrease and the overall trend seems to be a decrease of rain, ranging from 0.02% in Ndu to 3.8% in Shisong.

Figure 48: SPI (Standardized Precipitation Index) values for Bui Plateau (1957-2016)



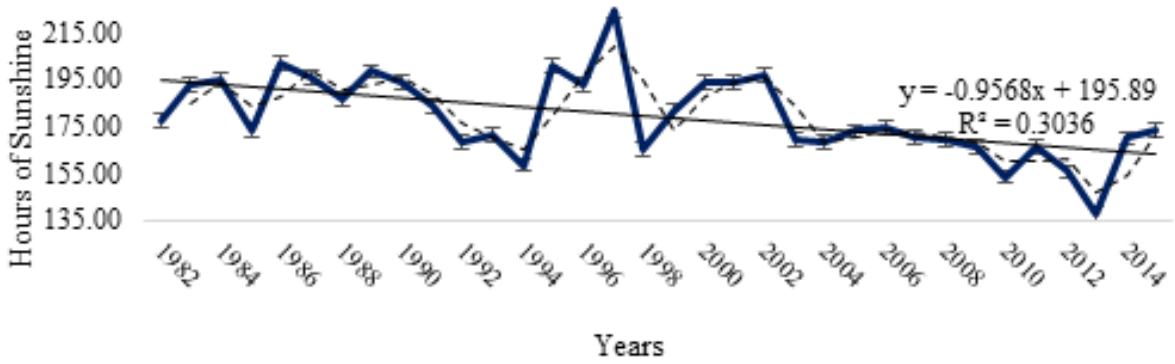
Source: Suiven, 2018

In the NW Field Survey, 2018 more than half of the respondents in Boyo, Bui, Mezam and Menchum divisions state that they have been facing problems in their locality because of massive precipitation or hail. Asked if they witnessed an unusual shift in the period of precipitation that caused problems with farming in their locality 40 to 67% stated that they did. Almost half of the respondents pointed to the months of March, April (34%) and May where they witnessed most change.

As for **temperature** it varies with altitude. Elevated stations like Oku, Takui and Ndu experience relatively low mean temperatures of 16-18ºC and have a low variability in seasonal temperature. Lower stations like Tobin show mean temperatures of 24ºC in the wet and 26 ºC in the dry season. On the whole the Bui Plateau and in fact the whole region shows a slight decrease of minimum temperatures (-0.1ºC), an increase of maximum temperatures (+1.0ºC) in the period 1975-2013. The mean annual temperature since 1982 increased with 0.28ºC, which is in line with global changes. This has widespread impacts on the ecology and on livelihood and makes both more vulnerable.

Evaporation is decreasing with a clear trend from 2002, caused by rising temperatures, a reduction of moist surfaces and the planting of large Eucalyptus plantations. This also has effects on the precipitation pattern. The **relative humidity** in the rainy season is constant and high at 83% and drops during the dry season to a level of 55%. In the data collected in 1997/1998, it was exceptionally low, because El Niño disrupted the global circulation pattern. When you look at changes in the period from 1982-1992 it slightly increased and since then it shows a decrease. For **sunshine** and thus surface solar radiation the global trend since the 1950ies is a decline. This is also observed on the Bui Plateau, for example at Ndu (Figure 49). In the rainy season rain bearing clouds block sun rays from getting to the land surface and lead to heavy convectional showers in the afternoons when sunshine is expected to be at a maximum.

Figure 49: Decreasing mean annual sunshine hours, Ndu (1982-2015)



Source: Suiven, 2018

Average annual **wind velocity** is also declining although strong wind and storms with abundant precipitation, are frequently observed, especially at the onset and towards the end of the rainy season.

Climate change, mitigation and adaptation policies

Since 2012, Cameroon has a National Climate Change Action Plan (NCCAP) aimed at building the capacity of socio-economic actors to adjust to climate change (UNDP 2009; African Development Fund 2013; Egan 2013). A series of adaptation measures have been formulated, including:

- assessment of risk and vulnerability studies to identify the best intervention strategies
- sensitisation and training of traditional rulers (Fons, Chiefs, Elders), Mayors of municipal councils and farmers on environmental protection and climate change adaptation
- knowledge building on climate change adaptation by training many stakeholders
- promotion of improved stoves to ease pressure on wood resources
- increase in the proportion of reforestation of watersheds through analogue forestry
- rangeland improvement activities to reduce bush fires and consequently scale down greenhouse gas emissions, Climate Change and variability

According to the NCCAP the consequences and effects of climate change in the North-West Region are as follows: rising temperatures, a changing landscape, wildlife at risk-extinction due to habitat loss, increased risk of drought, fire and floods, stronger storms, more heat-related illnesses and diseases e.g. malaria and economic losses.

In the NW Field Survey, 2018 respondents were confronted with questions on hazards and climate change related issues.

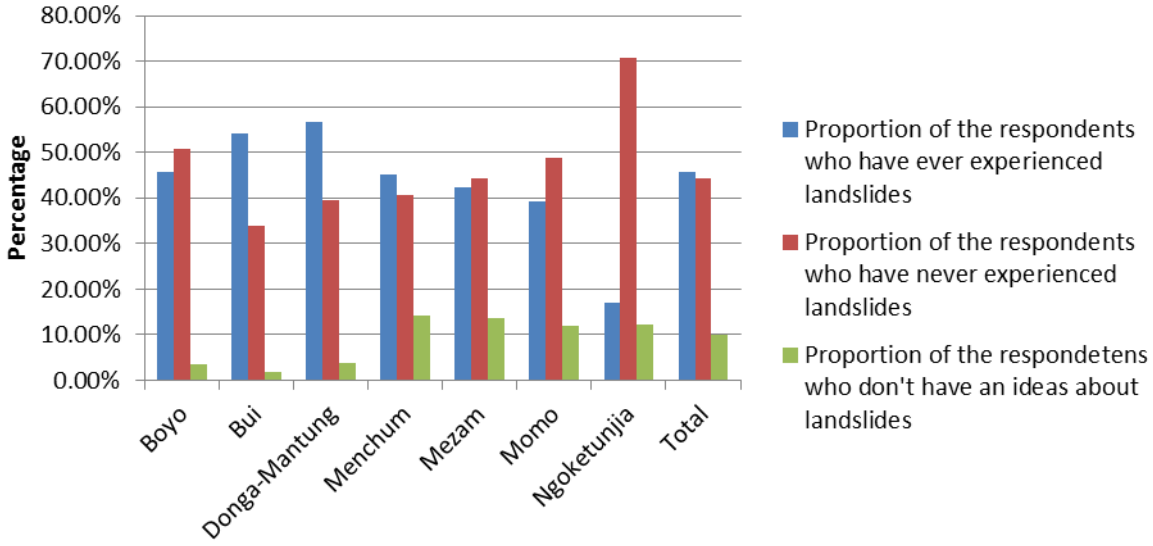
Table 26 and Figure 50 give the percentages of the respondents who experienced landslides in their division. Asked to choose from proposed measures to adapt to natural / hydrological hazards most of the respondents (93%) stated that the most important measure is “permanent education and sensitisation of population on environmental mitigation risk measures, while afforestation and planting of trees came second (81%) and adopting appropriate agricultural practices and avoid bush fire came third with 44% of the respondents. Figure 50 and Table 26 gives an overview of the view of the respondents from the various divisions on the activities responsible for climate change and on their view how it will impact on their livelihoods.

Table 26: Proportion of respondents in different divisions of the North-West Region who state that they experienced landslides

Division	Proportion of the respondents who have experienced landslides	Proportion of the respondents who have never experienced landslides	Proportion of the respondents who don't have any ideas about landslides
Boyo	45.80%	50.80%	3.40%
Bui	54.10%	33.90%	1.90%
Donga-Mantung	56.60%	39.60%	3.80%
Menchum	45.20%	40.60%	14.20%
Mezam	42.30%	44.20%	13.50%
Momo	39.10%	48.90%	12.00%
Ngoketunjia	16.90%	70.80%	12.30%
Total	45.60%	44.40%	10.00%

Source: NW Field Survey, 2018

Figure 50: Proportion of respondents in different divisions of the North-West Region who state that they experienced landslides



Source: NW Field Survey, 2018

Table 27: Activities conducted in each division that contribute to the climate change

Activities conducted by the population that contributed to the climate change	Distribution (%) of the respondents of each division according to those who declared that the following activities who contribute to the climate change are conducted in their locality						
	Boyo	Bui	Donga-Mantung	Menchum	Mezam	Momo	Ngo-Ke-tunjia
Slash and burn farming	0.75	0.76	0.86	0.92	0.78	0.91	0.85
Tree cutting/deforestation	0.93	0.77	0.83	0.87	0.89	0.82	0.89
Intensive use of charcoal/firewood	0.61	0.4	0.35	0.38	0.35	0.23	0.43
Poor waste management	0.75	0.52	0.32	0.34	0.43	0.32	0.63
Poor management of plastic	0.8	0.37	0.24	0.3	0.39	0.27	0.45

Source: NW Field Survey, 2018

From Table 27 it is obvious that in most divisions deforestation is seen as the most important cause, with the exception of Donga-Mantung, Menchum and Momo where “Slash and burn” practices in agriculture are seen as the most eminent causes, with deforestation as second. Poor waste management is seen as an important cause mainly in Boyo and Ngoketunjia. The same is true for the use of firewood and charcoal for cooking. Only a minority sees any relationship with climate change except for Boyo who does realise that this relationship does exist and it’s fairly important.

Looking at the consequences of climate change (Table 28) the decreasing agricultural yields, the irregularities in seasonal changes, the decreasing volume of water streams and the increase of temperature related diseases score relatively high with all respondents of most divisions. On the other side apparently only very few of the respondents (1 in 3-5) believe that landslides and the decrease of forests and natural reserves have anything to do with climate change. That climate change can lead to degradation of the environment and erosion, which in this chapter is regarded as one of the most important impacts is not seen as much of a problem in all divisions. Only in Mezam a slight majority thinks that this is relevant, while in Boyo 80% of the respondents are inclined to agree with that.

Table 28: Consequences of climate change in the different localities of the North-West Region

Consequences of climate change in the different localites of the North-West Region	Distribution (%) of the respondents of each division according to those which declared that the following consequences of climate change are observed in their localites						
	Boyo	Bui	Donga-Mantung	Menchum	Mezam	Momo	Ngo-Ketunija
Poor/decreasing agricultural yields	89	74	74	77	61	73	63
Irregular change of seasons	87	73	70	83	74	62	58
Environmental degradation/Erosion	80	43	35	51	37	32	42
Landslides	33	34	22	17	24	22	20
Natural/hydrological hazards	15	25	14	9	26	12	22
Decreasing volume of water streams	82	73	65	73	69	53	55
Destruction of high forest, natural reserves	61	32	32	25	33	24	22
Disease increase (because of hot, cold…)	79	46	59	57	52	27	38

Source: NW Field Survey, 2018

Finally, respondents (NW Field Survey, 2018) were asked to vote for proposed resilience strategies in the North-West Region to mitigate and adapt impact of climate change. The majority of the respondents (39% for Mezam to 79% for Boyo) chose “mixed cropping/ maintaining land coverage”, “tree planting” (48-89%) and the “reduction of slash and burning techniques in farming” (34-77%) as the most important strategies/ activities. “To define soft slopes where building or cropping is considered to be risky” scored very low (8-28% of the respondents). The “use of indigenous species in afforestation” (17-28%) and to “take care of sufficient seed availability in case of drought of young seedlings” (12-25%) were not much more popular as resilience strategies either. The low scoring strategies should nevertheless also be an important focal point in the contacts with the various stakeholders in the prospective phase in order to determine whether the experts are mistaking or the information with the stakeholders is still insufficient.

It is obvious, as was already stated at the end of the section on biotics, that the traditional land practices of cropping, livestock and also urban development can not be maintained in the light of the serious degradation of land that is already occurring in the North-West Region and that it will greatly increase due to poverty as well as climate change. It is very necessary that in the prospective phase of this study an action plan to mitigate and adapt to climate change, affecting all kinds of land use, is elaborated. The deterioration of the environment in the North-West Region is accelerating at a most alarming rate and might make all attempts for any socio-economic development futile.

4.4. Assessment of the situation in environment

Table 29: SWOT summary of Abiotic Environment

SWOT summary: **Abiotic Environment**	
STRENGTH	**WEAKNESSES**
• Highly fertile soils, abundant rainfall and relatively favourable temperatures for living, visiting & farming • No industrial pollution of air and water • Plenty of natural watersheds and – catchments • Favourable conditions to profit from natural resources, like: forest (products), energy from wind/ water/ sun/ biomass as well as mining • Geomorphological superb scenery	• High percentage of degraded areas (loss of soil and water, especially on steep slopes) • Ignorance of environmental impacts and weak enforcement of regulations, corruption • Low and decreasing percentage of tree cover • Air quality locally detrimental to health • Water quality locally detrimental to health and the ecosystem
OPPORTUNITIES	**THREATS**
• Diversification of agriculture based on the natural carrying capacity of soil (fertility) and water • Harvesting of rainwater • Protection of watersheds and catchments, replacing Eucalyptus with indigenous species • Reforestation on steep slopes with soft soils as alternative livelihood • Take advantage of the highly developed educational system (and the cooperative system in agriculture) to educate people on every day environmental impacts and possible health hazards of pesticides, uncontrolled waste management, cooking on wood and water pollution	• Deforestation for agriculture (crops and livestock) and urban development • Health problems and environmental stress (shortage of wood and clean water) caused by cooking on wood, dust, bushfires, slash & burning and polluting rivers with waste, pesticide runoffs, and cattle • Planting of Eucalyptus in water sheds and catchments • Non regulated mining for especially Gold and Bauxite (inadequate implementation of the existing Mining Code)

Table 30: SWOT summary of Biotic Environment

SWOT summary: **Biotic Environment**	
STRENGTH	**WEAKNESSES**
• Enormous biodiversity and rich natural habitats that contribute a lot to the global ecological capital • Forests providing natural products like honey and plants for medical purposes and creating resilience against droughts, landslides and floods, thus preventing natural hazards and protecting people living downstream and/ or downhill • Numerous unique and endemic species • High importance for medical purposes, food, science and socio-cultural aspects • Interesting for tourism	• Bad governance and weak control and enforcement in protected areas • Training schools for forestry are not available in the region • The control mechanisms put in place by the state is not consistent • There is a weak awareness and knowledge about the importance of nature protection with the population • Poor touristic infrastructure
OPPORTUNITIES	**THREATS**
• Communities raising awareness and actively engaging in the conservation of natural values as well as their own resources • More NGOs are being interested in conservation practices • Unclassified potential forests exist. New protected areas can be created • High touristic potentials to exploit • Engaging in agroforestry systems	• Deforestation in combination with corruption and bad governance • Extinction of fauna and flora species and biodiversity loss • Further degradation of natural habitats as well as grazing land by invasive species like the fern and Bokassa species • Water shortages • Conflicts over land use and natural resources

Table 31: SWOT summary of Hazards in the Environment

SWOT summary: **Hazards in the Environment**	
STRENGTH	**WEAKNESSES**
• The natural potentials of the environment are highly resilient to a number of natural hazards like: landslides, floods and bush fire • The forests can protect naturalness and preservation plus reforestation can be directed to diminish risks of landslides and floods as well as water shortages • In the North-West Region there is only one urbanized environment at a serious risk of landslides which is Bamenda • The dense organization of cooperatives, common-initiative groups and the relatively high level of education can be used for raising knowledge and awareness on risks for the general population and on agriculture to adapt to CC	• Corruption and weak enforcement of the building regulations: in most cases poorer people build in higher risk zone disregarding the regulations and the danger • Uncontrolled urban development on steep slopes and soft soils • Insufficient research on risks in the project phase of infrastructural and urban developments • The high degree of poverty and the total lack of possibilities to insure loss of assets is making people very vulnerable to natural hazards • Weak enforcement in building regulations and the protection of protected areas
OPPORTUNITIES	**THREATS**
• Make building regulations on steep slopes/ soft soils and enforce them • Mitigate mudflow risks on steep slopes above Bamenda technically • Sensitisation of the population on risks and climate change adaptation • The knowledge to prevent soil and water from runoff in agricultural practices are thorough and unique. This is high potential knowledge, that could be exported to other countries with difficulties to adapt to less stressful situations • Investigate the introduction of more drought resistant agricultural products. Different species or genetically modified species, like the drought resistant Dutch Irish Potato	• Rise of water borne diseases as well in urban and rural areas (like Cholera) • Removing forests in high areas that became more suitable for cropping because of temperature rise are now more suitable for cropping • Loss of economical assets and human life because of landslides or mudflows • Cutting of important infrastructure by landslides with all relevant socio-economic impacts • Increase of poverty after risks occurred

5 Economy

The economy of the North-West Region encompasses agriculture, livestock and fishing, business and service industries, transformative industries, trading, forestry, and mining and quarry. A large majority of the rural population, about 80%, in the North-West Region depend on agriculture. The region produces diverse food crops and has as a main cash crop: coffee. The North-West Region hosts a vibrant livestock sub-sector, accounting for about 4.5% of the GDP, with a 2.3% growth rate. The region has huge potentials for livestock development and production; the vast amount of land provides enough breeding potentials for this sub-sector and the presence of the Fulani population, who depend solely on livestock for their livelihood, is an undeniable resource for the growth of this sub-sector.

Agriculture, though the dominant activity in the region, remains fundamentally subsistence. As opposed to the livestock sector, the farming sector in the region is mainly for subsistence; very few farmers undertake market-based farming. However, traces of market-based farming are fast emerging around Santa sub-division, with vegetable farming, Donga-Mantung, Bui and Boyo divisions with bean and potato farming, just to mention a few. Essentially, agriculture in the region is dominantly rudimentary, with the use of cutlasses, hoes, spades/shovels etc. Mechanised farming is still an exception in the region, though vital for agricultural productivity. The NW Field Survey, 2018 within this project revealed that well over 98% of agricultural production in the region is still rudimentary. Importantly, though leaning on rudimentary methods, agricultural output from the region is still able to meet demand in the region and fuel food demand elsewhere in the country and even beyond. The potentials of agriculture in the North-West Region are big but partly not exploited due to challenges with limited quality of the farm-to-market road network and missing technical equipments and effective structures.

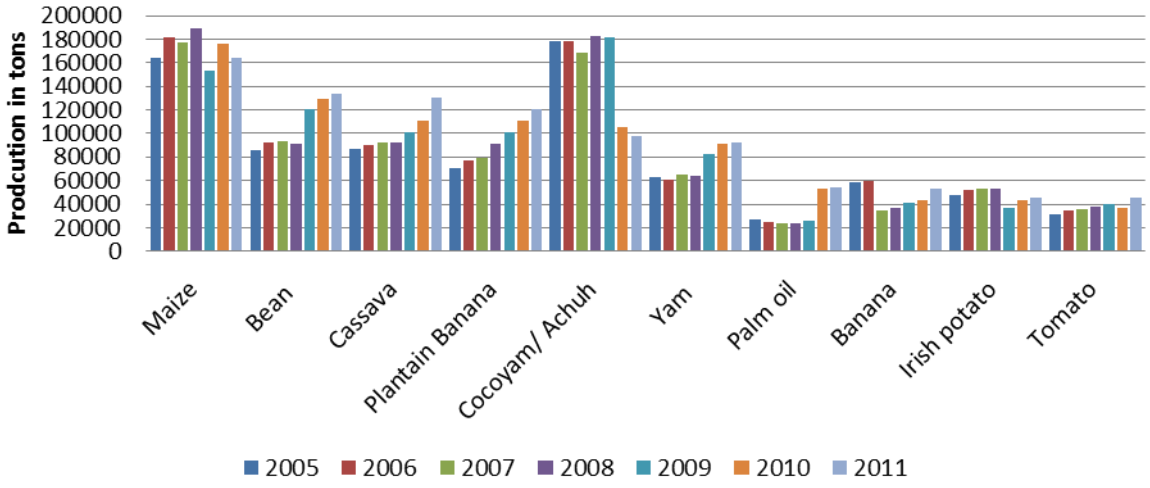
The business sector in the region, though growing sluggishly, is suffering. A large majority of businesses are still informally runing or operated despite the efforts (for example, One-Stop-Shop and government support programs) put in place by the government. The region has very few companies, which can provide employment to the ever-growing number of well-educated people of the region. The results of the 2011 Business Climate Survey conducted by MINEPAT, GICAM, CCIMA and GIZ indicate that 70% of company operators in the region opinionated that administrative bottlenecks affect negatively the day-to-day running of their business operations. This survey also revealed that the poor road network and quality of transportation services affect their businesses negatively. Besides wholesale and retailing businesses, one can find in the region, it is worth mentioning that the strong and ever growing micro-finance sector gives the region a competitive advantage over some other regions in Cameroon.

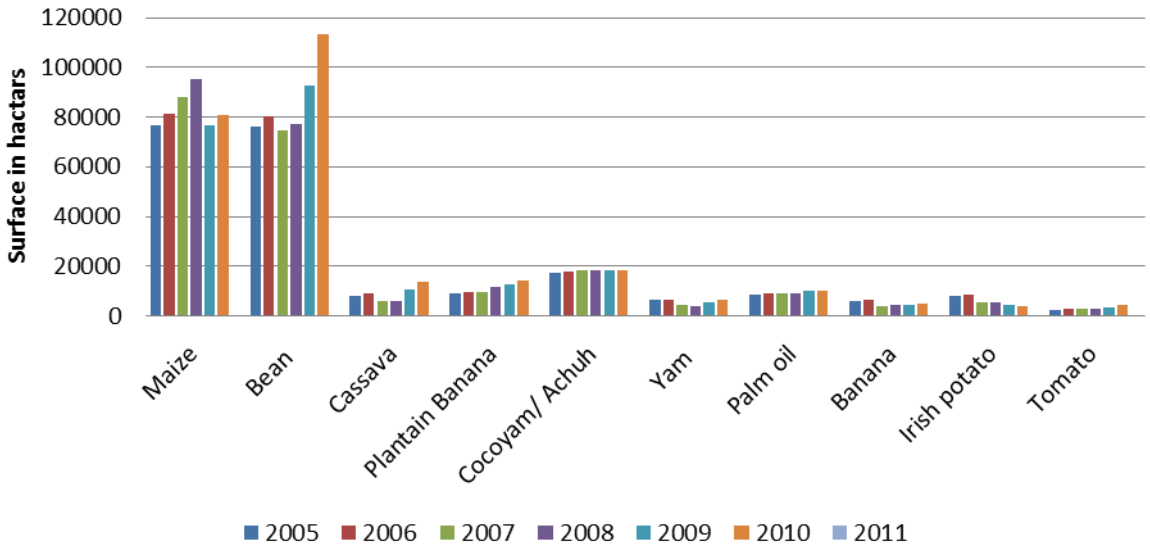
5.1. Agriculture

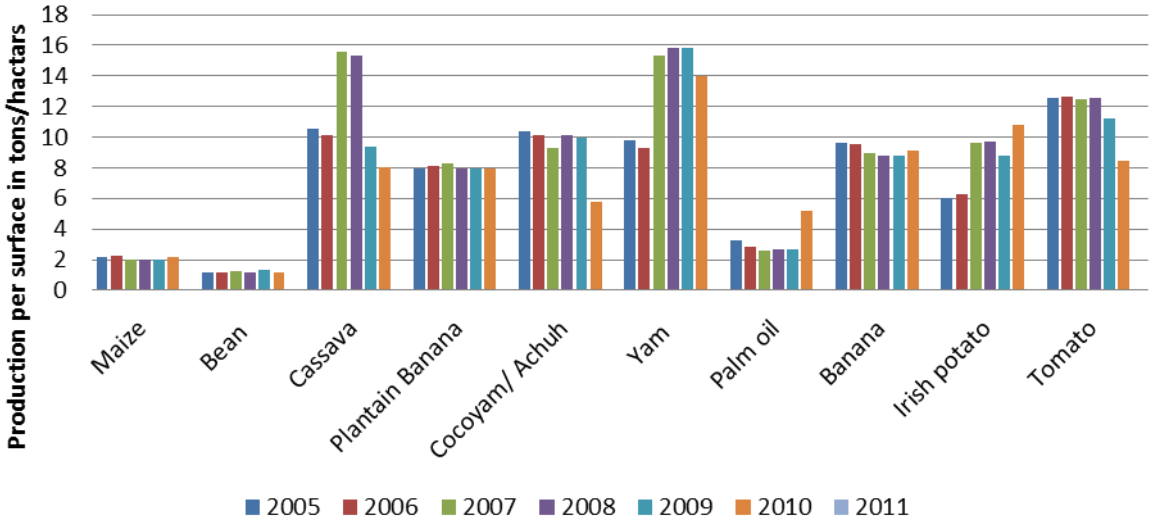
5.1.1. Food crop production

The most important food crops for agricultural production in the North-West Region are Maize, Cocoyam, Beans, Cassava and Plantain Banana, followed by Yam, Palm Oil, Banana, Irish Potatoes and Tomato. The evolution in the agricultural production and surface area can be depicted graphically as shown in Figure 51 a- c. Food crops such as bean, cassava and plantain banana registered an increasing trend in output between 2005 and 2011.

Figure 51 a-c: Production and production area of the top 10 products

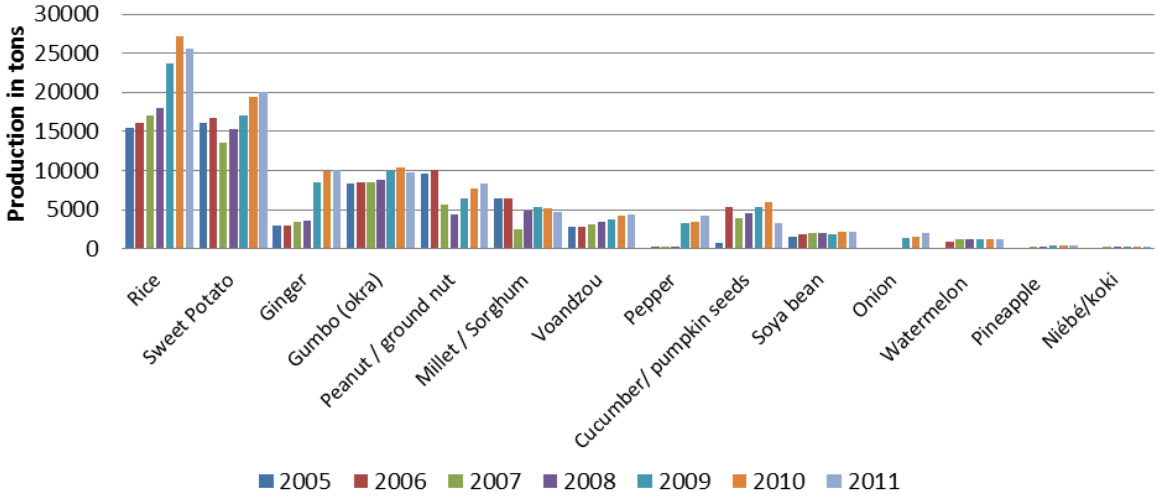


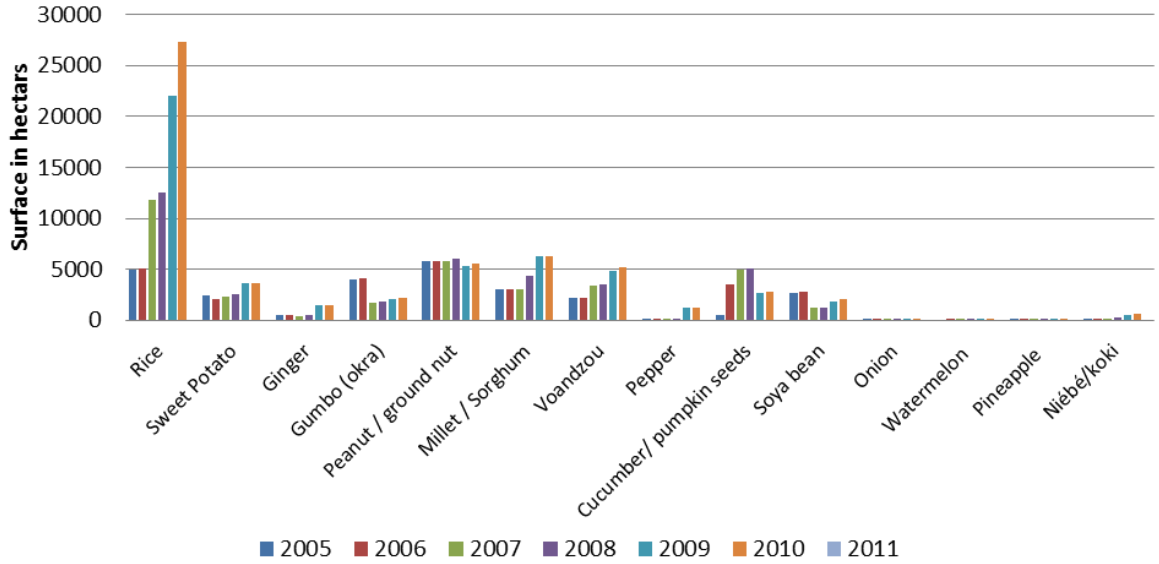


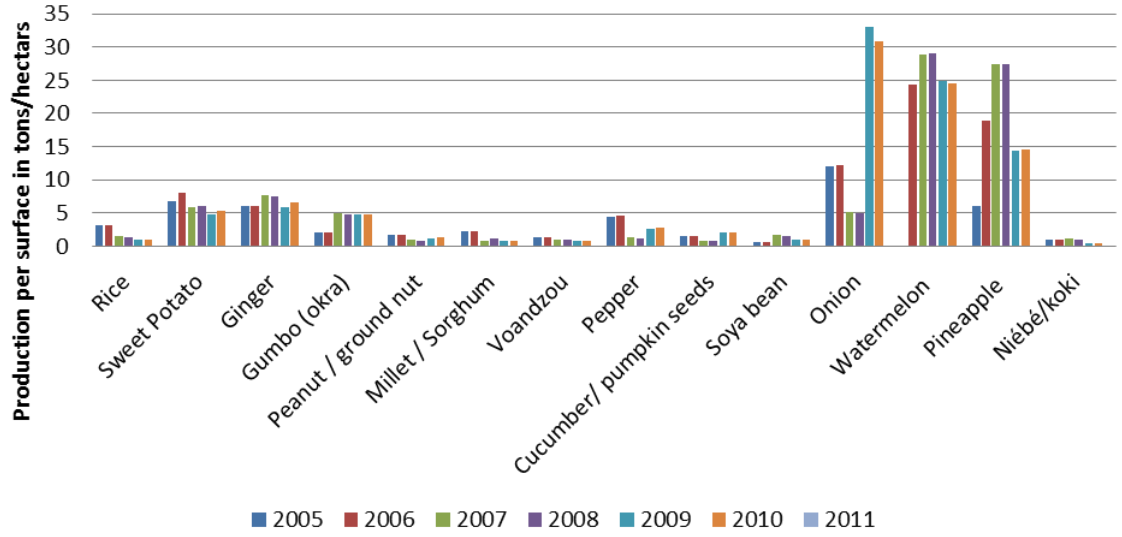


Source: Designed using data from MINADER/Department of Agricultural Surveys and Statistics /AGRI STAT N° 014, 015 and 016

Figure 52 a-c: Production and production area of the top 11 – 24 products







Source: Designed using data from MINADER/Department of Agricultural Surveys and Statistics /AGRISTAT N° 014, 015 and 016

Most important crops / highest production at present

It can be observed from Figure 52 a and Figure 52 b that between 2005 and 2011, cocoyam/achuh, maize, cassava, bean and plantain banana are the first five food crops in the North-West Region in terms of their output in tons. Importantly, cocoyam/achuh and maize stand as the first two food crops in the region across the years under consideration followed by bean, cassava and plantain banana.

Essentially, for beans, cassava and plantain banana, between 2005 and 2011, it can be observed that these registered comparingly high growth in production and in surface area of land used to grow them. The production per surface is relatively constant for most crops. Just Cassava and Yam but also onion show significant increase in productivity as tons per hectare (Figure 52 c).

From Figure 52 a-c, there is clear evidence that the production of rice is increasing with an increase in the surface area of land used for its production. However, it is important to note that the potential of this crop in the region is expected to be higher but this higher potential is still yet to be realized due to the decreasing demand for this locally produced rice. Demand for imported rice is increasing in the region in particular, and the country as a whole, at the expense of our locally produced rice.

Cassava production per surface area of land used has registered significant increase between 2005 and 2011. Cassava in the region is consumed either directly or transformed or processed into garri and cassava flour. Worthy of note, the processing of this product into garri and flour is done mainly locally by individual farmers; no industrial level processing is available.

Other food crops such as cucumber/ pumpkin seeds, ginger, gumbo (okra), onion, watermelon, sweet potato, pepper, soya bean, tomato, voandzou also registered an increasing trend in the period 2005-2011. Importantly, the increasing trend is indicative of the increasing need/demand for these crops in the region and elsewhere, this knowledge provides vital inputs for potential processing in the North-West Region.

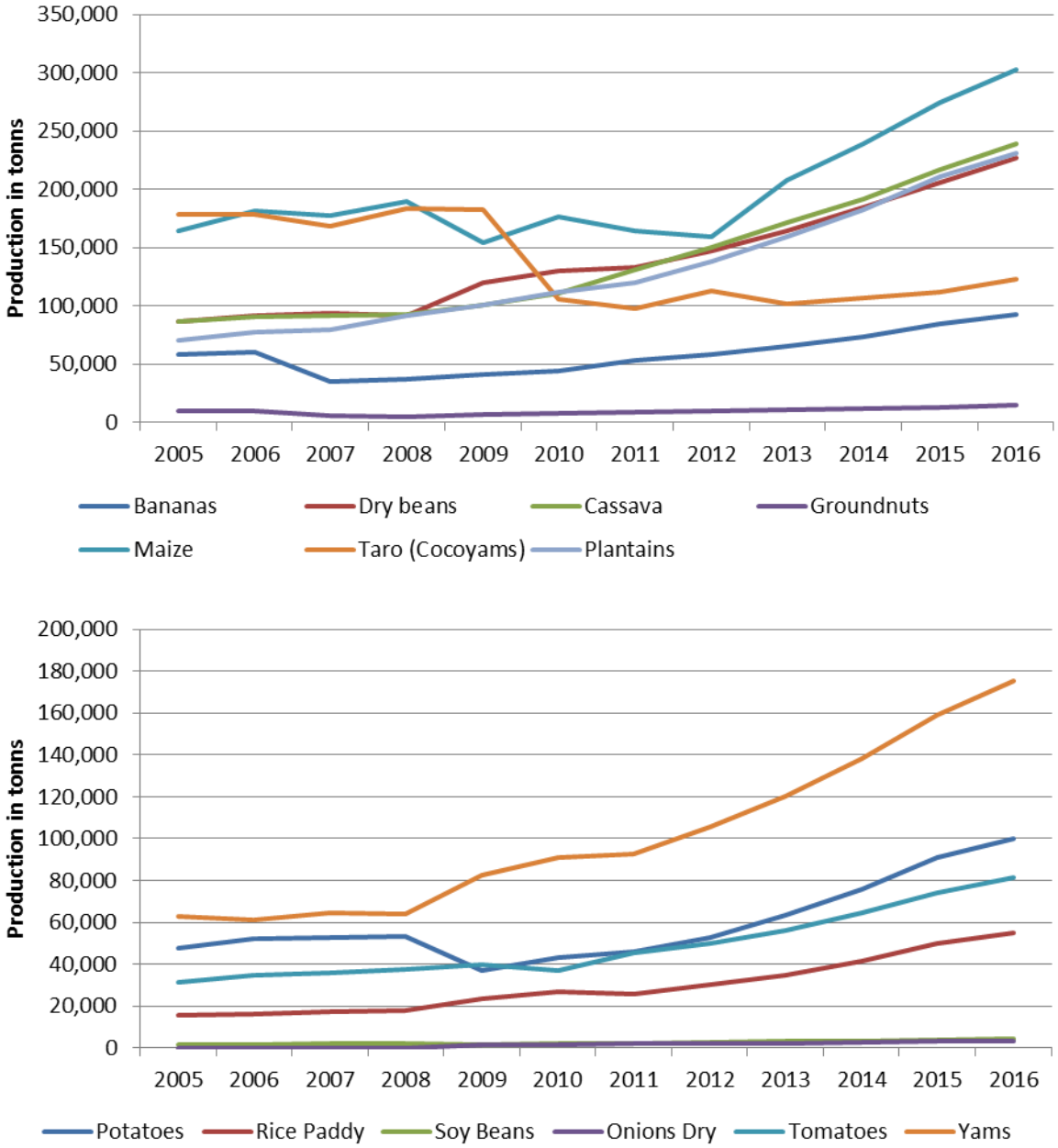
Food crops with unsteady/decreasing trends in output

According to Figure 51 a-c, other crops like Irish potatoes and cocoyam/ achuh registered a decreasing trend between 2005 and 2011 while palm oil and maize production registered an unsteady trend in the period under consideration. Irish potatoes is a very important product for some divisions as it is used for self-purpose but also exported all over Cameroon and abroad.

In the period 2005-2007, banana production witnessed a decreasing trend, while until 2011 it increased again almost to the original level. The surface area used for the production of this crop remained almost constant (Figure 51 a). There is a slight indication of a little decreasing productivity of banana per surface area used in its production in this period. Though a sluggish return of growth in banana production around 2007 can be observed, it remains clear that much is to be done to revamp this crop that serves the North-West Region and other regions. The production of banana like that of any other crop in the North-West Region, if care is not taken, can be dampened by the current socio-political crisis plaguing the region since November 2016.

Maize production registered a rather staggering production between 2005 and 2010. Part of the maize produced in the region is used for home use and part is sold to secure some economies. Its cultivation is done in distant farms away from home and also around the premises of many houses, especially in semi-urban and rural areas. This possibility to crop it anywhere shows how well this crop does in the region.

Figure 53: 12-years overview of the production of certain crops from 2005 to 2016



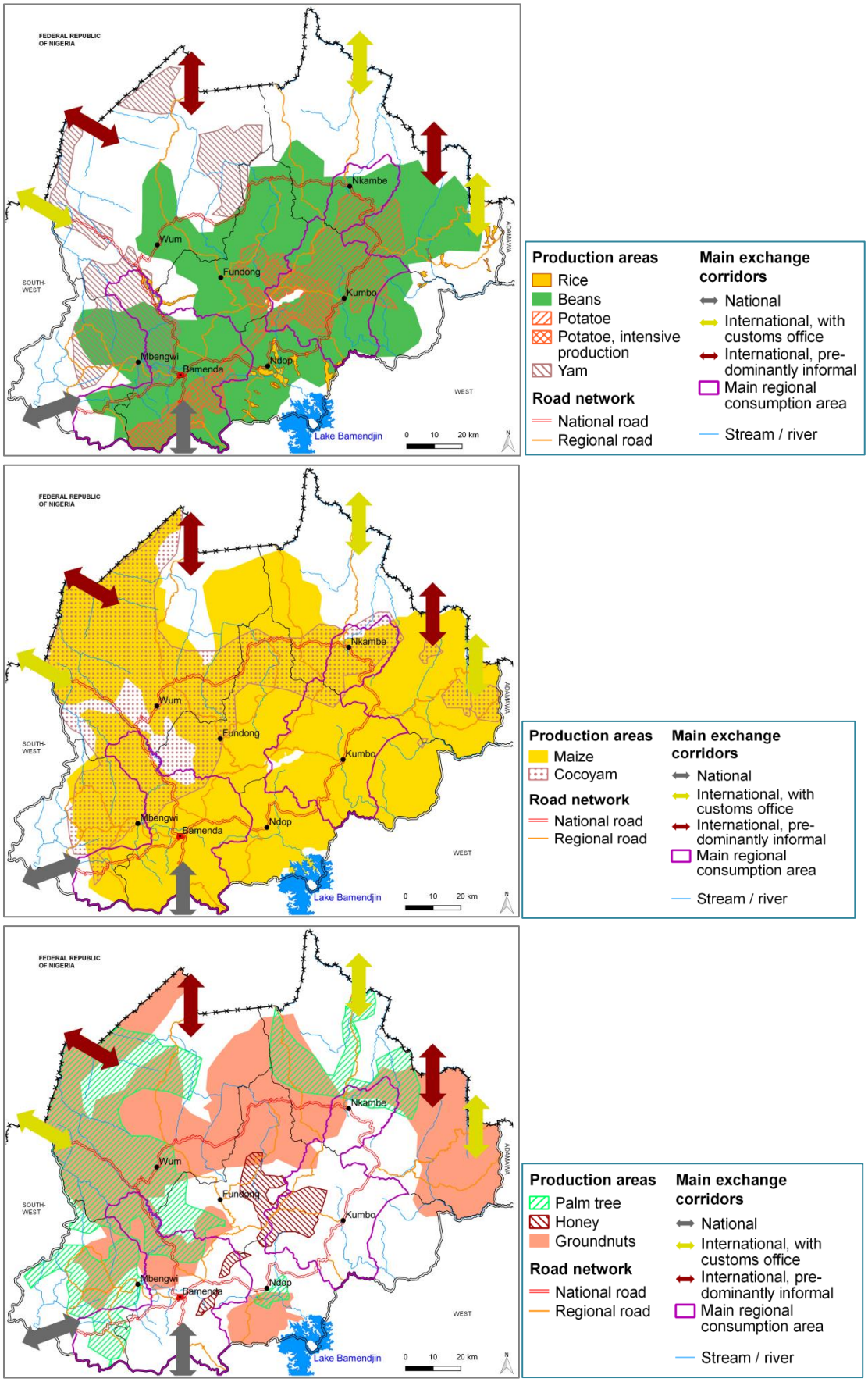
Source: designed using data from the regional delegation of MINADER

This 12 year's overview of the production of crops confirms the maize, cassava, plantains, and beans as being the most important crops in the Region. They display a marked and steady increase since 2012. The decrease of cocoyam/achuh, which was among the top five crops in the Region until 2011, is also confirmed. It is replaced by yams, which production outweighs cocoyam since 2012. The other crops follow a slow increasing trend in production since 2011.

Spatial and divisional aspects of agriculture in the North-West Region

The main production areas for the different agricultural products are shown in Figure 54 a-c and in the respective maps in volume 3.

Figure 54: Production areas of the main crops (for full maps see annex part 3, section 3 - Economy)



Data source: field survey IU/CPAC/geomer 2018

Palm oil is mainly produced in Donga-Mantung, Momo and Menchum Divisions. Its production employs rudimentary methods to extract the oil from the nuts. The palm oil production in the region is huge but there might be more potential if the production would be more industrialised with modern technology while factoring-in adverse consequences.

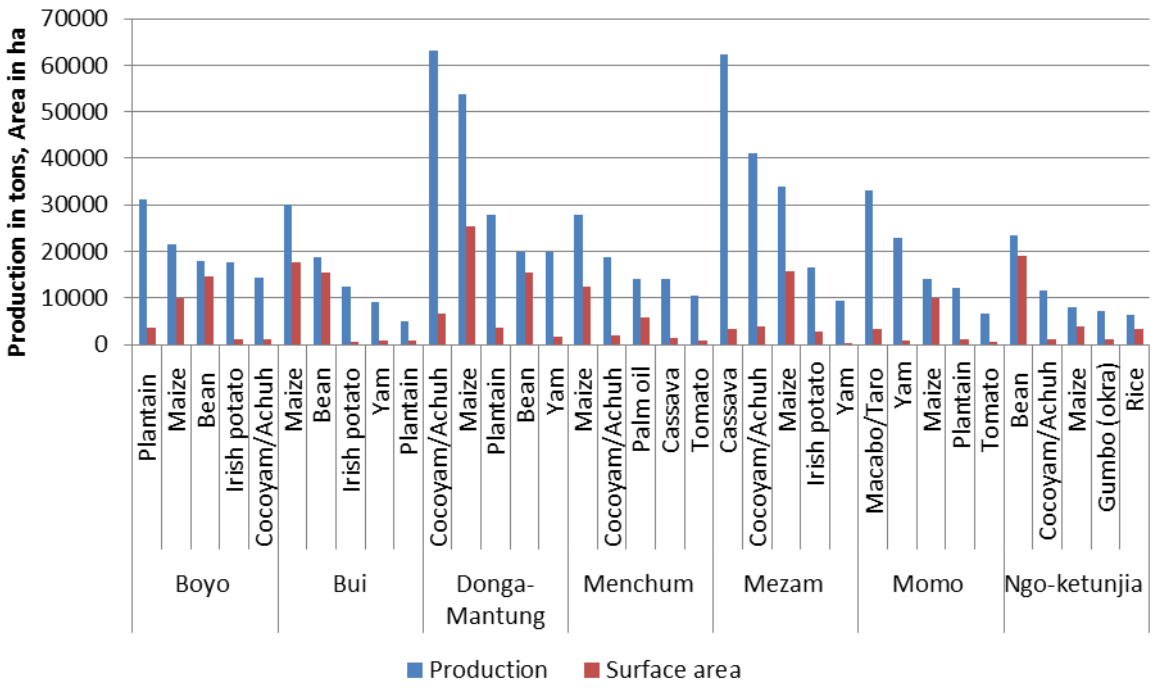
It is worth mentioning that the region is endowed with rich oil production basins as indicated below:

- Teze is a locality in Ngie Sub-Division, Momo Division, rich in palm oil production. It is the largest palm oil production basin in the region, but is under-exploited because of the poor state of the road, lack of HEP energy (the state through MINEPAT has made available funds more than three hundred million for a three-phase electricity power to be connected to this oil basin but unfortunately, due to insecurity, the project realization is very slow).
- Widikum Council Area still in Momo Division is equally a big basin for palm oil production. But the crisis has hampered the smooth functioning of this activity.
- Ako and Sabongari are all in Donga-Mantung equally gifted in palm oil production.

Figure 55 provides knowledge on the first five crops per division (classified in terms of output). Despite some few changes over the years, the observation is that the first two food crops for each division remain dominant across the years. For the Boyo Division we have plantains and banana/maize as the dominant food crops over the years, for Bui we have maize and beans, for Donga-Mantung we have coco-yam/achuh and maize, for Menchum we have maize and cocoyam/achuh, for Mezam we have Cassava and Cocoyam/Achuh, for Momo we have cocoyam and yam, and for Ngoketunjia we have bean and maize with rice being the least.

In order to have knowledge of the stakes that are most recent, Figure 55 present the first five crops per division for the most recent year, 2008.

Figure 55: First five crops per division for the year 2008

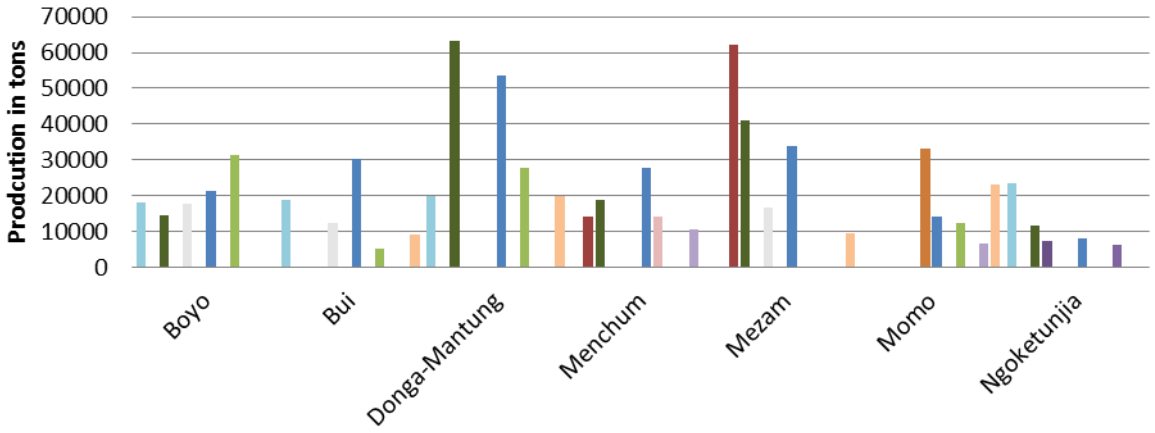


Note: surface is in hectares and production in tons

Source: Designed using data from MINADER/Department of Agricultural Surveys and Statistics /AGRI-STAT N° 014, 015 and 016

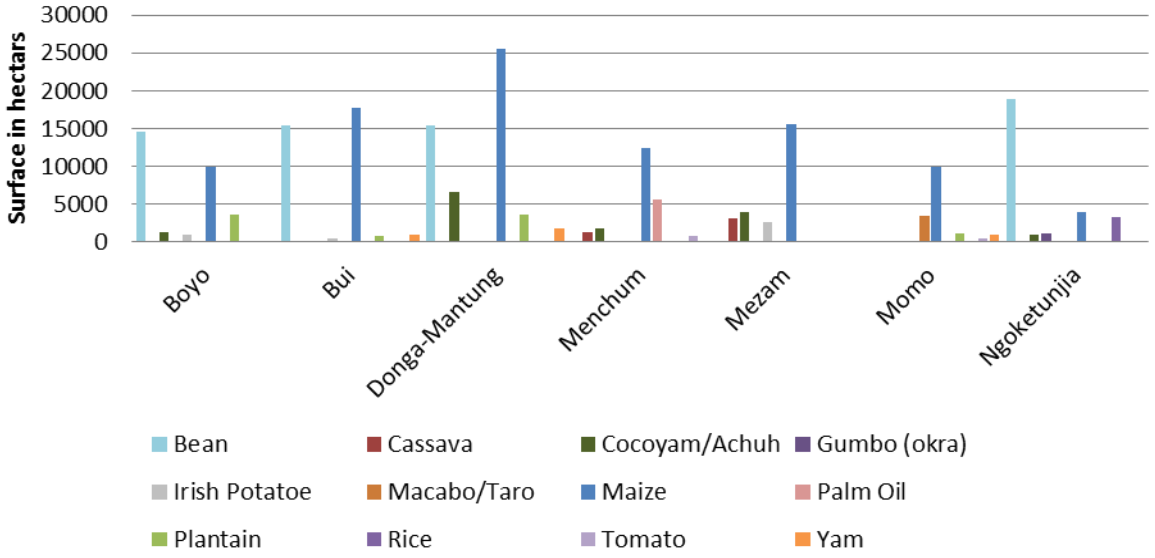
Figure 55 depicts the first five crops for the divisions and worthy of note, maize and cocoyam/achuh features in the list of the first five crops in all divisions except in Momo, where we have only maize. Importantly, tomato, which is a potential crop for exportation in this region is one of the first five crops in Menchum.

Figure 56: Production of first five crops per division for the year 2008



Source: Designed using data from MINADER/Department of Agricultural Surveys and Statistics /AGRI-STAT N° 014, 015 and 016

Figure 57: Production surface area of first five crops per division for the year 2008



Source: Designed using data from MINADER/Department of Agricultural Surveys and Statistics /AGRI-STAT N° 014, 015 and 016

5.1.2. Cocoa and coffee

Six out of the seven divisions of the North-West Region, except Menchum, are involved in the production of Arabic coffee. Robusta coffee does well in Menchum, Mezam, Momo, Ngoketunjia and cocoa farming is practised mostly in Donga-Mantung, Menchum, Mezam, and Momo. Cocoa is still practised at a very small scale, small farms, in the North-West Region compared to other regions like the Southwest, where

we have plantations. Plantation-driven types of projects are not very common in the North-West Region until today as they are in the Southwest region from old tradition (Table 32).

Coffee and cocoa are produced in the following division:

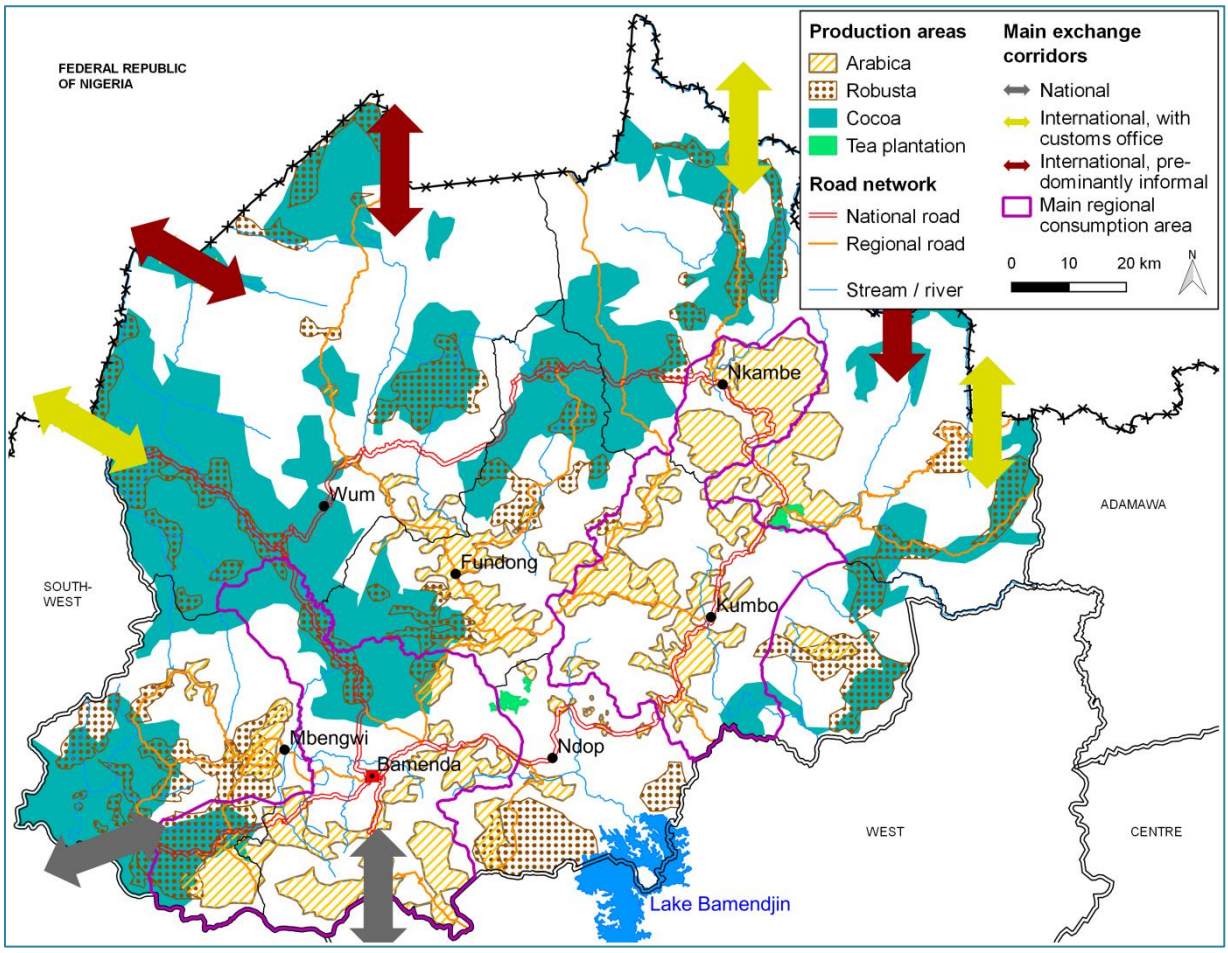
Table 32: Divisions that produce coffee and cocoa

Product	Divisions of production
Arabic coffee	Boyo, Bui, Donga-Mantung, Mezam, Momo, Ngoketunjia
Robusta coffee	Menchum, Mezam, Momo, Ngoketunjia
Cocoa	Donga-Mantung, Menchum, Mezam, Momo

Source: RD of MINCOMMERCE NW

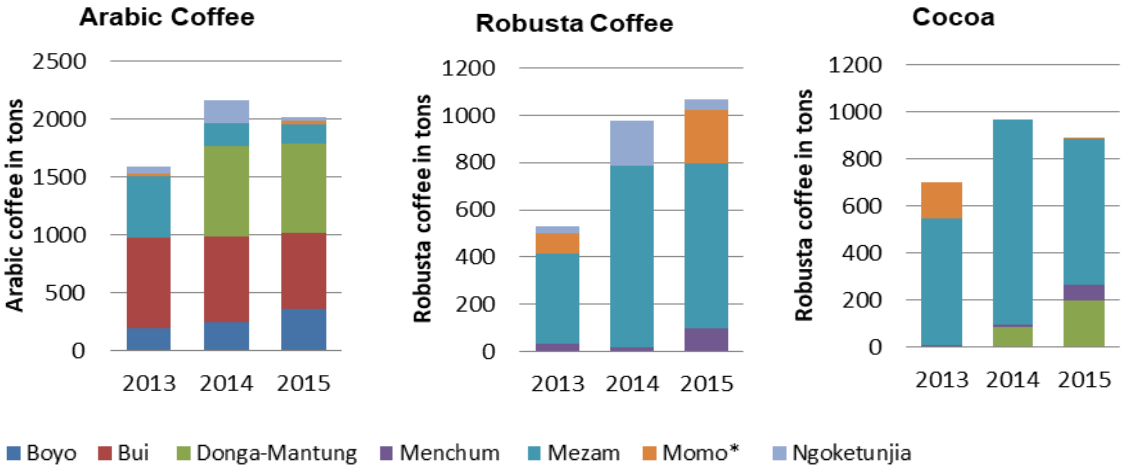
The following Figure 58 and Figure 59 (and map 3.-1-c) show the areas in the North-West Region in which the different types of coffee and cocoa are produced. Table 33 shows the quantity in the production of different types in the divisions.

Figure 58: Production areas of cash crops



Data source: field survey IU/CPAC/geomer 2018

Figure 59: Production of cocoa and coffee in the divisions 2013 – 2015



Source: Designed using data from RD of MINCOMMERCE NW

The production areas with the highest production rates for arabic coffee are located in the Donga-Mantung and Bui divisions, followed by Boyo and Mezam. Given that these divisions rank high in the number of tons of arabic coffee, it is most likely that they have the potentials to produce this cash crop compared to others. Mezam division hosts the highest potentials to produce robusta coffee, followed by Momo division (Table 33). This is a similar trend observed in the early 1980s, where robusta coffee production was dominant in the Momo, Mezam, and Donga-Mantung (see Government of Cameroon – Statistics Year Book, 1984). We can observe that over time Donga-Mantung, once a dominant division for the production of robusta coffee is not visible today in the production of this cash crop. This can be explained to some extent by the collapse of the coffee cooperatives in the region and the steady decrease in the prices of coffee.

Table 33: Distribution of recovered quantities of cocoa and coffee (in tons) per Division in 2013 – 2015

Division	2013 **			2014 **			2015 **		
	Arabic coffee	Robusta coffee	Cocoa	Arabic coffee	Robusta coffee	Cocoa	Arabic coffee	Robusta coffee	Cocoa
Boyo	190.31	-	-	250.19	-	-	367.00	-	-
Bui	787.82	-	-	735.58	-	-	647.00	-	-
Donga-Mantung	-	-	-	780.00	-	85.00	780.00	-	200.00
Menchum	-	33.40	9.86	-	20.10	10.92	-	98.08	65.27
Mezam	530.00	229.79	535.45	205.05	553.69	871.88	162.60	326.55	620.44
Momo*	20.16	84.79	153.65	-	-	-	33.02	225.23	2.35
Ngoketunjia	60.60	32.8	-	198.38	191.05	-	30.94	47.95	-
Total	1,588.89	380.77	688.96	2,169.20	764.83	967.8	8,458.26	697.80	888.07

** Coffee production in Njikwa excluded. The total quantity of both Arabic and Robusta coffee recovered in Njikwa in 2013 is 43.60 tons*

*** The presented figures and graphs are based on data from the official statistic reports. However, there are doubts on the correctness of some data, since some changes from year to year are not explainable. But the trends are reasonable so that the general trend alone will serve for the further analysis (see text).*

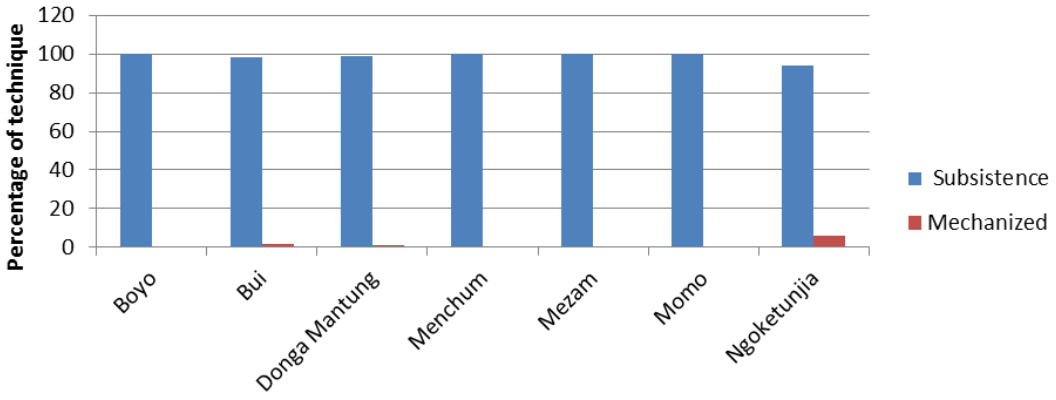
Source: RD of MINCOMMERCE NW

Looking at the world's markets today other production areas in the South and Middle America are raising prices due to demand and other influences, like also climate change induced problems in the production of coffee. At present opportunities might come up for reinforcement of coffee plantations in the North-West Region. The Coffee Strategy paper (2011) of the Cameroonian Government was written to strengthen the strategy. This fact shall be developed further in the prospective phase of the regional development project.

5.1.3. Main challenges of agricultural production

In the NW Field Survey, 2018 farmers were asked for the technique of agricultural production they use (see Figure 60).

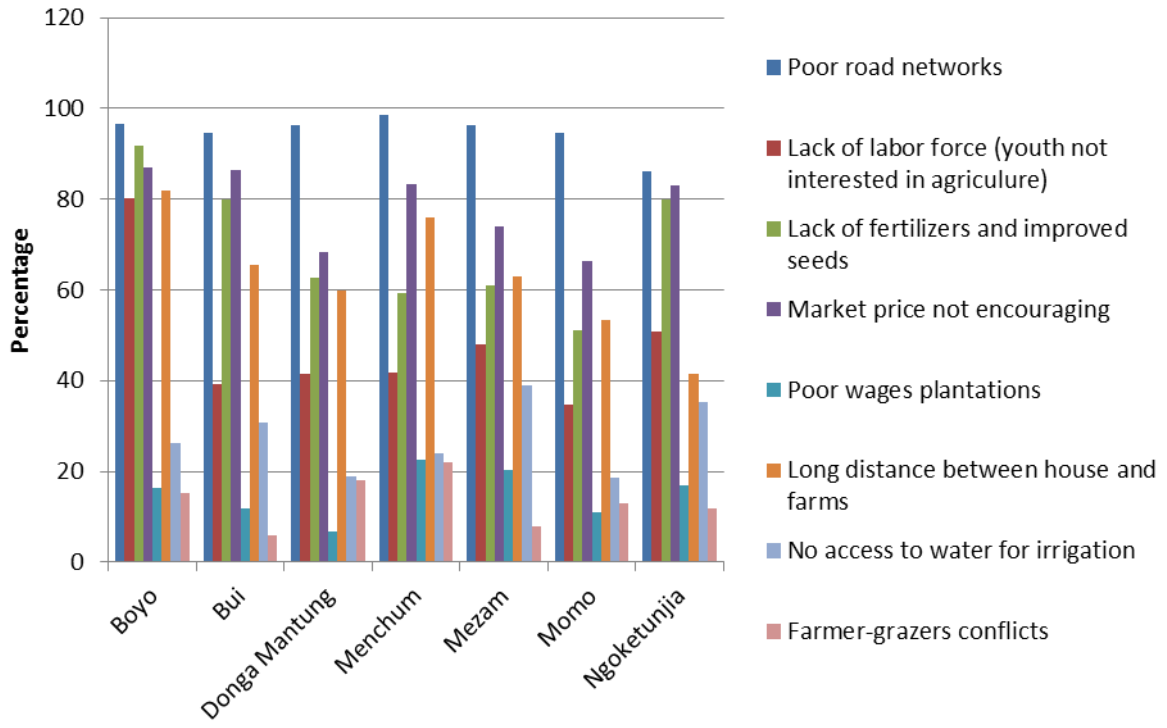
Figure 60: Technique of agricultural production in each division



Source: NW Field Survey, 2018

From Figure 60, it is evident that agricultural production methods in the region and across all seven divisions are rudimentary/subsistence, employing very little sophisticated machinery.

Figure 61: Main difficulties faced in the process of production of agricultural products in each division of the North-West Region



Source: NW Field Survey, 2018

Difficulties with the road network, difficulties finding fertilizer and improved seeds, low market price of products and long distances between houses and farms are the main challenges faced in the process of production of agricultural products in the region.

As shown in the analysis of the production figures the development lines in the prospective phase for agriculture in the region should work out the opportunities for the most important crops for the region and the division and prioritize processing towards these crops; most likely we have cocoyam/achuh and maize for the North-West Region but for the prospective future market-price-analysis which should be done.

Rice production should be revamped, it has the potential to create and generate jobs but due to huge competition from imported rice, the demand for Ndop rice is significantly low. Here opportunities might be generated in the next phase by scenarios that identify other or larger markets for rice of the North-West Region.

Tomato is an emerging sub-sector which, if harnessed, can produce better fruits and sustain livelihoods; it is the new export sector. It should be boosted to feature in the list of the first five crops in the region and in other divisions (not only Menchum). Here also future market-price-analysis should help to assess the opportunities.

Palm oil production potential in the region is huge. It might be further exploited at an industrial scale in some well selected areas, with modern technology, if socio-economic and environmental impact analyses ensure sustainable development options.

5.1.4. Impacts of climate change on agriculture in the North-West Region

Impacts of climate change on the agricultural sector in the North-West Region are (see Ndoh Mbue Innocent, D. Bitondo and Balgah Roland Azibo, 2016):

- Poor crop production
- Soil erosion
- Increase in pests and diseases
- Increase in household food insecurity
- Poor livestock production
- Increased suffering and poverty
- Increased temperatures with reduced crop yields.

Farmers who have noticed an increase in productivity concurs with a slow but gradual increase in use of modern agricultural practices (especially organic farming) for the past 10 years as compared to the past 20 years. These agricultural practices were significantly observed in Bui division. Conservation agriculture had been reported as potentially contributing in addressing the challenge of adapting agricultural practices to climate change. Understanding how local farmers experience climate variations and how they anticipate or react to them is likely to become crucial in the context of climate change. Some practices, such as mixed cropping and dispersal of sago and other crops in different locations, may provide some resilience. Common practices noted are:

- Adoption of varieties with increased resistance to heat shock and drought
- Use forest resources (non-timber forest products)
- Planting of tree and agroforestry practices
- Changing the planting dates with early and late planting
- Cultivation of short duration crops
- Application of organic manures
- Traditional moisture holding practices (shedding, tillage, breaking top soil)
- Mono-cropping abandoned for mixed cropping.

One of the most important ecological and socioeconomic adaptation methods employed by farmers is the use of non-timber forest products (NTFP). While honey is the most common NTFP exploited by farmers in Bui division, Gnetum africanum, Irvingia gabunensis, and many other NTFPs are extracted in Momo division. Wood and medicinal plants are common in all divisions of the region but the quantities are fast degrading especially in areas like Mezam division where uncontrolled urban sprawl is gradually extincting these products. Elsewhere, indigenous people have used biodiversity as a buffer against variation, change and catastrophe; in the face of plague, if one crop fails, another will survive. These are supplemented by hunting, fishing and gathering wild food plants.

Barrier to climate change is here defined as obstacles that delay, divert, or temporarily block the adaptation process, but which can be overcome with concerted efforts, creative management, change of thinking, prioritization, and any related shifts in resources, land uses, or institutions. The farmers identified lack of information on climate change impacts and adaptation options, lack of access to credit, access to water, high cost of adaptation, insecure property rights and lack of access to sufficient farm inputs as the main barriers. Farmers expressed the view that among many of the sources of information, agricultural extension is the most important for analyzing the adoption decisions of adaptive measures. The results agree with the hypothesis that farmers who have significant extension contacts have better chances of being aware of changing climatic conditions as well as adaptation measures in response to the changes in these conditions.

5.1.5. Agricultural Mechanization

At the level of agricultural mechanization, few cassava, maize, rice and Irish potatoes farmers are into mechanized agriculture making use of tractors. For food processing, there exist UNVDA with Paddy Rice, Tadu Dairy in Bui Division, Oku white honey, Avera ranch brown honey, NWCA with Kola Coffee, Cowrie Ginger (cowrie ginger tea, ginger candies and ginger juice) processing in Bafut, mushrooms processing and pepper. Palm oil is processed but still at its primary stage.

It is worth mentioning that the blossoming of agricultural productivity saw its apex in 2016 to 2018 a decline as a result of the socio-political crisis, the cultivated land surface dropped by 19.6% and harvest equally dropped by 21.5%.

As far as mechanization is concerned the North-West Region counts only five public structures to support road works and farm preparation: NWDA, UNVDA, Ndop Engine pool (Ndop), Mbankong Engine pool (Bafut), Santa Engine Pool (Santa), MATGENIE. These are centered either on some councils. Their services are still unaffordable and sometimes unavailable for most farmers in the region.

Table 34: Engine pools capacities in North-West Region

N°	Equipment pool	Sub division	division	Agricultural Tractor		soil preparation equipment		Building
				granted	handled	granted	handled	
1	Ndop*	Ndop	Ngoketunjia					YES
2	Santa	Santa	Mezam	15	5	36	17	NO
3	Mbakong	Bafut	Mezam	5	0	17	0	NO

*Source : CENEEMA (2020). Etat de lieux des pools d'engins créés par le MINADER et le MINEPAT**

- Few soil preparation equipments are available in the region, this mainly focused on primary and secondary tillage, weeding and planting. These were introduced by MINADER and MINEPAT through the farm mechanization project in cooperation with Indian Government as well as GIZ through the PROCISA project. Some private producers and cooperatives also acquired some equipment from neighbouring countries. It is worth mentioning that even tractors and implements granted and handled suffer from maintenance due to lack of trained personnel.

Figure 62: Sonalika tractor distribution in the North West Region

From the figure above it can be seen that there are few tractors operating in divisions other than Mezam division. 47 Sonalika tractors were distributed in the North-West Region with 25 to development industries, 5 for seed farms, 5 to cooperatives (SDMA, 2018). In 2017, 38% of these tractors was down already. This highlights the need for investment for the modernization of agricultural production in the region with more emphasis on agricultural producers. It is critical though to select adequate equipments and machines according to needs and contexts.

Pilot mechanization initiatives in the North-West Region

Different projects supported the mechanization in the Region:

Tractor mounting and distribution project piloted by MINEPAT (2014 – 2020) which aim was to ease access to tractors and ploughing equipments with technology transfer from India. The PROSAPVA project (agricultural extension project, 2018) handed some small equipments for farmers experimenting wheat cultivation. But, no cooperative from the North-West Region benefited since topography and sunshine were limiting factors. Considering the topography of the North West which is mainly hilly it is good to select appropriately the type of tractor

The GIZ PROCISA project (Green Innovation Centres for the Agriculture and Food Sector; consulting and support of farmers) distributed some power tillers in North-West Region to experiment soil compaction. Rotary tillers are preferable since it has reduced compaction it saves time and fuel besides their operations: ploughing and grass covering.

Agricultural Processing machines

There is little information on agricultural processing though a lot of small scale fabrications and processing is done for several agricultural products with interesting economic value: gari, dairy, palm oil, honey, irish, maize, water fufu. MINADER granted a seed conditioning unit to the North-West Region. It was based in Santa but has to be brought back in town due to security reason.

The Upper Nun Valley Development Authority (UNVDA) is the main rice-threshing unit of the region. Created on 29 October 1970 and later transformed in May 11th 1978 as a development authority. With their restructuring in 2011, their mission was refocused on supporting farm preparation and rice threshing From the PLANUT program UNVDA received rice processing machines.

Figure 63: Tractor breakdown in Santa engine pool (left) and UNVDA (right)

Source : MINADER (2018) : Suivi des performances des tracteurs montés à Ebolowa sur le terrai dans les cinq zones agro-éologiques du Cameroun

An analysis of the problems of storage and processing of agro-pastoral products with a focus on small-scale equipment can be summarized as follows:

Constraints to agricultural mechanization:

- Small and scattered surface areas planted
- Topography is hilly making it difficult for large tractors to operate.
- Scarce spare parts of existing machines
- Restriction of mobility which limits importation of spare parts from Nigeria
- Few trained operators and maintenance teams
- Very few fabrication units
- Access to production basins which makes it difficult to connect farms to processing units
- Weak financial capacities of the few existing smallscale processing units
- Weak structure of processing chain both machine fabrication and processed goods marketing
- Weak maintenance capacity for existing engine pools both public and private
- Scarce machine and spare parts providers
- Few agricultural goods processing service providers
- Little extension carried on adequate use of agricultural machinery on the production, processing, commercialization chain
- Absence of a maintenance strategy for existing equipments in public mechanization service providers units

Constraints to agricultural goods storage:

- Existing storage facilities are ageing and sometimes not appropriate for storage of agricultural goods with extended storage duration beyond recommended ranges

- Insufficient storage capacity in production basins
- Few investments in storage facilities in public investments
- Existing storage facilities are sometimes remote to production basins
- Main financing mechanisms for the construction of storage facilities for agriculture are projects with limited investment capacities

First conclusions for proposals for the improvement of agropastoral mechanization, products processing and storage in the North-West Region were made for the further assessment and development of solutions:

Agropastoral mechanization and agropastoral products processing

- Develop vocational training programs on agropastoral mechanization and machine fabrication in the existing engine pools and technical vocational colleges (public and private)
- Create two fabrication units for machine and spare parts in Menchum and Donga Mantung divisions
- Develop incentives (fiscal, subsidies, administrative, etc.) for the development of agropastoral smallscale processing units
- Create a regional agropastoral goods and small-scale machinery fair of the region
- Rehabilitate and Reinforce the equipment and infrastructure in existing engine pools and training institutions (college, universities)
- Recruit skilled personnel in engine pools and training institutions (college, universities)
- Reinforce extension service providers on efficient agropastoral good processing and sustainable mechanization.

Storage of agropastoral goods

- Build agricultural warehouses in major production basins
- Construct and maintain road connecting existing and projected warehouses with production basins
- Support cooperatives in rehabilitation and construction of small capacity warehouses
- Train skilled personnel on efficient agricultural goods packaging and storage
- Develop training programs on agricultural goods packaging, handling and storage in existing training centers (CEFER, CEEAC, CRA, …).

5.1.6. Agro-industrial zones

An option to improve the progress of agricultural production could be the creation of agro-industrial zones. These zones would need to concentrate on modern knowledge, sustainable agricultural approaches and public funds for the scientific support of both economic and ecologic farming. The state, the regional and local collectivities could carry out this venture, not leaving out the private sector. Possible zones could be:

1. Dairy industry created between Donga-Mantung and Bui Divisions
2. Irish Potatoes: Santa area,
3. Cassava transformation between Santa and Bali
4. Palm oil: Momo Division
5. Maize: Ndop basin
6. Honey: Oku.

Details on the identification and principles as well as the realization in terms of funding and policies could be developed further in the prospective phase.

5.1.7. Hydro-Agricultural facilities

The hydrographic situation and facilities to use existing water resources for agricultural purposes play a major role in the situation of agricultural production. The North-West Region is distributed among six watersheds drained each by a river, most of which given the name to the division (see chapter 4.1.3) : Momo River, Menchum River, Noun River, Bui River, Kumbi River which ends up as Katsina River and Donga River. Hydrography also includes three natural lakes: Lake Nyos, Lake Oku and Lake Wum.

Figure 64: Hydrography of the North-West Region

Rivers flowing in the North West Region are highly fluctuating and are influenced by rainfalls, as such their flow could vary from a few hundreds to thousands of m^3/s they cross one to two divisions with lengths ranging from 58 to 410 km. which constitute a rich potential for water resource use for development but also preservation of natural wetlands and biodiversity.

Table 35: Characteristics of main rivers in the North West region

	River	Length (km)	Width (m)	Flow wet (m3/s)	Flow dry (m3/s)	Divisions crossed over
1	River Menchum	156	60.4	4 563	210	Mezam and Boyo
2	River Donga	410	126	5 645	380	Donga mantung
3	River bui	58.8	10	2 865	189	Ngoketunjia
4	River Mezam	160		3 638	298	Boyo
5	River Momo	146.7	42.2	3 865	346	Manyu
6	River Kimbi	97.4	22.6	4 487	216	Boyo and Menchum

Despite the huge potential in water resources, few investments are made in irrigated farming. As shown in the tables below the main irrigated land is for rice production with support from the government and it's agricultural development programs (PADFA, PLANUT, BIP, etc.). The existing area covered by irrigated rice is close to 1 680 ha for an existing potential of 3 574 ha which can further be extended to 16 200 ha. Four divisions are concerned with investments in irrigated agriculture: Menchum, Mezam, Bui and Ngoketunjia.

Table 36: Agricultural hydraulics potential in the North West region

N°	Locality	Division	Existing area (ha)	Potential area (ha)	Possible extension (ha)	crop	Donor
1	Agulli (Benakuma)	Menchum	43,8	43,8	-	rice	PADFA
2	Tingoh (Bafut)	Mezam	8,53	8,53	-	rice	PADFA
3	Ebiatié (Benakuma)	Menchum	22	22	-	rice	PADFA
4	Ndop	Ngoketunjia, Bui and Mezam	1 540	3300	12 460	rice	Government
5	Menchum	Menchum	65	200	135	rice	Government
	TOTAL		**1 679.33**	**3 574.33**	**12 595**		

It is clear some efforts are made in the rehabilitation and maintenance of the existing rice farm at UNVDA but these are still insufficient. More investments are needed to develop more land and increase the hydraulic efficiency.

Table 37: Projected investments on irrigated farm development in 2020 and 2021 in the North West region

N°	Investissements	Donor	Cost (10^6 FCFA)	Area (ha)	Division	Locality
	projects for 2020					
1	Rehabilitation of rice farms (land leveling, 3 km canal dredging, 35 km dyke)	Rehabilitation Technical Committee MINFI	760	250	Bui Mezam	Ngwe Bamesing Tubah
2	Construction of 20 water storage reservoir	Rehabilitation Technical Committee MINFI	198	20 reservoirs	Bui Mezam	Ngwe Bamesing Tubah
3	Construction of micro dams	BIP MINADER 2020	30	03 micro dams	Ngoketunjia Bui	Bangourain Babessi
4	Réhabilitation de périmètres rizicoles	PLANUT	-	Dykes et road	Ngoketunjia Bui	Bangourain Babessi
5	Construction de road drainage rings	BIP MINADER 2020	42	05 road drainage	Ngoketunjia Bui	Bangourain Babessi
6	Canal dredging	BIP MINADER 2019	20	-	Ngoketunjia Bui	Bangourain Babessi
	Projects for 2021					
1	Canal dredging	BIP MINADER	300	-	--	-

It is observed that apart from surface irrigation, pressurized irrigation is rarely developed in the area even for vegetable production. This is due to scarcity of equipment and spare parts, lack of skilled personnel for design, construction and maintenance as well as few private investors. For all these reasons investing in pressurized irrigation is of high cost unaffordable for small producers.

Regarding the development of irrigated farming in the North-West Region, following proposals should be considered when drawing the development plan:

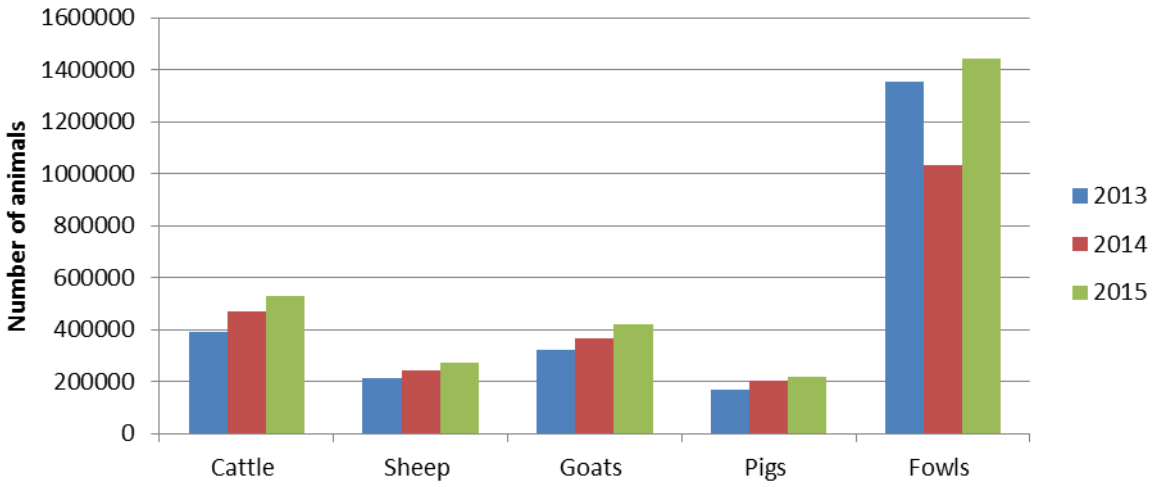
- Investments in the development of the existing irrigated rice farm (14 520 ha) and creation of new irrigated farms (2 000 ha) including diversification of crops
- Improvements for collective farm land management
- Rehabilitation of existing irrigated land and infrastructures
- Development of training programs on irrigated production as well as installation and maintenance of irrigation systems (surface and pressurized)
- Development of incentives for private investment in irrigated land development and pressurized irrigation equipments and services
- Creation of a fabrication unit for irrigation equipments in the region.

5.2. Livestock and fishing

5.2.1. Livestock in the North-West Region

Livestock farming in the North-West Region is centered mainly on cattle, sheep, goats, pigs and fowls. Horses are uncommon in the region; they are reared by the Bororos.

Figure 65: Livestock population (in numbers) in the North-West Region



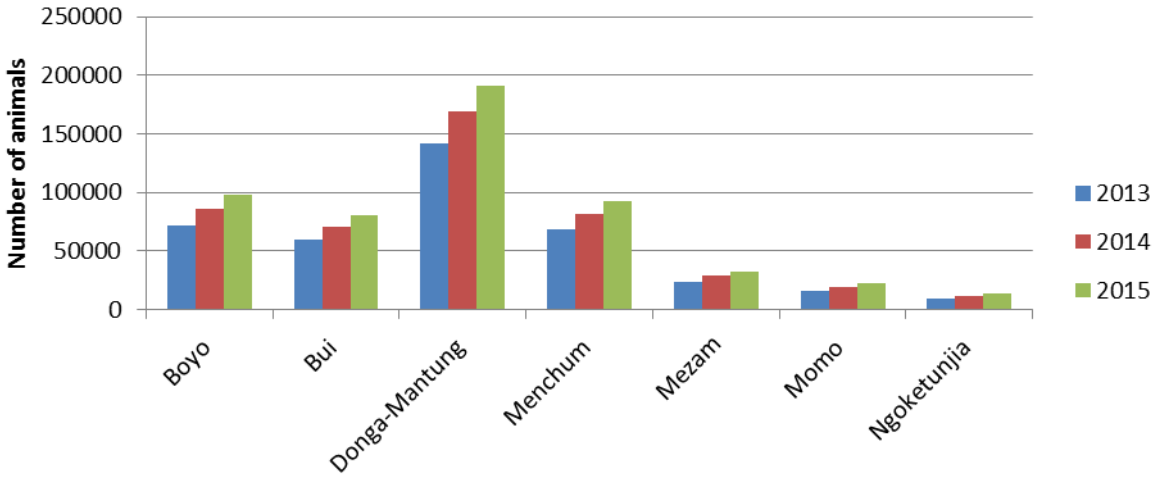
Source: Designed using data from the Regional delegation of MINEPIA

From Figure 65 we can observe a steady increase in the number of cattle, sheep, goats and pigs in the period 2013-2015 in the North-West Region. It is worthy to note that the most commonly reared livestock in the region by their numbers is fowl followed by cattle and goats. Pig farming, though lucrative, is increasingly becoming more and more labour-intensive and expensive to operate, given that the pigs have to be confined to a restricted environment (wooden stables on poles to prevent them from destroying crops, or fences), compared to the past, because of their destructive nature.

However, the pure numbers of livestock does not indicate directly their economic value in the North-West Region: working with the rough assumption that the average market price of one cattle equals the total price of 100-200 fowls, it becomes obvious that cattle is economically most prominent for meat production in the North-West Region, with of course higher investments, more regular demand on labour and higher risk in case of any failure like diseases or catastrophic events.

Similar comparison of the market prices of sheep, goats and pigs (1 cattle equals 3-6 of these) leads to the conclusion that economically cattle is most prominent also compared with sheep, goats and pigs while fowls, that are the far highest number and most easy to keep and to manage in short term, have the lowest economic potential. However, all five (5) species have a high importance for the food market and for the livestock economy in the North-West Region.

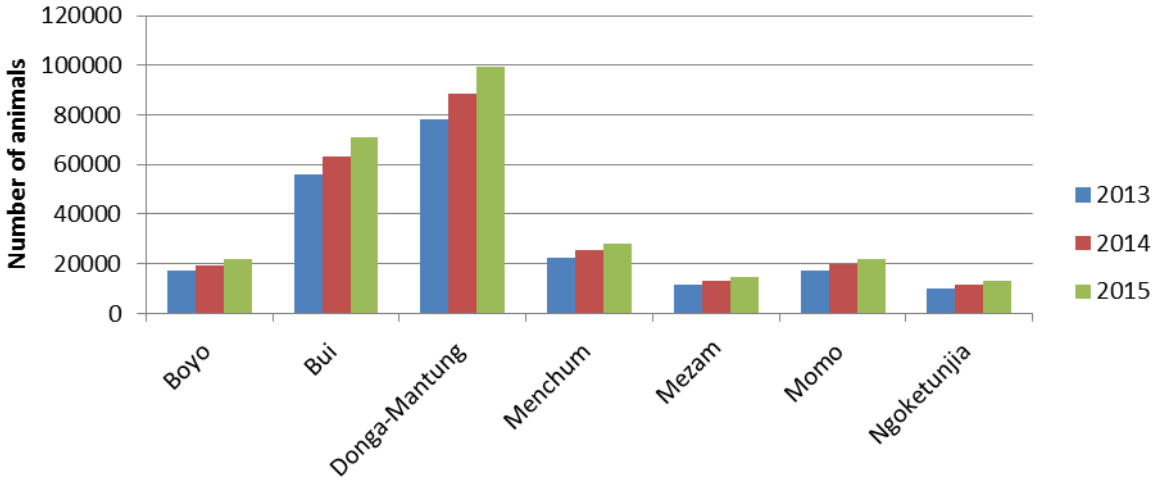
Figure 66: Evolution of cattle population figures (number) per division



Source: Designed using data from the Regional delegation of MINEPIA

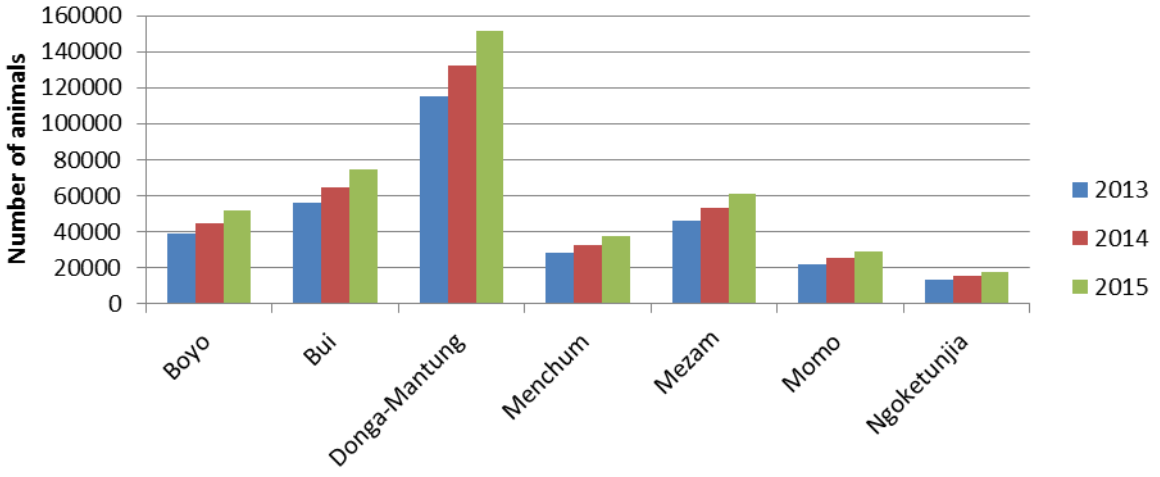
Figure 66 shows that cattle population in the divisions increased steadily between 2013 and 2015, with the highest increase registered in Donga-Mantung, Boyo and Menchum divisions and the least in Ngo-ketunjia. As intimated earlier, this activity is mainly operated by the Bororos, a minority ethnic group in the region and most divisions. The big problem with cattle in most divisions is the increasing conflict between farmers and grazers, which mostly result because of the trespassing of cattle into farmland leading to crop destruction on one hand side and the ever increasing cropping area especially close to urban areas (like Bamenda, Kumbo, Nkambe) and deforestation.

Figure 67: Evolution of sheep rearing (in numbers) per division



Source: Designed using data from the Regional delegation of MINEPIA

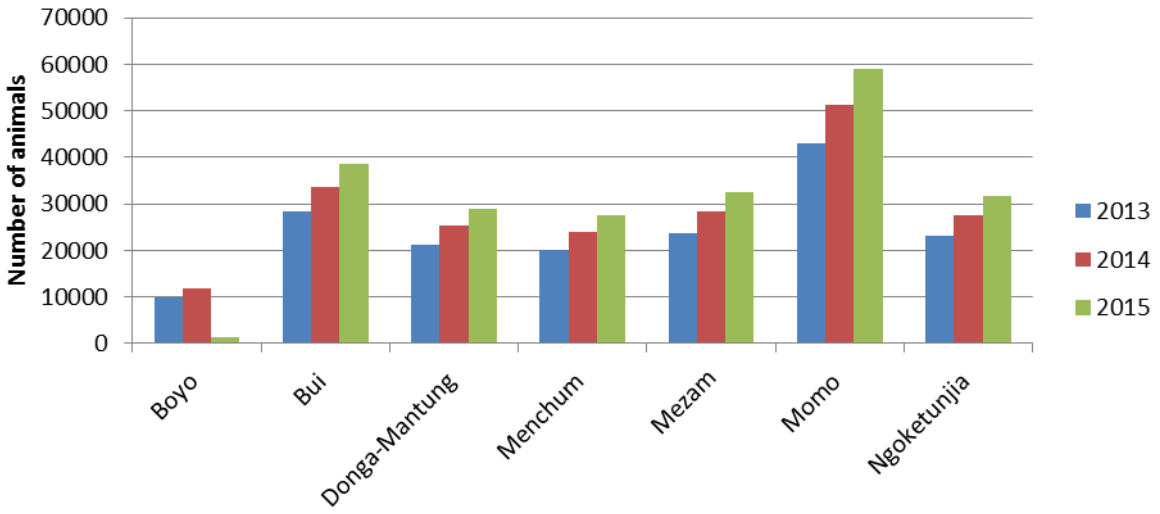
Figure 68: Evolution of goats reared (in numbers) per division



Source: Designed using data from the Regional delegation of MINEPIA

Number of sheep and goats reared increased between 2013 and 2015 for all divisions (Figure 67 and Figure 68). Essentially, Donga-Mantung division ranks first as the higher producer of sheep and goats followed by Bui and Menchum for sheep and Bui and Mezam for goats.

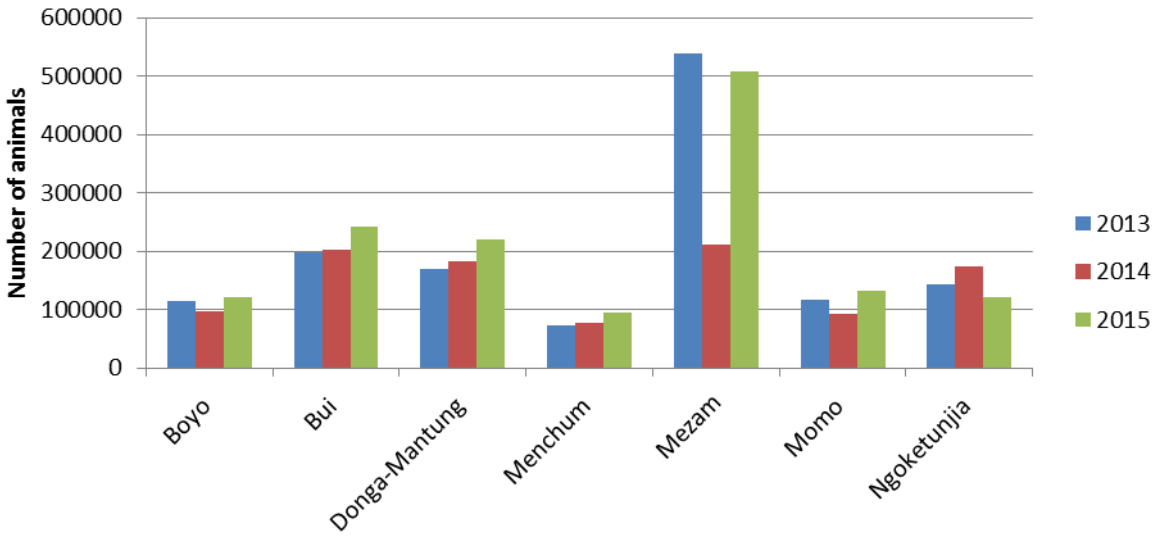
Figure 69: Evolution of pigs reared (in numbers) per division



Source: Designed using data from the Regional delegation of MINEPIA

From Figure 69, pig production is dominant in Momo and Bui divisions. The trend diagram shows that the number of pigs reared increased steadily between 2013 and 2015 for all divisions except Boyo. Pig farming is generally small-holding compared to poultry where we can have them reared in large numbers.

Figure 70: Evolution of fowls reared (in numbers) per division



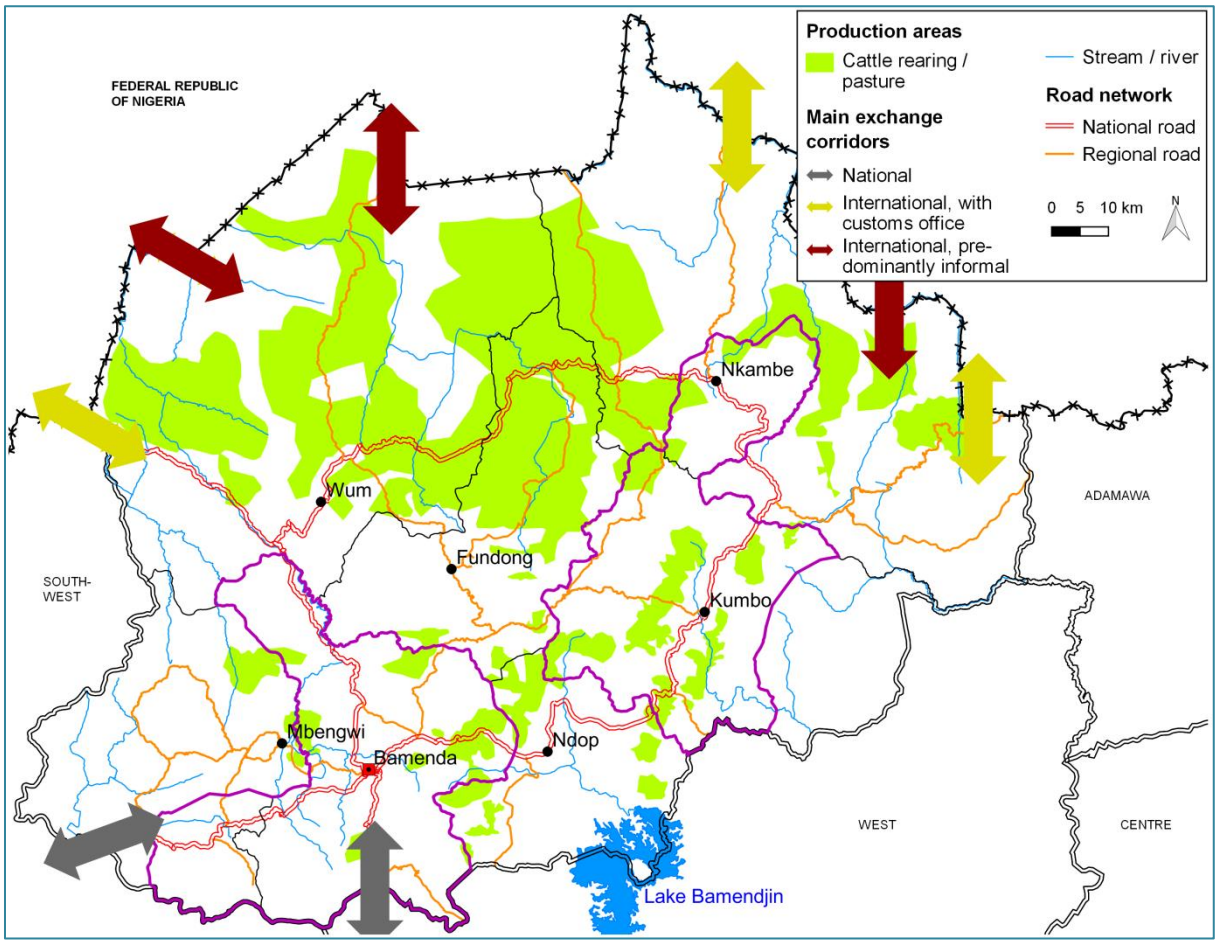
Source: Designed using data from the Regional delegation of MINEPIA

The number of fowls in the divisions is increasing steadily, but for Mezam, Momo and Ngoketunjia, with rather unstable trends. The numbers for Mezam in 2014 are not simply explainable: here, it could be due to some errors of measure in the statistics (that were checked but could not be validated) or impact of diseases. However, since there is no significant trend for Mezam from 2013 to 2015 uncertainties for 2014 seem not to be relevant.

Summarily, it is evident that Donga-Mantung Division holds the highest number of cattle followed by Boyo, Menchum and Bui. For sheep and goats, Donga-Mantung still ranks first followed by Bui and Mezam Divisions. For pigs, Momo comes first followed by Bui and Mezam Divisions. For fowls, Mezam ranks first followed by Bui and Donga-Mantung.

Concerning cattle, perhaps Donga-Mantung has snatched records from Mezam division who dominated in cattle rearing in the 1980s, followed by Bui division. However, Donga-Mantung has maintained the lead in sheep rearing from 1980 to 2015 and Bui division has also maintained a leading position in the production of goats since 1980. For pigs, Momo and Mezam have topped the list since 1980. Importantly, the rearing of horses and rabbits which appeared to be important activities in the 1980s has died out with time.

Figure 71: Grazing areas of cattle



Data source: field survey IU/CPAC/geomer 2018

These observations will allow us to develop prospective scenarios in the next project phases for the localization of potential animal product industries in the region, taking also importantly into account the potential markets and end users (consumption areas) as most or even all animals in Cameroon are transported alive. For fowl, especially the markets, consumption area and production areas should be in short distance from each other.

5.2.2. Production of animal products in the North-West Region

The production of animal products in the North-West Region is evaluated for the most important products like milk, yogurt, Butter, hides/ski, eggs and honey in the year 2013 to 2015 (see Table 38).

Table 38: Production of animal products for the North-West Region from 2013 to 2015

	2013	2014	2015
Milk (Tons)	2,763	3,771	4,441
Yogurt (liters)	1,170,453	1,792,526	2,020,907*
Butter (kg)	-	-	3,583
Hides/skin (kg)	16,577	26,118	28,888
Eggs (Number)	40,540,430	53,078,101	211,239,794
Honey (liters)	1,406,095	1,795,714	660,576

* This total is only for Bui and Mezam. Reliable data for other divisions are not available.
Source: Calculated using data from the Regional delegation of MINEPIA

Concerning the production of animal products in the region, there are eggs, honey, milk, yoghurt and hides/skins which are the most common. It is important to underline that milk and yoghurt production harbours huge potentials for large scale production/processing in the region given that the raw material (dairy cattle) is readily available and at affordable rates. The strong surge in egg production registered between 2014 and 2015 (passing from about 53.08 billion to 211.24 billion) can be explained by increasing number of poultry farmers in the region and the growing interest/involvement of young people in this sector, or might be a statistic error.

The skin production shows significant increase above the increase rate of cows. However, this seems to be a great potential for the production of secondary leather products in future also for further markets out of the North-West Region and out of Cameroon (to be further investigated in the prospective phase).

The rapid increase and decrease of produced honey observed is generally possible and is the result of natural variabilities, according to the views of honey production experts. While the sharp increase from 2013 to 2014 seems to show great economic potential, the sharp decrease registered in 2015 indicates high economic risk and enormous impacts of environmental conditions (in this example: number of bees, living conditions for bees, sane flowers, biodiversity and existence of many different species). This is also a good example and a strong argument for the high importance of environmentally sound conditions if such economic potentials shall be used in future.

The detailed figures on the production of animal products in the divisions are shown in Table 39 a-c below: Mezam division ranks first in milk production (in tons) followed by Bui and Boyo divisions. Mezam and Bui still come first in the production of yoghurt (in liters) and hides/skins. This is an indication that at present the highest production numbers of dairy products in the North-West Region are hosted in the Mezam and Bui Divisions, although in Donga-Mantung with the high livestock of cows the potential for dairy products seems to be much better than the actual output. In the prospective phase scenarios could be developed on how the potential in other divisions than Mezam and Bui for diary productions can be used by knowledge transfer or other inspiration.

As for the production of hides/skins in 2015 Donga-Mantung emerges, taking the second position after Mezam (Table 39 c). Boyo tops the list in the production of honey.

Table 39 a-c: Production of animal products by Division from 2013 to 2015

Production in 2013	Boyo	Bui	Donga-Mantung	Menchum	Mezam	Momo	Ngoketunjia
Milk (Tons)	415	718	221	83	1,244	55	28
Yogurt (liters)	163,865	222,379	187,274	140,455	316,025	117,046	23,409
Butter (kg)	--	--	--	--	--	--	--
Hides/skin (kg)	800	10,265	50	500	3,286	544	850
Eggs (Number)	3,483,234	6,531,064	3,047,830	2,177,022	21,770,215	2,177,022	4,354,043
Honey (liters)	705,510	337,674	151,878	81,766	119,784	2,279	7,204

Production in 2014	Boyo	Bui	Donga-Mantung	Menchum	Mezam	Momo	Ngoketunjia
Milk (Tons)	559	976	292	110	1,722	73	41
Yogurt (liters)	--	507,132	--	102,592	11,080	74,759	--
Butter (kg)	--	682	--	--	2,301	--	--
Hides/skin (kg)	--	8,285	281	5,862	7,286	912	3,492
Eggs (Number)	3,628,398	6,931,965	4,127,367	2,859,855	26,950,951	3,271,755	5,307,810
Honey (liters)	240,495	236,024	87,566	291,084	112,533	188,763	639,249

Production in 2015	Boyo	Bui	Donga-Mantung	Menchum	Mezam	Momo	Ngoketunjia
Milk (Tons)	415	718	221	83	1,244	55	28
Yogurt (liters)	163,865	222,379	187,274	140,455	316,025	117,046	23,409
Butter (kg)	--	--	--	--	--	--	--
Hides/skin (kg)	800	10,265	50	500	3,286	544	850
Eggs (Number)	3,483,234	6,531,064	3,047,830	2,177,022	21,770,215	2,177,022	4,354,043
Honey (liters)	705,510	337,674	151,878	81,766	119,784	2,279	7,204
Cheese ** (kg)	3,483,234	6,531,064	3,047,830	2,177,022	21,770,215	2,177,022	4,354,043
Skin ** of small ruminants (kg)	705,510	337,674	151,878	81,766	119,784	2,279	7,204

* no data available or available data not reliable and could not be validated with existing sources

** no data available for earlier years

Source: Regional delegation of MINEPIA

5.2.3. Fish farmers, fish ponds and quantity of fish produced in the North-West Region

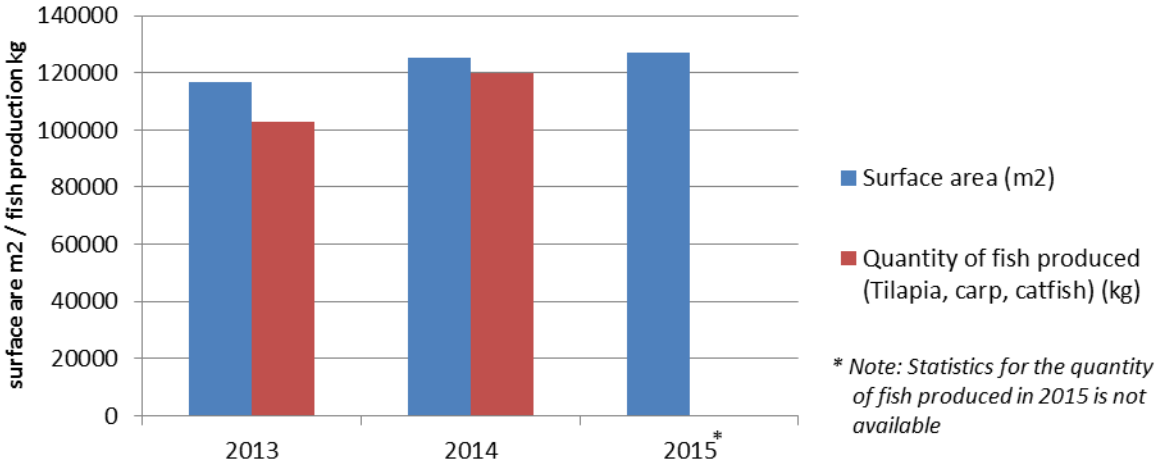
The number of registered fish farmers has significantly increased from 2013 to 2015, passing from 616 farmers to 870 farmers (corresponding to a growth rate of 41.2%). This significant increase in the number of fish farmers could be explained by the increase in the demand for fish in the North-West Region. The number of fish ponds moved from 1,035 in 2013 to 1,387 in 2015 (corresponding to a growth rate of 34.0%). The growth rate in the number of farmers is more than that in the number of ponds, implying that the passage between 2013 and 2015 witnessed a drop in the number of ponds per farmer or this may be an indication of the marginal addition in number of ponds made by new farmers (Figure 72).

It is worth mentioning that Menchum Division has great fishing potentials as analysed below: There is a variety of fish found in the rivers and streams of Furu-Awa and Gwayama in Menchum Division, the most unfortunate situation is that the fishing method here is artisanal and more than 85% of the harvest goes to Nigeria. The main reason being the proximity to Nigeria and an available market where the prices are far higher than in Cameroon. The road situation from Bamenda to Wum and to the fishing ports is not the best. The annual harvest in Furu-Awa is 18 tons and Gwayama the annual harvest is 6 tons.

Figure 72: Evolution of the number of Fish farmers and fish ponds for the North-West Region

Source: Designed using data from the Regional delegation of MINEPIA

Figure 73: Evolution of the quantity of fish produced for the North-West Region

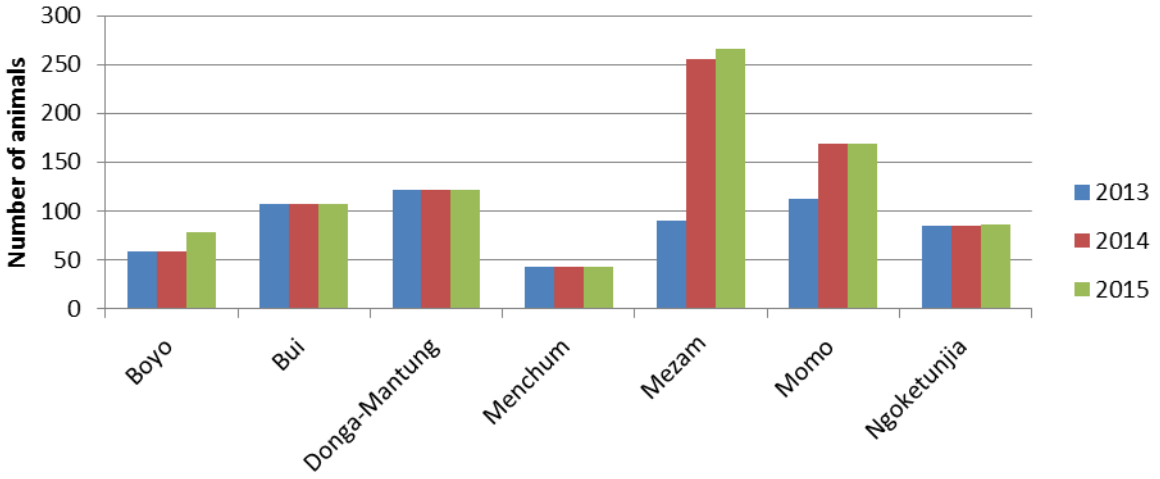


Source: Designed using data from the Regional delegation of MINEPIA

While the surface area used for fish farming increased just marginally from 2013 to 2015, the quantity of fish produced (tilapia, carp, catfish etc) increased significantly between 2013 and 2014 (note: no reliable figures for 2015 available), registering a growth rate of 16.89%. This is an indication that the productivity in fish farms can be improved and the quantity of fish production in the North-West Region might be further raised if the trend for increasing demand for fish in the region will continue. An expert observation is that fish production in the region is just emerging because the region had relied on fish produced in the Littoral and other regions to satisfy its demand. Another impact might be the decreasing maritime fish production and decreasing availability of reasonable priced fish from the sea.

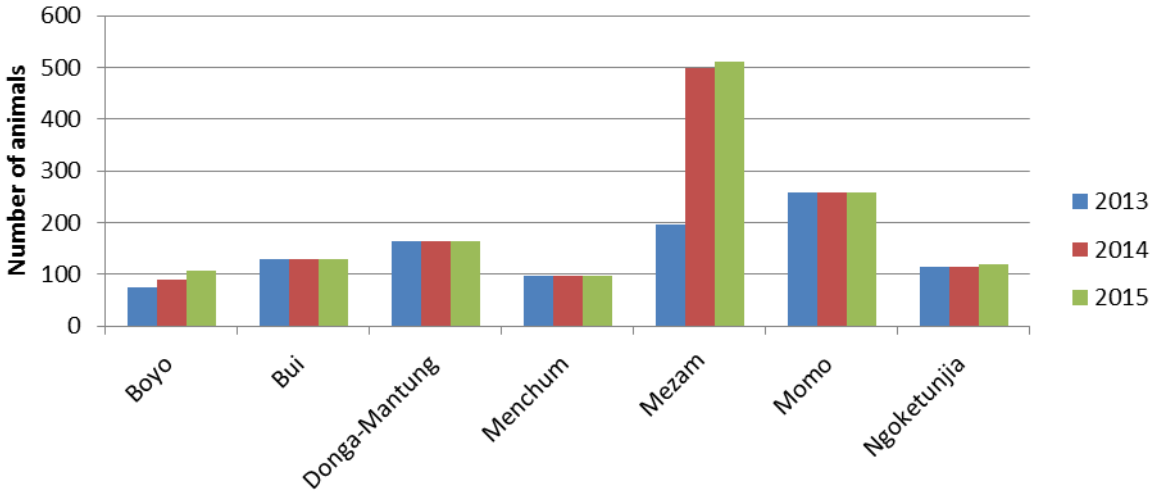
In the divisions of the North-West Region fish farming and fish production differs from the regional average as shown in the following specifications.

Figure 74: Evolution of the number of Fish farmers per division



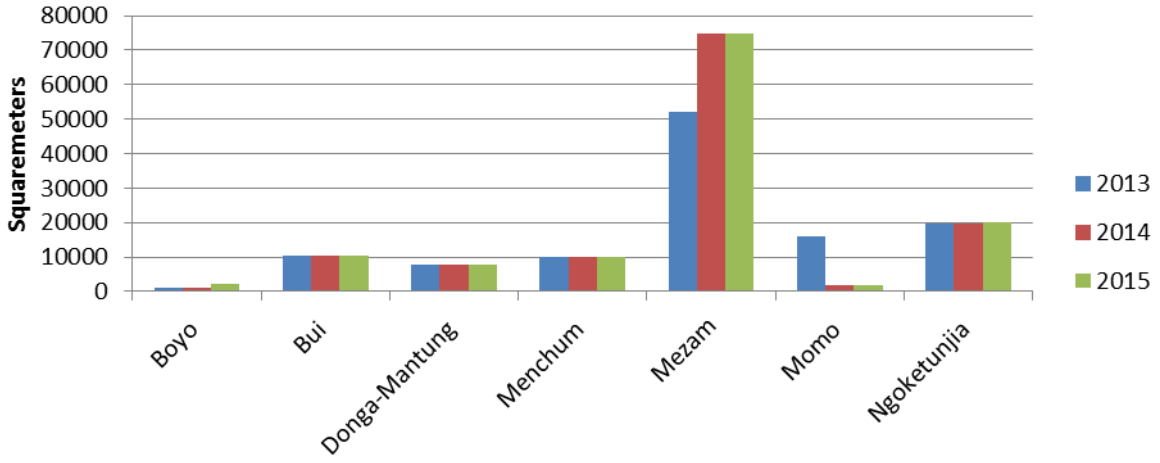
Source: Designed using data from the Regional delegation of MINEPIA

Figure 75: Evolution of the number of fish ponds per division



Source: Designed using data from the Regional delegation of MINEPIA

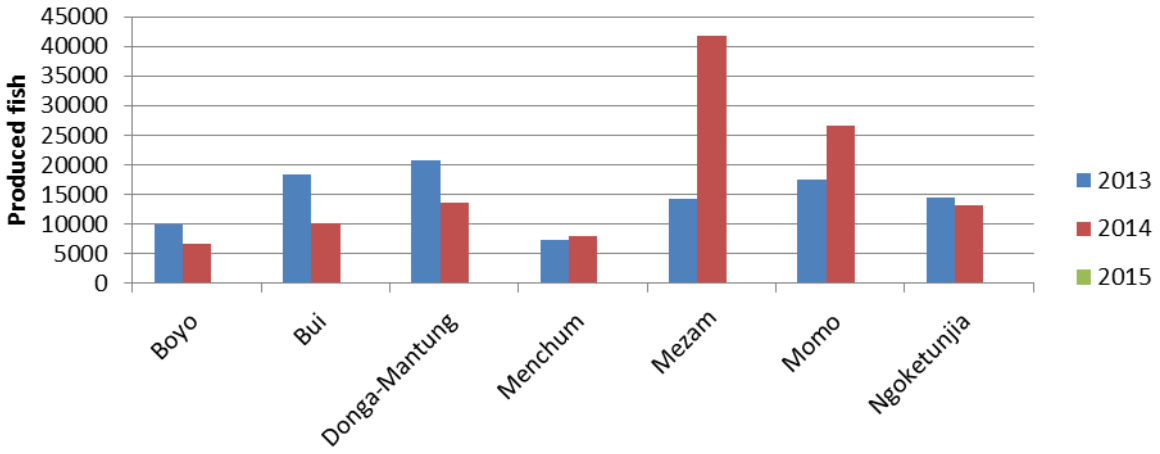
Figure 76: Evolution of the surface area per division



Source: Designed using data from the Regional delegation of MINEPIA

From Figure 74, it can be observed that the number of fish farmers has remained constant over the years (2013, 2014 and 2015) in Bui, Donga-Mantung, Menchum and Ngoketunjia divisions. On the contrary, this number has increased steadily in Boyo, catching up with the other divisions, and very much in Mezam. In Momo division the increase was between 2013 and 2014 and levelled up from 2014 to 2015. In a like manner, the number of fish ponds in Bui, Donga-Mantung, Menchum and Ngoketunjia divisions remained constant as well in the same period. Importantly, in Boyo and Mezam the steady increase in the number of fish farmers is accompanied by a steady increase in the number of fish ponds (Figure 75). The development of the fish pond surface area in the divisions correlates generally with the number of fish farms and fish ponds, which means that there has been no significant change in the size of fish ponds or size of fish farms. Only the figures for Momo division in the years of 2014 and 2015 cannot be explained after some analysis due most likely to some statistical insufficiencies.

Figure 77: Evolution of the number of fish produced per division



**Note: Data for the quantity of fish produced in 2015 is not available.*
Source: Designed using data from the Regional delegation of MINEPIA

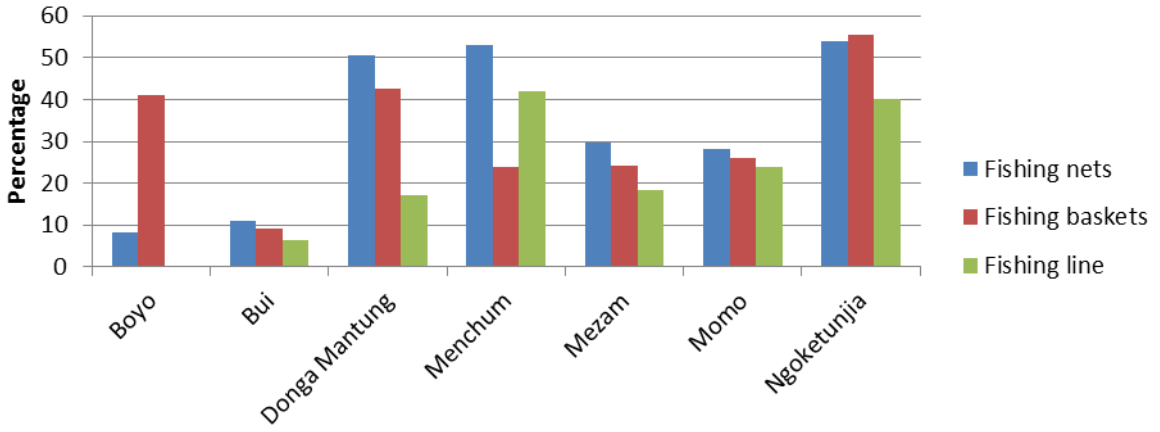
From the numbers of produced fish per division (Figure 77) it is obvious that even increasing numbers of fish ponds and fish farms as well as surface area is no guarantee for increasing fish production. The environmental conditions, maintenance of the ponds and maintenance of the fish stock have significant impact on the production rate. This makes it clear that potentials can only be achieved if accompanied by experienced fish farmers, trainings and capacity building including knowledge on sustainability factors for this economic sector in regard to natural conditions.

Overall there is one main fish farming division (Mezam), followed by Momo division and all other divisions are about on the similar level, under which Menchum has relatively the lowest number of fish farms and ponds. For further regional development scenarios, the market prices and respective economic values shall be further considered. Detailed economic data (in terms of costs and earnings in this sector) are not available because of the decentralized and informal structure of these activities. They will be estimated according the development options for the prospective phase.

<u>Views on usage of fish caught, fishing techniques and barriers for fishing the economy</u>

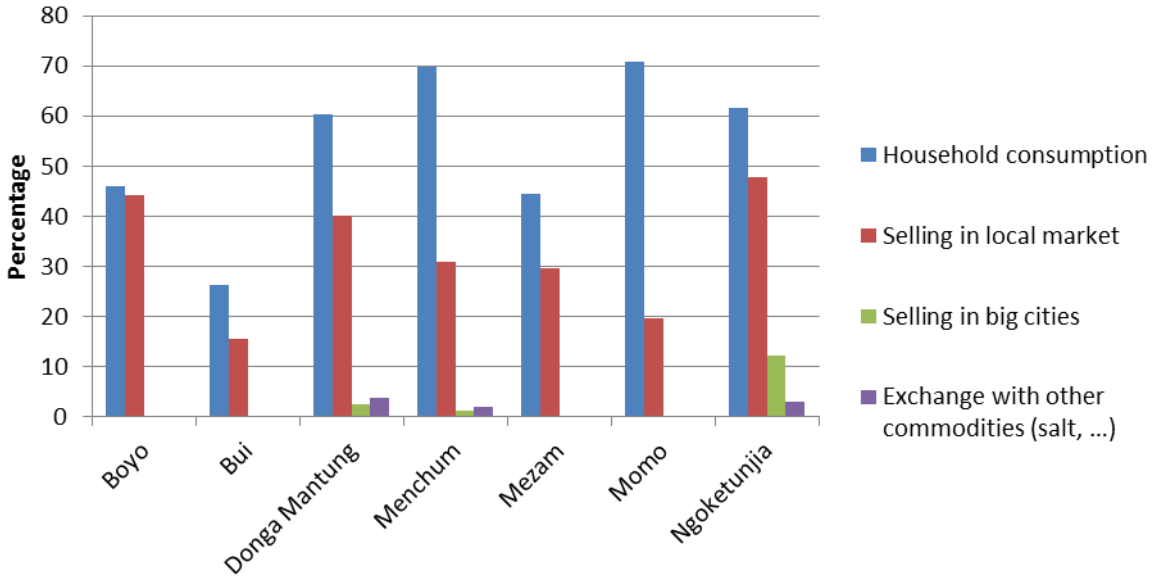
From Figure 78 the dominant use of fishing nets and fishing baskets in the Ngoketunjia, Momo, Mezam, Donga-Mantung, Bui and Boyo divisions can be observed. It is only in Menchum where the usage of fishing lines dominates usage of fishing baskets.

Figure 78: Main technique of fishing practiced in the divisions in the North-West Region



Source: NW Field Survey, 2018

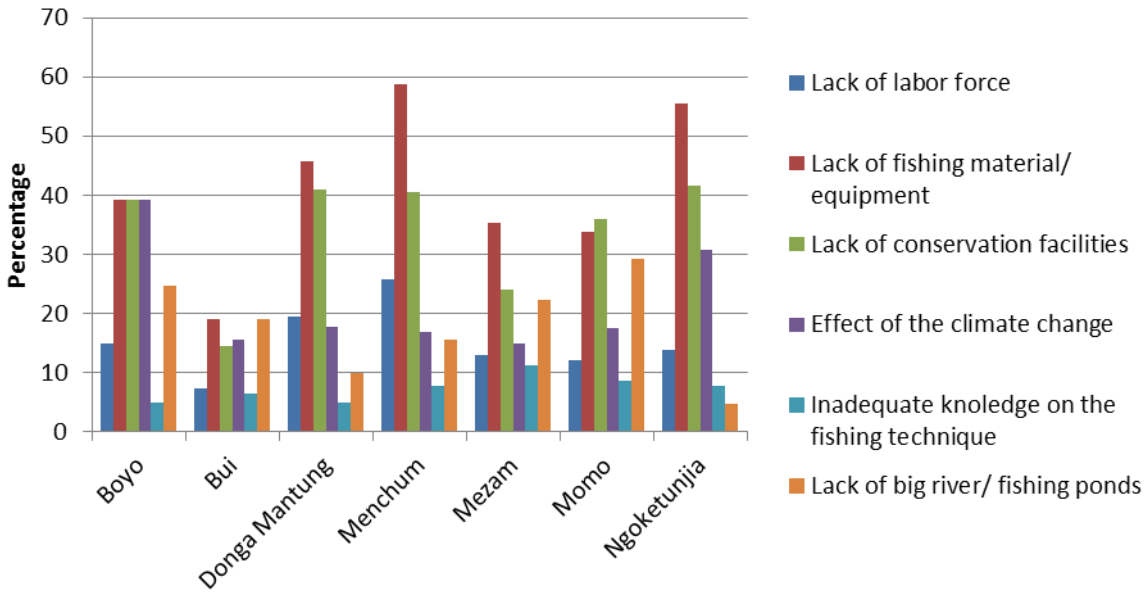
Figure 79: Percentage distribution of the views of respondents on the usage of fish products per division



Source: NW Field Survey, 2018

From Figure 79, most of the fish caught is used for home consumption and another significant proportion if sold locally. Only Ngoketunjia sells a commendable proportion of fish caught in big cities. This tells us the whole story on the scale of fishing activity in the region; it is still dominantly subsistence and employs local methods.

Figure 80: Barriers to the expansion of fishing activity in each division



Source: NW Field Survey, 2018

The main barriers to the expansion of fishing activities in the divisions are first, the lack of fishing material/equipment, second, the lack of conservation facilities, lack of big water bodies and lack of knowledge on fishing methods.

5.3. Forestry

Forests and forestry tackle both economic and ecologic aspects. Here the economy of forestry is the focus while ecologic aspects are evaluated in chapter 4.2.2 Thus, some overlapping cannot be avoided.

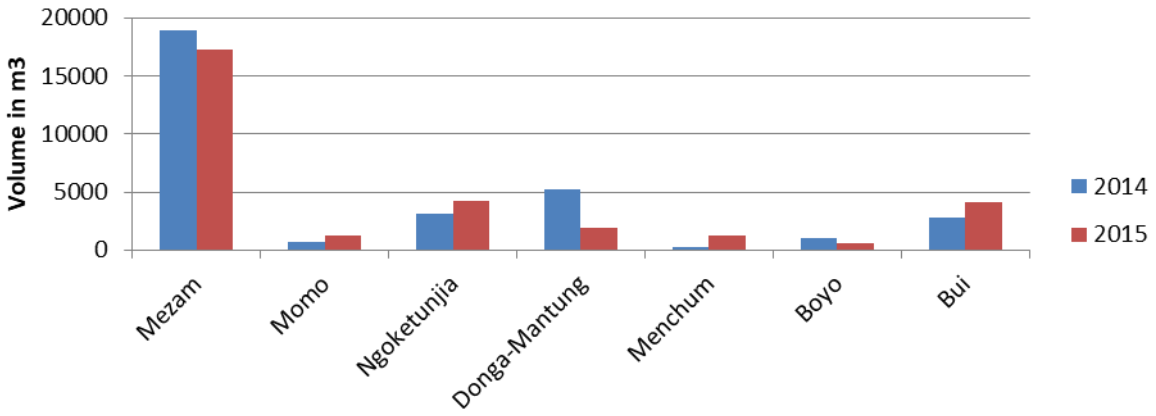
Looking at legally sold wood in the North-West Region Figure 81 presents the selling statistics (volume in m^3) in 2014 and 2015. The very tall bars on Mezam division are indications that Mezam constitutes the main sales point for wood produced in other divisions of the region. Most of the wood produced in the other six divisions, except Mezam, have as main outlet the Mezam division. It is also worth noting that some of the wood produced in the North-West Region is transported by heavy duty trucks to other regions (such as Littoral, West, Centre etc.) for sale. So, the huge bars on Mezam do not necessarily say that the Mezam division hosts the largest wood production potential. Dominant wood producing divisions in the region are Ngokentunjia, Donga-Mantung and Bui.

The border Divisions are two that is, Menchum and Donga-Mantung.

- Menchum Division is associated with illegal forest logging at Furu-Awa, which is transported to Nigeria.
- Donga-Mantung has a high level of illegal logging within the virgin forest of Ako.

For these illegal activities to be halted, the State needs to put in place strong legislation which must be accompanied with all the needed implementory facilities accorded to the competent services alongside security backup.

Figure 81: Statistics of legally sold woods (volume in m³) in 2014 and 2015



Source: NIS 2017 (designed from table)

From Figure 82, the dominant species of wood sold is the Eucalyptus, followed by Ayous, Iroko and Cypress. Eucalyptus is one of the most useful woods in the region; serving as material for roofing, furniture material designing, firewood for cooking, poles for electricity installations, poles for image-cable connections etc.

Figure 82: Volume of sold wood for the top 4 species (in m3) in the North-West Region in 2015

Source: NIS 2017 (designed from table)

The main non-timber forest product in the region is 'Prunus africana' harvested commonly in Bui and Boyo divisions. It is used in the region but also finds outlets in other regions like the Centre and West regions. Further species of wood growing in the forests in the North-West Region are described in chapter 4.2.2 but these have low relevance for the economic aspects of forestry.

The region's forest is rich in honey and a variety of tree species as per below:

Bui Division:

- Processing of white and brown honey in Elak-Oku Council Area
- Processing of brown honey at Avera Ranch in Mbiame Council Area (Mbo-Nsaw)
- Donga/Mantung Division:

Mbembe Forest Reserve in Ako Sub-Division, it is a state reserve with high quantity of various tree species, such as mahogany, sapelli, iroko, nueclea latifolia (African peach tree), crosoptryx febrifuga, hymenocardia acidia, annona Senegalensis (wild soursop), diospyrus monbuttensis, cola cordifolia (wild colanut), ceiba petandra (silk cotton tree), landolphia spp (rubber plant) etc. There are equally, some wildlife species found in this forest. Though a reserve, illegal logging is very high in this reserve forest. The illegally logged timber is transported and sold in Nigeria without a franc paid into the state coffers nor Ako Council Treasury.

5.4. Mining and quarry

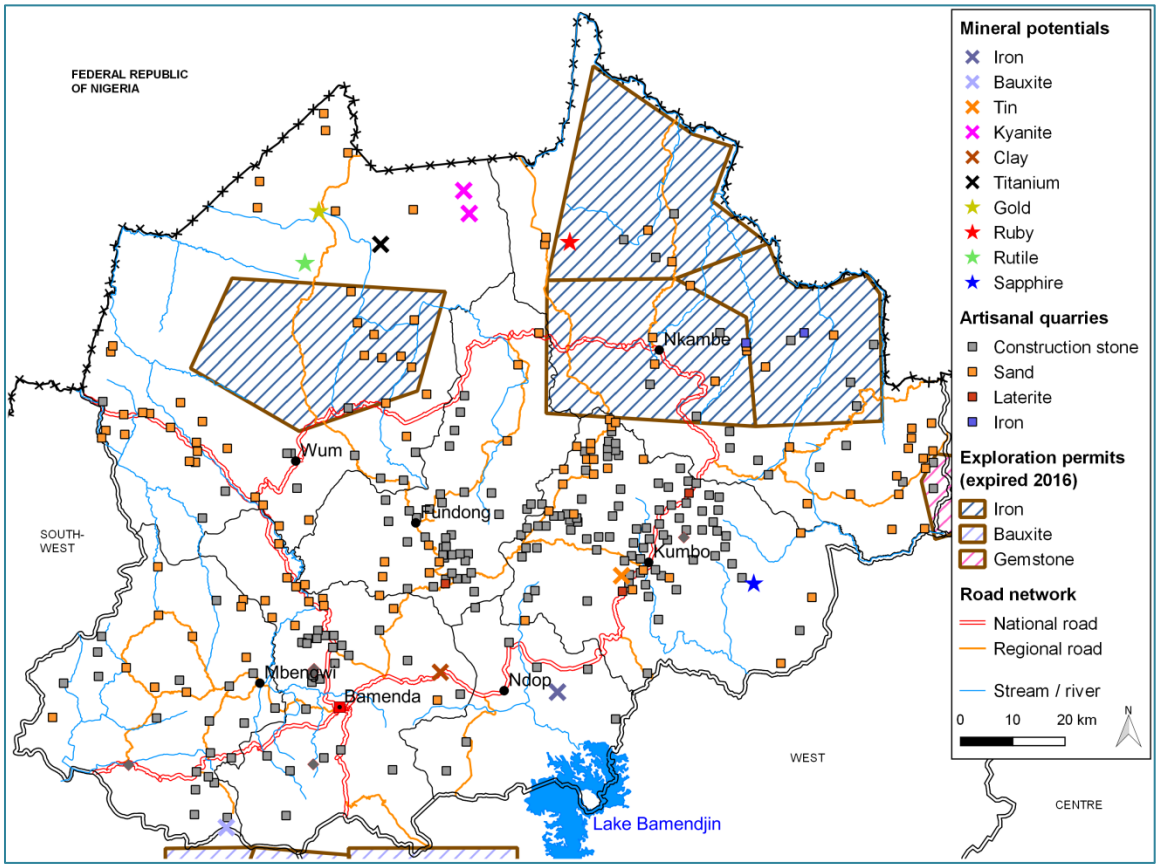
5.4.1. Legislation

The Ministry of Mines, Industries and Technological Development (MINMITD) is responsible for the issuance of mineral exploration and exploitation licenses, authorisations and permits. The Institute for Geological and Mining research (IRGM) under MINMITD, is the agency responsible for all geologic and mining activities (including conducting geologic exploration programs, mechanized drilling operations, overseeing the mining of mineral deposits, and preventing unauthorized exploitation of mines and quarries) in the country. Reconnaissance permits give a company the non-exclusive right to explore an area of up to 10,000 km^2. Then a prospecting license, which is exclusive, is awarded for a block of up to 1,000 km^2, for an initial term of three years, renewable for 4-two year periods. An operating permit is delivered by the president on recommendation from the minister in charge of mines, for a total of not more than 25 years. The company signs a mining agreement with the State which lays out the company's obligations in terms of social development in the region where it will operate (including local employment commitments), environmental considerations, tax agreements if applicable, and any share in the operation that accrues to the State. The license may be renewed if the company meets all its obligations in terms of the agreement. Generally, mining and quarry activities have a negative image because it is potentially highly polluting. Its costs are often externalized on local communities that host its operations. Recently, there have been some complaints of pollution from some neighbourhoods where quarries exist in Bamenda. Although the industry has many drawbacks, it can potentially confer many benefits, especially for the local community, by providing employment, and some socio-economic improvements. Although the overall economic growth achieved by the nation particularly during the current decade, has been impressive, employment growth and sustainable development has not kept pace. The mining sector usually is a great contributing factor to the GDP of a nation. However, for the North-West Region of Cameroon, the mining sector has been relatively slow. This has significantly limited the regional economic growth, sustainable development and widespread distribution of the benefits of the national economic growth and unemployment. At a time, when Cameroon is aiming to be an emerging nation, investing in, and boosting, the region's mining sector would imply-industrial growth which would assume crucial importance and impact the rate of poverty reduction in the country and Region in particular.

5.4.2. Mining Potential of the North-West Region

The mining industry in the North-West is still in its infancy stage, with activity being predominantly artisan in nature. However, the Region has significant potential, and large proportions of its landmass are yet to be explored. As the state of infrastructure improves, it can be expected that mining in this fast emerging region will prosper. The region has considerable potential for mining with its prospects of bauxite, iron ore, sapphire, ruby, diamond, tin, gold, titanium, rutile, kyanite, basalt, sand, pyroclastic materials and others. Of the region's 17,300 km^2 surface area, less than 25% has been explored for minerals by five different exploration projects. In 2017, a total of 67,936 m^2 of land was occupied by industrial quarry activities. A vast geography endowed with diverse topography has made the North-West Region the repository of abundant resources, which provides a base for investment. The region is quite rich in natural resources. The region has considerable potential for Gold in Misaje, Lum Ndu, Mbengwi, Diamond in Misaje, Donga Mantung, Iron in Mayor-Binka, Coal in Tabeken, Saphire in Mayo-Kilah, Mbiame, donga Mantung, Zircon in Fonfuka and Coal, Kaolin in Mbengwi. Pyroclastic materials in Befang, Clay on the lower slopes of the Sabga hill and the upper limits of the Ndop plain and Bamessing (Figure 83).

Figure 83: Mining activities and potentials in the North-West Region



Data source: based on data from IRGM / MINMIDT

In the North-West Region, there is no existing permit for mineral exploration. But, there are five exploration permits (all expired) issued for mineral exploration in Wum, Ako, Binka Babungo and Nkambe. Though there hasn't been any mining permit for the region, three non-industrial and one artisanal operator card has been issued to individuals for Kaoling in Mbengwi, Gold, diamond, Sapphire and associated minerals in Donga Mantung. However, activities on these sites are at a stand still. The region is still virgin as concerns the exploitation of mineral water. The artisanal mining domain is quite busy in the region. Three non-industrial operator cards have been issued for Kaolin in Mbengwi and for Gold, Diamond, sapphire and associated minerals to individuals in Donga Mantung Division. The North-West Region presently has six industrial quarries that exploit Basalt and about 157 non industrial quarries for sand, Kaolin limestone, laterite or Basalt distributed over the Seven Divisions (Figure 83) covering a total surface area of 88,300 m^2.

The border Divisions are two that is, Menchum and Donga/Mantung.

- Menchum Division is associated with illegal mining at Furu-Awa and Benakuma, transported to Nigeria.
- Donga/Mantung has a high level of illegal logging within the virgin forest of Ako.

For these illegal activities in Menchum and Dinga-Mantung to be halted, the State needs to put in place strong legislation which must be accompanied with all the needed implementory facilities accorded to the competent services alongside security backup.

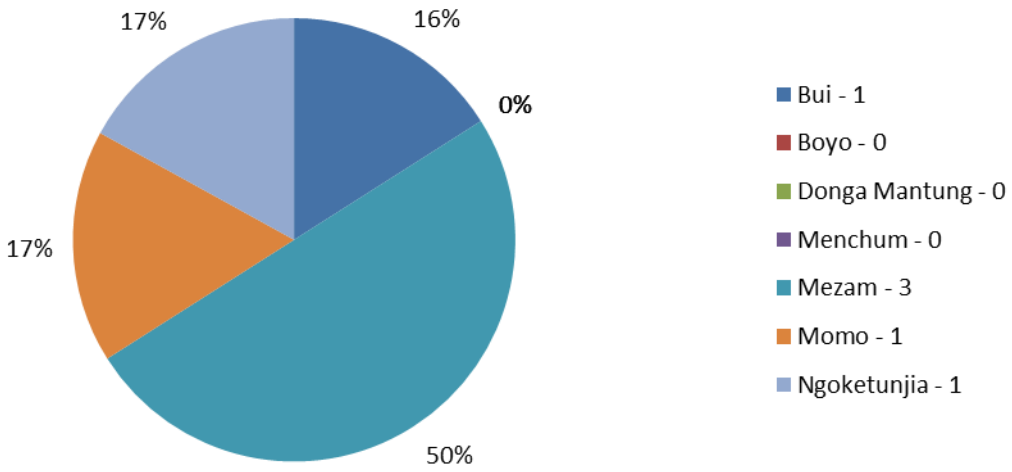
5.4.3. Mining Activities

It is a non-disputable fact that the region is enormously rich in minerals. Though there are no industrial mining activities going on, small scale mineral mining activities, Industrial quarrying, semi-industrial and

artisanal activities dominate the mining industry in the region. It is sometimes difficult to differentiate between non-industrial commercial and non-industrial domestic activities from some artisanal activities, considering that many of them are seasonal. Perhaps considering that domestic quarries don't pay land tax, gives a reason why we have so many of them compared to commercial quarries. Most of the non-industrial commercial quarries are for sand and must occupy a maximum surface area of 2,000 m^2. The figures below, for each sub-sector are a summary of individuals that are registered at the Ministry of Mines, Industries and Technological Development (MINMIDT).

Looking at the repartition of industrial quarries in the region, one easily notices that they are mostly located in urban areas. About 50% of commercial quarries in the region are located in Mezam alone (Figure 84).

Figure 84: Distribution of Industrial Quarry Companies in the North-West Region in 2017

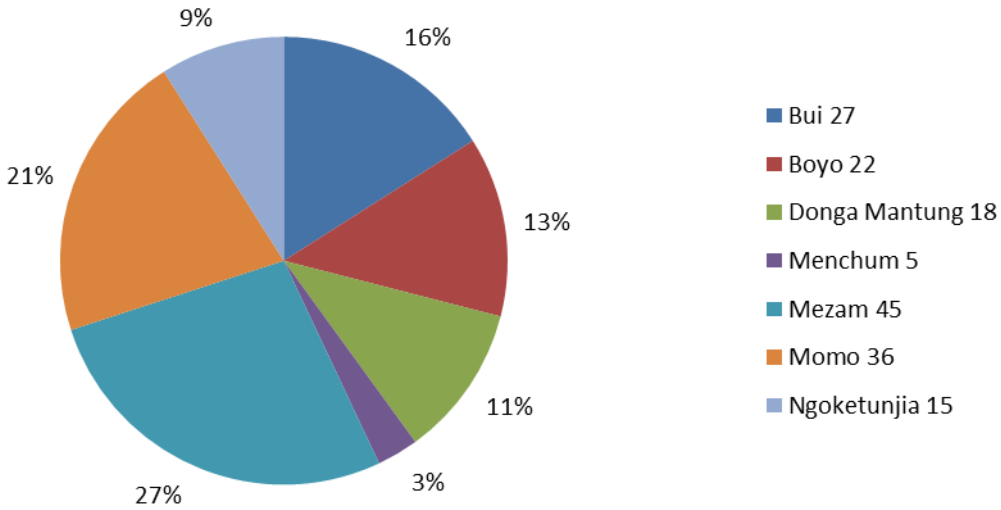


Source: own figure based on data of MINMIDT

Many reasons can account for this, ranging from the fact that investors prefer areas where the market of the products would easily yield dividends. This has brought a lot of effects to the already congested areas. The roads are easily destroyed by heavy duty trucks, the highest inhabited areas are polluted.

There is no semi-mechanised activity going on in the region.

Figure 85: Distribution of Artisanal Quarries in the North-West Region in 2017



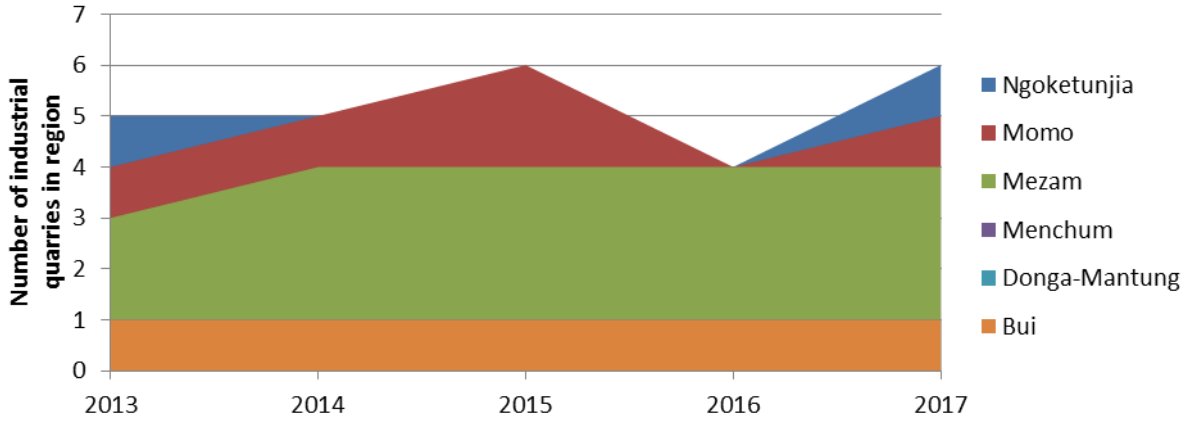
Source: own figure based on data from MINMIDT

The mining code encourages individual Cameroonians to engage into mining activities. This is demonstrated in the easy issuance of artisanal licenses. This explains the reason why there are hundreds of quarries in the region. Looking at the chart above (Figure 85), all the 7 divisions of the region have quarries. Many of these artisans usually operate seasonally, while many of them are for domestic purposes. These are some of the factors that make the booking of artisans difficult. Many people starting in the business choose this sector because it requires little capital to start and little administrative controls. But, a greater number of accidents in the sector are due to artisanal activities.

5.4.4. Evolution of mining and quarrying activities in the North-West Region

The evolution of industrial quarry exploitation, semi-mechanized quarry exploitation and artisanal quarry activities in the North-West Region are shown in Figure 86, Figure 87 and Figure 88.

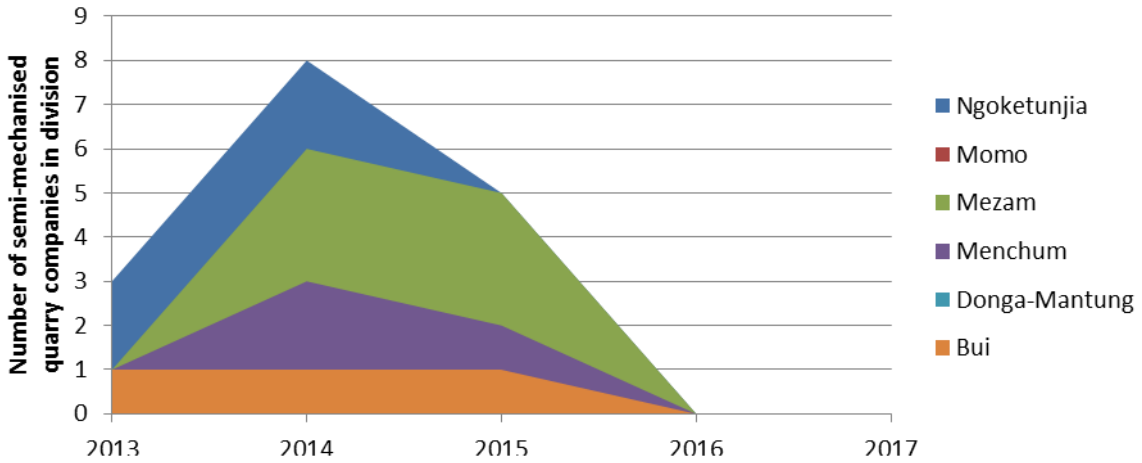
Figure 86: Evolution of Industrial Quarry Exploitation in the North-West Region



Source: own figure based on data from MINMIDT

There are relatively no mining activities in the region. MINMIDT recently successfully closed down the illegal mining of sapphire at Mbiame. The five mineral explorations that had been issued in Wum, Ako, Binka, Babungo, and Nkambe, all expired and there are no exploration activities in the region. There is relative stability in the number of industrial quarries (Figure 86). This is a sector that supplies construction aggregates to the region. Today, either or both of quarry sand and gravel are used in almost all construction works.

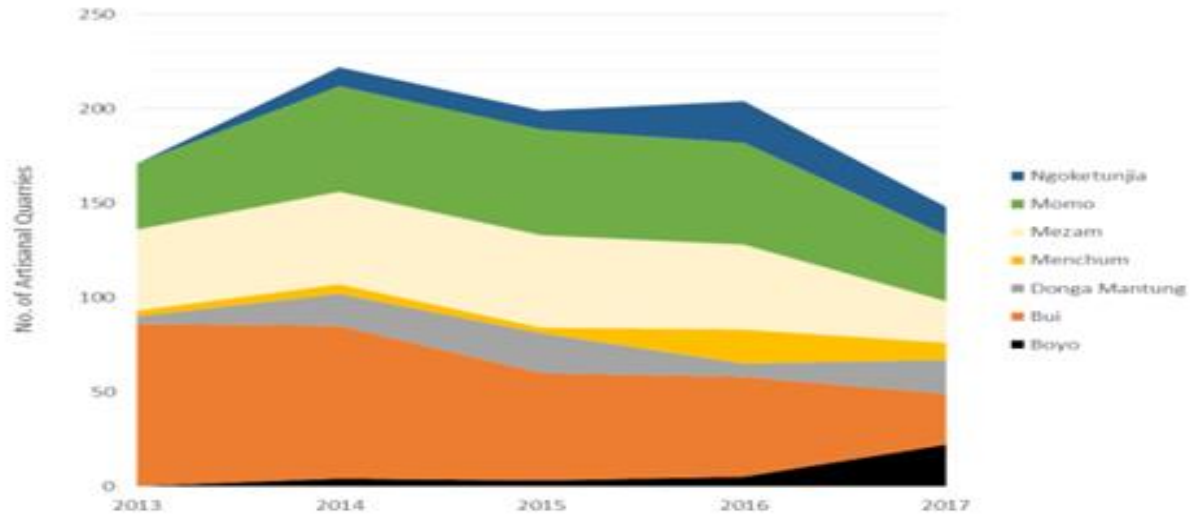
Figure 87: Evolution of Semi-mechanized Quarry Exploitation in the North-West Region



Source: own figure based on data from MINMIDT

Recently, there has been a drop in quarry activities in some divisions. Since 2016, semi-mechanised activities have all shut down (Figure 87).

Figure 88: Evolution of Artisanal Quarry Activities in the North-West Region



Source: MINMIDT

In 2017, Mezam had 30 registered artisanal stone quarries and by May 2018, this number dropped to 12 stone quarries and 25 alluvial sand operators (Figure 88). These changes could be due to environmental (climate change), infrastructural (lack of accessible roads), Sociocultural (land disputes) and the sociopolitical effects. The figures below, for each sub-sector are a summary of individuals that are registered at the Ministry of Mines, Industries and Technological Development (MINMIDT).

There is no current mining exploration activity going on in the region. Exploitation is yet to begin in the region.

5.4.5. Risk, environmental and social impacts due to mining activities

The geology and physiography of the region makes it a potential natural risk zone. The poorly consolidated and highly weathered rock of volcanic region for most parts of the region, posing enormous danger to life and property. Landslides, floods and lightning strikes are the most common especially during the rainy season. Mining is an essential activity as it provides an important source of livelihood, particularly where economic alternatives are critically limited. More than half of the population of youths around wum depend entirely on sand exploitation activities. Unfortunately, these activities are frequently accompanied by extensive environmental degradation and deplorable social conditions, both during operations and after mining activities have ceased. Given the number of people directly or indirectly reliant on mining activities especially as artisans, and the magnitude of resulting impacts, appropriate measures must be developed and implemented to mitigate associated problems. The main environmental damage are soil degradation, land damage and river pollution. In fact, there is usually no landfill for quarries and artisans. This leads to severe disturbances of the land surface and the disappearance of the cultivable lands and forests. Artisanal mining produces a large amount of mud that is transported into the river and downstream zones, leading to river pollution and marshland flooding. This phenomenon is exacerbated by the activities of some quarries, mechanised sand exploitation activities. One of the biggest negative impacts on the environment is the damage to biodiversity: fish, insects, invertebrates, reptiles, birds, mammals, plants, fungi and even micro-organisms. The damage caused to plants by pollution includes necrosis (dead areas on leaf structure) chlorosis (loss or reduction of chlorophyll leading to 13 yellowing of leaf), epinasty (downward curvature of the leaf due to higher rate of growth on the upper surface), and abscission of leaves (premature fall). These might lead to a trend of declining crop output on farms within a close radius to quarries. Without a doubt, the most contentious environmental impact experienced by residents living adjacent to industrial quarries. Inhabitants of the Ntambeng area, due to the constant traffic of heavy dumpers and lorries to and from quarry sites are likely to develop asthma or

other respiratory diseases while their lungs development may also be stunted. Abandoned quarry pits that are quickly filled up with water become suitable habitats for freshwater snails that in turn acts as intermediate host for Schistosoma haematibium that eventually contributes to the prevalence of urinary problems in people. The stagnant water bodies also breeds other disease carrying organisms, increasing the susceptibility of the rural population to various health challenges. Apart from these, other negative impacts of quarrying include soil pollution with abandoned equipment and machine parts, swamp creation, deterioration of ground water, erosion of soil, noise and percussions from rock blasting, generation of dust, smoke and fumes; production of noxious gases and ground vibration and coarse wastes. With the right planning and management; many of the negative effects can be minimized or controlled if strictly the operators and community adhere to the policy and regulations governing the location of a structure in an environment. On the one hand quarries supply raw materials to meet many of society's needs, create employment and contribute to the local economy. In the domain of waste management, there are no up-to date waste management systems put in place for the already existing mine wastes especially in the abandoned mines or quarry sites. Wastes produced essentially depend on the type of deposit and the technological alternatives used for mining and for ore processing; stripping of the deposits in strip-mined quarries, washing of sand, and artisanal exploitation of precious minerals produce wastes most. This waste may consist of natural materials without any modification or of natural materials, processed to varying degrees during the ore-processing, and possibly containing chemical, inorganic and organic additives. Disposal of this waste consists in conversing large areas with dumps or infilling abandoned open-pits. Hence, recycling, though most expensive happens to be the best method for managing these wastes.

5.5. Businesses and service

The North-West Region though harbouring the second fastest growing town (Bamenda) in the country is not endowed with very big enterprises or even a good presence of medium enterprises which can provide jobs to the ever growing number of well-educated youths in the region. The business sector is dominantly informal with an important proportion of very small enterprises; encompassing petty trading and small holder shops as well small holder farming businesses.

The analyses in this field, are based on the following definitions of businesses:

Table 40: Definition of types of business

Type	Abbreviation	Comment
Informal Production Units	IPU	
Very Small Enterprises	VSE	A VSE must have an annual tax-free turnover strictly less than 15 million CFAF or employs at most 5 persons
Small Enterprises	SE	A SE must employ between 6 and 20 persons or realizes an annual tax-free turnover of between 15 and 100 million CFAF
Medium Enterprises	ME	A ME must realize an annual tax-free turnover of between 100 million and one billion or employs between 21 and 100 persons
Big Enterprises	BE	A BE employs more than 100 persons or realizes an annual tax-free turnover of more than one billion.

5.5.1. Distribution of enterprises by sector

Based on formal and registered businesses, the tertiary or service sector (comprised of commerce, transport, banking and insurance, communication and other service subsectors) makes up about 83%

of the business and service industry in the North-West Region, followed by the secondary sector (comprised of extraction, food industry, other manufacturing industries, electricity, water and gas and construction) and bottomed by the primary industry (comprising about 0.3% of the business and service industry), see Figure 89 and Figure 90, as at 2009.

However, it is important to note that besides the statistical figures for formal and registered businesses, from expert knowledge based on observations/evaluations, it can be estimated that the informal economy plays a very vital role in the region, though not visible in the available statistics. As intimated earlier, well over 80% of the rural population in the region works in the informal sector, mainly as farmers; this is an implication that the primary sector would be much more important than 0.3% as shown in the statistics. Further assessments and development scenarios shall take this important fact into consideration.

Table 41. Distribution of enterprises by sector of activity

Sector of activity	Description of the sub-sector	Number of enterprises	Number of establishments	Total
Primary	Agriculture	5	2	7
	Breeding	5	3	8
	Forest exploitation	2	-	2
	Fishery and fish farming	-	-	-
	Subtotal	**12**	**5**	**17**
Secondary	Extraction	1	-	1
	Food industry	32	1	33
	Other manufacturing industries	999	7	1,006
	Electricity, water and gas	3	8	11
	Construction	30	2	32
	Subtotal	**1,065**	**18**	**1,083**
Tertiary	Commerce	3,184	125	3,309
	Transport	11	13	24
	Bank and insurance	72	93	165
	Other tertiary subsectors	1,715	129	1,844
	Subtotal	**4,982**	**360**	**5,342**
Not declared		43	2	45
Total		6,102	385	6,487

Source: NIS/RGE 2009

Figure 89: Distribution of enterprises and establishments by sector of activity (in %)

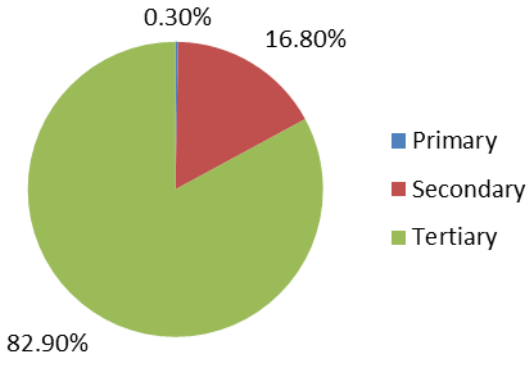
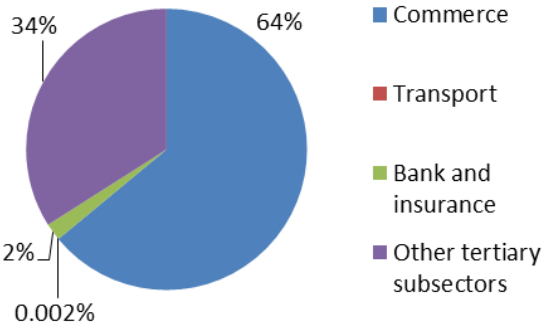


Figure 90: Percentage distribution of the tertiary sector by subsectors



Source: NIS/RGE 2009

With regards to the dominant tertiary industry in the North-West Region, the sub-sector commerce, which tracks trading activities such as wholesale and retailing, ranked first, followed by other tertiary

subsectors comprising information and communication subsectors and in the third place we have banking and insurance.

Table 42: Distribution of enterprises by sector of activity and by type

Sector of activity	Description of the sub-sector	VSE	SE	ME	BE	Total
Primary	Agriculture	2	2	-	1	5
	Breeding	4	-	1	-	5
	Forest exploitation	2	-	-	-	2
	Fishery and fish farming	-	-	-	-	-
	Subtotal	**8**	**2**	**1**	**1**	**12**
Secondary	Extraction	1	-	-	-	1
	Food industry	27	1	1	3	32
	Other manufacturing industries	976	12	11	-	999
	Electricity, water and gas	-	1	-	2	3
	Construction	22	5	3	-,	30
	Subtotal	**1,026**	**19**	**15**	**5**	**1,065**
Tertiary	Commerce	2,980	173	28	3	3,184
	Transport	3	2	4	2	11
	Bank and insurance	18	22	29	3	72
	Other tertiary subsectors	1,340	321	47	7	1,715
	Subtotal	**4,341**	**518**	**108**	**15**	**4,982**
Not declared		11	32	-	-	43
Total		5,386	571	124	21	6,102

Source: NIS/RGE 2009

The majority of the enterprises in the agriculture, breeding and forest exploitation sectors are very small enterprises; agriculture has just one enterprise classified as a big enterprise, while breeding and forest exploitation has no big enterprise. This size has implications on the potentials of these sectors to generate employment in the region. Most of enterprises in the fishery and fish farming are still 'undefined' or not registered. The tertiary sector, as opposed to the agriculture and breeding sectors, has a few large or big enterprises accompanied by a good number of medium enterprises and small enterprises. This is indication of the tertiary sector's employment generation potential. Worthy of note, a very large number of enterprises or businesses in the region are registered (that is, have their license of operations and pay taxes) but do not appear in the above classification because they cannot even be classified as VSEs; they do not meet the criteria of VSE. In other words, the 'not defined' is underrated. The secondary sector will be reviewed below under transformative industries.

Looking at the spatial distribution of enterprises to the divisions the following tables gives an overview by types of enterprises in the divisions:

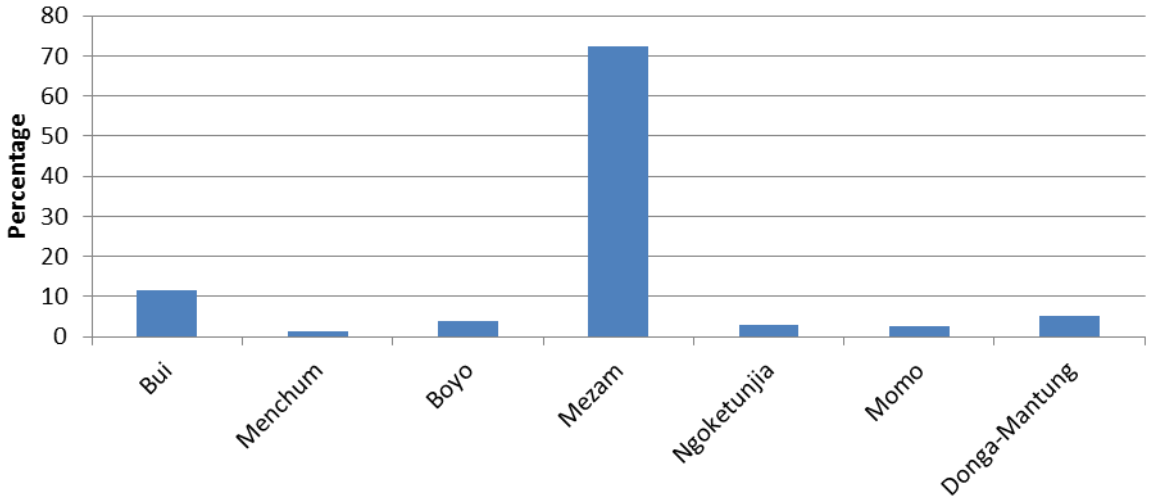
Table 43: Distribution of enterprises by division and by type

Division	VSE	SE	ME	BE	Total
Bui	543	139	10	2	694
Menchum	64	10	2	-	76
Boyo	226	15	2	1	244
Mezam	3,974	344	82	16	4,416
Ngoketunjia	167	15	4	-	186
Momo	142	17	6	-	165
Donga-Mantung	270	31	18	2	321
Total	5,386	571	124	21	6,102

Source: NIS/RGE 2009

Table 43 presents the distribution of enterprises by division and by type. The big enterprises (BE) are mostly localised in the Mezam division and the other divisions are left with little or no such enterprises. We only have one big enterprise in Boyo, two in Bui and two in Donga-Mantung. Momo, Ngoketunjia, and Menchum divisions have no big enterprises; this depicts the limited potentials of all the divisions in the North-West regions, except Mezam, to generate employment.

Figure 91: Distribution of enterprises by division



Source: NIS/RGE 2009

From Figure 91, it can be seen that majority of the enterprises in the northwest region are localized in the Mezam and Bui divisions. 72.4% of the enterprises in this region are in Mezam Division alone and 11.4% are in Bui Division; these two divisions host 83.8% of enterprises in the region. The remaining 16.2% are split across the other divisions as indicated by the figure. This is a call for concern, as employment potentials/opportunities in a division depend on the number of enterprises it hosts.

The observation that majority of the enterprises in the North-West Region are localised in the Mezam and Bui divisions, is same when we consider the distribution of enterprises by sector of activity (Table 44).

Table 44: Distribution of enterprises and establishments by division and by sector of activity

Division	Primary	Secondary	Tertiary	Not declared	Total
Bui	2	57	665	5	729
Menchum	1	9	74	-	84
Boyo	2	70	195	-	267
Mezam	8	837	3,741	39	4,625
Ngoketunjia	2	27	190	-	219
Momo	1	24	170	-	195
Donga-Mantung	1	59	307	1	368
Total	17	1,083	5,342	45	6,487

Source: NIS/RGE 2009

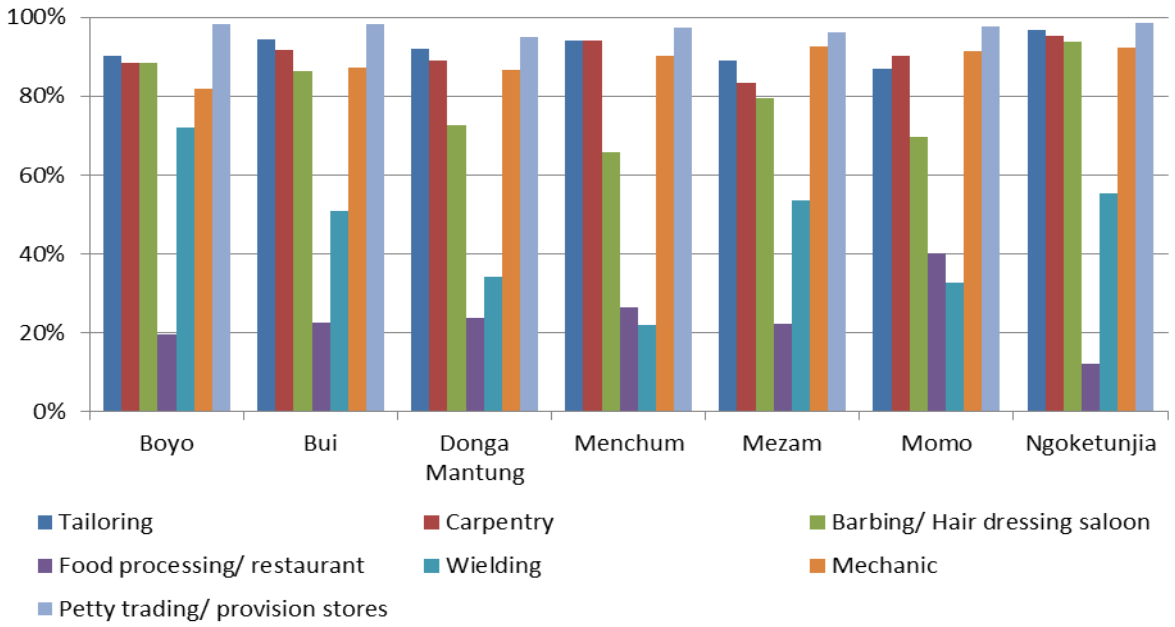
The percentage distribution of the most common type of Small and Medium Size Enterprise (SME) in each division is shown in Figure 92. We can observe that petty trading/provision stores are the dominant SME in all seven divisions followed by tailoring and carpentry and bottomed by food processing/restaurant and wielding. The increasing involvement of youths in auto-repairs (mechanic) is a signal that an auto-industry coming to the region will have a levelling ground for take-off.

North West Region has three main financial umbrellas for Micro Financial Institutions:

- Renaissance Cooperative Credit Union League (RECUCAM)
- Rainbow Cooperative Credit League and
- Cameroon Cooperative Credit Union League (CAMCCUL).

- These Micro-Financial Institutions provide services of savings, according loans and assisting small and medium size enterprises and contractors in projects execution. Thus, creating employment and reducing poverty.

Figure 92: Distribution of most common types of enterprises by division



Source: NW Field Survey, 2018

5.5.2. Employment and Turnover by sub-sector

Table 45 presents the employment and turnover by sub-sector of activity.

Table 45: Employment and Turnover by sub-sector of activity in 2009

Sector of activity	Description of the sub-sector	Number of enterprises	Number of establishments	Manpower employed	Turnover (in thousands of CFA francs)
Primary	Agriculture	5	2	496	525,811
	Breeding	5	3	42	242,269
	Forest exploitation	2	-	21	28,000
	Fishery and fish farming	-	-	-	-
	Subtotal	**12**	**5**	**559**	**796,080**
Secondary	Extraction	1	-	3	1,000
	Food industry	32	1	212	14,358,646
	Other manufacturing industries	999	7	1,972	14,377,599
	Electricity, water and gas	3	8	117	544,962
	Construction	30	2	109	1,544,565
	Subtotal	**1,065**	**18**	**2,413**	**30,826,772**
Tertiary	Commerce	3,184	125	5,067	58,909,469
	Transport	11	13	448	6,803,930
	Bank and insurance	72	93	606	30,185,155
	Other tertiary subsectors	1,715	129	7,224	48,030,327
	Subtotal	**4,982**	**360**	**13,345**	**143,928,881**
Not declared		43	2	57	784,572
Total		6,102	385	16,374	176,336,305

Source: Regional Delegation of MINPMESSA

The tertiary sector tops the list in terms of employment provision and turnover in thousands of cfa in the Northwest region, followed by the secondary sector and bottomed by the agricultural sector. Specifically, about 81.5% of total employment is in the tertiary sector, 14.7% in the secondary, 3.4% in the primary sector, and the remaining 0.4% is in the 'undefined' sector. Essentially, in the primary sector, the sub-sector agriculture ranks first, followed by breeding, in terms of employment. In the secondary sector, the food industry and other manufacturing industries like iron, aluminium etc lead, in terms of employment. In the tertiary sector, the sub-sector commerce ranks first, followed by other tertiary industries (such as communication, training etc.), in terms of employment.

Though not reported in formal statistics, the informal sector plays an important role in providing jobs mainly to the youthful population in the region who can not secure a job in the public sector or formal private sector. Most youths in the urban and semi-urban areas in the region are involved in non-farming activities such as petty trading, repairing, beauty shops etc while their counterparts in the rural areas are mainly in farming, dominantly small scale,

Table 46 shows the permanent labour force employed according to the legal status and the origin of the capital.

Table 46: Distribution of enterprises and permanent labour force employed according to the legal status and the origin of the capital

Legal status	Social capital						Total	
	Social capital in the majority Cameroonian		Social capital in the majority foreign		ND		Number of enterprises	Permanent manpower employed
	Number of enterprises	Permanent manpower employed	Number of enterprises	Permanent manpower employed	Number of enterprises	Permanent manpower employed		
IE	5,335	10,137	151	249	145	588	5,631	10,974
UPLLC	14	440	-	-	1	14	15	454
PLLC	23	219	-	-	2	45	25	264
PLC	7	274	-	-	-	-	7	274
Others	316	3,301	8	81	11	567	335	3,949
ND *	23	266	-	-	66	193	89	459
Total	5,718	14,637	159	330	225	1,407	6,102	16,374

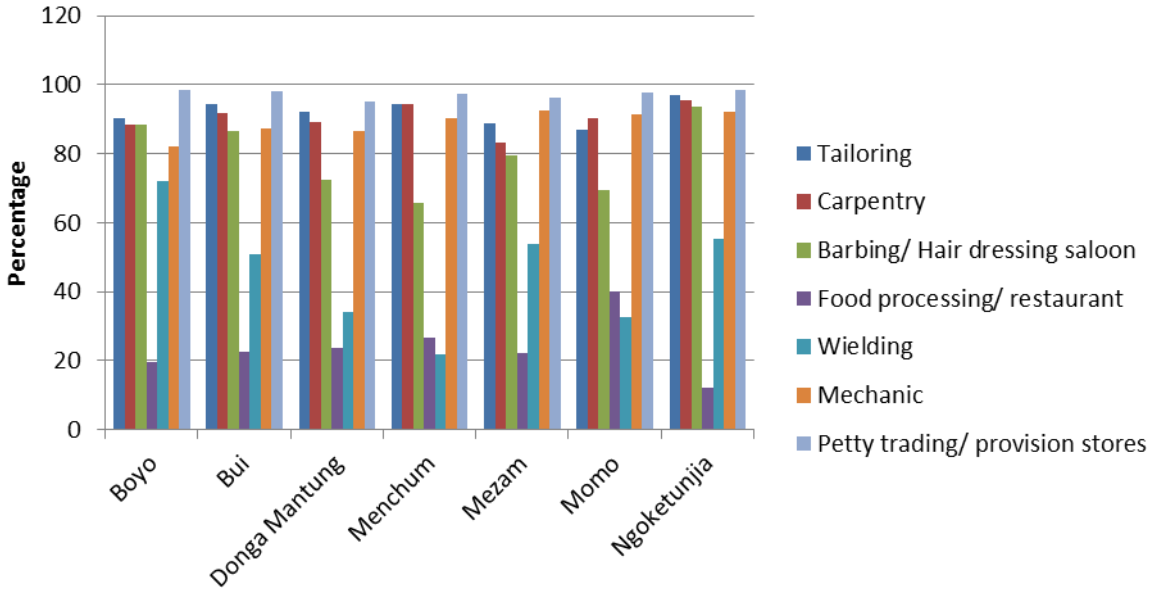
Source: NIS/RGE 2009

Table 46 hosts the distribution of enterprises and permanent labour force employed according to the legal status and the origin of the capital. All PLCs, PLLCs and UPLLCs in the region are in the hands of nationals or citizens, that is, all the permanent manpower employed is entirely Cameroonian. On the contrary, IE in the region have both citizens and foreigners in the permanent manpower, with majority of the social capital being Cameroonian.

5.5.3. Observations on the situation of businesses and employment in the North-West Region

Within the field surveys, part of the diagnostic phase questions were asked according to the situation of businesses and employment in the North-West Region and the divisions. This gives an idea on which main businesses are represented in the survey:

Figure 93: The most common type of Small and Medium Size Enterprise (SME) in each division



Source: NW Field Survey, 2018

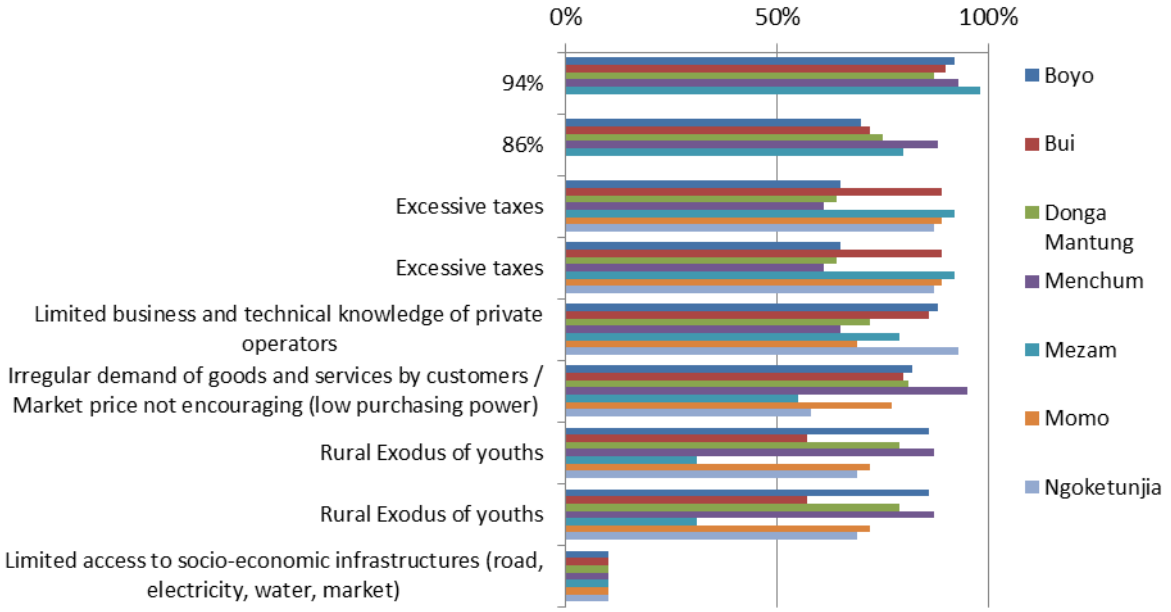
The persons answered the questions on their main difficulties faced by SME in the daily running of their businesses as follows:

Table 47: The main difficulties faced by the SME in their daily running

The main difficulties faced by the SME in their daily running	Repartition (%) of the respondent of each division according to those who declared the main difficulties faced by the SME in the daily running in their localities						
	Boyo	Bui	Donga Mantung	Menchum	Mezam	Momo	Ngoketunjia
Lack of finance resources (capital)/ difficult access to loan	98.4%	94.5%	92.1%	90.3%	87.0%	93.5%	98.5%
Lack of equipment and material	82.0%	86.4%	70.7%	72.3%	75.9%	88.0%	80.0%
Limited access to socio-economic infrastructures (road, electricity, water, market)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Excessive taxes	65.6%	89.1%	64.0%	61.9%	92.6%	89.1%	87.7%
Corruption practice	23.0%	19.1%	12.8%	20.6%	33.3%	14.1%	13.8%
Limited business and technical knowledge of private operators	88.5%	86.4%	72.6%	65.8%	79.6%	69.6%	93.8%
Irregular demand of goods and services by customers / Market price not encouraging (low purchasing power)	82.0%	80.9%	81.7%	95.5%	55.6%	77.2%	58.5%
Lack of training (vocational)	39.3%	50.9%	40.2%	43.2%	29.6%	33.7%	32.3%
Rural Exodus of youths	86.9%	57.3%	79.9%	87.7%	31.5%	72.8%	69.2%

Source: NW Field Survey, 2018

Figure 94: The main difficulties faced by the SME in their daily running



Source: NW Field Survey, 2018

According to the field survey, the main difficulties faced by SMEs in the region are limited access to socio-economic infrastructure (roads, electricity, water, markets etc.), lack of financial resources /difficult access to loans, lack of equipment and material, excessive taxes and limited business knowledge. Surprisingly, corruption is the least, followed by lack of training, on the list of factors inhibiting the smooth operations and growth of SMEs in the region. This may be so because of the presence of 'excessive taxes' as a factor in the options, this must have accommodated some of the blames which corruption could have otherwise received; given that most corrupt practices in the business sector are filtered through taxation.

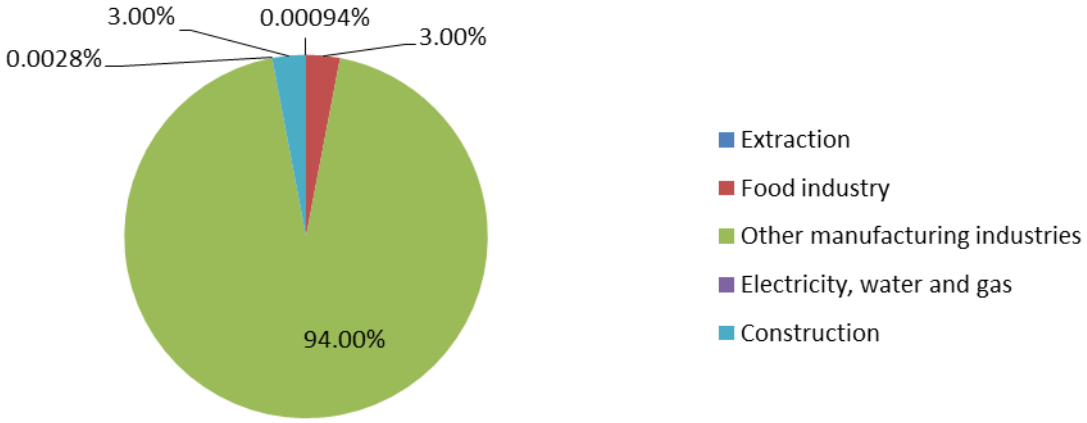
5.5.4. The Diaspora as a dynamic element in the development of the region

The role of the Diaspora in the socio-economic-political development of the country and the North West Region is an exception. The human and financial resources owned by this Diaspora can contribute immensely. North Westerners are found in Nigeria, South Africa, Canada, USA, European Countries and Asia. For this to be possible, there is need for the government of Cameroon to relax its land acquisition policy, review its taxation policy towards new investors. The presence of the Diaspora is highly manifested in the North West Region through their involvement in hotel and leisure, and social sector (Education and Health) activities.

5.6. Transformative Industry

Transformative industry includes the secondary sector as it transforms raw material and primary products in different processes into secondary products. The sector is mainly characterized in the North-West Region by informal businesses (see chart: informal businesses are mainly included in "others"). This makes the analysis quite difficult due to missing reliable detailed data on the subsectors.

Figure 95: Percentage distribution of the secondary sector by subsectors



** Note: Extraction makes up 0.00094% and Electricity, water and gas subsectors make up 0.0028%*
Source: designed using data from NIS/RGE 2009

We can observe that the food industry subsector despite the huge agricultural potential is still very sluggish in the North-West Region, making up only about 3% of the transformative industry. Other manufacturing industries comprising of wood and furniture, plastics, farm inputs industries etc. constitute 94% of the secondary sector. The distribution of transformative industries by type can be characterised for the North-West Region as follows:

Table 48: Distribution of the secondary enterprises by type

Description of the sub-sector	VSE	SE	ME	BE	Total
	Number of enterprises				
Extraction	1	-	-	-	1
Food industry	27	1	1	3	32
Other manufacturing industries	976	12	11	-	999
Electricity, water and gas	-	1	-	2	3
Construction	22	5	3	-	30
Subtotal	1,026	19	15	5	1,065

Source: NIS/RGE 2009

From Table 48, we can observe that a large majority of the enterprises in the food industry are the very small enterprises (VSE) (making up 84.4% of this subsector) and only 3 out of the 32 food industries in the North-West Region are big enterprises (corresponding to 9.4%). This same observation holds for construction industries and other manufacturing industries, where majority is still very small enterprises.

Table 49: Evolution of the number of enterprises in crafts mining

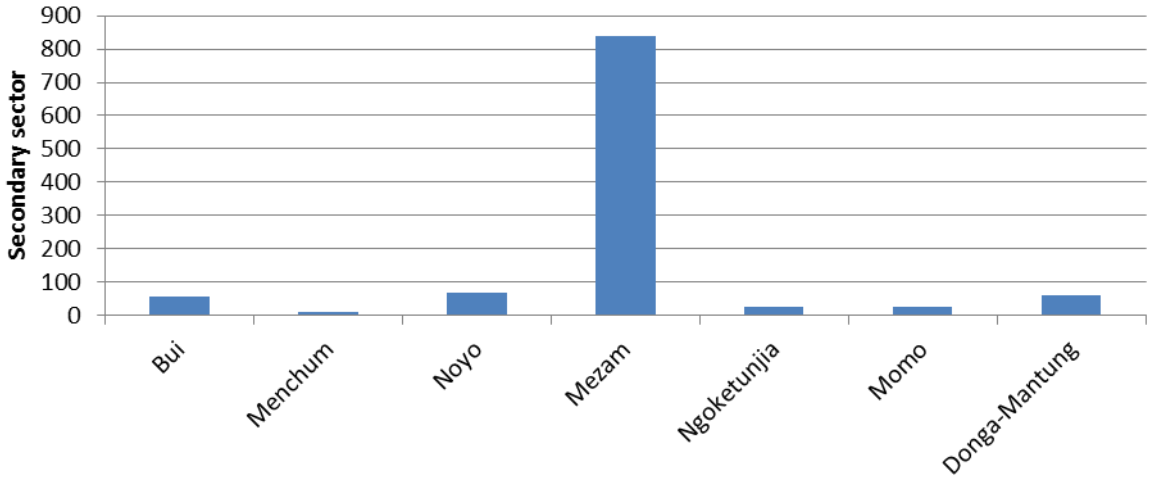
Division	2011	2012	2013	2014	2015
Boyo	0	0	0	4	3
Bui	2	74	86	81	57
Donga-Mantung	1	2	4	17	21
Menchum	3	3	3	5	3
Mezam	0	0	43	49	49
Momo	11	20	35	56	76
Ngoketunjia	0	0	0	10	22
Total	17	99	171	222	231

Source: Regional Delegation of MINMIDT

Over the years, craft mining has been dominant in the Bui and Momo divisions. It is only as from 2013 and 2014 that craft mining witnessed a surge in Mezam and Ngoketunjia respectively. This industry has witnessed a steady growth, though marginal, in the Donga-Mantung over the years.

Looking at the specific facts on transformative industry in the divisions Mezam is clearly the main location for the registered activities and enterprises. However, here it should be recalled that the informal businesses are spread out over the divisions which is not reflected in the statistics.

Figure 96: Distribution of enterprises in the secondary sector by division



Source: designed using data from NIS/RGE 2009

It is essential to note that no specific information or statistics are available for the transformative sector in the North-West Region. We are using the secondary sector (made up of extraction, food industry, other manufacturing industries, construction and electricity, water and gas) as a close proxy for the transformative sector. Figure 96 shows the distribution of the secondary sector by division. Secondary industries are predominantly localized in the Mezam division compared to other divisions. The challenge here is to ensure a fairly even spread of such industries to guarantee quality employment in every division.

Factors that can encourage industrialization:

- Put in place a quality control unit in the North West Region (ARNO)
- Relaxation of tax policy
- Simplification of land acquisition procedure
- Improve on roads, water and electricity network

Facilitate loan acquisition from financial institutions

5.7. Information and Communication Technology (ICT)

The number of subscribers on telephone reflects the development of quantitative and qualitative coverage of the North-West Region with phone and data networks.

Table 50: Evolution of the number of subscribers on telephone (unit: number of lines); reference: 31st Dec of each year

Product	2010	2011	2012	2013	2014	2015
Underground line	2,175	2,059	1,892	1,777	1,751	1,695
ADSL/No Limit	190	355	485	717	709	530
Enterprise network	-	-	-	-	15	26
Specialised link internet	-	-	-	-	7	7

Source: DR-NW/CAMTEL

Table 50 presents the evolution of the number of subscribers on telephone (unit: number of lines). It can be observed that the ADSL coverage was increasing until 2013 but stagnated in 2014 and decreased in 2015, for which the reason is difficult to explain. Enterprise lines or networks and specialised link internet lines only surfaced in 2014, and enterprise networks were growing in 2015. Underground lines witnessed a steady decrease over the years from 2010 to 2015.

Important ICT access indicators are the numbers of fixed phone subscriptions, registered mobile telephones and the number of computers on the internet per 1,000 inhabitants. To assess the quality Table 51 shows the numbers for the North-West Region in comparison with the average for Cameroon.

Table 51: ICT access indicators in 2007 and 2015

Region	Number of fixed telephone subscriptions per 1000 inhabitants		Number of mobile telephones per 1000 inhabitants		Number of computers per 1000 inhabitants	
	2007	**2014**	**2007**	**2014**	**2007**	**2014**
North-West	1	2	117	369	4	23
Cameroon	10	5	169	379	6	36

Source: NIS-ECAM 3 and 4

Table 51 presents ICT access indicators in 2007 and 2014. It shows that there is a far lower number of fixed telephone subscriptions per 1,000 inhabitants in the North-West Region compared with the national average (40% of the average in 2014). This can be explained with the slower coverage of the region with phone networks than in the average and at the same time with coming of mobile telephones. The average number of mobile telephone subscriptions per 1,000 inhabitants in 2014 (corresponding to ca. 37 %) in the region is in the neighbourhood of the national average which stands at ca. 38 %. The number of computers per 1,000 inhabitants in the region (about 2.3%) is as low as that at the national level (about 3.6%) in 2014. It is important to underline that these figures should have improved in 2018 with the 500,000 computer project by the President of the Republic of Cameroon. The number of audio-visual media having their headquarters in the North-West Region is shown in Table 52.

Table 52: Audiovisual media having their headquarters in the North-West Region by 31st December, 2015

Division	Number of radio stations	Number of TV stations
Boyo	2	-
Bui	6	-
Donga-Mantung	3	-
Menchum	1	-
Mezam	12	3
Momo	2	-
Ngoketunjia	2	-
Total	28	3

Source: Regional Delegation of MINCOM

From Table 52, there are about 28 radio stations in the North-West Region, with most of them located in Mezam and Bui divisions. TV stations are all in Mezam with no one in the other divisions.

Drivers of better communication in the region:

- Installation CAMTEL Network in the border settlements
- The state to encourage private telecommunication and audiovisual communication networks to be installed in border areas.
- Generally, the whole of the region needs improvement on its telecommunication and audio-visual communication networks.

5.8. Local Markets

The existence and distribution as well as the economic activities of local markets are essential for the trade of regional products and for the North-West Region important due to the regional and mainly informal economy. Table 53 shows the distribution of markets in the divisions.

Table 53: Distribution of market types in the North-West Region by division

Division	2013			2014			2015		
	Daily market	Periodic market	Cattle market	Daily market	Periodic market	Cattle market	Daily market	Periodic market	Cattle market
Boyo	1	5	2	1	5	2	1	12	2
Bui	1	24	2	1	24	2	1	17	2
Donga-Mantung	1	10	7	1	10	7	1	9	7
Menchum	1	7	2	1	7	2	1	9	2
Mezam	6	10	2	11	33	2	11	44	3
Momo	2	8	1	2	12	1	2	8	1
Ngoketunjia	1	13	-	1	13	-	1	15	-
Total	13	77	16	18	104	16	18	113	17

Source: RD of MINCOMMERCE North-West Region

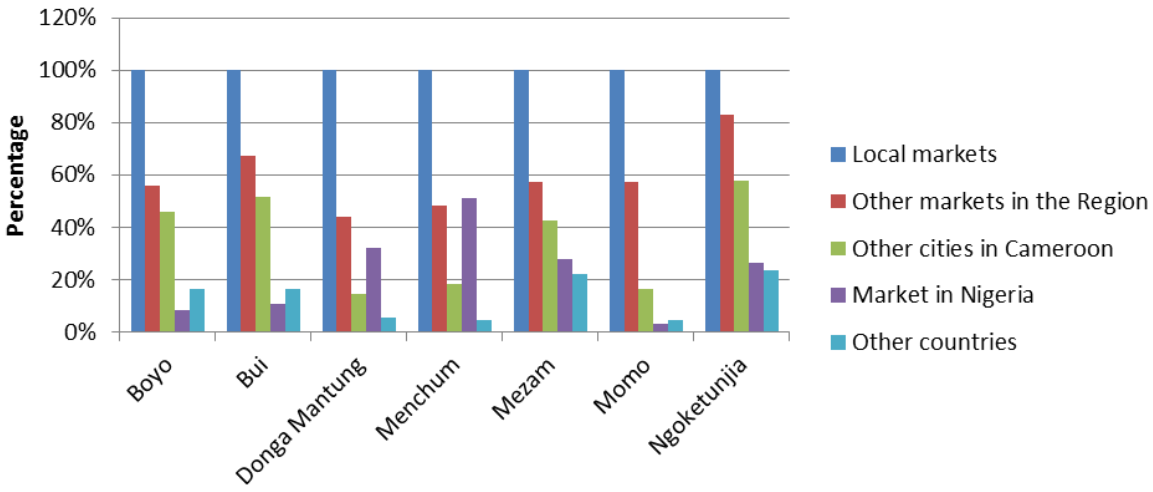
Table 53 presents the distribution of market types in the North-West Region by division. In the region, we have basically two types of markets, daily and periodic markets. Daily markets are markets which host every day in the division and periodic market are markets which come up once every week, say a day in the week. The number of daily/periodic markets in a division or an area is some indication of growth in activities and businesses as well as demand in such a division or area. We noticed that over the years (from 2013 to 2015), the number of daily markets has remained same in the divisions except for Mezam. Some divisions (Bui, Donga-Mantung, and Momo) have even registered a decrease in the number of periodic markets over these years. These are signals of stagnation in the growth of business activities and growth in demand.

Worthy of note, Mezam division has had additional cattle markets between 1982 (with two markets) and 2015 (with three markets), Momo division has maintained a single cattle market from 1982 to 2015, Menchum division has instead lost an additional cattle markets between 1982 (with three markets) and 2015 (with two markets), Donga-Mantung has had an additional cattle markets between 1982 (with four markets) and 2015 (with seven markets) and Bui division has maintained two cattle markets between 1982 and 2015 . This evolution of cattle markets tells a close story on the evolution of cattle rearing in the different divisions; it is in tandem with the fact (observed above) that Donga-Mantung has the highest number of cattle.

From Figure 97, we can observe that though most agricultural products are sold locally (local markets, other markets in the region and other cities in Cameroon), Nigeria and other countries (such as Equatorial Guinea) constitute important outlets for agricultural output in the region.

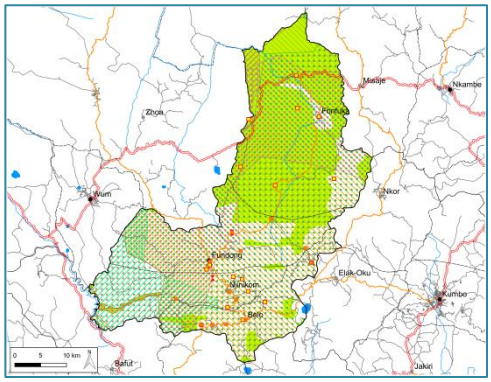
The following maps show the production and consumption basins, location of market or open sheds and cattle market for each division. Besides the main markets, the maps also show the location of warehouses and slaughter slabs.

Figure 97: ***The main markets for the agricultural goods produced in each division of the North-West Region***

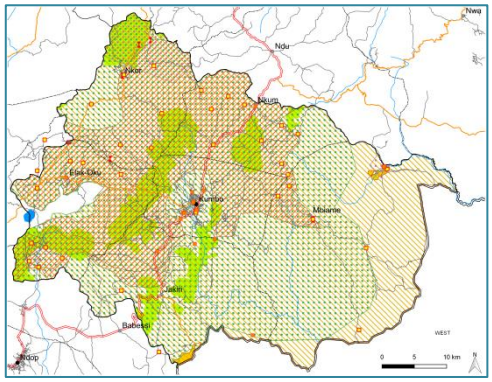


Source: NW Field Survey, 2018

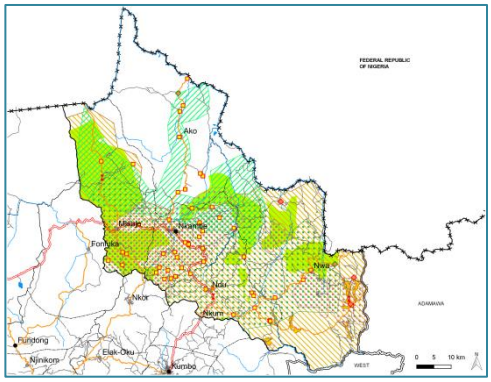
Figure 98 a-g: ***Production and consumption basins for Boyo, Bui, Donga-Mantung, Menchum, Mezam, Momo and Ngo-Ketunjia Divisions (for a better resolution see maps 3.1. f-l in volume 3)***



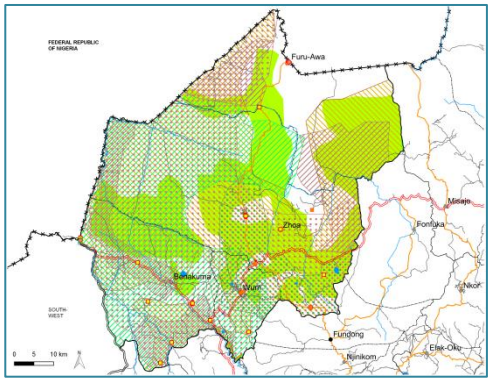
Boyo Division



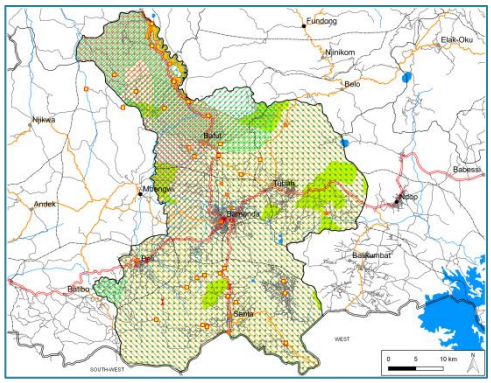
Bui Division



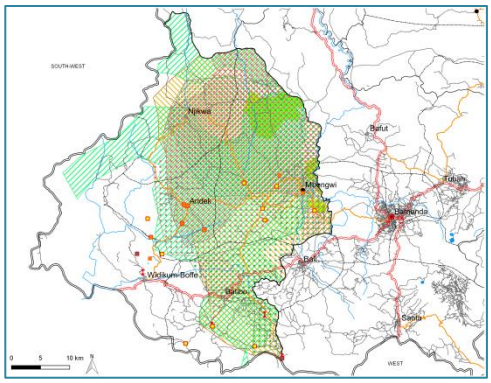
Donga-Mantung Division



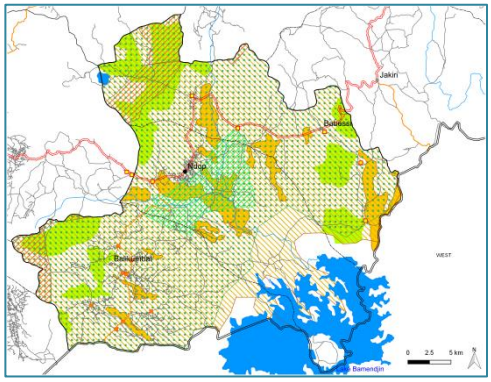
Menchum Division



Mezam Division



Momo Division



Ngo-Ketunjia Division

Production areas

- Rice
- Cocoyam
- Beans
- Yam
- Palm tree
- Maize
- Cattle rearing

Trade structures

- Permanent market
- Periodic market
- Unkown periodicity
- Cattle market
- Village with custom office
- Village without custom office

Data source: based on PNDP data and field survey IU/CPAC/geomer 2018

It is important to underline that there are a lot of potential markets in the region; these markets, though informal, harbour huge potentials for future markets in the region. Some of these emerging markets have the likelihood to grow more than others. Those located along the street or junction and closely surrounded by public buildings and residential areas have limited potentials of emerging into full flesh markets compared to those located around junctions with some spatial freedom.

5.9. Artisanal Industry

Embroidery, beading, knitting and weaving are seen as the main artisanal handicraft activities in all the divisions, as Table 54 shows, based on the survey in the framework of the North-West Region regional planning project in 2018.

Table 54: The Main type of handicraft activity in each division according to the respondent declaration

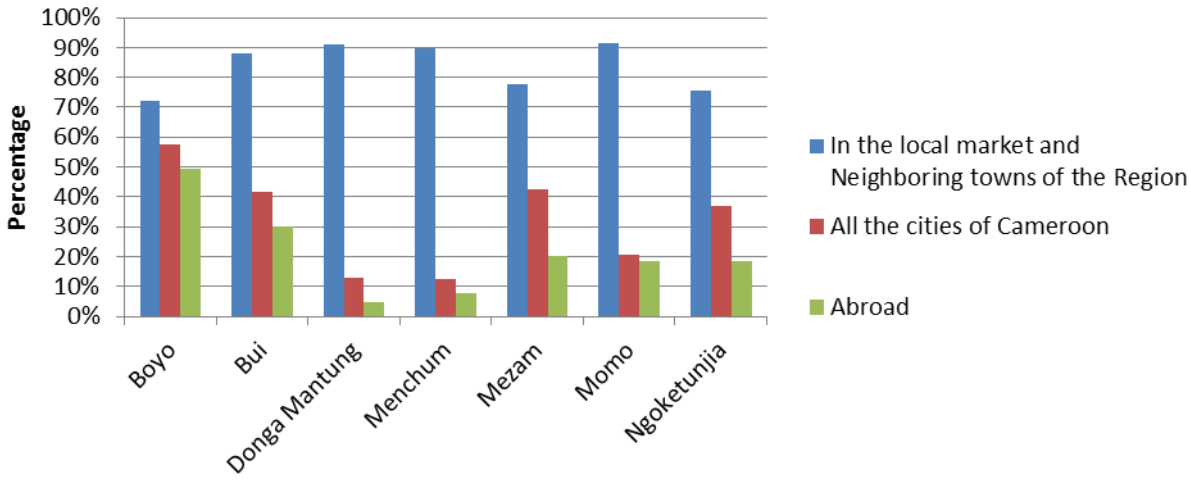
Main handicraft activity in the North-West Region	Percentage of respondent of each division who declared that the following artisanal activity are mainly developed in their locality						
	Boyo	Bui	Donga Mantung	Menchum	Mezam	Momo	Ngoketunjia
Weaving	85.2%	85.5%	89.6%	89.0%	83.3%	88.0%	60.0%
Carving/pottery	73.8%	67.3%	45.1%	57.4%	48.1%	62.0%	53.8%
Bamboo work	57.4%	60.9%	40.2%	55.5%	46.3%	60.9%	52.3%
Embroidery/beading/knit	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: NW Field Survey 2018

From Table 54, it is evident that weaving is dominant in the Donga-Mantung, Menchum and Momo divisions. This is an indication that locally produced cloth through weaving is a growing activity in all divisions. This activity uses distinct sets of yarns or threads interlaced at different angles (mainly right

angle) to produce fabric or cloth. Other methods of textile production used in the region are knitting, plaiting and crocheting. Carving of wood into different objects and shapes and pottery are potential activities in the region dominantly undertaken in the Boyo Division.

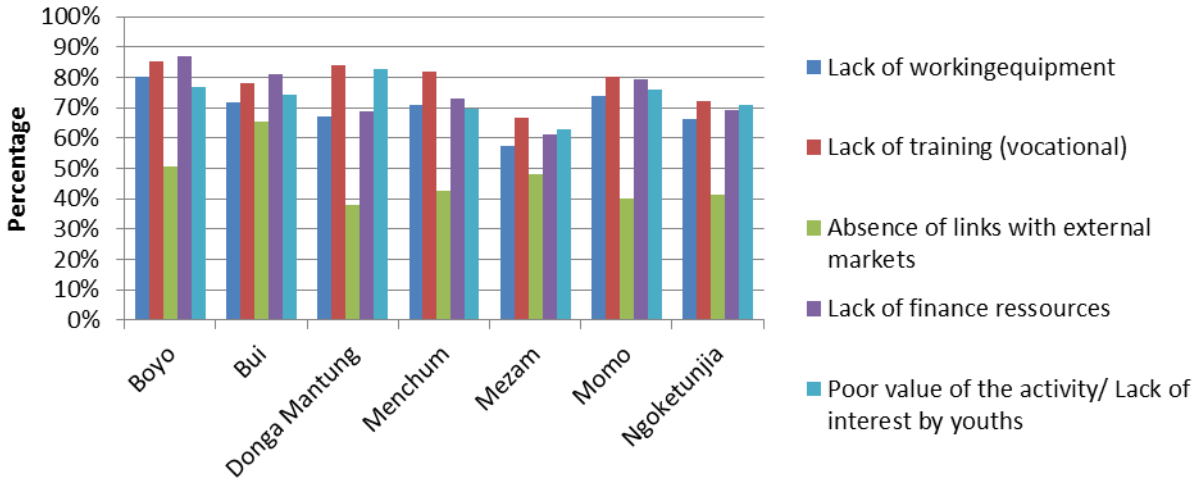
Figure 99: ***The Main destination for the handicraft products produced in each division according to the respondent declaration***



Source: NW Field Survey, 2018

The main destination for artisanal goods produced in the region is the local markets and other towns in the region followed by other cities in the country and a little proportion sold abroad. This is the case given the scale of this industry; it is small scale and individual-based as intimated above, consequently the average cost of production is high; explaining why the locally produced textile is pretty expensive.

Figure 100: ***The main barriers/problems to the development of artisanal/handicraft activity in each division***



Source: NW Field Survey, 2018

Artisanal activities which are common in all divisions and dominant in the Donga-Mantung, Menchum and Momo divisions have as main challenges the lack of financial resources, lack of training (vocational training), poor value of the activity/ lack of interest by youths and lack of working equipments. The absence of links with the external markets may not be an issue because the present capacity cannot satisfy a huge external demand. Thus, we should harness and scale-up activities in this industry and give it the standing/standards which can meet international quality requirements.

5.10. Tourism

5.10.1. The role of tourism for regional development in the North-West Region

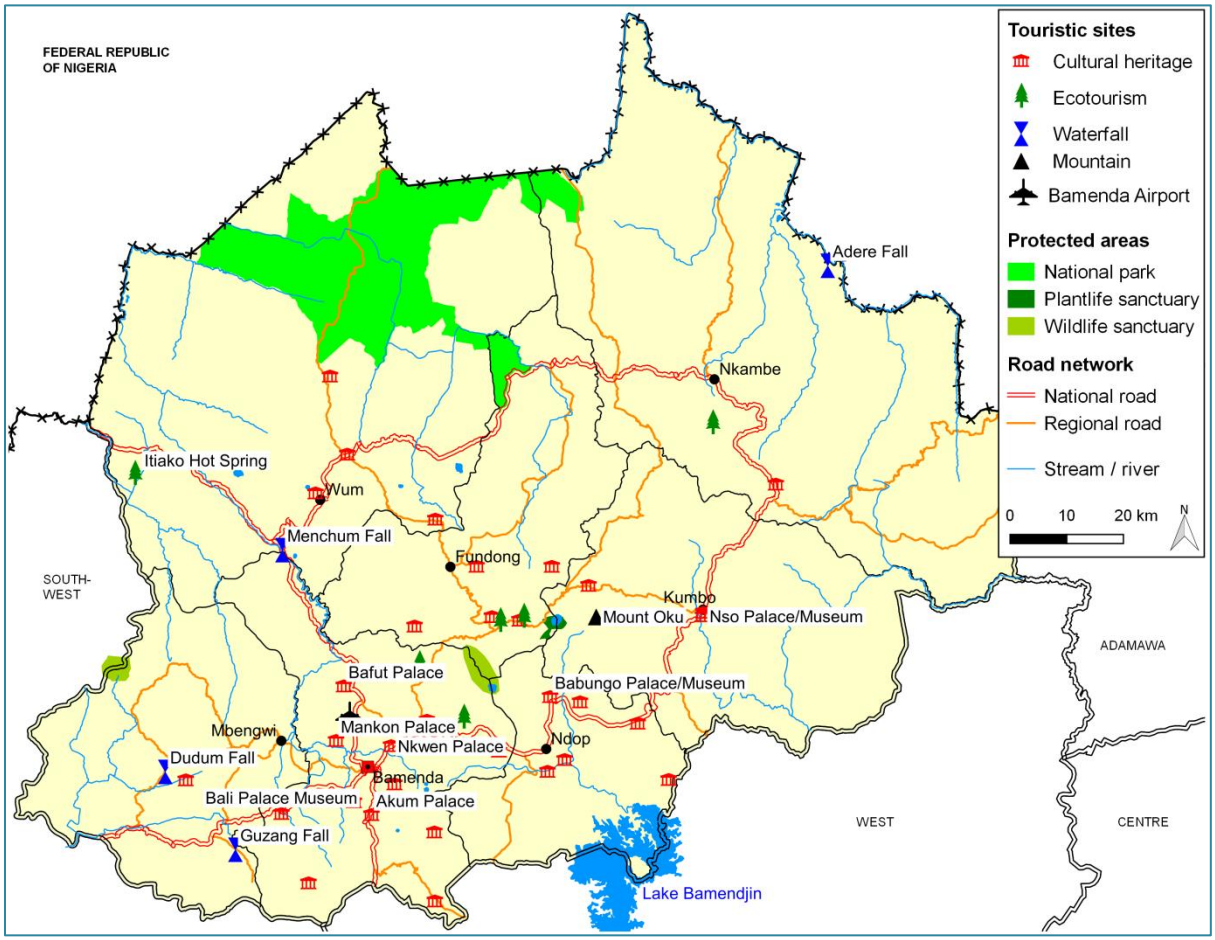
The territorial planning and sustainable development of the North-West Region must enhance people, planet and profit (3 P-approach). Strategies, plans and projects should be socially acceptable, environmentally sustainable and economically feasible. Tourism can be an important way for an economic development, combining these purposes. According to the World Tourism Organisation of the United Nations tourism is in fact the most vital source of income for 20 out of the 48 least developed countries. It is obvious that the North-West Region has huge potentials for tourism development too, for a multitude of reasons:

- the geologically and geomorphological interesting, high (-3,011m) volcanic mountains, with its pleasant climate and stunning scenery;
- the rich cultural diversity with interesting museums (Mankon, Babungo and Akum), palaces (Nkwen, Bali, Kumbo, Bafut; the latter designated as a World Heritage site of international importance), cultural festivals (Bali, Bafut, Aghem and Kumbo and the Fulani horse race at Tobin/Kumbo);
- nine protected nature reserves with rare species like the Cross River Gorilla (Momo Division), the Nigerian Cameroonian Chimpanzee (Mezam and Boyo Division) and lots of endangered, red list bird species of which six are completely endemic to the region;
- the Kimbi-Fungom National Park, soon to be nominated as a Category I National Park (IUCN), 150,000 ha, with various sites like the Python Gayama cave, the waterfall in the Katsina river, and the old German cable bridge at Nkang Kwep Akum over the Katsina, passing through a narrow and spectacular gorge;
- a relatively dense, hospitable and English speaking population in the rural areas;
- waterfalls (like Menchum-, Abbi-, Itiako- and Chimney falls), a hot spring (Itiako) and as much as 35 volcanic crater lakes (like Mbi, Awing, Wum, Nyos, Atoe, Ashion, Ilum, Kuk and Benakuma) spread across the different divisions;
- the (artificial) huge Bamendjing lake at the borders of Nguketunija Division and the West Region;
- a small but modern airport at Bamenda/ Bafut, that can be reached daily with modern airplanes, with good service by Camair, for relatively low prices, from both international airports at Douala and Yaoundé;
- some good and well maintained roads, like parts of the spectacular Ring Road (most of the route Bamenda-Nkwen-Bambui-Bambili-Sabga-Bamessing-Ndop-Babessi-Jakiri-Nkar-Sop-Kumbo and some parts of Bamenda-Bafut-Wum) as well as the road stretches Bambui-Njinikom-Belo-Fundong, Babungo-Oku, Bamenda-Bali-Batibo and Bamenda-Mankon-Mbengwi;
- and (until recent) its stable administration and relative safety.

The above makes the North-West Region of Cameroon indeed one of the most interesting areas to visit on the African continent.

Talking to Western and Asian tourists that travelled a lot worldwide and some of them (frequently in campers) throughout Africa, a significant part of them would say they enjoyed the North-West Region of Cameroon most, of all the sites they visited. The Bradt-Guide (Ben West et al. ISBN-13 978 I 841622535; updated by Annelies Hickendorff in 2011) describing the qualities along the Ring Road states: “the landscape seems to come straight out of a fairy-tale”.

Figure 101: Sites and infrastructure with relevance for tourism in the North-West Region



Data source: based on MINEPAT data of the SNADDT and field survey IU/CPAC/geomer 2018

New hotels have been built on beautiful spots like:

- Avera Range in Bui Division, in Mbven subdivision, close to Mbiame, with spectacular views on the Mbo Nso plain;
- Poliflor Hotel above Kumbo/ Tobin, Bui Division;
- Hilltop Hotel in Upstation Bamenda, Mezam Division;
- King David Hotel (extension) in Elak, Oku subdivision, Bui Division;
- the recently constructed Elak Hotel, beside Mount - and Lake Oku, also in Bui, Oku subdivision.

However: most hotels remain largely empty. The potential economic impact of tourism is there, but unfortunately in reality it is predominantly dormant. The North-West Region is only attracting a few visitors so far. Least of all regions in the country!! “How come?” and more specifically: “How to overcome this?” These are the most important questions to be analysed in this paragraph of the chapter Economy.

Hereunder first the facts are presented, based on the national statistics, some best professional judgement and personal experiences of the author [who is also the director of Maca Travel BV, a company that organised 4 tours, 6 pp in 2010, 2 pp in 2013, 16 pp in 2015 and 3 pp in 2018, to the North-West Region for sightseeing and visit community development oriented projects around Kumbo]. Under the various topics that are analysed where relevant there is a retrospective analysis. At the end of the paragraph there is an assessment of the qualities and a SWOT analysis on Tourism.

5.10.2. The situation of tourism as economic factor in the North-West Region

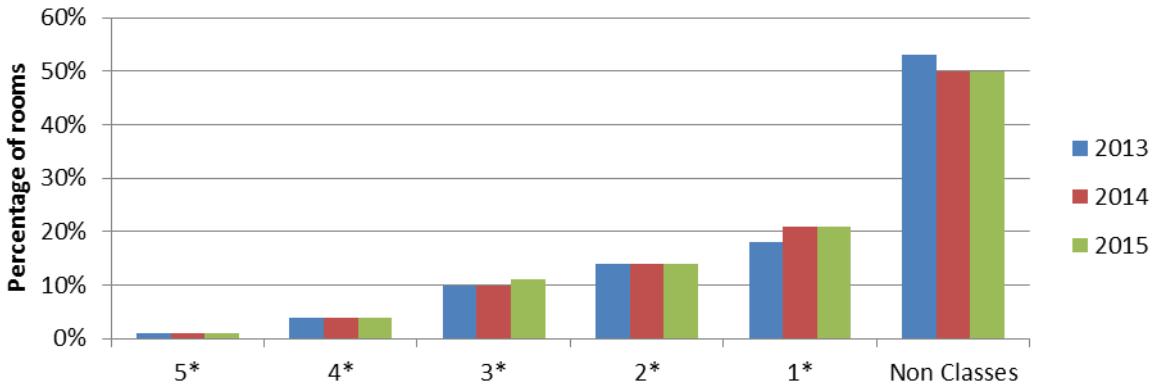
In the introductory chapter of the report on the statistics on tourism, collected by the government [L'Annuaire des Statistique du Tourisme et des loisirs 2015, Ministère de Tourisme et Loisirs] it is mentioned that, because of adverse economic and safety conditions as well as competition, it will not be possible to reach the national policy growth objectives for tourism, as have been defined in the National Employment Strategy. These stated that Cameroon will try to reach 1 million international tourists and 6 million internal tourists by the year 2020.

5.10.2.1. Touristic infrastructure

Looking at the availability of hotel accommodation the statistics show (Table 55 and Figure 102) that the total number of rooms available in the whole of Cameroon (2015) is 32,710 in a number of 2,092 mostly unclassified hotels. There are 458 hotels with a one star (*)-, 135 hotels with a two star (**)- and 57 hotels with a three star (***) classification in the whole of Cameroon. The total number of hotels with four (****) or five (*****) stars is 10. In the North-West Region there are 2,352 rooms available in 132 hotels. Of these hotels a bit more than half is classified, which is a higher percentage than at the national level. However, most of them are classified only as a 1 * star hotel. There are only eight ***- and 11 ** star-hotels in the North-West Region.

From 2013 till 2015 the percentage of unclassified hotels went down nationally from 53 to 50%, while the * hotel category grew slightly (Figure 102). The number of hotels with at least ** remained about the same (Figure 102).

Figure 102: Development of number of rooms available in Cameroon per class of hotel from 2013 to (mid-) 2015



Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

5.10.2.2. Eco-tourism

The North West Region is endowed with several eco-tourism potentials which need to be harnessed and developed.

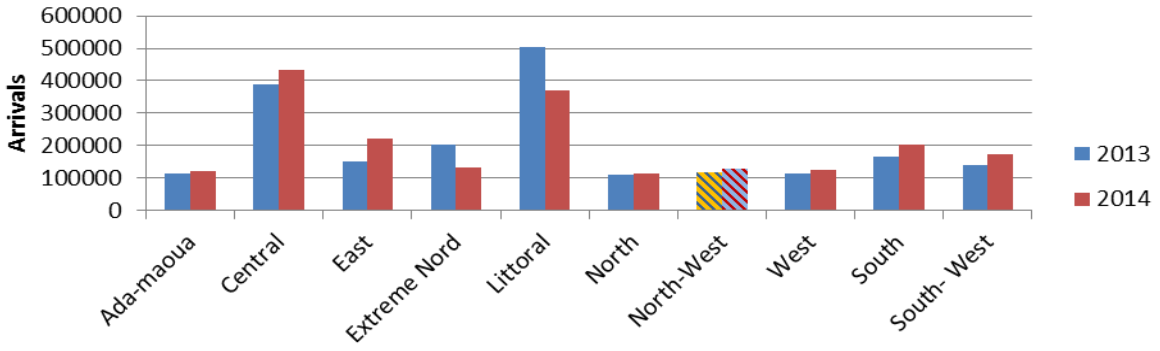
- Walk ways to be developed on the mountains (good examples of China) e.g. Mount Oku, Sabga-Mendankwe hills, Tabenken, Mbu-Pinyin, Ijim, Kovifem and Acha-Tugui
- Improvement on the traditional palaces and equally boost eco-tourism

5.10.2.3. Occupation of tourism infrastructure and transport mode

Looking at the number of arriving guests in hotels (Table 55, Figure 103 and Figure 104) it can be concluded that in the period from 2013-mid 2015 they arrived between 9,000 and 14,000 according Figure 104 even up to 20,000 guests per month in the North-West Region with a total of 129,491 guests in 2014, when over 2 million arriving visitors were registered in the whole of Cameroon. March, August

and December seem to be the months with the most visitors nationwide, while in the North-West Region no great peak can be observed. From 2013 – mid 2015 the total numbers of visitors did not change a lot. There seems to be no unusual trend in the months. In 2016-2018 a general decreasing trend has been observed throughout the country [expert observation in Littoral, South and North-West Region].

Figure 103: Arrivals in hotels in the North-West Region in comparison with other regions in Cameroon 2013 and 2014



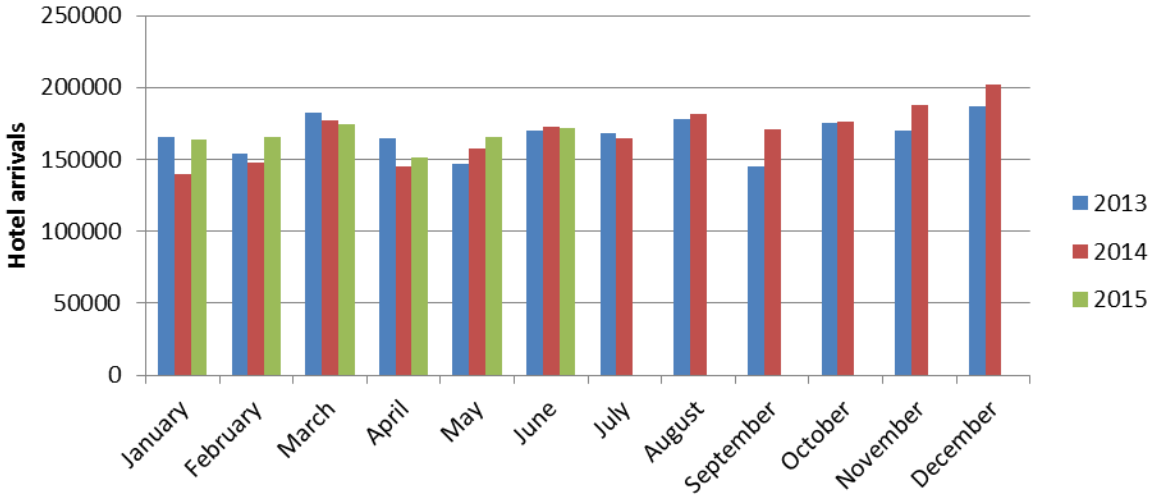
Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

Table 55: Arrivals in hotels in the North-West Region in comparison with other regions in Cameroon per month in 2014

Mon.	Ada-ma-oua	Central	East	Ext-reme Nord	Littoral	North	North-West	West	South	South-West	Total
Jan.	6,933	29,244	12,304	11,423	25,004	8,329	9,543	10,487	10,412	15,825	139,503
Feb.	8,435	28,776	18,622	14,648	24,604	9,480	8,757	9,270	9,416	15,773	147,781
Mar.	9,350	39,052	16,978	12,618	33,390	11,289	9,411	10,046	21,092	13,828	177,053
Apr.	10,923	30,482	18,769	13,088	26,063	8,757	9,149	8,657	7,966	10,925	144,777
May	10,320	31,724	18,216	13,533	27,125	9,494	9,494	7,311	14,806	15,925	157,947
Jun.	11,335	40,226	18,631	10,525	34,394	8,671	11,080	11,171	12,173	14,445	172,652
Jul.	9,603	35,294	19,216	9,325	30,177	7,800	9,263	7,640	22,523	1,495	165,035
Aug.	10,413	36,352	20,511	9,893	31,082	8,603	13,154	14,107	23,693	13,528	181,335
Sep.	9,730	38,042	20,007	9,643	32,527	10,006	11,049	12,112	15,372	12,473	170,959
Oct.	10,473	40,982	20,049	10,280	35,040	11,009	11,954	9,279	11,557	15,695	176,318
Nov.	11,968	40,496	20,104	9,035	34,625	10,569	12,734	11,169	21,907	15,600	188,206
Dec.	10,908	43,282	16,511	9,438	37,007	10,303	13,903	14,175	30,508	15,980	202,014
Tot.	120,388	433,952	219,918	133,445	371,037	114,309	129,491	125,422	201,429	174,190	2,023,580

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

Figure 104: Hotel arrivals in the Northwest Region per month 2013-2015



Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

Regarding the origin of hotel visitors Table 56 gives an overview of nationalities for the year 2014, which is the most recent year, with available complete statistics. In 2014 more than 2 million people were registered in Cameroonian hotels. For 75% they had the Cameroonian nationality or (130,429) came from one of the neighbouring CEMAC countries. Only 70,000 of them came from third countries. It seems a long way from reaching the policy goal for 2020, being respectively 6 million Cameroonians and 1 million international tourists. In the years after from 2015 - 2018 the number of international tourists went further down.

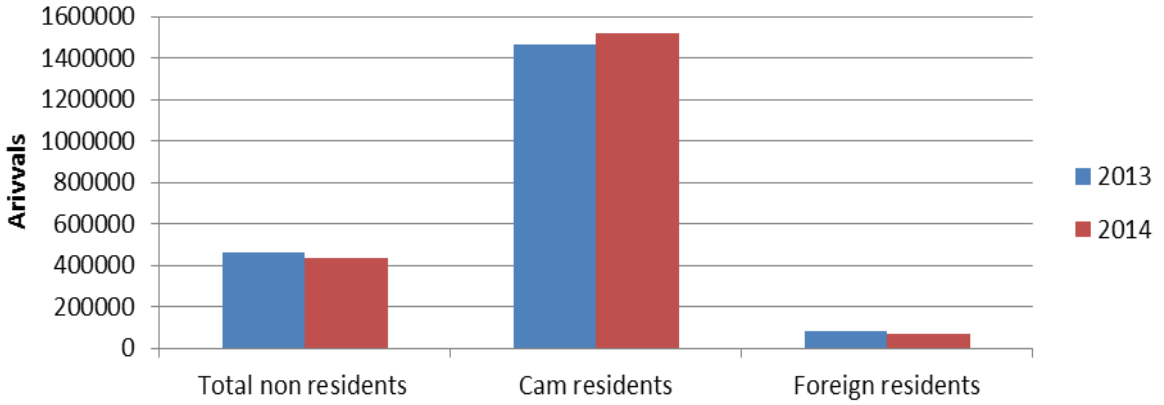
The Boko Haram crisis in the Extreme North and North Region, the Anglophone crisis in the North-West and South-West Regions as well as a more restricted policy for issuing visas, for safety reasons, are primarily responsible for a further decrease [based on own observation, experience and best professional judgement]. In 2014 the five most important suppliers of tourists in Cameroon were France (44,916), Germany (16,918), United Kingdom (16,006), Belgium (13,600) and the USA (13,280), followed by Switzerland, Canada, Russia and the Netherlands. There were also substantial amounts of visitors from (unspecified) Asian- (21,075), African- (outside CEMAC, 80,906) and Middle East (7,851) countries in 2014. These numbers reflect the primarily Francophone character of most of Cameroon, including the coast, and the tendency for French speaking westerners (France, parts of Belgium and Canada) to visit preferably French speaking countries, during their holidays. In fact during the last decade French is more and more common in Douala and even in formerly mostly Anglophone regions, as on the coast of the South-West Region, around Limbe (former Victoria). This trend intensified.

Table 56: Arrivals in hotels an origin of guests in the North-West Region in comparison with other regions in Cameroon (reference year 2014)

		Ada-ma-oua	Central	East	Extreme Nord	Littoral	North	North-West	West	South	South-West	Total
Non residents	CEMAC	11,480	26,942	10,882	20,870	35,381	10,900	814	789	10,071	2,300	130.429
	Other Africa	8,167	18,656	3,298	6,400	25,170	7,754	997	966	4,029	5,470	80.906
	German	403	2,836	469	160	1,243	383	428	414	9,064	1,518	16.918
	French	1,664	14,380	1,816	225	5,129	1,580	1,463	1,417	14,100	3,143	44.916
	British	144	2,338	356	40	445	137	115	111	11,079	1,243	16.008
	Italian	223	2,408	424	173	686	211	136	131	4,029	575	8.996
	Swedish	36	1,042	38	3	111	34	15	14	4,029	220	5.542
	Belgium	123	2,772	242	53	380	117	150	146	9,064	553	13.600
	Swiss	111	1,852	180	38	343	106	62	60	5,036	450	8.237
	Dutch	159	1,344	100	35	492	151	77	74	4,029	573	7.033
	Other European	740	4,286	989	400	2,281	703	386	374	10,071	2,203	22.434
	Americans	250	5,942	422	6	770	237	366	354	3,021	1,853	13.280
	Canadians	51	2,318	124	10	158	49	94	91	4,029	305	7.229
	Russia	111	1,126	158	30	343	106	32	31	5,036	178	7.151
	Other Asian	740	5,596	2,076	135	2,281	703	265	257	7,051	1,970	21.075
	Oriental	169	2,072	522	143	519	160	21	20	4,029	198	7.851
	Others	391	5,318	816	5	1,206	371	27	26	8,057	365	16.581
	Total	24,963	106,824	22,911	28,783	76,938	23,703	5,448	5,277	115,823	23,113	433.783
Residents	Cam. residents	92,099	305,460	189,800	101,548	283,851	87,449	122,462	118,613	71,506	147,192	1.519.980
	Foreign residents	3,325	21,668	7,207	3,115	10,248	3,157	1,581	1,531	14,100	3,885	69.817
Total overall		120 388	433,952	219,918	133,445	371,037	114,309	129,491	125,422	201,429	174,190	2,023,580

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

Figure 105: Arrivals in hotels and origin of guests 2013 – 2014 in Cameroon



Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

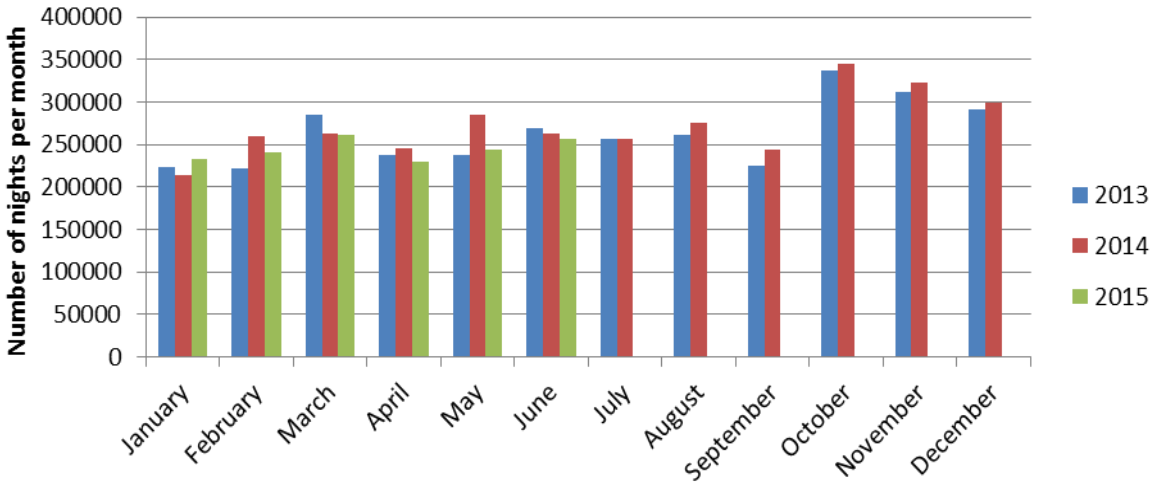
Looking more closely to the origin of tourists in 2014 and 2015 in the North-West Region in Table 56, Figure 104 and Figure 105, it is clear that in 2014 only 1.3% (= 5,448 people) of the total amount of all international tourists in Cameroon, registered in the hotels in the North-West Region. Only the West Region is comparably low. Most of them (27% of the visitors to the North-West Region) were French. The number of international tourists in the third lowest region in 2014, being the East region, had 22,911 international visitors, which is 4 times more than in the North-West Region, while the Central Region in 2014 had as much as 106,824 registered international tourists in their hotels in 2014. The number of people coming to hotels in the North-West (and West) region that originate from neighbouring CEMAC countries is also very low, compared to the other regions. Looking to the total numbers it is obvious that the 118,613 Cameroonian residents in 2014 were by far the most important group to register in the hotels in the North-West Region. Looking to foreign residents the situation is comparable, with the North-West Region having only 1,531 = 2.2% of the total in Cameroon.

Table 57: Number of nights in hotels in the North-West Region in comparison with other regions in Cameroon 2014

	Ada-maoua	Central	East	Ex-treme Nord	Littoral	North	North-West	West	South	South-West	Total
Jan.	9,705	45,126	14,171	15,740	62,596	12,043	13,286	12,037	13,757	16,080	214,541
Feb.	9,785	45,868	19,569	19,020	97,888	13,651	12,803	11,599	12,441	17,418	260,042
Mar.	10,918	81,662	19,171	19,163	47,685	16,306	13,743	12,451	27,868	13,795	262,761
Apr.	12,908	55,518	20,673	18,510	76,153	13,097	13,494	12,226	10,525	12,878	245,982
May	13,013	52,678	20,616	17,550	103,573	14,423	13,391	12,132	19,563	18,555	285,494
Jun.	13,603	82,978	21,364	14,830	51,888	11,946	18,189	16,479	16,084	15,725	263,085
Jul.	11,643	64,444	21,949	12,655	60,087	11,897	14,060	12,738	29,759	16,978	256,209
Aug.	11,870	56,632	22,800	13,268	77,481	13,429	15,897	14,403	31,305	18,318	275,402
Sep.	12,525	64,724	17,278	12,808	58,055	14,903	15,029	13,616	20,311	15,085	244,333
Oct.	15,018	72,730	25,029	13,498	141,122	15,326	15,794	14,309	15,270	17,170	345,266
Nov.	14,065	75,600	25,440	12,338	103,914	15,494	15,434	13,983	28,945	17,518	322,730
Dec.	12,858	72,086	19,656	12,858	71,286	15,426	18,360	16,634	40,309	19,050	298,521
Tot.	147,908	770,046	247,716	182,235	951,730	167,940	179,480	162,606	266,138	198,568	3,274,365

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

Figure 106: Number of nights per month in hotels 2013 – 2015 in Camaroon



Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

In Table 57 and Figure 106 the number of nights in hotels per Division in the year 2014 (table) and the development in 2013-mid 2015 is presented. Again, the North-West Region is one of the regions with the least hotel nights. Only Adamaoua-, North- and the West Region had less, while most regions have many more nights per month in 2014, with the Littoral at more than 5 times the number of nights in the North-West Region. The number of nights where the hotel rooms are occupied in the North-West Region is highest in the months of June and December and the total number is only 5.5 % of the total number of nights in the country.

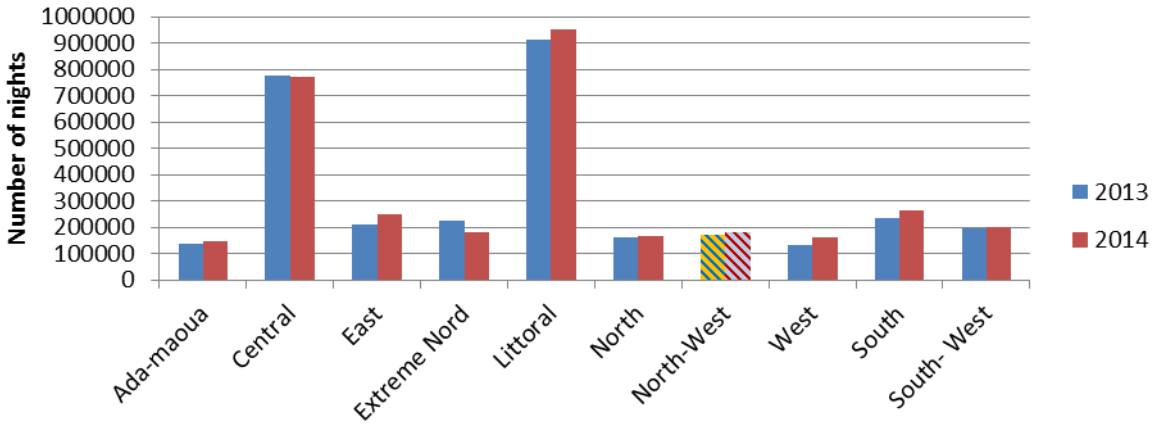
From Figure 106 it is clear that the number of nights sold in the whole of Cameroon are relatively high in March and in the period June-August, while the maximum is in the period October-December (start of the dry season). In most months the year 2014 showed a small increase. However, in the first half of 2015 there was a decrease in the number of nights sold to customers (Figure 106). In the years 2016 – 2018 the nights sold were observed to decrease further [personal observation of the author in Littoral, South and North-West Region]. From Table 58 and Figure 107 and Figure 108 it is clear that most of the nights are paid by Cameroonian customers and are situated in hotels in the Littoral - and Centre Region, inhabitants from other CEMAC countries come second. For the whole number of nights in the whole country by far the highest contribution comes from the Cameroonian residents and non-residents. The foreign tourists are only representing a small relatively fraction. The year 2014 was slightly better than 2013.

Table 58: Overnight stay in accommodation establishments in Cameroon by region and by type of residents in 2014

		Ada-maoua	Central	East	Extreme Nord	Littoral	North	North-West	West	South	South-West	Total
Non residents	CEMAC	13,470	45,994	12,078	26,825	56,846	15,294	1,135	1,029	13,307	1,256	187.234
	Other Africa	9,066	53,008	4,462	8,515	65,515	10,294	1,378	1,249	5,323	1,525	160.335
	German	629	7,124	682	245	8,805	714	612	554	11,976	677	32.019
	French	4,009	36,123	2,260	383	44,646	4,551	2,176	1,971	18,630	2,407	117.157
	British	171	5,873	242	80	7,259	194	148	134	14,638	164	28.904
	Italian	287	6,049	471	213	7,476	326	214	194	5,323	237	20.790
	Swedish	38	2,618	42	3	3,235	43	22	20	5,323	24	11.367
	Belgium	224	6,963	289	118	8,606	254	189	171	11,976	209	29.001
	Swiss	181	4,652	193	80	5,750	206	82	74	6,653	91	17.963
	Dutch	214	3,376	129	45	4,173	243	120	109	5,323	133	13.863
	Other European	1,603	10,767	1,271	653	13,307	1,820	539	489	13,307	597	44.352
	Americans	471	17,762	587	100	21,953	534	612	554	3,992	677	47.241
	Canadians	93	7,832	133	13	9,680	106	104	94	5,323	115	23.493
	Russia	133	1,740	158	30	2,151	151	35	31	6,653	38	11.121
	Other Asian	1,334	14,326	2,796	280	17,706	1,514	312	283	9,316	345	48.212
	Oriental	244	3,614	844	443	4,467	277	22	20	5,323	24	15.278
	Others	483	5,388	898	-	6,659	549	32	29	10,646	35	24.717
	Total	32,649	233,210	27,536	38,023	288,233	37,071	7,733	7,006	153,029	8,555	833.045
	Cam. residents	111,237	484,886	209,751	139,703	599,289	126,303	169,625	153,677	94,479	187,664	2.276.614
	Foreign residents	4,021	51,950	10,429	4,510	64,207	4,566	2,122	1,923	18,630	2,348	164.106
Total overall		147,908	770,046	247,716	182,235	951,730	167,940	179,480	162,606	266,138	198,568	3,274,365

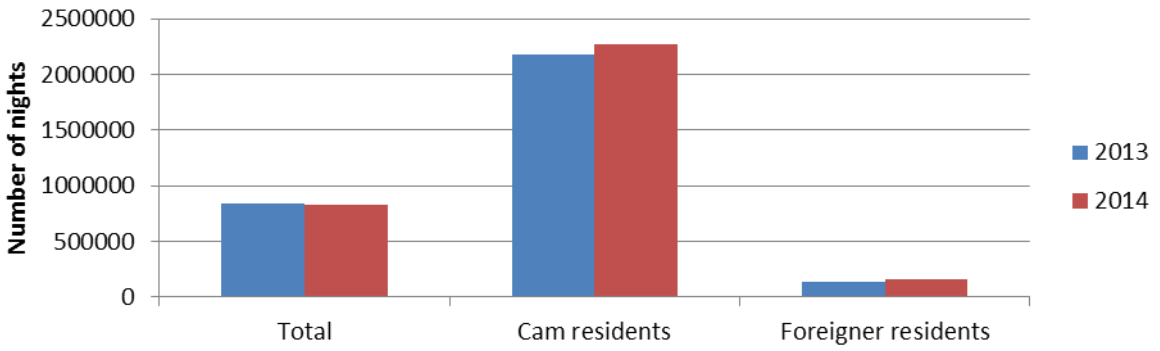
Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

Figure 107: Number of nights in hotels in the North-West Region in comparison with other regions in Cameroon 2013 – 2014



Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

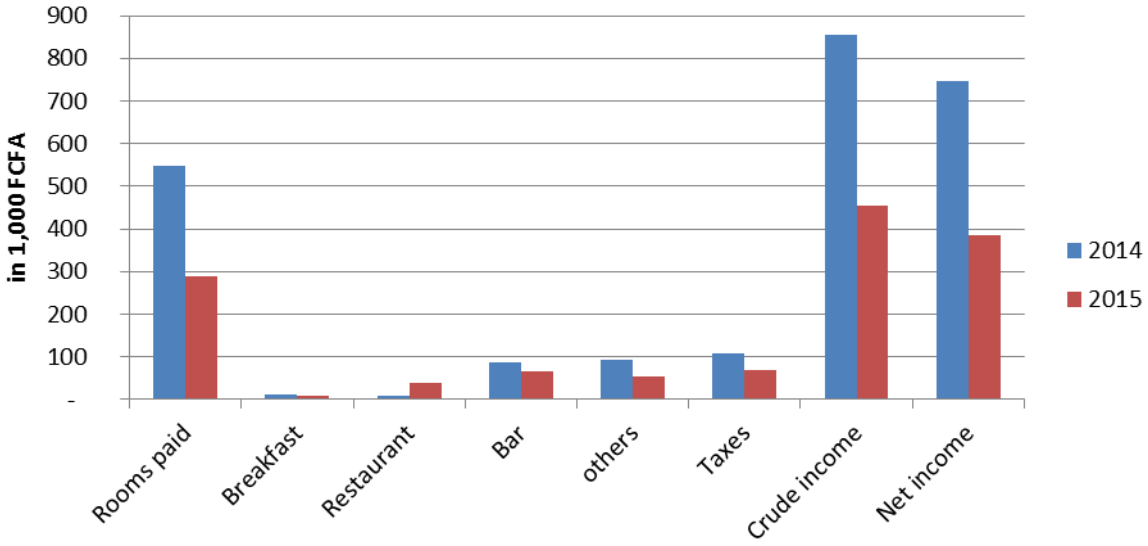
Figure 108: Number of hotel nights in 2014 and origin of guests 2013 – 2015 for Cameroon



Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

The most important factor for the economy in the tourism sector is the expenses made in the North-West Region. Figure 109 gives an indication of the amount and types of expenditures made. In the whole of Cameroon the expenditures in the hotels were 43.3 Billion CFA in 2014 and 22.7 Billion CFA in the first half of 2015 (see annex part 1 section 2.6 Tourism). In 2013 they were about 20% lower than in 2014. The explanation for this must be a rise in the prices and taxes for the rooms as the number of nights in these years did not increase a lot. Of course, raising the prices will not help to attract more visitors, especially from foreign countries that can choose different cheaper destinations. The major part of the total expenditure is the price for renting the room. Restaurant and taxes come second and third. For the North-West Region the expenditures were 747 million CFA (2014) and 395 million CFA (-mid 2015), which is only 1.7% of the total national expenditures. Given the fact that more than 5% of the nights is spent in the North-West Region this amount and percentage indicates that the quality of the hotels in the North-West Region and the services that are provided are less than in some of the other, more touristic Regions (see above: the highest class in the North-West is a three *** hotel).

Figure 109: Expenditures of tourists in hotels in 2014 and 2015 in the North-West Region



Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

To compare prices with competitors like Kenya, Gambia, Ghana and Tanzania it would be interesting to know the mean prices to rent rooms in hotels of the various categories in Cameroon. At the moment this data is not available. Besides it would be interesting to estimate the expenditures tourists make outside the premises of the hotel. It is through locally booked excursions, payment of inland transportation, arrangement of local guides, entrance fee to national parks or forest reserves, a visit and contribution to local community development projects, restaurants outside the hotel, entrance of palaces and museums and the purchase of souvenirs to take back home, that local people can make profits from tourism. The World Tourism Board of the United Nations estimated that in developing countries in 2013 only 5 € of every 100 € spent on tourism stays actually in that destination. There are therefore initiatives to promote “sustainable tourism”. This is defined more broadly than “ecotourism” as: “travel with a positive impact not only for the environment, but also for the culture and the economy of the destination you are visiting” [New York Times, May 2nd 2018, page 20: “A holistic view of sustainable travel”].

In Table 59 it is visualised that about a third of the arrivals of tourists is by plane (2013) with a diminishing trend in favour of a mounting percentage of visitors coming by car (Table 59), while only 2-4% arrives in Cameroon by ship.

Most of the air passengers on the airplanes (28.4 % in the period 2013-mid 2015) are Cameroonians, while a quarter is French. From the other passengers more than 20% is from CEMAC (neighbouring) or

from other African countries. Other international tourists come from or through Casablanca in Morocco (Royal Air Maroc), Paris in France (KLM/ Air France), Istanbul in Turkey (Turkish Airlines), Brussels in Belgium (Brussels Airlines), Addis Abeba in Ethiopia (Ethiopian Airlines) or Nairobi in Kenya (Kenya Airlines). Camair provides relatively cheap, frequent and comfortable flights from Yaounde and Douala towards Bamenda/ Bafut airport in the North-West Region on a daily basis. Inside Cameroon, there are also connections towards Ngaoundere and Maroua in the North. Since 2017/ 2018, Camair also opened new international routes to Bamako in Mali and to Dakar in Senegal.

Table 59: Transport mode of arriving tourists in Cameroon

Mode of transport	2013		2014		2015 (1st Semester)	
	Number	%	Number	%	Number	%
Road	493,210	63	553,875	67.4	308,804	71.2
Air	268,527	34.3	243,868	29.7	109,392	25.2
Sea	21,158	2.7	23,760	2.9	15,576	3.6
Total	782,895	100	821,503	100	433,772	100

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

From the air passengers, in the period 2010-2014, less than half (43 %) come to enjoy their holidays, 26 % is in Cameroon for business, while the rest (30%) comes for different purposes, like visiting friends or relatives (L'Annuaire des Statistique du Tourisme et des loisirs 2015, Ministère du Tourisme et Loisirs).

From 2010 – 2014 the payments for travelling to Cameroon increased from 87,922 till 294,400. Most of the visitors that come to Cameroon come "à titre personel". About 11% (2010) up to 25 % (2014) come for business. The occupation percentage of beds in hotels in Cameroon during the period 2013-mid 2015 decreased from 29% (2013 and 2014) to 25% (2015). In the regions it varied between 52% (Extreme North in 2013) till 17% (South-West Region in 2015). The North-West Region had an occupation percentage of 30% (2013), 31% (2014) and 27% (2015). These occupation percentages are very low and the trend is decreasing. In the period 2015-2018, the decrease was intensified [personal observation]. The mean number of days that people stayed in a hotel varied from 1.1 – 2 days, with the North-West Region on an average score of 1.4 days. Non residents on average tend to stay a bit longer (1.8 – 2.1 days).

Table 60: Occupancy rates of rooms and lots in establishments of accommodation by region from 2013 to 2015

	Adamawa	Centre	East	Far North	Littoral	North	North-West	West	South	South-West	Total
2013	22.2%	31.9%	51.8%	31.7%	27.0%	34.8%	29.8%	21.6%	27.4%	22.4%	28.9%
2014	31.2%	31.7%	29.2%	33.7%	27.3%	32.0%	31.4%	21.5%	31.2%	22.5%	28.9%
2015	32.9%	35.6%	27.4%	25.9%	17.7%	35.5%	21.8%	21.4%	26.8%	17.9%	24.9%

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

Table 61: Average duration of stay (in day) in establishments of accommodation by region from 2013 to 2015

	Adamawa	Centre	East	Far North	Littoral	North	North-West	West	South	South-West	Total
2013	1.21	1.99	1.38	1.12	1.81	1.48	1.48	1.17	1.39	1.42	1.57
2014	1.23	1.77	1.37	1.13	2.57	1.47	1.39	1.30	1.32	1.14	1.62
2015	1.21	1.69	1.46	1.10	1.61	1.54	1.44	1.31	1.59	1.09	1.48

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

Table 62: Average duration of stay (in day) of non-residents in establishments of accommodation by region from 2013 to 2015

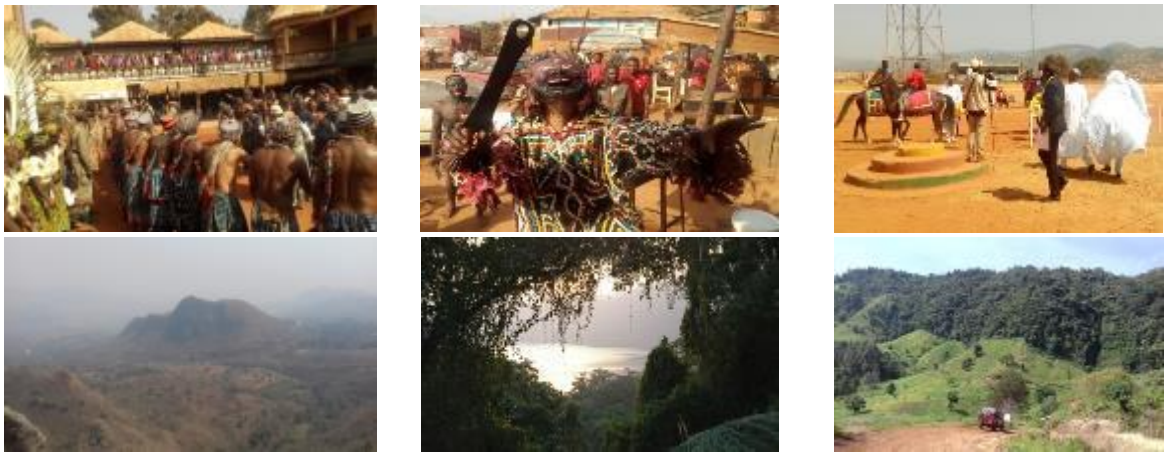
	Adamawa	Centre	East	Far North	Littoral	North	North-West	West	South	South-West	Total
2013	1.21	2.22	1.40	1.14	2.03	1.93	1.06	1.20	1.50	2.30	1.82
2014	1.31	2.18	1.32	1.20	3.75	1.56	1.42	1.33	1.32	1.56	1.92
2015	1.77	2.25	1.46	1.25	2.14	2.25	1.24	1.26	1.59	1.09	2.12

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

5.10.2.4. Touristic sites (natural and cultural)

The North-West Region combines a rich cultural diversity and splendid natural beauty. Figure 110 shows some of the interesting sites, that can also attract tourist and other visitors if adequate guidance, services and marketing are in place.

Figure 110: Examples for touristic potentials in the North-West Region



Pictures up left and middle: Nso Cultural Week in Kumbo, Bui Division. Picture up right: Fulani horse races in Tobin Stadium, Bui Division. Picture down left: Sabga Hill in Mezam Division. Picture down middle: Lake Oku and picture down right: dirt road between Oku and Kumbo in Bui Division (NW Field Survey 2018).

As for the number and nature of touristic sites the statistics for 2015 (Table 63 / Table 64 / Table 65) show that the North-West Region should be the poorest region indeed, offering only 38 out of the 816 sites in the whole country, that are considered to be of touristic relevance. However, the actual numbers in the North-West Region are far higher than stated in the table for most categories. As for lakes: there are 35 crater lakes + Bamendjin artificial lake makes the total number 36, while the table gives a number of 4 lakes. The introduction of this chapter names the three most important waterfalls and the table states there are only two. The table states that, there is only one mountain in the Northwest and no grottos or rocks. There are many. Furthermore, there would be only two monuments, while even only in and around Bamenda there are more than a dozen monuments. So, the conclusion is that the official statistics on touristic sites in (L'Annuaire des Statistique du Tourisme et des loisirs 2015, Ministère de Tourisme et Loisirs) is far from complete for the North-West Region. No conclusions can therefore be drawn from this (Table 63) and it is recommended that in the next statistical report on tourism this table will be actualised and supplemented.

Table 63: Touristic sites in the different divisions of Cameroon

Nature of touristic site	Regions										Total
	Adamawa	Centre	East	Far North	Littoral	North	North-West	West	South	South-West	
Lakes	21	4	6	5	3	2	4	15	3	7	70
Waterfalls and Rapids	13	8	7	0	2	0	2	17	5	13	67
Mountains and Hills	10	5	3	9	3	4	1	16	3	11	65
Caves	9	4	4	4	2	1	0	6	4	0	34
Rocks	2	4	1	2	1	2	0	3	10	1	26
Monuments	10	11	3	6	6	4	2	2	15	9	68
Shores and Beaches	21	4	7	5	3	3	4	0	8	7	62
Craft and Markets	10	22	6	19	18	7	8	15	10	6	121
Palaces and Sultanates	10	5	8	25	8	6	8	12	4	6	92
Architectural relics	5	5	3	5	7	2	1	0	8	8	44
Dams	2	1	0	2	2	1	0	2	0	0	10
Ranches	5	1	0	0	0	0	3	0	0	3	12
Bridges	5	2	0	0	3	4	0	1	0	5	20
Plantations	2	8	3	7	10	2	5	10	10	6	63
Mining reserves	2	3	1	1	0	0	0	0	0	0	7
Camps	3	0	1	1	0	3	0	1	3	3	15
Climatic centres	0	0	0	0	0	0	0	1	0	0	1
others	0	5	4	14	3	2	0	9	2	0	39
Total	130	92	57	105	71	43	38	110	85	85	816

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

Table 64: Distribution of establishments of catering, leisure, and tourism in 2015

Regions	Count of catering establishments	Count of leisure establishments	Count of tourism establishments
Adamawa	20	4	11
Centre	101	52	98
East	19	7	0
Far North	22	5	13
Littoral	140	56	88
North	7	3	14
North-West	31	1	10
West	15	6	2
South	52	10	1
South-West	3	1	5
Total	410	145	242

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

Table 65: Distribution of licensed tourism guides in Cameroon in 2015

Regions	National guide	Regional guide	Local guide
Adamawa	1	10	1
Centre	41	35	14
East	0	4	1
Far North	4	11	3
Littoral	30	15	6
North	2	4	5
North-West	0	4	4
West	4	10	3
South	1	2	5
South-West	2	4	3
Total	85	99	45

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

5.10.2.5. Employment and education in tourism

Looking to the tourism related education in Cameroon, it is obviously concentrated in the Central and Littoral regions. The North-West Region only accommodates four out of 62 nationwide educational organisations (Table 66). This is a comparable number to the other regions in the country.

As for employment in the registered hotels of the North-West Region a number of 1,228 people was employed in 2015 (Table 66).

Table 66: Distribution of training facilities and employment in hotels in 2015

Regions	Count of training	Executives		Others		Total
		Males	Females	Males	Females	
Adamawa	2	43	18	383	78	522
Centre	27	229	146	1,722	1,102	3,199
East	1	33	13	63	128	237
Far North	0	73	22	1,446	317	1,858
Littoral	15	260	136	2,084	1,422	3,902
North	1	140	37	3,280	726	4,183
North-West	4	146	74	597	411	1,228
West	5	168	88	1,343	916	2,515
South	4	352	184	2,820	1,924	5,280
South-West	3	860	790	294	271	2,215
Total	**62**	**2,304**	**1,508**	**14,032**	**7,295**	**25,139**

Source: Statistical yearbook on tourism, 2015, Ministry of tourism and leisure

5.10.2.6. Potential of tourism

Assessing the situation for tourism for the North-West Region in the diagnostic phase of the territorial planning and sustainable development plan, starts with the observation that the ambitious policy goals that were defined in the National Employment Strategy, to increase the number of international tourists to 1 million and the Cameroonian tourists to 6 million in the year 2020, will not be met.

The North-West Region has a lot of potentials for tourism, however they are hardly developed. Tourism is even on the scale of Cameroon, compared to other regions, practically absent. Hotel accommodation is hardly attracting international tourists, but depends largely on domestic guests from other regions inside Cameroon. The majority of the foreign visitors, that do come, is French. The present tensed situation in the North-West Region because of the Anglophone issue and the more strict requirements for visa because of it, make the short term prospects even worse.

Sustainable tourism that contributes to the environment and the regional culture and maximizes the profits for local people, could focus on the natural and cultural highlights of the region and on contributing to community development projects. Balancing protection of nature & culture with tourism, calls for a strategic approach in which communities, businesses and organisations should work together and also manage potential community conflicts. Providing experiences, communicate on shared values and especially generating revenue by creating income. During the prospective phase stakeholders could profit from other internationally developed manuals, like: “Practical, profitable, protected. A starter’s guide to developing sustainable tourism in protected areas, an initiative of ECEAT International, the European Centre for Eco and Agro Tourism in partnership with the EUROPARC Federation (Latvia, 2012).” It contains ideas, case studies, guidelines and tips to help conservation, businesses, host communities and visitors all become winners.

Table 67: SWOT summary of Resources/inputs

SWOT summary: ***Resources/inputs***	
STRENGTH	**WEAKNESSES**
• Vast and fertile land for agriculture and livestock • Availability of raw materials for the transformative industry; variety of agricultural production will provide food for processing, commendable livestock production will provide raw materials for animal product industries • Availability of MFIs and Commercial Banks to provide funding to small holder activities and even big start-ups • Availability of forest resources	• Tight land tenure systems can be a challenge • Electrical energy instability (low voltage, frequent outages, delays in maintenance and repairs of damaged/obsolete electrical equipments) is a challenge to most enterprises that require electrical energy to perform their operations
OPPORTUNITIES	**THREATS**
• Relaxing land tenure in some areas (Bambili, etc.) will open the full potential of these resources • Develop and explore the potential hydro electrical power generating potentials in the region (e.g. Bamenjim dam) • encourage competition from mobile money (MOMO) and money transfer agencies and other funding agencies such as SCE to help reduce interest rates in CBs and MFIs • The increasing involvement of youths in auto-repairs (mechanic) is a signal that an auto-industry coming to the region will have a levelling ground for take-off. • University of Bamenda has a big potential to boost the food sector; the University has increased the middle and upper class citizens in the region and has increased the population tremendously; creating a huge market for businesses • Huge opportunity for the growth of a modern furniture or wood transformation industry • The increasing interest in developing and using solar energy and other sources of renewable energy.	• Rice production which has the potential to generate income for many steadily and sustainably is facing huge foreign competition • The sociopolitical crises plaguing the region and slowing down economic activities can discourage farmers and increase migration to other regions with relative calm • Fierce competition from importation, especially for the poultry industry and animal products (yoghurt, milk etc.). Competition from imported canned food is hampering the growth of food industries in the region • Periodic and somewhat frequent bird flu plagues (linked to avian influenza) which cause a lot of losses for the poultry sector in the country as a whole and North-West Region in particular, like the ones that came in shift in 2016 and 2017 • Urbanisation and growth in agricultural activities are increasingly reducing the amount of land that can be set aside for livestock rearing. Urbanization is also increasing deforestation in the region. • Mobile Network hawking can cause customers to lose confidence and deter from using some operations like MOMO promoted by ICT networks • Falling demand for works of art in line with the increasing detachment from cultural standards/values in the region can cause this subsector to go out of business in the region • Acute lack of interest in works of arts among the youths who prefer fast earning activities is reducing the labour force needed in this subsector, and hence productivity • Most Commercial Banks are foreign owned (about 9 out of 14 CBs are foreign); implying that a proportion of what we save/deposit can be directed out to provide loans for investment elsewhere. This poses a threat to domestic financial resources. • Demand for collateral security by banks and MFIs and other stringent loan policies can discourage domestic credit, especially in the formal financial sector • Poor road infrastructure, especially within the capital city of the North-West Region, is slowing down economic activities within and without Bamenda.

Table 68: SWOT summary of Production Variety/choice

SWOT summary: ***Production Variety/choice***	
STRENGTH	**WEAKNESSES**
• Region can grow a large variety of crops, including wheat. Pilot wheat farming activities have been found feasible in the North-West Region	• Sluggishness to involve/encourage farmers to do large scale wheat production • Falling prices of coffee and cocoa which are the main cash crops the region hosts • Low demand for Ndop rice in the region and elsewhere in Cameroon, mainly because of the heavy competition from cheaper substitutes from China and Thailand • The palm oil production in the region is huge but it is still yet to be exploited at an industrial scale, with modern technology. • Lack of conservation facilities and fishing materials/equipments for fishing subsector. • weaving, carving, knitting etc. are small scale and individual-based activities; thus the potential economies of scale for the artisanal sector are not exploited coupled with the lack of vocational training centres
OPPORTUNITIES	**THREATS**
• Potential to produce wheat and supply our many bakeries in the region with the needed flour for processing and reduce the huge dependence on imported wheat • Revamp the coffee and cocoa sectors in the region. This can be done by restoring our coffee and cocoa cooperatives which once existed and facilitated coffee and cocoa sales at attractive prices • Possibility of large scale milk and yoghurt production in the region, given the readily available raw material (cattle) in many divisions, especially Donga-Mantung, Boyo and Menchum • boost the potential of the food transformation industry given the huge agricultural potentials that exist in the region to explore the possibility of exporting transformed products to secure better income for farmers • give the artisanal sub sector an industrial scale, especially the weaving of yarns into different fabrics and cloth; this will boost the textile industry in the region.	• See SWOT summary: Resources/inputs • Limitation in electric energy provision • Accessebility of locations for production

Table 69: SWOT summary of Policy/programs

SWOT summary: ***Policy/programs***	
STRENGTH	**WEAKNESSES**
• Government programs such as Safety Net which are highly effective should be made to gain more coverage and be made sustainable to better support the agriculture and livestock sectors • The strong drive of the government to provide improved seeds and seedlings the agricultural sector should be sustained • One-Stop Shop framework by the government of Cameroon to register their enterprises faster; create an enterprise in 72 hours • Training centres; food processing programs in schools such as COLTECH in UBa and INSET in CCU	• Safety Net still lacks complete coverage and our fears of it not being sustainable cannot be underestimated • Cattle and sheep still dominantly in the hands of the minority Bororos and Muslims, very little or no government support for these minority groups • Increasing farmer-grasser conflicts can hamper growth in the agricultural and livestock sub-sectors • Taxes; high rates and multiplicity of taxes slows down the growth of existing enterprises and discourages the coming of new ones • Corruption; funds meant for some community-based initiative may be misdirected elsewhere,
OPPORTUNITIES	**THREATS**
• Possibility of making the Safety Net program sustainable to support start-ups in agriculture and livestock • Informal enterprises should take advantage of the One-Stop Shop framework by the government of Cameroon to register their enterprises faster; create an enterprise in 72 hours	• See SWOT summary: Resources/inputs

Table 70: SWOT summary of Outlets/markets

SWOT summary: ***Outlets/markets***	
STRENGTH	**WEAKNESSES**
• Ready markets in the country and neighbouring countries (Nigeria, Equatorial Guinea etc) for agriculture and livestock products • Ready external demand in other continents (USA, Europe etc)	• No regional arts and culture show to develop and reward talent in the artisanal sub-sector • However, markets for maize and coco-yam/achuh, as top food crops in the region are still to go across the borders
OPPORTUNITIES	**THREATS**
• Produce more tomatoes, the new-export sector, and explore the ready market in the CEMAC region • Possibility to market maize and coco-yam/achuh across the borders,	• See SWOT summary: Resources/inputs

Table 71: SWOT summary of Employment generation and decency

• SWOT summary: Employment generation and decency	
• STRENGTH	• WEAKNESSES
• Employment generation potentials in the dominant tertiary and secondary sectors • Government programs (example Safety Net etc) to support start-offs	• Lack of decent job generation, • Access to formal credit (loans from the formal financial sector) for the SMEs.
• OPPORTUNITIES	• THREATS
• Harness the employment generation potentials in the dominant tertiary and secondary sectors to produce decent jobs • Given that labour is readily available, increasing the cooperating factor, capital, in the region can lead to a surge in employment	• See SWOT summary: Resources/inputs

Table 72: SWOT summary of Mining

SWOT summary: ***Mining***	
STRENGTH	**WEAKNESSES**
• Strategic location: Proximity to the fast-developing Central and West African markets for export of Minerals. • Large quantity of high quality reserves • The government readily offers a wide range of concessions to investors. • Liberal taxation policy: Zero VAT on exports and reimbursement of VAT paid on the investments and operating expenses of export businesses in order to guarantee their competitiveness in international markets. • Local population is easily available for labour	• Fall of mineral prices • Poor transportation facilities • Low electrical energy supply • Inadequate existing data for the mining sector. • Insufficient administrative control on illegal/artisanal operations. • Local Labour force is highly un-skilled and inexperienced • Poor infrastructure and innovation capabilities • Limited access to capital, and mines are increasingly more costly to find, acquire, develop and produce. • Population is unskilled • Insufficient facilities to train youths to engage in sustainable mining activities.
OPPORTUNITIES	**THREATS**
• Possibility of gaining the whole market and subsequent extension into other regions • High possibility of improving from artisanal mining to industrial mining • Diverse areas for exploration ventures include gold, diamond, sapphire, tin, manganese ore, basalt, sand and other rare metals. • Considerable opportunities for future discoveries of sub-surface deposits with the application of modern techniques. • Great chances to improve on the national GDP and boost on the technological infrastructure of the region. • long-term solution to the problem of unemployment and poverty. • Training of population to investor's thirst.	• Unavailability of quick market for products • Theft and insecurity • Inadequate transformation factories of products • Politicians undervalue the industry's contributions to the economy. • Agricultural lands are converted into mining sites. • Pollution and displacement of local population. • A heavy tax burden discourages further investment. • Stricter environment rules restricting mining activities. • Poor productivity. • High rate of accidents and risk zones • Heavy damage to the environment • Increasing rate of school drop outs,

Table 73: SWOT summary of Quarries

SWOT summary: ***Quarries***	
STRENGTH	**WEAKNESSES**
• Quarries are situated closer to the ready market. • Large quantity of rock deposits. • The government readily offers a wide range of concessions to investors. • Liberal taxation policy • Local population is easily available for labour	• Fall of mineral prices • Low electrical energy supply • Slow demand for products. • Insufficient administrative control on illegal/artisanal operations. • Very costly. Operations are mostly machinery. • Poor wages offered to local population.
OPPORTUNITIES	**THREATS**
• Possibility of supplying public contracts. • Easy supply of products • High possibility of improving from artisanal quarry to industrial quarry. • Great chances to improve on the national GDP and boost on the regional technological infrastructure • Good employment opportunities to the local population. • Population is skilled and ready to cooperate.	• Market is seasonal, especially individuals operating artisanal quarries. • Agricultural lands are converted into mining sites. • Displacement of local population. • Stricter environment rules on quarry activities. This discourages mostly artisanal quarries. • High rate of accidents and risk zones.

Table 74: SWOT summary of Tourism

SWOT summary: Tourism	
STRENGTH	**WEAKNESSES**
• Favourable climate, especially in the early dry and early rainy season, from mid-November until mid-May; • Splendid scenery with mountains along an old volcanic range, up to 3011 meters (Mount Oku), dozens of crater lakes, waterfalls, gorges, grotto's et-cetera; • Beautiful natural assets, with forest reserves and a National Park (Kimbi Fungom) with spectacular scenery and rare endemic species, like mammals (Cross River Gorilla and Nigerian-Cameroonian Chimpanzee) and six bird species; • Very rich and diverse cultural assets, with traditional fondoms, interesting museums and cultural festivals in various divisions; • Friendly and English speaking population.	• The country's assets are hardly known in Western countries; • The safety conditions are worsening because of the crises in the North (Boko Haram) and in the North-West itself (Anglophone question); • Poor road infrastructure; • Stricter visa requirements where tourists should arrange and name all night accommodations beforehand; • Unfriendliness of airport personnel upon arriving in the country.
OPPORTUNITIES	**THREATS**
• Relatively low costs for example in National Parks that creates a lot of competitiveness with other African countries, where safaris are very expensive; • Lots of private community development projects in the field of education, health and/or agriculture with possibilities to engage tourists. A lot of foreigners actively involved in NGO's, CIG's that can be used to bridge the gap of knowledge of their fellow country men and women; • Potentially one of the few countries in Central Africa that can attract back packing tourists because of cheap food, accommodation, relatively easy public transport and (normally) very safe; • Possibilities for nice package tours with a week on a tropical beach at Limbe or Kribi and a week in the Western Highlands with its cultural and natural diversity; • Improve education in French language and be bilingual also in tourism.	• Increasing unsafety, political unrest; • Restrictions to the free use of internet; • More restrictions to travelling around freely by safety measures like control posts; • Not well managed and deteriorating roads; • Poor and deteriorating hotel infrastructure and not well educated staff.

6 Urbanisation

Urbanisation in the North-West Region dates back to the 1960s when there were clear indications of modernisation of its economy and improvement of living conditions. This thus impacted on the emergence of early urban stations of Bamenda, Mbengwi, Nkambe and Wum while several other towns in the form of administrative headquarters that started growing rapidly. Urbanisation created separated spaces across the Region that were characterised by clear differences in housing, water supply, drainage, health, educational, infrastructural and other facilities as well as political considerations. Unfortunately, the lack of development plans caused these towns or stations to have a disorderly development.

It was only until recent that the urbanisation process in the Region started being organised through some town planning laws in the form of approving of buildings and layout of plans by health officers based on some rudimentary building regulations. Urban development and planning regulations is to ensure the orderly development of urban areas. The various laws, legislations and decrees guiding development in Cameroon, especially with respect to the building industry include:

- Law N^{o} 2004/003 of 21st April 2004 regulating town planning in Cameroon;
- Decree N^{o} 2008/0739/pm of 23rd April 2008 regulating the use of the soil in the area of construction;
- Decree N^{o} 2008/0737/pm of 23rd April 2008 regulating security, hygiene and sanitation during construction;
- Decree N^{o} 2008/0738/pm of 23rd April 2008 organising the procedures and modalities of land management;
- Decree N^{o} 2008/0740/pm of 23rd April 2008 placing sanctions on town planning infrastructural development violators;
- Law N^{o} 2009/009 of 10th July 2009 in relation to the sales of constructed buildings;
- Decree N^{o} 2009/1726/pm of 04th September 2009 emphasising on the modalities applicable to Law N^{o} 2009/009 with respect to the sales of constructed buildings.
- Law N^{o} 2010/022 of 21st December 2010 in relation to building ownership;

These urban development and planning regulation laws are aimed at providing a good living environment for all by ensuring safety, amenity, accessibility, energy conservation and environmental protection and providing a safe, healthy, useable, serviceable, pleasant and easily maintained environment for commercial, industrial, civic, and community land users.

In the following Figure 111 and Table 76, the trend showed a decreasing of proportion of the population of the Region to that of the national population.

6.1. Demography

The North-West Region is the third most populated region in Cameroon. It has one major metropolitan city, Bamenda, with several other smaller towns such as Wum, Kumbo, Mbengwi, Ndop, Nkambé, Batibo, Bambui and Oshie. The region saw an increase in its population from approximately 1.2 million in 1987 to 1.8 million in 2010. The population density of 99.12 people per square kilometer is higher than the national average of 22.6. The regional urban growth rate is 7.95%, higher than the national average of 5.6%, while the rural growth rate, at 1.16%, is equal to the national rate. In 2001, according to the Statistical Provincial Services of the North-West Region, the population of the region is young, with over 62% of its residents being less than 20 years old. Assuming a more stable demographic growth in the next two decades, the region will reach approximately 2.64 million inhabitants by 2041.

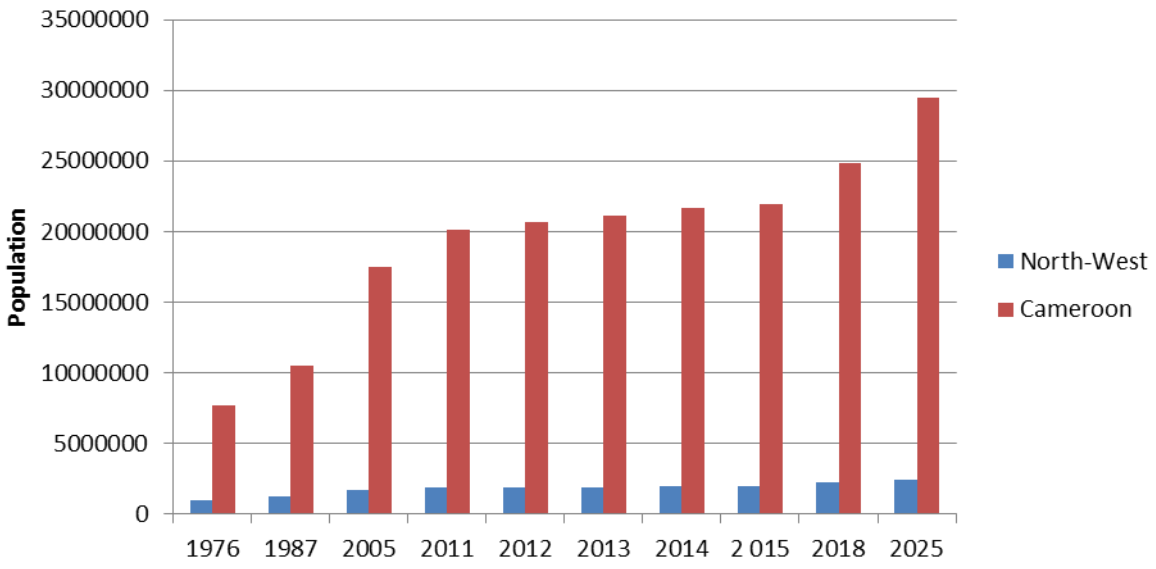
Table 75: Evolution from 1976 to 2005 of populations in the North-West Region

	year					
	1976	**1987**	**2005**	**2015**	**2021***	**2041***
Population	980,531	1,237,348	1,728,953	1,968,578	2 112 130	2 639 137
increase		+2.14%	+1.88%	+1.31%	+1,18%	+1,12%

Source: Cameroon administrative division population statistics (www.citypopulation.de/en/cameroon/cities); GPHC 1976, GPHC 1987, 3rd GPHC, BUCREP, 2005

The Northwest Region has many ethnic groups, including immigrants from other regions and countries. Nigeria is well represented, as it borders the region to both the north and the northwest. The native population comprises a variety of ethnic and linguistic groups. The main ethnic groups are of Tikar origin: Tikari, Widikum, Fulani, and Moghamo. The most widely spoken languages in the province include Mungaka, Limbum spoken by the Wimbum people of Donga Mantung Division; Yamba, spoken by the Yamba people also of the Donga Mantung Division; Bafmen, Oku, Lamnso, Ngemba, Pidgin English, Balikumbat, Papiakum, Moghamo, and Nkom. During the colonial period, administrative boundaries were created which cuts across ethnic groups and cultures. As a result, parts of some ethnic groups now live in different divisions and regions, which is believed to have led to several land conflicts (see chapter 9.2 and 10.3).

Figure 111: Evolution of the population in Cameroon and the North-West Region



Source: GPHC 1976, GPHC 1987, 3rd GPHC, BUCREP, 2005 (designed from table)

This indicates a generally slow rate of urbanisation for the whole Region in terms of the number of towns becoming urban as the towns that formed the government stations either declined or stagnated to the advantage of two new poles being Bamenda and Kumbo. The heart of the current urbanisation is a bipolarity between Bamenda in Mezam and Kumbo in Bui even though other Divisional capitals appear as urban areas. Urban areas around these two poles appear to be swallowed up as they are growing more slowly as compared to Bamenda and Kumbo.

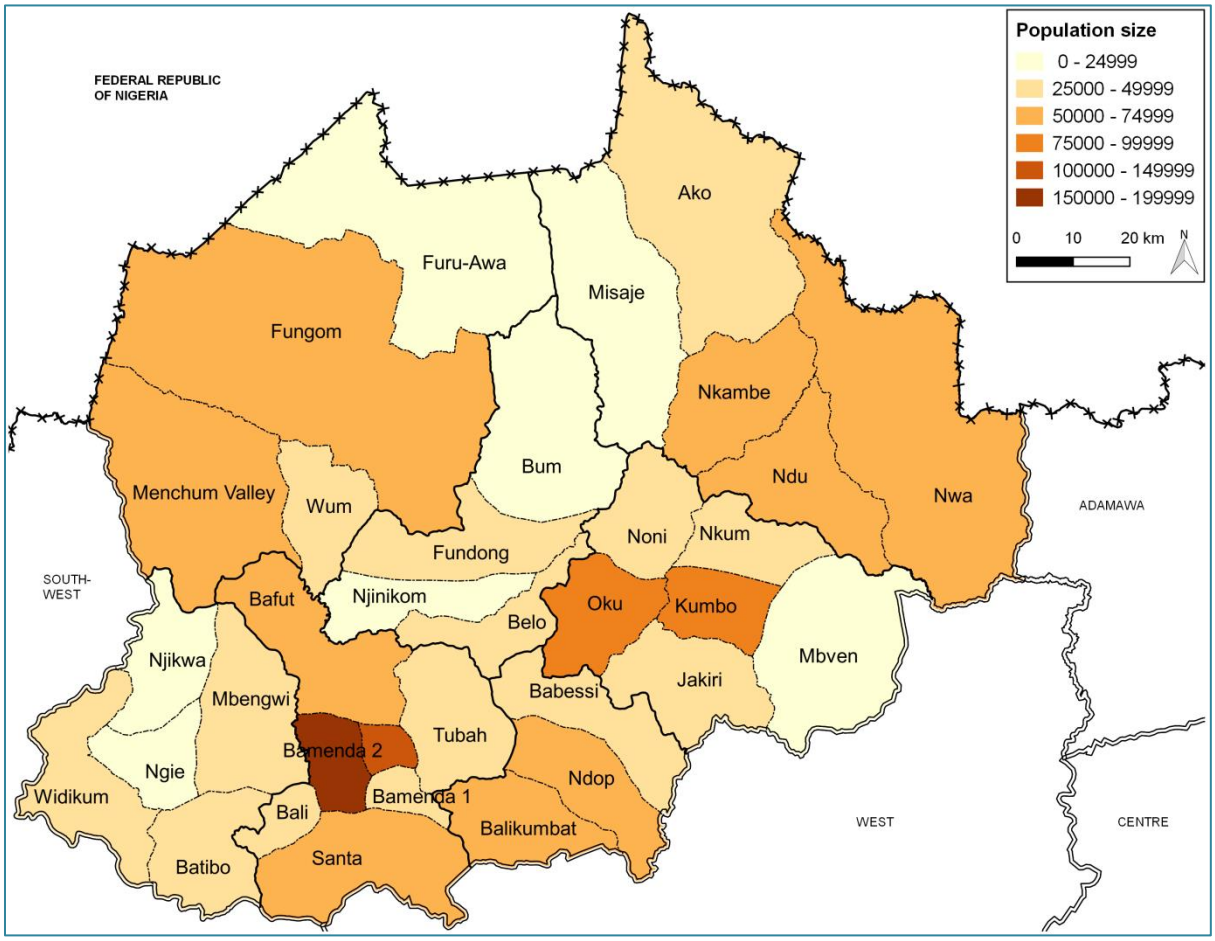
Table 76: Evolution from 1976 to 2005 of populations of towns of the North-West of more than 50,000 inhabitants

Town	**Census**			**Average annual increase rate**	
	1976	**1987**	**2005**	**1976-1987**	**1987-2005**
Kumbo	12,533	33,353	80,212	9.3	4.8
Bamenda	48,111	110,142	269,530	7.8	4.9

Source: GPHC 1976, GPHC 1987, 3rd GPHC, BUCREP, 2005

The General Population and Housing Census of Cameroon puts the population of the North-West Region in December 2005 at 1,728,953 inhabitants. The census of April 1976 gave the North-West 980,831 inhabitants. The results per subdivision of the censuses of 1987 and 2005 can be found in the annex (part 1 section 3 Urbanisation and demography). The distribution of the population according to the census of 2005 can be seen on Figure 112.

Figure 112: Population size by Subdivision of the North-West Region according to the census of 2005



Source: 3rd GPHC, BUCREP, 2005. The projection for 2015 is visualised on the map 4.1 of the atlas

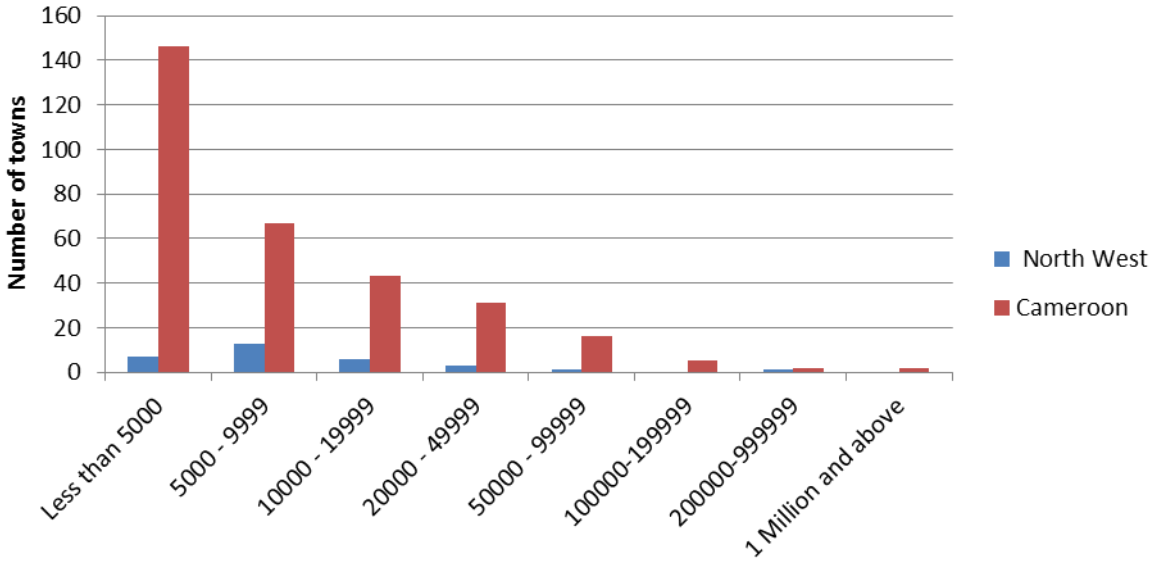
In 2010, according to the estimation of BUCREP, the North-West was around 1,804,695 inhabitants, male represents 862,269 and female 942,426. The population density is estimated at about 104.3 inhabitants/ km² in 2012 when the population was around 1,855,199 inhabitants. This projects the population figures of the Region at 2,429,174 by 2025. The population density is about 99.9 inhabitants/ km² compared to the national average of 37.5 according to the 2005 census. Projections show an increasing population density of the Region over time as it is increasing from 104.3 inhabitants/ km² in 2010 to 140.4 inhabitants/ km² in 2025. Within this period, the projections also show that the population density is about 2 times higher than that of the nation.

The Mezam Division has a surface area of 1,745 km² and a population of 524,127 in 2005, a density of 300.5 inhabitants per square kilometre, which appears as the densest Division in the North-West Region. This Division has the Regional headquarter which is Bamenda and concentrates on commercial activities and higher-level educational facilities which are attractive factors for rural populations. Menchum Division with an area of 4,469 km² and a population of 161,998 inhabitants in 2005 and with a density of 36.3 inhabitants per square kilometre is the least densely populated Division.

Between 1976 and 1987, the Region had a population growth rate of 2.1%, less than that at the national level which had a growth rate of 2.9%. Between 1987 and 2005, the growth rate experienced a drop from 2.1% to 1.8%, while that at the national level experienced a slight drop from 2.9% to 2.8%. Despite these drops in the population growth rates of the Region, the growth rates remained positive indicating that the populations kept increasing, but at a slower rate than the period between 1976 and 1987.

Considering that an urban centre in Cameroon has a population of at least 10,000 people, this category in the North-West Region are some divisional and sub divisional headquarters. Urban zones are also determined by population size, population growth rate, the presence of administrative headquarter, availability of utilities and services such as market centres, educational, health, socio-cultural facilities. Other characteristics are high road densities, hotels, communication facilities, etc. These assets, though with a lot of problems, are important resources for sustainable environmental management in urban centres and sustain the numerical, spatial and psychological growth of the urban centres.

Figure 113: Number of towns in the Region with respect to their population sizes in 2005



Source: 3rd GPHC, BUCREP, 2005 (designed from table)

More than half of the towns (being 20 out of 31) as of 2005 were less than 10,000 inhabitants which correspond mainly to the sub divisional headquarters. There is an urban development primacy of Bamenda in the Region, which not only corresponds to the crossroad point to and from the other divisions but a major hub along the trans-African highway.

In 2005, the Region had 7 out of 146 towns in the nation with a population of less than 5,000 inhabitants, 1 out of 16 towns with a population of between 50,000 and 100,000 inhabitants, and 1 out of 2 towns with a population of between 200,000 and 1 million inhabitants (Figure 113). Bamenda (capital of Mezam Division and the Region) was the 3rd most populated town in the country (after Douala and Yaoundé) with a population of 269,530 while Kumbo (capital of Bui Division) was the 15th most populated with a population of 80,212. The webpage http://worldpopulationreview.com/ for Cameroon on 14th of February 2018 on World Population Review, ranked Bamenda as the 5th most populated town in Cameroon giving Bamenda a population of 393,835 inhabitants. By this source, Kumbo does not figure among the first 20 populated towns in Cameroon.

The 2005 population census revealed that 18.6% of the population of the North-West Region lives in Bamenda while at the national level Bamenda has 1.8% of the population of Cameroon. The surface area of Bamenda City Council is 1,076 kilometres square with a population density of 300 inhabitants per square kilometre. However, the average population growth rate for the city has dropped. From 1976

– 1987 the average population growth rate was estimated at 7.8%; and from 1987 – 2005, it dropped to 4.9%. The national growth rate was 2.8% while Bamenda City Council's growth rate was 4.9% (BUCREP, 2005). Natural population increase was estimated at 15,822 persons per annum, while the rate of urbanisation was estimated at 50.2%.

The city is expanding into rural settlements or suburbs in Mankon, Nkwen, MbatuBamendankwe, Ndzah, Chomba and Nsongwa areas as the population of the city is growing. The growth of the city is agglomerated along main access to the city. Expansion from the city centre is geared towards main access in the east, west, and north and south-basically along the Bamenda - Akum, Wum, Bambui, Mbengwi, and Bali roads. Physical barriers to urban growth include: the simple fault line separating the city into two parts, with numerous streams, swamps and undulating topography. The area of land required for the expansion of Bamenda city over the next fifteen years will be about the size of the present built–up areas.

Major urbanisation trends for Bamenda by 2025 :

- Bamenda will need new districts (probably towards the northeast towards Tubah) and cultural centres of conviviality.
- A road system that would permit the free flow and movement of people and goods to the city centre from its southwest direction (along the Trans-African road axis) and northeast (towards Tubah that is gateway to Boyo, Ngo-Ketunjia, Bui, and Donga-Mantung as well as the University of Bamenda for now all concentrated in Bambili). There is urgent need to develop peripheral roads (Banjah-Sabga and NtaTawah City-Mile 90) or consider a double way transport route in these directions with possibilities of developing mass transport systems.
- Present built-up areas have maintained a complex natural drainage pattern and topography, a physical structure which prevents the creation of new units. So revolutionary urbanisation approaches need to be envisaged like in Atuazire (see location on Figure 112) that was developed by the Tawah Real Estate Company. The development of the area envisages a blend between infrastructural development and the topography ensuring for sewage disposal, social facilities like schools, playgrounds, hotels, conference centres, green lots and building according to typical urban zones according to income level (low, average, high, very high) using near standardised architectural designs.
- Peripheral development would necessitate the expansion of public utilities (electricity, water, sewage disposal, roads, etc) at high cost in some sectors.

6.1.1. Age structure of the population

Since 2010, the structure by age of the population of the North-West has been marked by its extreme youth majority. More than half of the population remains to be less than 20 years (56.8% in 2012). This proportion is estimated to be situated at about 49.5% in the year 2025. The table of population by age can be found in the annex (part 1 section 3 Urbanisation and demography).

In 2018 (Figure 115) the population of those aged between 0 and 5 years have the greatest proportion of the population while the age group of those above 80 years have the least proportion of the population. This decrease in size of the pyramid is accounted for by the fact that the North-West Region has a young population, thus producing a broad base.

The demographic weight of children aged less than 15 years was situated at 43.5% in 2015. Old persons (60 years and above) represent 5.7% of the total population of the region in 2015 (Table 77). These trends are identical to those observed at the national level. The proportion of persons of 60 years old and above is very small (4.2%), which constitutes 2.4% of the urban population.

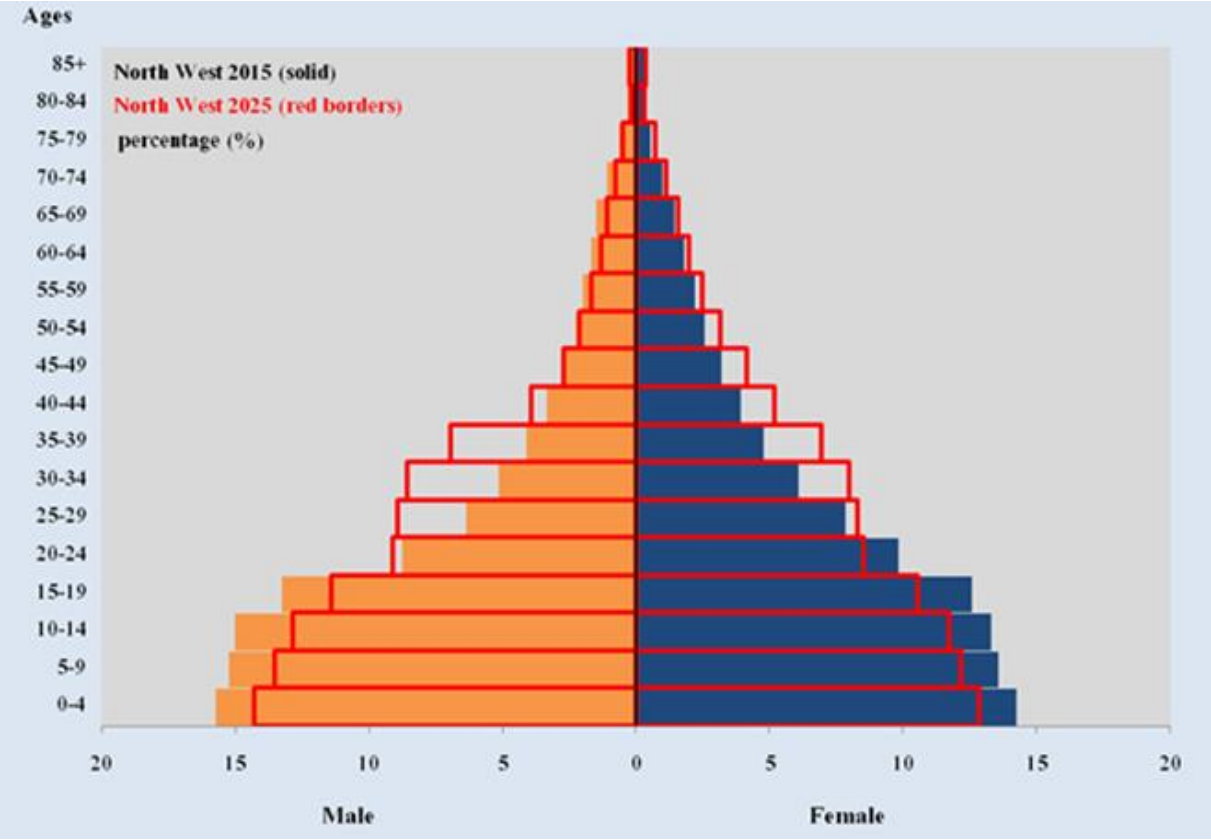
The average age of the Region in 2014 was 21.8 years, while the national level was 22.1 years. The Region had a median age of 17.3 years, indicating that more than half of its population was less than 17 years associated to the drop of infant mortality rate and high fertility maintenance. The proportion of individuals aged less than 15 years gradually reduces over time while those of age between 15 and 60 gradually increase over time. The proportion of individuals less than 15 years gradually reduces from 44.0% in 2014 to 40.9% in 2018 while that of individuals between 15 and 60 years gradually increases from 50.5% in 2014 to 54.3% in 2018. Projections reveal that the proportion of individuals aged from 60 years and above fluctuates in a saw-tooth manner over time. The gradual increase of the population aged 15 and 60 and the decrease of the population aged less than 15 years causes the average age of the population of the region to increase over time passing from 21.8 years old in 2014 to 22.4 years old in 2018.

Table 77: Percentage of population in major age groups in the North-West Region between 2010 and 2025

Year	Age group (%)			Age	
	Less than 15	15 to 59	Above 60	Average	Median
2014	44	50.5	5.5	21.8	17.3
2015	43.5	50.8	5.7	22	17.5
2018	40.9	54.3	4.8	22.4	19.3
2025	38.5	56.5	5	23.6	20.3

«Source: 3rd GPHC 2005, BUCREP, 2010 and "Projections Démographiques et Estimations des Cibles Prioritaires des Différents Programmes et Interventions de Santé 2016"

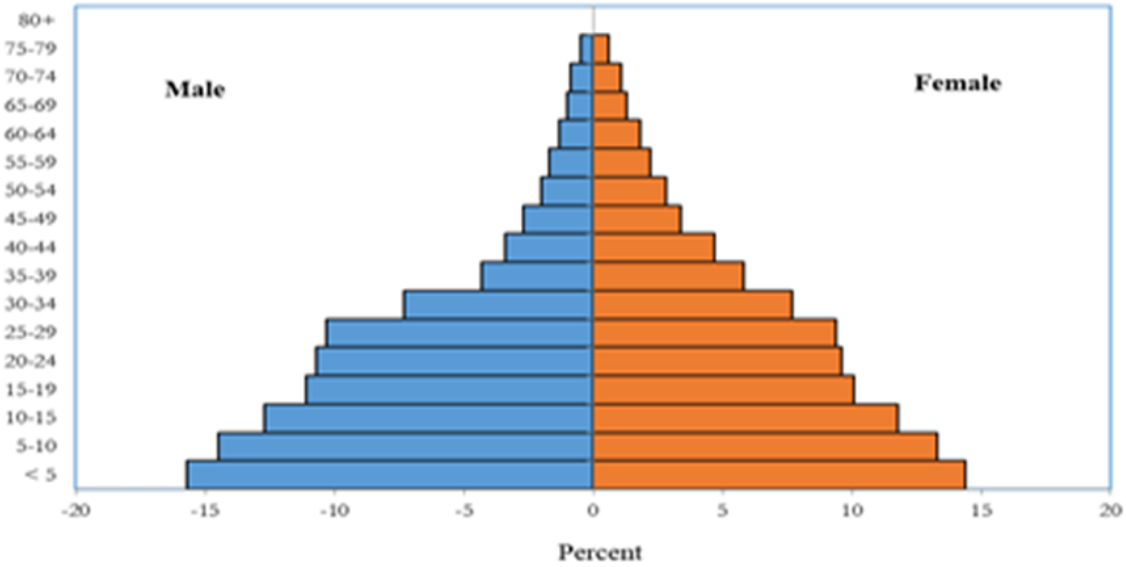
Figure 114: Age-sex population pyramid of the North-West Region in 2015 and in 2025



Source: 3rd GPHC, BUCREP, 2005

The asymmetric nature of the pyramid gives the disparity in the population of males and females for a particular age group. For the age group of 40 – 44 in the year 2018 (Figure 115), the number of females is more than that of the male.

Figure 115: Population pyramid of the North-West Region in 2018



Source: "Projections Démographiques et Estimations des Cibles Prioritaires des Différents Programmes et Interventions de Santé 2016"

Most of the age groups that portray similar characteristics on the pyramid are those that have ages of below 15 years, and this can be accounted for by the high male emigration rate between the ages of 15 and 60, and the dominance of the female life expectancy over that of males.

6.1.2. Sex structure of the population

When the population of the Region is considered by sex, there is the predominance of females over the male population.

Table 78: Evolution of the population by sex and sex ratio of the North-West Region between 1987 and 2025

Year	North-West				Cameroon			
	Male	Female	Total	Sex ratio (%)	Male	Female	Total	Sex ratio (%)
1987	600,570	636,778	1,237,348	94.3	5,173,372	5,320,283	10,493,655	97.2
2005	828,862	900,091	1,728,953	92.1	8,632,036	8,831,800	17,463,836	97.7
2010	869,962	946,618	1,816,580	91.9	9,707,318	9,940,969	19,648,287	97.6
2015	942,120	1,026,458	1,968,578	91.8	10,955,014	11,224,693	22,179,707	97.6
2018	1,049,292	1,163,341	2,212,633	90.2	12,302,530	12,560,807	24,863,337	97.9
2025	1,137,003	1,291,170	2,428,173	88.1	14,474,880	14,967,447	29,442,327	96.7

Source: 2nd GPHC 1987, 3rd GPHC 2005, BUCREP, and "Projections Démographiques et Estimations des Cibles Prioritaires des Différents Programmes et Interventi ons de Sante 2016")

The sex ratio of a population is the ratio of the number of men to the number of women expressed in percentage. It is generally expressed as a value indicator that gives the number of men for 100 women. The smaller the sex ratio of a population is than 100%, the more there are women and the greater the sex ratio is than 100%, the more there are men than women. For example, in 2005, the sex ratio of the Region was at 92%, indicating that in a population of 192 persons living in the Region, some 92 individuals were men and 100 are women (Table 78). Both in the Region and in Cameroon, population censuses and projections have been systematically showing sex ratios less than 100%, confirming the female excess over male population at both the regional and national level.

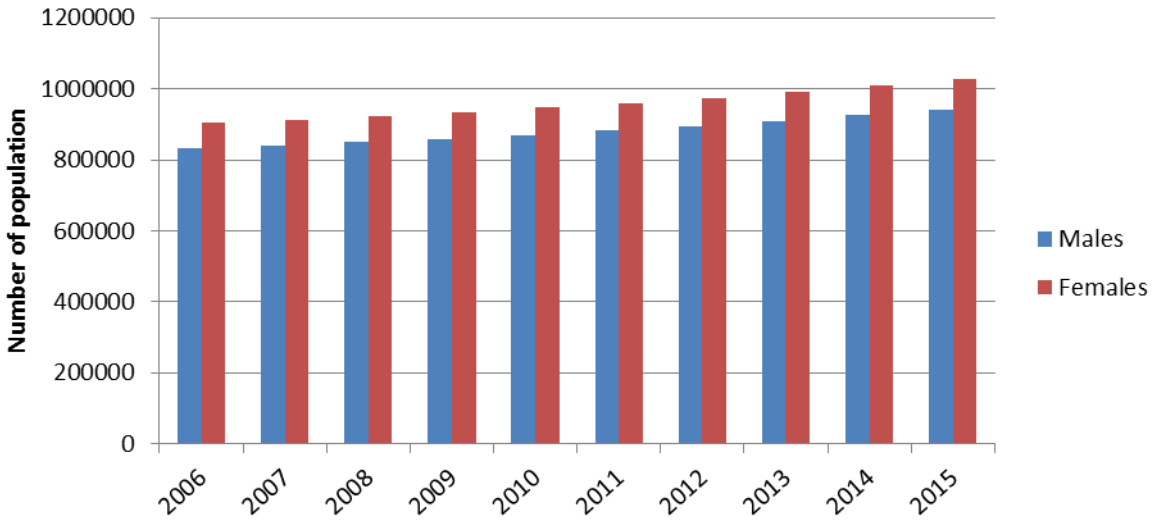
Between, 1987 and 2005, the sex ratio of the North-West were smaller than that of the nation, indicating that the proportion of the female population of the North-West has been higher than that of the National level within the same period. Within the same period, the sex ratio of the North-West dropped from

94.3% to 92.1% while it instead increased at the level of the nation from 97.2% to 97.7%. Following the population projection trends done by BUCREP, the sex ratio of the North-West has been decreasing over time (Table 78).

It decreased from 92.1% in 2005 to 90.2% in 2018 estimated to be 88.1% in 2025. At the national level, this ratio is fluctuating in a saw-tooth manner from 97.7% in 2005 to 97.6% in 2015, then increases to 97.9% in 2018 and projected to drop to 96.7% in 2025. A possible threat to this sex ratio that is creating the persistent drop in the Region as the case of decrease in growth rate can also be attributed to the fact that mostly males migrate out of the Region into the South-West, Littoral or Centre Regions in search of greener pastures.

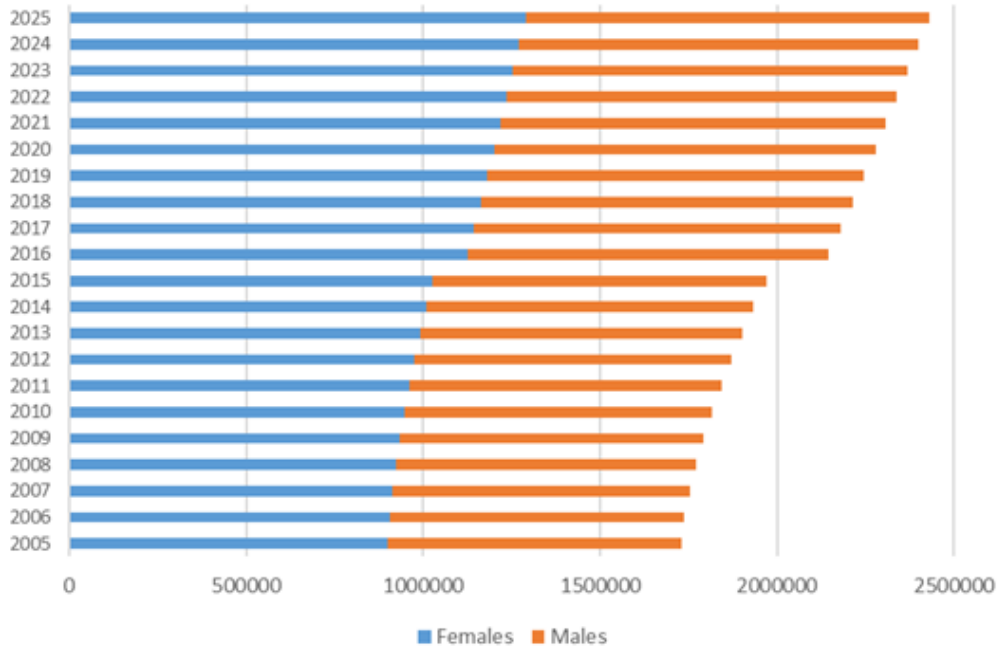
The distribution of the population by sex can be found in the annex (part 1 section 3 Urbanisation and demography).

Figure 116: The distribution of the population of the Region by sex from 2006 to 2015



Source: 3rd GPHC, BUCREP 2005 (designed from table)

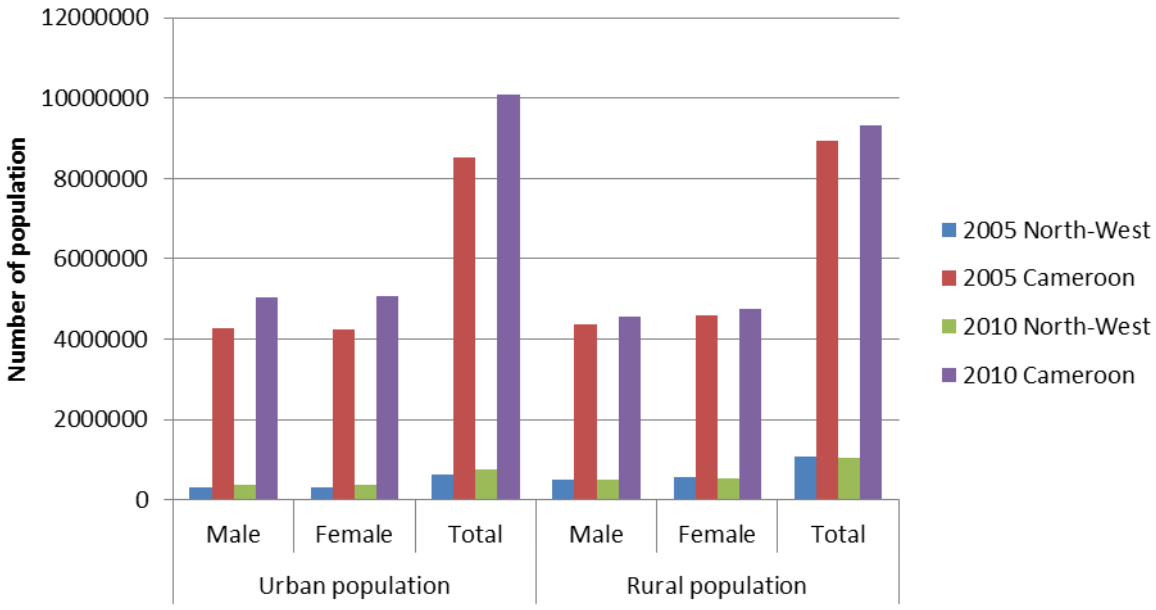
Figure 117: Relative evolution of female to male population of the North-West Region



Source: adapted from the 2015 North-West Statistical Yearbook, NIS, 2017

North-West (together with the West) are the only Regions in Cameroon where women are more than men whether in the rural or urban areas. In the rest of Cameroon, the number of men in urban areas is more than that of women. In 2005, there were 327,272 females with only 314,286 males in the urban areas of the Region (Figure 118). There is an apparent high emigration rate of men from the North-West to other regions. The table of the evolution of urban/rural population can be found in the annex (part 1 section 3 Urbanisation and demography).

Figure 118: The evolution of urban rural population distribution in the North-West from 2005 to 2010 (corrected)



Source: 3rd GPHC, BUCREP, 2005; BUCREP, projection published in 2010

In 2005, the Region recorded a higher rural than urban population being 62.9% (37.1% urban). Projections for 2010 showed an increased urban population rate. The urban population rate in the Region still is 42.1% while that of the nation increased to 52.2% indicating that the rate of urban exodus in the Region is lower than the rest of Cameroon dominated by Yaoundé and Douala.

There is an increasing proportion of excess females over the males in the Region but the above trend is not reflected in the proportion of the population that contributes to production and this varies as a function of the degree of urbanisation.

In 1987, the adult working population is divided into 47.4% men compared to 40.4% women in the urban areas of the Region. This is probably due to the fact that more men migrate to town to get jobs, whereas the women remain in rural areas and work on the farms: 47.7% men and 51.5% women in rural areas (NIS, 2017). This situation is rapidly evolving to the advantage of females because they constitute a majority of the urban population in Bamenda I, II, and III as well as Kumbo. It is becoming the same in the Tubah rapidly urbanising zone.

The age pyramid that shows a high number of population, especially people of working age, is a good potential for human resources. Consequently, the dependency rate (proportion of the economically inactive population to active population) is high in the Region (116 inactive persons: 100 active persons), particularly in rural areas to the advantage of the urban areas.

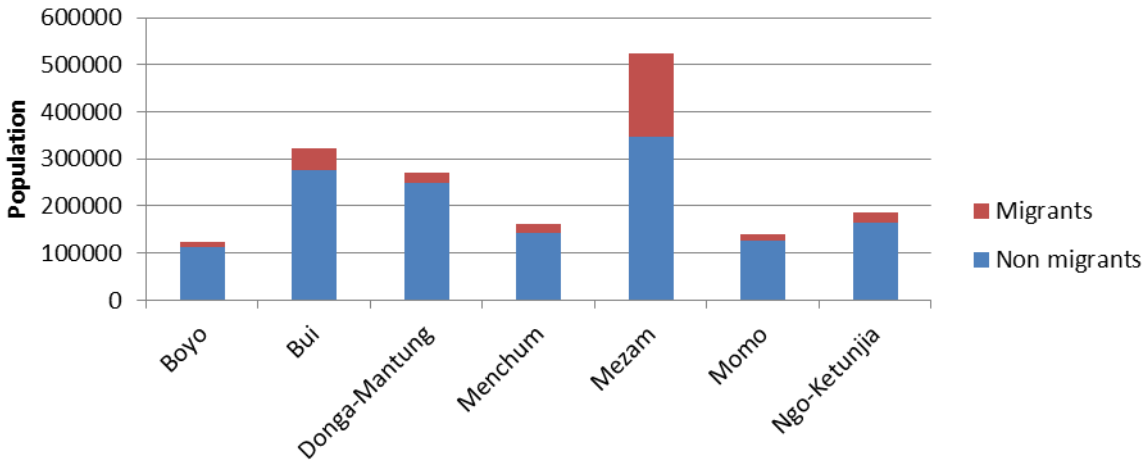
6.1.3. Population heterogeneity

The native population comprises a variety of ethno-linguistic groups. In terms of religion, Christianity and Islam are dominant. Christianity (Baptist, Presbyterian, Catholics, etc.) accounts for 80% of the religious population, while Muslims take less than 20%. A small percentage practices uniquely the traditional religion. Religion is a determinant factor in urbanisation for its impact on birth rate behaviour, urban health, urban development through school, and health infrastructure. In 2005 according to the 3rd GPHC, the Protestants were 49.3%, Catholics were 30.8%, Muslims were 7.6%, other Christians were 5.2%, and about 2.1% of the traditional religion.

From 1987 census data, 74% accounted for monogamous marriages while polygamy accounted for 26%. Religious bodies and structures have also been a driving force in the development of this area, especially in the areas of health and education in the urban areas.

The population of the North-West Region is a combination of varied ethnic groups strongly united in the whole urban geographical space, comprising the native population and a significant proportion of immigrants from other Regions and from other countries, particularly Nigeria, with whom the Region shares boundaries in the North and North-West. The 2005 census revealed that 18.15% of the population changed the place of residence with Mezam Division (with Bamenda as divisional and regional capital) taking the lead, and Boyo (with the most difficult topography of the Region) being the least (Figure 119). This goes to add to the demographic weight that Bamenda continues to carry on the rest of the Divisions of the Region.The table showing the divisions of residence can be found in the annex (part 1 section 3 Urbanisation and demography).

Figure 119: Variation in change of place of residence in the Divisions of the Region in 2005



Source: 3rd GPHC 2005, BUCREP

The trend also showed gender disparity between the Divisions in their change of residence in 2005

Table 79: Divisional index of residential mobility

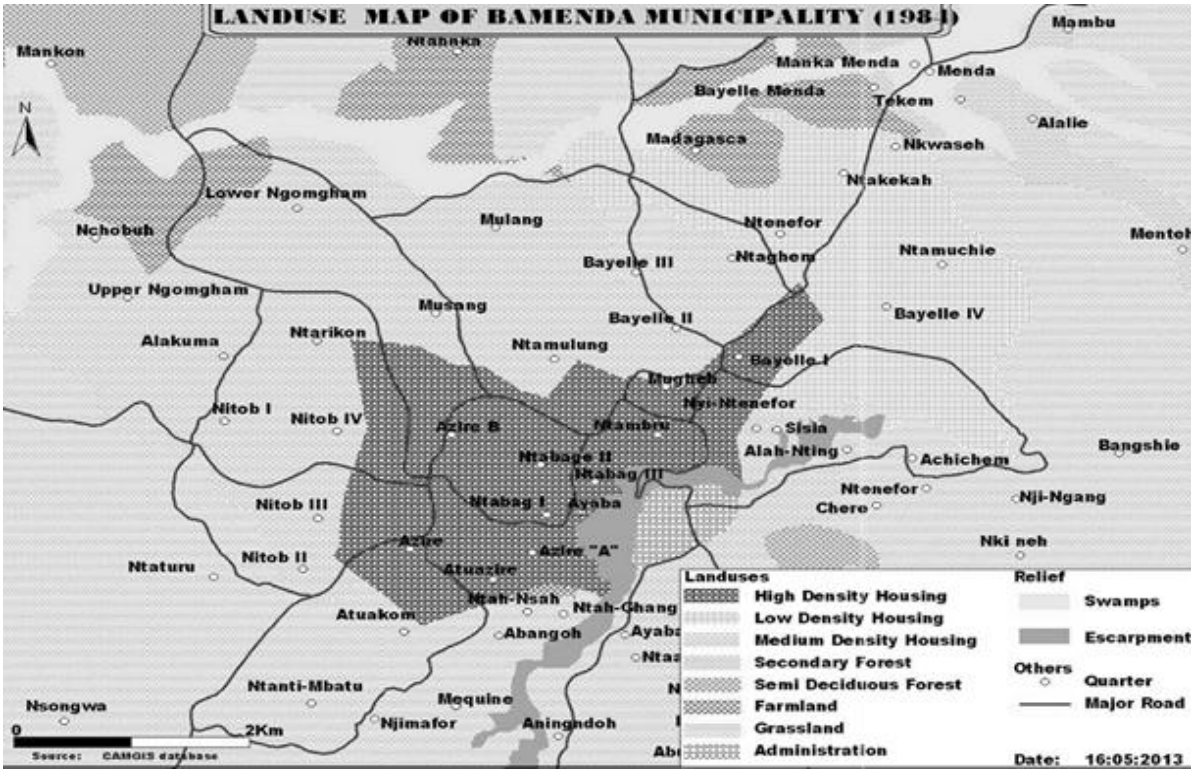
	Boyo	Bui	Donga-Mantung	Menchum	Mezam	Momo	Ngo-Ketun-jia
Males	9.68	13.91	8.35	12.99	34.29	9.86	12.03
Females	10.82	14.34	8.03	12.38	33.40	9.29	11.80

Source: 3rd GPHC 2005, BUCREP

Males were predominantly involved in urban-ward migration in all Divisions except for Boyo and Bui. The movement of people within the Region stood at 21,344 in 1987 (UNDP, 1999) and increased rapidly to 313,879 in 2005. This goes to increase the heterogeneous nature of the urban population so that Bamenda is a blend of the various neighbouring ethnic groups who give their cultural identity to the quarter of residence in Bamenda: Meta, Awing, Pinyin, Hausa, etc. Such quarters reflect this diversity in unity. The native population is a blend of ethnolinguistic groups like the Tikars that are also found in the West Region, the Widikum, Fulani and the Nso. These initially clustered around the centre of the town in 1984 when the economic crises that rocked the country were at its peak.

Land uses in Bamenda city council area are classified into residential, commercial, industrial, public and semi-public, transport networks, parks, play fields, open spaces, and agricultural land.

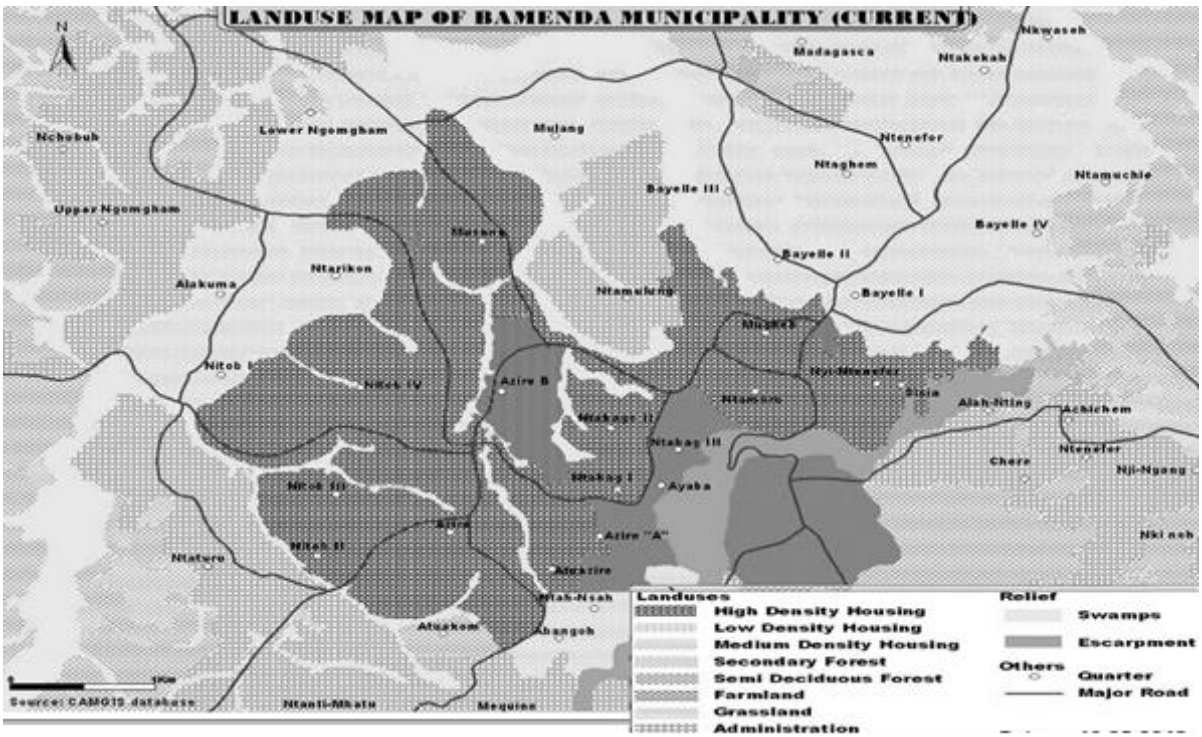
Figure 120: Land use of the Bamenda municipality in 1984



Source: Bamenda City Council Report, 1987

Other economic crisis like the closure of the Wum Area Development Authority (WADA), natural disasters, presence of health centres, large scale agro-production, some capital investment by the government make people migrate to more advantageous urban areas. This has led to an uneven population distribution and the land use to change radically by 2014.

Figure 121: Land use situation of Bamenda municipality in 2014



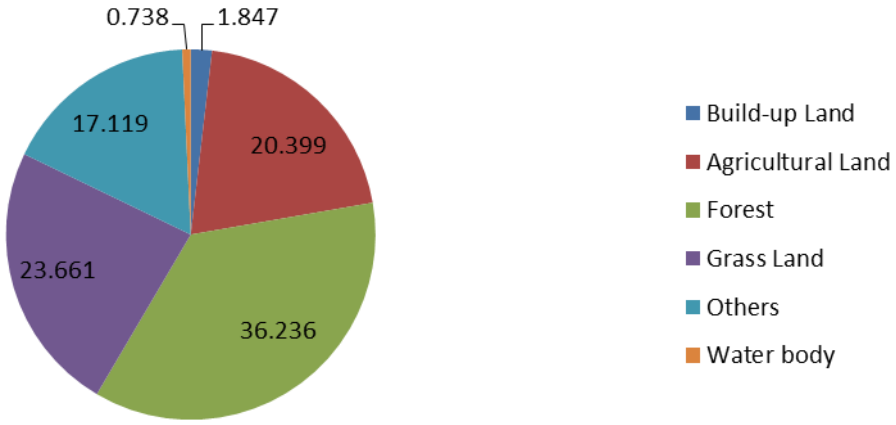
Source: Bamenda City Council Report, 2014

The key driving force of land use dynamics in Bamenda is population growth especially from migration within the Region, which is focused towards its Regional headquarter, Bamenda, for job opportunities and business in enterprises of small scale transformation of milk into yoghurt, slaughtering of cattle, transformation of feedstuffs into animal feed, wood works, metal works, tailoring, embroidery, carving and crafts, soap manufacture and fired bricks. The activities undertaken under tertiary sector include services offered by public service and private companies like government offices, banks and Micro Finance Institutions (MFI). These employment opportunities have remained very dynamic in Bamenda as:

- Food industries dominated by bakeries have risen from 2 in 1975 to 6 in 1984 and many more in 2018. Bakeries have had a production increase of 33% over the past years (Monographic report on the Development of the North-West Region, 1984, and fieldwork of 2018).
- Individual and institutional poultries specialized in the production of poultry products and day old chicks.
- Chemical industries with soap making like the International Soap Factory and FONAB Soap situated at Nkwen that produces soap for laundry. Though have closed by 2016.
- Printing Industry with a number of small printing presses dotted all over Bamenda town prominent among which are Longla Printing Press, Versity Printing Press, Nooremac Press and Prominence Printing Press, Unique Printers, Shilo Printers, Destiny Printers etc
- Building Industry for the manufacture of cement blocks are found all over the region; prominent among which are Longla Building and Block Industry, Atia's Enterprise, Tawah Building Company, Kilo and Bros Company and Mbengwi Monastry. More prominent ones employing in the Bamenda urban area are the Tawah, Kennely, Dreamland, etc. which operate integrated systems of building

This has pushed the outer limits of the built up area (Figure 120 and Figure 121) accelerating urbanisation towards the north of Bamenda but not matched in the other Divisions of the Region as the built up areas of the whole Region makes for less than 2% of the Region's area.

Figure 122: Land use of North-West Region in 2014



Source: GP-DERUDEP; LUMINOUS ENGINEERING & TECHNOLOGY SERVICES

6.2. Housing

6.2.1. Urban Morphology: distribution/crowdedness

Regulations to govern housing, land use and better planning towns are recent. Plots are generally sold at random as the urban population is increasing rapidly. The creation of the University of Bamenda and other crowd pulling institutions has increased the built up area and the urban population of Bamenda.

Table 80: Evolution of the built up areas of Divisions of the North-West Region

Division	Boyo	Bui	Donga-Mantung	Menchum	Mezam	Momo	Ngo-Ke-tunjia
Built-up land (in km²)	32.86	57.14	56.27	16.52	100.74	21.84	37.16
Total area (in km²)	1,592	2,297	4,279	4,469	1,745	1,792	1,126
Percentage of built up area	2.06	2.48	1.31	0.81	5.77	1.21	3.3

Source: NIS, 2015

The trend of built up areas for the Region with Mezam, Ngo-Ketunjia and Bui dominating is reflective of the quality of housing that is dependent on the issuance of building permits. Border Divisions like Donga-Mantung and Menchum appear to be low or only moderately built up (Table 80). Perhaps the surface areas covered by the Divisions or the presence of forest reserves.

There is a significant fluctuation in the building permits issued by the Regional Delegation and Divisions especially with Mezam where it decreased between 2013 before rising to a peak in 2015. The issuance of building permits is low in Menchum and Momo. This trend seems to be indicative of the dominant system of land ownership in each Division and the degree of urbanisation.

Table 81: Town planning certificates issued by the Delegations of MINHDU from 2011 to 2015

Issuing authority	2011	2012	2013	2014	2015
Regional Delegation	95	126	54	220	31
Boyo Delegation	-	63	90	96	153
Bui Delegation	43	52	23	160	146
Donga-Mantung Delegation	41	39	38	43	74
Menchum Delegation	6	10	12	11	-
Mezam Delegation	715	784	489	659	905
Momo Delegation	-	33	45	33	-

Source: Regional Delegation of MINHDU NW)

The extreme variation in the data (Table 81) may not necessarily explain the variation on the field but reflect the difficulties of data collection in this domain. Maybe differences and difficulties of application of ever changing regulatory texts could also be an issue especially in the largely non-urban areas where the population does not feel the particular obligation to comply with building permits. Most importantly, these permits cost at least 1 percent of the total construction cost and house area covered by the building. Perhaps the greater part of the population finds it more rewarding to invest such costs in erecting the houses especially those made up of local material than comply with official regulations.

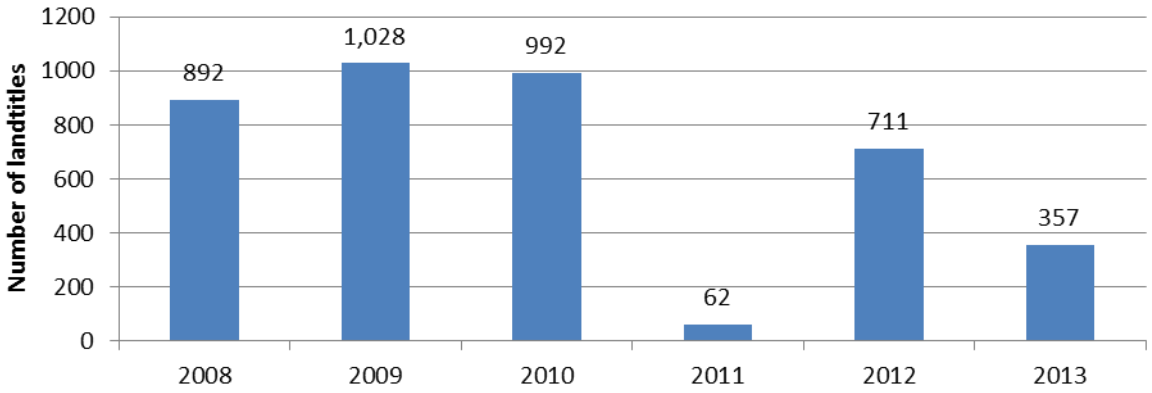
6.2.2. Urban housing conditions

In Bamenda city both the housing numbers and supply are inadequate. Most houses in Bamenda city are both for profit making and non-profit making especially those supplied by governments, families, and non-governmental organizations. Housing quality in Bamenda is dominantly of low grade in high density residential areas while high grade housing is found in low density residential areas. Commercial land uses are found in the Central Business District (CBD) where the houses are adapted for business shopping, commerce, offices, retail and whole sale shops. There are several market stalls in Bamenda at the

daily markets being Bamenda main market situated within the CBD, Nkwen market, Ntarikon market, Bali park market, Mile 4 Nkwen market, Mbengwi park market, and Mile 8 Mankon market.

This perhaps explains the relatively lower quality of housing in the other parts of Region apart of Bamenda.

Figure 123: Evolution of the number of land titles established in the North-West Region from 2008 to 2013



*The exceptionally low value for 2011 is probably a statistical error. Actual value is unknown but the graph shows a clear downward trend over the year

Source: Cameroon Statistical Yearbook, NIS, 2014.

The amount of construction work going on in town and the number of issued building permits allow us a conclusion to be made that most people go into illegal housing construction. There is however some good degree of compliance to good housing standards as the percentage that do not have legal documents for the occupied lodging has dropped to 61.2% in 2011 from 67.5% in 2006 (Table 82).

Table 82: Property security in Bamenda between 2006 and 2011

			North-West	Cameroon
2006	**Percentage of the population**	Have no legal documents for the lodging occupied	67.5	46.6
		At risk of being expelled from the lodging	8	11.2
		Have no security of lodging	68.2	51.6
		Expelled from their lodging during the past 5 years	5.9	4
	Number of household members		1,321	21,538
2011	**Percentage of the population**	Have no legal documents for the lodging occupied	61.2	59.8
		At risk of being expelled from the lodging	4.2	9.8
		Have no security of lodging	62.6	64.7
		Expelled from their lodging during the past 5 years	2.4	35
	Number of household members		6,357	70,882

Source: NIS, MICS3, 2006; DHS-MICS 4, 2011

Households are considered as not having security of lodging when they do not have any law document (lease, contract, ownership title), or when household members feel at risk to be expelled from the lodging

The drop from 5.9% in 2006 to 2.4% (less than half) in 2011 being just five years of those expelled from their lodging during the past 5 years is indicative that urban constructions are generally on the rise in Bamenda as urban dwellers endeavour to have a lodging that is increasingly in decent form. Housing decency of houses shows the inverse relationship with national trend as it is decreasing from 68.2% to

62.6% while the national trend is on an increase. Logically therefore, the number of household members more than quadrupled between 2006 and 2011 whereas the national trend barely tripled.

Most of the walls of the houses constructed in the North-West Region are in solid materials (mud blocks, cement blocks, stones, burn brick, compressed brick) while their roofs are in tiles, aluminium sheets (zinc) and special grass.

Table 83: Durability of lodging percentage of households and percentage of the population of households occupying lodgings considered as non-durable

			North-West	Cameroon
2011	**Percentage of households**	Floor of lodging is earth or sand	50	43.5
		Lodging is in poor state[1]	9.2	13.9
		Lodging is vulnerable to accidents[2]	0.1	1.1
		Lodging is situated in a risk area[3]	0	0.1
		Lodgings considered as non-durable[4]	6.7	10.1
		Number of households	1,258	14,214
	Percentage of households occupying non-durable lodgings [4]		4.2	9.8
	Population of households		62.6	64.7

Source: NIS, DHS-MICS 4, 2011

1. The lodging needs at least two types of repairs for the following reasons: cracks or holes in the wall, no windows, window glasses broken, holes in the roof, incomplete roof, and non-security door.
2. Existence of narrow passages between houses (instead of roads /streets) with numerous electrical cables and or high tension cable connected to the nearest post.
3. The lodging is situated near four or more dangerous spots: landslide zone, liable to flooding zone, bank of river, stiff flank of a hill, pile of wastes, industrially polluted zone, railway, power station, elevated bridge.
4. A lodging is considered non-durable if: a) the floor of the lodging is on earth or sand (row 1) and the lodging is in a poor state (row 2), or b) it is vulnerable to accidents (row 3), or c) it is situated in risk areas (row 4).

This explains why lodgings considered as in poor state, situated in a risk area and considered as non-durable in the North-West Region are far below the national percentages. On the whole therefore percentage of the population of households occupying non-durable lodgings is only 4.2% (being less than half) of the national percentage that is 9.8% (Table 83). Unfortunately, this individual effort by the urban dwellers in the Region is not matched by the provision of social infrastructure and services such as drinking water, collective sewage disposal systems and sanitary installations.

Table 84: Precarious housing percentage of households and percentage of the population of households whose habitat is precarious, according to some socio-demographic characteristics, Cameroon socio-demographics

		North-West	Cameroon
Percentage of households	Lodging is considered as non-durable	6.7	10.1
	Have no security of lodging	64.3	64.6
	Lodging is overpopulated[1]	16.7	16
	Have no harnessed source of water	34.2	29.2
	Have no harnessed sanitary installations	76.3	64.1
	Occupying precarious habitat[2]	89.8	85.3
	Number of households	1,258	14,214
Percentage of households living in a precarious habitat		88.3	84.7
Figure of the population of households		6,357	70,882

Source: DHS-MICS 4, 2011

1. A lodging is considered as overpopulated, when there are more than three persons per room used to sleep.
2. A household is considered as occupying a precarious habitat if one of the 5 preceding criteria (row 1 to 5) is verified

This institutional deficiency in basic service provision has increased the percentage of the population of households living in habitat of precarious nature above national percentage (Table 84).

Table 85: Some indicators on household lodgings between 2001 and 2007

Indicator	2001		2007	
	North-West	Cameroon	North-West	Cameroon
Percentage of households having access to dust bins or garbage cans.	14.5	17	5	20.6
Percentage of households living in lodgings with definite material (wall, floor, roof).	14.5	22.2	43.1	39.2
Average number of living rooms.	2.4	2.5	1.8	2
Percentage of households that are victims of cuts due to non-payment of bills (within the past 12 months)	26.6	20.4	25.4	16.8
Percentage of households having an arrears of at least one month of unpaid house rents (within the past 12 months).	53.6	44.7	28.1	28

Source: INS, ECAM 2, ECAM 3

In the years following the economic crises (late 1990s and early 2000s) Cameroon and its Councils have been in difficulties of providing for basic services because of the Structural Adjustment Programs of the World Bank which limited access to electricity and water to less than half of the population of the Region up to 2007. However, the situation improved towards 2014 resulting in a significant access to electricity and water as house ownership continues to be dominantly self-owned and very low free accommodation (for top civil servants at Government Residential Area - GRA).

Table 86: Some indicators of habitat and access to certain commodities

Indicators		North-West				Cameroon			
		2001	2005	2007	2014	2001	2005	2007	2014
Tenure	Owner	70.8	70.8	66.5	65.3	63	63.5	58.9	73.6
	Tenant	13.9	20.7	20.1	29.4	23.8	29	29.8	21.6
	Free accommodation	15.3	8.5	13.3	5.3	13.1	9.7	11.3	5.5
Access rate to certain commodities (in %)	Electricity	32	31.2	31	49.6	46.1	49.8	48.2	56.8
	Potable drinking water	48.4	54.6	52.2	65.6	50.5	52.7	45.3	61
	Flushing toilet	4	5.3	4	-	7.3	7	6.8	-

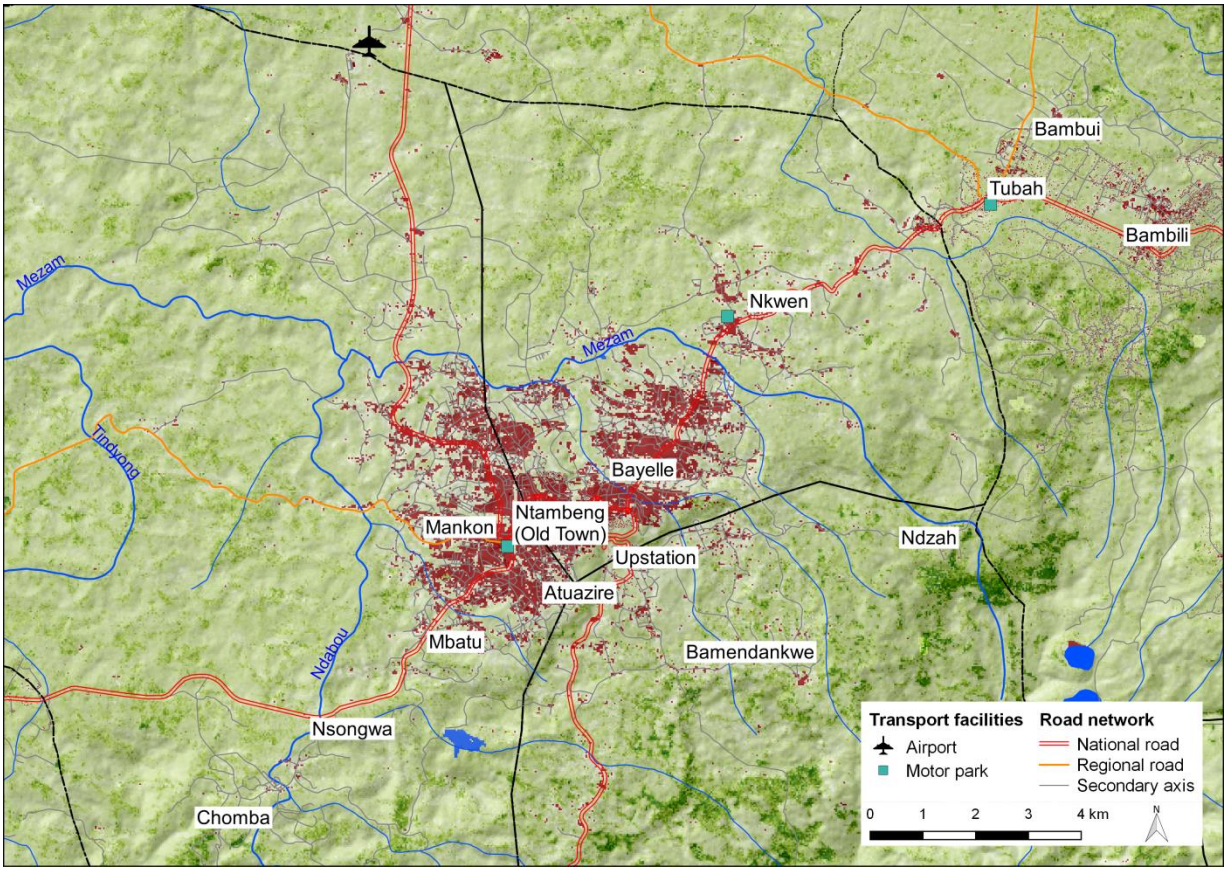
Source: NIS: ECAM 2 - 2001; EESI 1 - 2005; ECAM 3 - 2007; ECAM 4 – 2014, MICS 5 – 2014

The fluctuation in the percentage of free accommodation (Table 86) reflects government policy and ensuing instructions with regards to the free lodging of some civil servants from the World Bank's Structural Adjustment Programs of the economic crises period.

6.2.3. New growth points

Urbanisation in Bamenda is composed of the following villages of Mankon, Nkwen, Mbatu, and Nsongwa villages that make up the down town in the north while Bamendankwe makes the Station of Bamenda to the south (Figure 124).

Figure 124: Localities of the urban area of Bamenda



Data source: based on OSM data, NIC data, and Tree Cover data from Landsat 7 images (stripes caused by a technical failure in the Landsat sensor (SLC-Off))

The 1985 Master Plan of Bamenda identified and recommended the need for a cottage industry, and allocated an industrial zone after Mile 4 bridge in Nkwen. There is no implementation of the proposed master plan as the industrial zone site is occupied by a soap factory, a slaughter house, few poultry farms, farms and residential buildings and Mile 4 Motor Park.

The effects of urbanisation in Bamenda reflect

- The congestion in the inner cities pushed the population to seek for more quiet lodging outside of the town centre
- Population growth from increase in birth rate and better living conditions caused a reduction in the death rate and thereby the increase in the urban population which caused a horizontal growth and development of the town.
- Rural exodus with large population influx into Bamenda to look for jobs which caused a rapid depopulation of the rural areas and surrounding towns.

6.2.3.1. Mbengwi town

Mbengwi that is the Divisional capital of Momo Division started with preliminary survey of the site acquired from some villagers who owned landed property after independence. At the same time other areas were earmarked for the development being Batibo in the now Batibo subdivision and Guzang that started as a grouping of small and scattered communities but have today grown to be the most populated centres of the subdivision. Before 1969, the divisional headquarter was at Gwofon. Some political considerations and geographical obstacles later moved headquarter to Mbengwi. Gwofon then was abandoned as the old government station with distorted buildings but with a planned layout. Between 1969

and 1973 urbanisation in Mbengwi was higher than the national average because it was a new town in all forms of a government station. At the same time political activities prior to the national referendum, personalities were involved in the promotion of development in this station, and most especially it was the first and only town in the Region to have a development plan. Hundreds of workers were transferred to work in the new offices and so rapid growth was obvious. Starting with a few native buildings at Mile 19 on about 12 ha, Mbengwi town grew to about 1,000 ha even though the Development Master Plan that had been prepared covered only 600 ha. The Prostitution Act of 1972 had a great impact on the population as the population more than doubled and as a consequence, all vacant buildings were occupied giving rise to housing development. As such urbanisation in Mbengwi spread rapidly to Mile 18, Mile 17 and Mile 16.

6.2.3.2. Nkambe town

Nkambe was the headquarters of Donga-Mantung Division. It was established by the English Colonial Masters as the Government Station in 1949, but before then, the area around the existing market and Chief's palace including neighbouring villages around were in existence. The establishment of the Government Station in 1949 and the construction of the Nkambe General Hospital in 1952 upgraded Nkambe to be a Divisional Administrative Headquarters in the Nkambe and Nwa Sub-Divisions with headquarters at Nkambe and Nwa respectively. Since then, Nkambe has maintained its Divisional status under the then West Cameroon State. In 1968, the Division received a new name – Donga-Mantung and in 1972, it became a division under the newly created North-West Province with headquarters in Bamenda just to fit with the colonial provincial set up. The urban morphology of Nkambe town reveals very little spatial growth in activities in the Government Station. Located 4 km from the town centre is the Government Residential Area consisting mainly of non-native civil servants of high status. The random acquisition of land has resulted in a leap-frog type of development whereby pockets of vacant lands separate developed areas lacking in infrastructure and basic facilities. Nkambe presently has a good number of government offices though still fails to attract major development owing to the remoteness. Between the Station and the town is Binju a native village where coffee, eucalyptus and fruit trees are grown by the indigenes. Some offices are now being set up in this area causing an upsurge of spatial growth taking a linear or ribbon pattern. The construction of Government Secondary/High School on the way to Tabenken is a magnet to induce development and growth in this direction.

6.2.3.3. Kumbo town

Colonial administration grouped Nso, Bafut, Ndop, and Native Authorities to the Bamenda South Eastern Federation of Native Authorities in the 1940s. The Nso Native Authority split up from the union in 1960 and by 1st April 1961, the Nso Area Council was created which administratively fell under a Subdivision. Kumbo rose to a Subdivision on November 4th 1963 and became a full division on December 15th 1966. Evolutionally, the Kumbo Council was created in 1977.

6.2.3.4. General growth trends

The general trend is the movement from the rural to the urban centres.

Table 87: Urban population of the North-West compared to Cameroon in 2005-2010

Region	2005			2010		
	Male	Female	Total	Male	Female	Total
North-West	314,286	327,272	641,558	369,693	390,766	760,459
Cameroon	4,276,130	4,238,808	8,514,938	5,029,993	5,061,179	10,091,172

Source: 3rd GPHC, BUCREP, 2005

Putting this side by side with the increase in the birth rate, healthy conditions of living consequent upon a reduction in the death rate, it is anticipated that by the year 2050, most of our present urban centres

like Bamenda, Kumbo, Wum, Nkambe and Mbengwi shall increase their present population by about 50%, while towns like Ndop, Bali, Batibo, Fundong, Jakiri will become heavily populated urban centres.

Main trends show that

- Bamenda is the main centre of economic and administrative activities.
- The population will steadily increase.
- With urban growth exceeding rural growth, the urbanisation rate will increase.

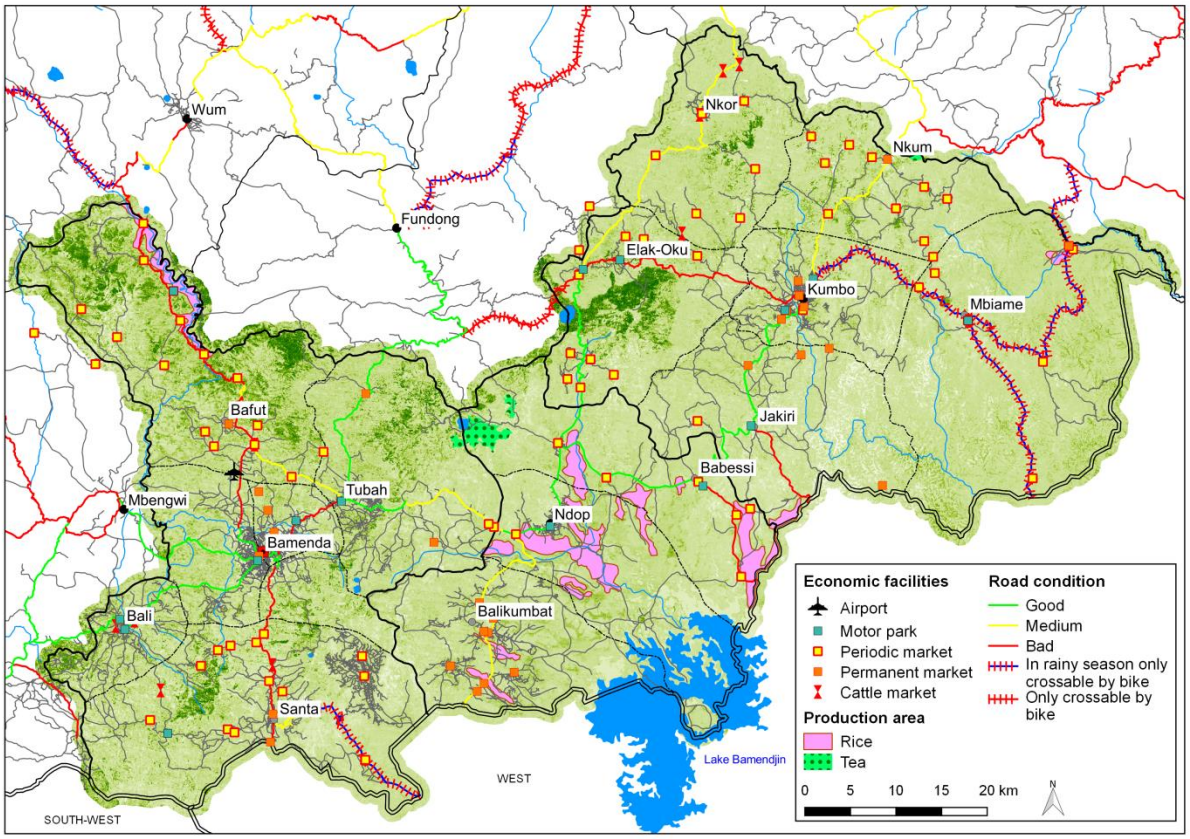
There are no major industrial establishments in the Region. There are however various small and medium size ventures which are promising hubs for urbanisation which include new growth points mainly along the north east axis of Bamenda towards Kumbo (Figure 125):

- U.N.V.D.A. which undertakes the production and processing of rice at Ndop.
- Ndu Tea Estate: based at Ndu in Donga-Mantung Division, the C.D.C. grows tea using about 1,042 workers. During the year 1983, this estate realized a turnover of 81,685,000 francs.
- Honey Processing: the Oku Honey and Handicraft Co-operative operating since 1972 for handicraft and 1980 for the processing of honey. The society has been able to realise 4,303,785 francs CFA from the sale of honey in 1984.
- Bessi Soap: this project is found in Batibo Sub-Division in Momo Division. It was started in 1972 but due to financial difficulties and the availability of raw materials, its progress has been limited to the artisanal stage.

Handicraft production is an old occupation and the main source of livelihood to many people in the Region. This activity can be placed under two categories. The first being individuals who produce and sell their articles directly. The others organise themselves into production units and market their products through co-operatives. In Bamenda, there are two co-operatives: the Prescraft, is a Presbyterian Mission undertaking and the Traditional Handicraft Co-operative Society Limited with branches in Nkwen, Bafut, Bamessing, Bambili, Big Babanki and Babungo.

These production areas where urbanisation begins have variable points of arrival and distances between Bamenda and the headquarters of the Divisions but which is mainly a function of the state of the road between these distances. The table of distances between Bamenda and the headquarters can be found in the annex (part 1 section 3 Urbanisation and demography).

Figure 125: The urban fabric of the North-West Region



Data source: based on data from OSM, NIC, PNDP, Tree Cover from Landsat 7, and field survey IU/CPAC/geomer 2018

6.2.4. Housing sprawl direction/barriers

Table 88: Projected Housing Need in Bamenda by Subdivision

Year	Bamenda I			Bamenda II			Bamenda III		
	Population	Housing Need		Population	Housing Need		Population	Housing Need	
		Urban	Rural		Urban	Rural		Urban	Rural
2005	28,359	4,617	2,473	184,277	39,803	6,267	110,253	22,963	4,600
2011	29,749	4,843	2,594	193,307	41,753	6,574	115,655	24,088	4,826
2016	31,207	5,081	2,721	202,779	43,799	6,896	121,322	25,269	5,062
2021	32,736	5,330	2,854	212,715	45,945	7,234	127,267	26,507	5,310
2026	34,340	5,591	2,994	223,138	48,196	7,588	133,503	27,806	5,571
2027	36,023	5,861	3,141	234,072	50,558	7,960	140,045	29,168	5,844

Source: Consultant HTR and National Census 2005

Table 88 shows the population and the estimated housing need for each subdivision. New housing units needed from one period to the other can be achieved by subtracting the current figure from the previous one. Therefore, the total number of new housing units required from 2005 to 2027 for Bamenda I will be 1912; Bamenda II will be 12,448; and Bamenda III will be 7,449 housing units.

6.2.5. Social housing policy

The above characteristics show that the housing component of urbanisation in the Region is not well developed. This explains why the government of Cameroon through the Ministry of Housing and Urban

Development partnership with the Chinese have within the Three Year Development Plan of the acceleration of economic growth started the low cost houses or multi-residential houses in Banjah in Bamenda with a 10% execution rate (Le Citadin Magazine, MINUH, March 2018).

6.3. Poverty level indicators

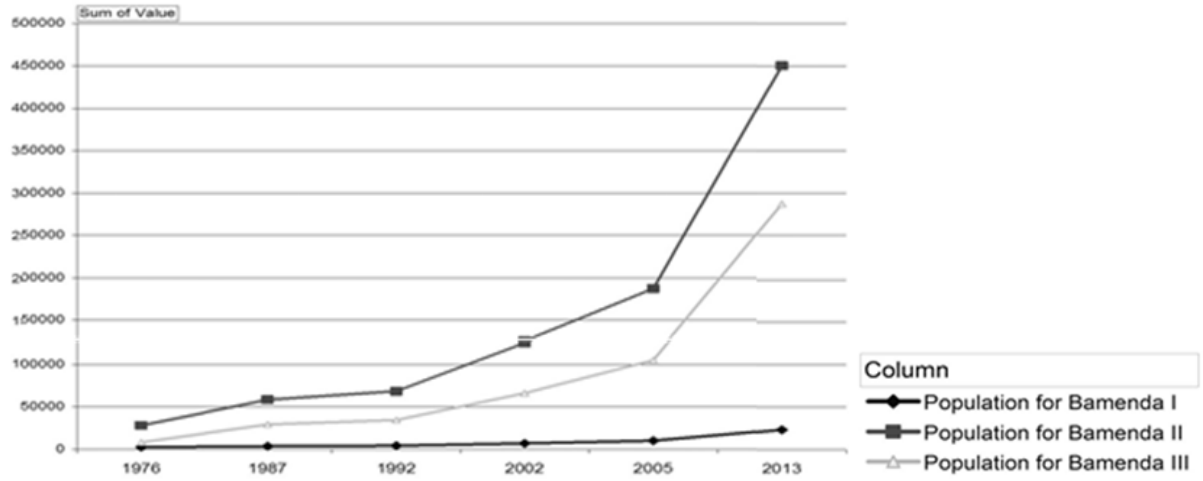
The Region is highly handicapped economically especially as it concerns industries (secondary sectors). A majority of the commercial enterprises found in the North-West Region are composed mainly of sole proprietorship doing principally retail trade.

6.3.1. Quarter functional classification

The planning and development classification is defined by Decree No 2008/021 of 17th January 2008 creating the Bamenda City Council (BCC), which is made of three Sub-Divisional Council Areas. These Sub-Divisional Councils are Bamenda I, Bamenda II and Bamenda III. Bamenda I Sub-Divisional Council is made up of Bamendankwe land area, while Bamenda II Sub-Divisional Council is made of Mankon, Nsongwa, Chomba and Mbatu land areas, and the Bamenda III Sub-divisional council is made of Nkwen and Ndzah. As a regional headquarter, Bamenda was exposed to significant land use transformation which was brought about by the influx of migrants.

By 2014, significant changes were observed for the major land uses – residential land use moved from 42% in 1984 and now occupies 53% of the total land use area. This is followed by agricultural land use which occupies 34%. Conversely the surface area covered by wetlands reduced from 27% in 1984 to 6% in 2014. It is evident that residential and agricultural land uses have encroached and converted these wetlands located towards Nkwen in Bamenda III. Such changes signal the colonisation of wetland environments which reflect the rate of urbanisation in Bamenda. This is reflected by the population growth rates for the districts in Bamenda (Figure 126).

Figure 126: Population growth in Bamenda

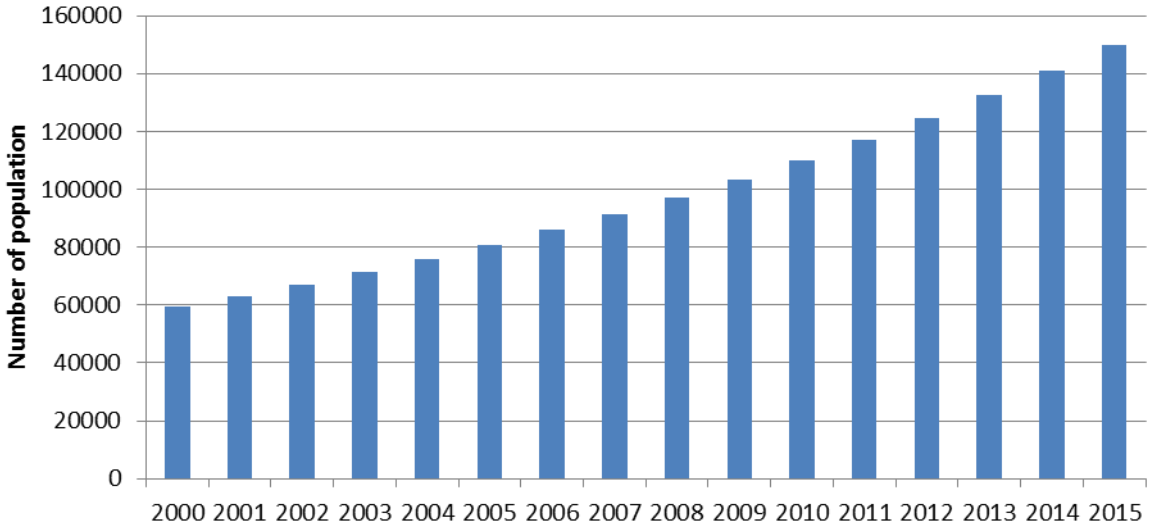


Source: Bamenda City Council, 2014

Bamenda I (Bamendankwe) is stagnant in its population growth so slow urbanisation since it is limited by the high concentration of government offices and the difficult hilly topography. There is rather a rapid urbanisation in Bamenda II towards Mankon and Bafut with abundant fairly level land on the low crystalline plateau spreading along the axis to Bali and Mbengwi. Most exponential urbanisation is witnessed and more expected in Bamenda III being the Nkwen-Bambili extension of the north east of Bamenda where newly created higher education institutions (St Louis in Mile 3 Nkwen, Bamenda University of

Science and Technology at Mile 6, National Polytechnic of Bamenda, in Bambui, and the University of Bamenda in Bambili that passed from 2 to 10 establishments between 2011 and 2018).

Figure 127: Population evolution in Bamenda III



Source: Bamenda III Council Development Plan, 2012 (designed from table)

The table showing the evolution of the population of Bamenda III can be found in the annex (part 1 section 3 Urbanisation and demography).

The schools range from nursery, primary and secondary schools. Here the Catholics, the Baptist and the Full gospel mission have contributed by constructing schools accommodating over 4,000 pupils and students. The number of schools increased from 15 to over 50 schools between 2,000 and 2015 (Bamenda III Council Development Plan, 2012). Population increase has been accompanied by an increase in land speculation resulting to an increase in land value around the city. This has pushed many people to acquire cheap and marginal lands - wetlands. The quest for land from the wetlands is as a result of the necessity to build more houses to accommodate the fast increasing population. In the process of construction, the wetland ecosystem is destroyed through the cutting of trees and the killing of the habitats of some wetlands. Thereafter, the area is drained and backfilled with ground for buildings to be erected. Still in the same way with the rapid growing population these wetlands are over exploited for farmlands and other beneficial activities. Deforestation and wetland exposure (26.3%), increase in construction of houses (25%), drainage and backfilling (17.5%), over exploitation of wetlands (16.3%) and dumping of household waste (15%) were the key forces operating through land use change to cause wetland degradation.

The threats for this rapid expansion especially for the newly created Bamenda III are multiple:

- No provision of safe infrastructure for pedestrians
- Mixed infrastructure for vehicles, pedestrians, motorcycles and bicycles
- Rising traffic congestion at critical junctions and stretches of busy roads especially towards the north-east of the town so loss of travel time
- Rising incidence of road accidents especially with motor bikes
- Total inexistence of mass transportation services even towards student occupied peripheries of the north east
- Absence of organised system of managing sewage and no planned collective sewage system
- Occupation of vulnerable sites especially Sisia and Abango areas

All forms of manufacturing activities whether light, medium and heavy earmarked for:

- Bayelle Menda (Mile Four) extending across the stream to the new site for Bamenda stadium is designated for light industries such as furniture, food processing, building material, parts manufacturing, pharmaceutical, soap manufacturing, printing press, rice and saw mills, motor garages, etc. This area has been earmarked for industrial establishment and some factories are existing on the site. All activities of this nature found within the city have to be relocated to this site or at Nitop I along western bypass.
- Alankie and Altakoh areas are suitable for medium and heavy industries. The area is accessible from Mbengwi road, and it is at the outskirts of the city whereby the city is free from any form of pollution. Site is chosen taking into consideration the wind direction and the population density.
- Special considerations have been made to relocate all motor repairs garages to: Mile 90 Nsongwa, Mile 4 Nkwen, and Mile 1 Bamenda. These areas are accessible for their customers.

City council buildings are designed with landscape elements. Access to the City Council office precinct is designed to be through a north by-pass dual carriage road from Mile 4 Nkwen through Mulang, Ntarikon to Mbatu, Chomba and Nsongwa axis. It is linked to secondary distributor roads to the city centre through Ntamulung.

6.3.2. Quarter age classification

In terms of origin, before 1961, Bamenda town was basically Old Town (Nta-Mbang) on an area of just 30 ha. Also called Abakwa, the town grew because of and around the old market which later was in 1965 moved to the present main market site because of lack of space for expansion, dilapidating structures and the slum nature of the buildings. Since 1965 there has been a rapid growth of commercial activities around it forming a commercial layout known as independence area. Simultaneously Bafreng (now Nkwen) and Mendankwe were also developing. The growth in Mendankwe was more because it was the seat of the colonial government. Development at the Mendankwe was more collective and administrative in nature than individual or private as in the other parts of Bamenda. The Nkwen New Layout also emerged in 1962 and extension of the built up area brought about a fusion with Bafreng and Abakwa or Old Town. This larger urban space then spread to other parts of the present day Down Town so that neighbourhoods emerged such as Atuakom, Atuazerie, Nitob I and II and Meta Quarters that became a single unit. The area towards Nkwen also expanded with organised development along Foncha Street and the road to Banjahbecame attractive to urbanisation. Urbanisation also continued towards River Mezam in Mankon marking the western barrier to the urban front around colleges such as Sacred Heart College that moved to its present site in 1960.

Bamenda centre already stretched beyond Old Town in the early 1980s. This area also known by the name Ntambag II and III experienced a high population bump as was the case with quarters like Azire, Musang, Mougheb and Bayel. The Government Residential Area (GRA) was moderately inhabited. The newly occupied areas were amongst others Ntarikon, Nitop, Atuakom, Ngomgham, Ntambesi and Mendankwe. The development of Bamenda happened very quickly over the last two decades. This growth has in every sense profoundly altered the cityscape. From 1982 to 1992, the spatial evolution was in the low density neighbourhoods inhabited in 1982. Accessibility has also played an important role in extending the city opening. Many secondary roads have encouraged the extension of linear habitat around these roads. Since 1992, the urban area of Bamenda has continued to spread in all directions: the north-west it extends to Alamatu, crossing the north-east to Mulanga and Ntenefor to six Nkwen Mile: Ntatru, Atuakom, high Ngomgham, Bayele III, IV and SisiaAbangoh. The area now known as GRA extension, with part of Mendankwe now incorporated in the urban space.

6.3.3. Facility distribution/density

Of over 6,487 enterprises counted in the Region in 2009, some 82.34% being 5,342 (Table 89) are within the tertiary economic sector being generally shops of various sizes. More than half (3,741) of these largely informal sector tertiary enterprises are in Mezam with the highest concentration in Bamenda making it a mega informal city of chaotic activities where hundreds of transformative industies determine its economic primacy role.

Table 89: Enterprises and establishments by division and by sector of activity in 2009

Division	Primary	Secondary	Tertiary	ND	Total
Bui	2	57	665	5	729
Menchum	1	9	74	-	84
Boyo	2	70	195	-	267
Mezam	8	837	3,741	39	4,625
Ngoketunjia	2	27	190	-	219
Momo	1	24	170	-	195
Donga-Mantung	1	59	307	1	368
Total	17	1,083	5,342	45	6,487

Source: NIS/RGE 2009

The precarious and low income issuant of these largely small scale shopping does not permit individuals and households to survive within the urban areas.

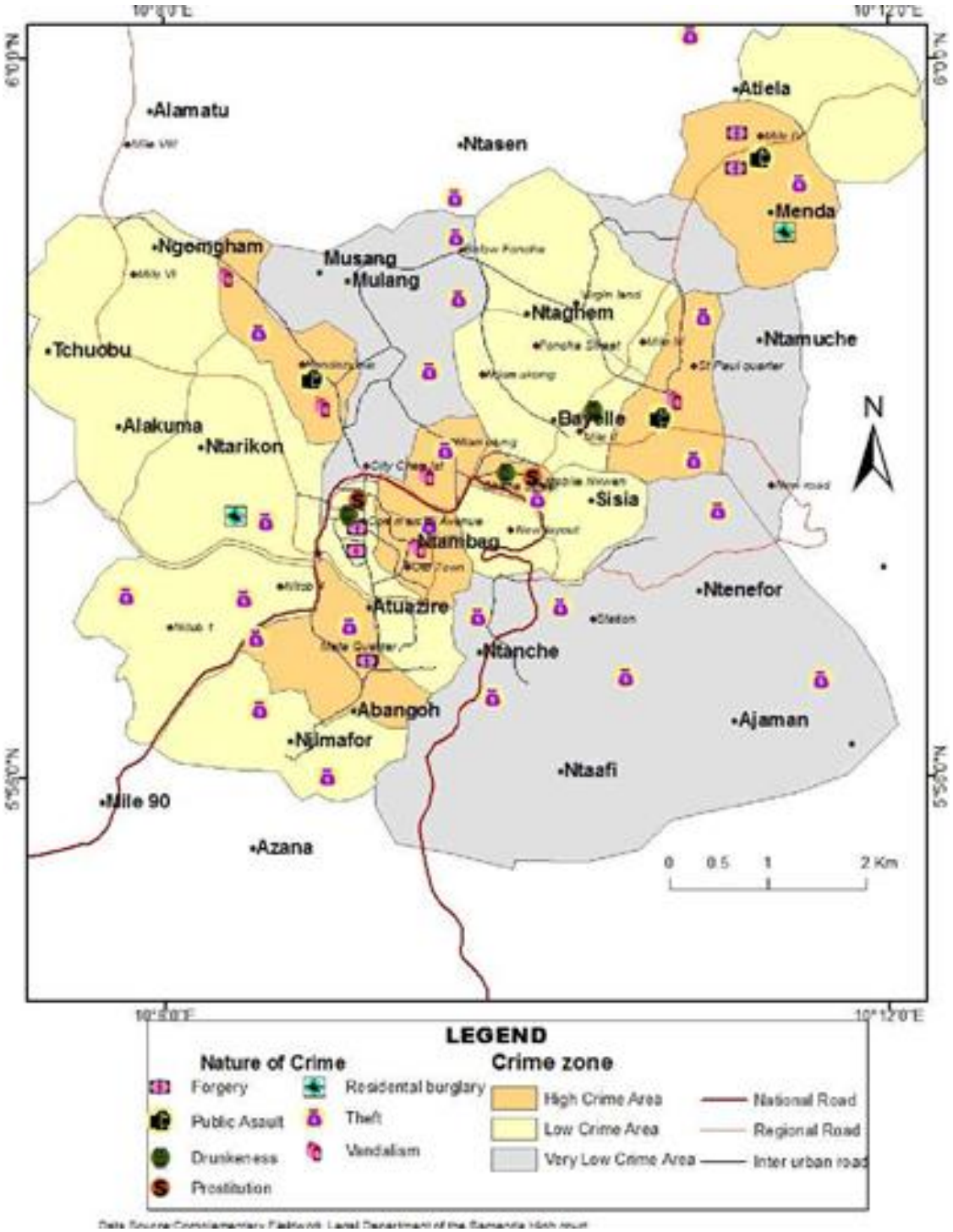
Table 90: Indicators of poverty between 1996 and 2014

Indicators	North-West				Cameroon			
	1996	2001	2007	2014	1996	2001	2007	2014
Proportion of the population living below poverty line or poverty incidence (in %)	66.0	52.5	51.0	55.3	53.3	40.2	39.9	37.5
Poverty line (in FCFA per day per adult equivalent)	-	-	-	-	405	637	738	931
Annual average per capita consumption expenditure (in FCFA)	183,500	278,114	273,495	-	236,800	367,423	327,436	-
Average annual expenditure per adult equivalent (in FCFA)	219,300	329,654	367,278	418,110	275,300	438,773	439,787	635,345
Total number of households	-	395,749	444,856	-	2,174,916	3,120,935	4,069,791	-
Average household size (persons)	-	4.5	4.1	-	5.9	5.0	4.4	4.5

Source: NIS, ECAM 1, 1996; ECAM 2, 2001; ECAM 3, 2007; ECAM 4, 2014

Such instability in sources of income has thus triggered a series of urban vices and criminality that is spatially unequal in type and intensity which is a function of the urban characteristics of the quarter.

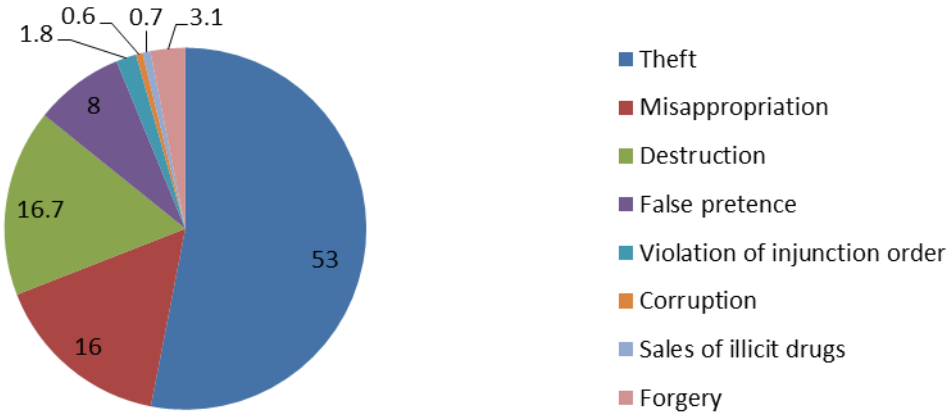
Figure 128: Spatial distribution of types and intensity of criminality in Bamenda



Source: Complementary Fieldwork of the Legal Department, Bamenda high court 2016

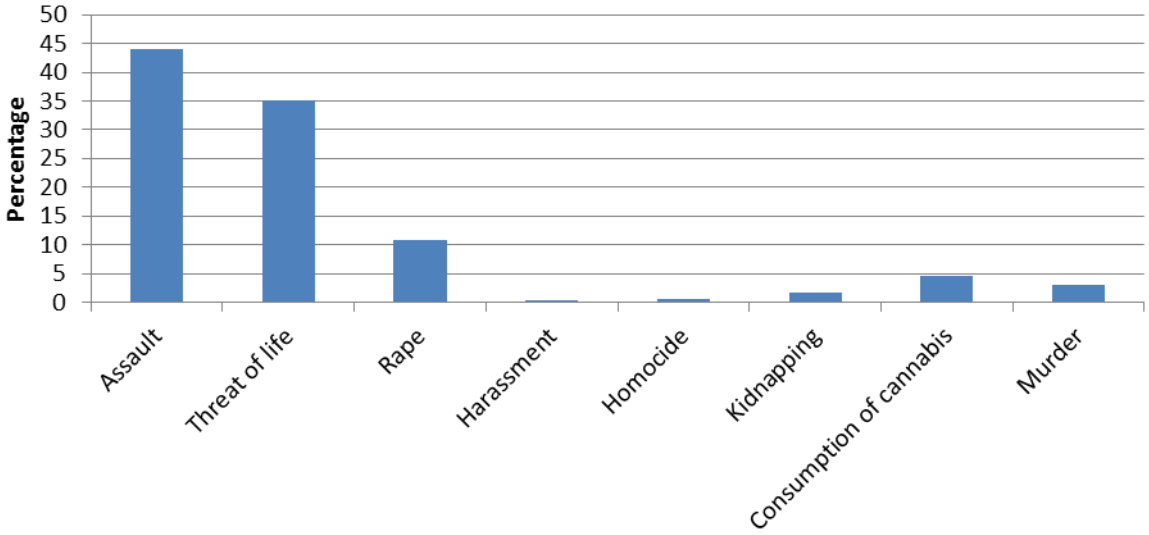
The lead crimes appear to be theft, assault and misappropriation which denote the quest for survival most often by those who are unable to find a means of survival in the urban area (Figure 129). There are fewer crimes that do not reflect poverty as the cause such as homicide, consumption of cannabis and others.

Figure 129: Types of property crime in Bamenda



Source: Legal Department of the Bamenda High Court, 2016

Figure 130: Urban crime frequency in Bamenda



Source: Legal Department of the Bamenda High Court, 2016

Most crimes are poverty rooted with the need to acquire a means of survival (assault and threat of life totalling 79.08%) while those not related to the standard of living are ranked very low.

Information on poverty based on the ECAM 4 data conducted in 2015;

- Poverty index 37.5% compared to 39.9% in 2007.
- Household consumption 20% of the rich consumed ten times more than 20% of the poor.
- A 5.5% annual growth rate and an inflation rate of 5.3%

6.4. Assessment of the situation in urbanisation

Table 91: SWOT summary of demography

*SWOT summary**: Demography***	
STRENGTH	**WEAKNESSES**
• Current urbanisation is a bipolarity between Bamenda in Mezam and Kumbo in Bui • The number of towns becoming urban • Population density is about 99 inhabitants per km^2 compared to the national average of 37.5 • The city is expanding into rural settlements or suburbs in Mankon, Nkwen, Mbatu Bamendankwe, Ndzah, Chomba and Nsongwa areas as the population of the city is growing • An extreme youth majority: More than half of the population is less than 20 years (56.8% in 2012) • For the age group of 40 – 44 in the year 2018, the number of females is more than that of the male • The urban population comprises a variety of ethnolinguistic groups: combination of varied ethnic groups strongly united in the whole urban geographical space	• Government stations (colonial towns) either declined or stagnated. More than half of the towns (being 20 out of 31) as of 2005 were less than 10,000 inhabitants which correspond mainly to the sub divisional headquarters • Mezam Division is the densest Division with 300.5 inhabitants per square kilometre. Some 18.6% of the population of the North-West Region lives in Bamenda • The growth of the city is agglomerated along with main access to the city. Bamenda needs new districts (probably towards the north east towards Tubah) and cultural centres of conviviality • A population pyramid that is broad at the base: children aged less than 15 years was situated at 44% in 2014. Old persons (60 years and above) were 5.5%. High dependency ratio: short term need to provide youth social facilities • Sex ratio of the Region has been decreasing over time from 92.1% in 2005 to 90.2% in 2018, estimated to be 88.1% in 2025
OPPORTUNITIES	**THREATS**
• An increasing population density of the Region over time as it increasing from 104.3 inhabitants /km^2 in 2010 to 140.4 inhabitants /km^2 in 2025 • Expansion from the city Centre is geared towards main access in the east, west, and north and south-basically along Bamenda - Akum, Wum, Bambui, Mbengwi, and Bali roads. Opportunity to develop an enhanced (double way) or peripheral road system in the southwest direction (along the Trans-African road axis) and northeast (towards Tubah) with possibilities of developing mass transport systems. • In 2014, 44% of the population consisted of persons less than 15 years old, and more than half of its population was less than 17 years old • Dominance of the female life expectancy over that of males but adult working population is divided into 47.4% men compared to 40.4% women in the urban areas of the Region • Religion is a determinant factor in urbanisation for its impact on birth rate behaviour, urban health, urban development through school and health infrastructure	• Urban areas around Bamenda and Kumbo appear to be swallowed up as they are growing slower. There is an urban development primacy of Bamenda in the region • Population density is about 2 times higher than that of the nation so the North-West concentrates on commercial activities and higher-level educational facilities which are pull factors for rural populations • The area of land required for the expansion of Bamenda city over the next fifteen years will be about the size of the present built–up areas. Present built-up areas have maintained a complex natural drainage pattern and topography, a physical structure which prevent the creation of new units. So revolutionary urbanisation approaches need to be envisaged • High male emigration rate between the ages of 15 and 60 out of the Region into the South West, Littoral or Centre Regions in search of greener pastures. • Bamenda weighs on the rest of the Divisions of the Region

Table 92: SWOT summary of housing

SWOT summary: ***Housing***	
STRENGTH	**WEAKNESSES**
• Regulations to govern housing, land use and better planning towns exist • Drop from 5.9% in 2006 to 2.4% in 2011 of those expelled from their lodging is indicative that urban constructions are increasing in decent form • A 1985 Mater Plan of Bamenda exists • The congestion in the inner cities pushed the population to seek for more quiet lodging outside of the town centres thereby reducing inner city blight and good peri-urban housing infrastructure • Trend is the movement from the rural to the urban centres which increases the urban population that serves as a market and development potential	• Regulations are relatively new so fluctuation in the building permits issued • Improvement in housing quality and building materials is not matched by the provision of social infrastructure and services such as drinking water, collective sewage disposal systems and sanitary installations • Allocated industrial zone after Mile 4 bridge in Nkwen is not optimally used • Rural exodus with large population influx into Bamenda caused a rapid depopulation of the rural areas and surrounding towns • Bamenda is the main centre of economic and administrative activities with only two areas starting social housing
OPPORTUNITIES	**THREATS**
• Opportunities can be exploited to control plots sold at random where population is increasing rapidly like around the University of Bamenda and other crowd pulling institutions • In the Central Business District houses are adapted for business shopping, commerce, offices, retail and whole sale shops. Increasing compliance to good housing standards • There is no implementation of the proposed master plan • Population growth from an increase in birth rate and better living conditions caused a reduction in the death rate and thereby an increase in the urban population • It is anticipated that by 2050, present urban centres like Bamenda, Kumbo, Wum, Nkambe and Mbengwi shall increase their population by 50%, while Ndop, Bali, Batibo, Fundong, Jakiri will become heavily populated urban centres • Innovative post-modern urbanisation can be envisaged in line with the Growth and Employment Strategy Paper and Vision 2035 of the Ministry of Housing and Urban Affairs • Social housing policy at Banjah and Ntambang in Nkwen (Bamenda III) of the Ministry of Housing and Urban Affairs and futurist urban planning and zoning practices of individuals like the Nta Tawah City emerging at Atuazire	• Slow development of the border Divisions like Donga- Mantung and Menchum as they are low or only moderately built up. The issuance of building permits is low in Menchum and Momo • Proliferation of market stalls in markets (Bamenda main market, Nkwen market, Ntarikon market, Bali park market, Mile 4 Nkwen market, Mbengwi park market, and Mile 8 Mankon market) • The allocated industrial zone site is occupied by mixed urban activities such as a soap factory, a slaughter house, few poultry farms, farms and residential buildings and Mile 4 Motor Park • A horizontal growth and development of the town • The population will increase rapidly increasing the total number of new housing units needed from 2011 to 2027

Table 93: SWOT summary of the poverty level indicators

SWOT summary: ***Poverty level indicators***	
STRENGTH	**WEAKNESSES**
• Dominance of retail trade of the tertiary sector • Bamenda planning and development classification is defined by Decree No 2008/021 of 17th January 2008 creating the Bamenda City Council which provides a legal urbanscape development institution that has the role to plan and implement • Increased residential land use • Urban quarters have changed function with time • Over 6,487 enterprises counted in 2009	• Few industries for the secondary sector • Bamenda is exposed to significant land use transformation brought about by the influx of migrants • Built up space sprawls into undeveloped/not accessible or in areas forbidden for buildings (steep slopes, wetlands and swamps, etc) • Bamenda I is stagnant in its population growth and urbanisation by concentration of government offices and the difficult hilly topography • Old quarters remain at city centre with old poor structures • Economic primacy role of Bamenda largely determined by the informal tertiary sector
OPPORTUNITIES	**THREATS**
• Closeness to Nigeria offers a market • Chance for intermediary and agrarian basin towns (Ndop, Jakiri) to strengthen goods and people flow and exchange with alternative poles along the Ring Road • Three Sub-Divisional Councils Bamenda I, Bamenda II and Bamenda III • Extensive building land towards Nkwen in Bamenda III. New quarters can be created • Concentration of the tertiary economic sector in Bamenda, being generally shops of various sizes	• Dominance of one man (family) ownership • Urban development becomes male gender dominant with numbers and higher income jobs: widening urban gender livelihood inequality • Some Council areas are culturally heterogeneous as Bamenda II Sub-Divisional Council is made of Mankon, Nsongwa, Chomba and Mbatu and the Bamenda III Sub-divisional council is made of Nkwen and Ndzah: conflict of governance • Urban wetlands are increasingly colonised by residential and agricultural land uses • The inexistence of mass transportation services even towards student occupied peripheries of the north east • Poor facility provision • The precarious and low income issuant of the largely small scale shops does not permit individuals and households to survive within the urban areas

7 Technical Infrastructure

The North-West Region shares borders with Eastern Nigeria and three Regions in Cameroon: Adamawa, West and South-West. Its economy also requires appropriate and reliable technical infrastructures for its development. These infrastructures will facilitate the transportation of people and goods, their production, processing, conservation and marketing or acquisition in the regional, border, subregional, national and international markets. In short, it is necessary to ensure the links between the centres of production and those of consumption in the Region.

The people of the Region also need infrastructures for their well-being and comfort in a healthy and ecologically sustainable environment; not to mention those that guarantee their civic, moral and cultural training to enable them to make everyday choices and to appreciate what they listen to, hear, read and consume. In addition, they produce daily domestic, industrial and solid waste as well as wastewater and soiled oils that require appropriate technical management. The Government of the Republic sets the policy for technical infrastructures and their implementation.

Technical infrastructures include:

- Transport infrastructures and their operating systems; these are highways, roads, railways, sea or river ports and airports. They are under the responsibility of the Ministry of Public Works (MINTP), State Engineer in charge of their construction and maintenance while the Ministry of Transport (MINT) is in charge of their management, sometimes in partnership with private concessionaires;
- Energy and water supply infrastructures and their exploitation and distribution systems are under the responsibility of the Ministry of Water and Energy (MINEE);
- Telecommunications and ICT infrastructures are under the responsibility of the Ministry of Posts and Telecommunications (MINPOSTEL);
- Sanitation and waste management infrastructures, especially domestic ones, are managed by the Ministry of Housing and Urban Development (MINHDU) in partnership with decentralised territorial communities.

The diagnostic analysis of technical infrastructures in the North-West Region will focuses on the following subsectors:

- Transport
- Energy
- Water supply
- Waste water treatment
- Telecommunications and ICT
- Sanitation
- Waste management.

This study reflects the evolution of this sector since 2000.

7.1. Transport infrastructure

The Region has a poor and poorly maintained road network, an airport in Bamenda which is in a state of disrepair and whose operation after a long downtime had just begun again with Camair-Co. There is no highway or railway, let alone a river or sea port, as the Region has no sea or river front.

In this environment, apart from walking, horse-riding, motorcycle taxis, and by canoe according to need, the vehicle remains the most used mode of transport. Intra-urban, interurban and to Nigeria and CEMAC

zone countries transport is carried out either by taxis, minibuses, buses or trucks belonging to private operators grouped into transport companies or transport agencies.

7.1.1. Institutional and private actors

At the national level

The main institutional actors in the transport sector are:

- The Ministry of Transport in charge of the management of transport-related activities;
- The Ministry of Public Works, State Engineer in charge of programming studies, construction, rehabilitation and maintenance of highways, roads, railways, engineering structures, airfields and harbours;
- The Ministry of Housing and Urban Development in charge of programming the construction, study and rehabilitation of urban roads ;
- The Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDED) in charge of environmental monitoring ;
- The Ministry of Public Procurement (MINMAP) in charge of public procurement ;
- The Ministry of Agriculture and Rural Development (MINADER) in charge of programming, maintenance and rehabilitation of forest and rural roads ;
- The Ministry of Economy, Planning and Regional Development (MINEPAT) in charge of spatial planning and border areas, planning and fundraising ;
- The Ministry of Finance (MINFI) in charge of the development and implementation of the government's financial, budgetary, fiscal and monetary policy ;
- The National Road Council (CONAROUTE) is a forum for consultation and coordination of operations, projects and policies related to the road sector; it is under the authority of the Prime Minister, Head of Government;
- The Road Fund to mobilise the road maintenance funds, the LABOGENIE for the geotechnical control of the works, the National Civil Engineering Park for the leasing of the works machines, the FEICOM for the financing of municipal maintenance equipment, as well as several organisations involved in the public works sector;
- The Camair-Co.

At the regional level

In the North-West Region, the main institutional actors in the sector are the regional and departmental delegations of the various ministries created as actors at the national level. Decentralised territorial communities (Urban and Communal Communities) are thus in charge of the construction and maintenance of communal and rural roads.

Private actors

Private actors intervene at various levels in the transport sector:

- Private or organised individuals in transport companies or travel agencies ensure the transport of people and goods. Motorcycle taxis are experiencing a boom for the transport of people and small quantities of goods in short distances;
- Transport-related services are thus provided by private operators (driving schools, technical inspection centres, production of CEMAC plates, insurance, etc.);
- Trade unions in the different transport sub-sectors play an important role in organising the various private actors. They manage the partnership between private actors and public organisations or institutions.

7.1.2. State of play of the transport network

The road network remains the most used for the transport of people and goods in the Region. Until April 2017, there were four categories of roads: national roads, provincial roads, departmental roads and rural roads. By Presidential Decree N° 2017/144 of 20th April 2017 on road nomenclature, we now distinguish:

- Highways represented by the symbol A ;
- National roads represented by the symbol N ;
- Regional roads represented by the symbol R ;
- Communal roads represented by the symbol C.

Table 94: Road infrastructures (road network in km) in the North-West Region in 2006

Division	National		Provincial		Divisional		Total Tarred	Rural roads	Total Length of Roads
	Tarred	Untarred	Tarred	Untarred	Tarred	Untarred			
Boyo	0.00	36.74	17.05	8.40	0.00	16.27	17.05	391.00	469.46
Bui	21.39	26.87	0.00	11.62	0.00	38.77	21.39	546.90	645.55
Donga-Man-tung	7.40	64.72	20.83	43.30	0.00	134.12	28.23	480.60	750.97
Menchum	7.81	57.71	0.00	25.97	0.00	44.88	7.81	113.40	249.77
Mezam	91.73	0.00	41.04	24.53	0.00	0.00	132.77	282.76	440.06
Momo	17.11	19.13	0.00	40.55	0.00	127.45	17.11	292.40	496.64
Ngoketunjia	31.04	35.05	0.00	0.00	0.00	27.20	31.04	166.90	260.19
Total	176.48	240.22	78.92	154.37	0.00	388.69	255.40	2,273.96	3,312.64

Source: Regional delegation of Public Works North-West Region, 2006

Table 95: Highway network of the North-West Region

Division	Major (priority) roads				Rural roads			
	Untarred roads		Tarred		Untarred roads		Tarred	
	2014	2015	2014	2015	2014	2015	2014	2015
Boyo	42.2	42.2	36.1	36.1	303.2	303.2	-	-
Bui	422.4	422.4	63	63	452.5	102	27.5	-
Donga-Man-tung	239.7	239.7	22.3	22.3	734	790	-	-
Menchum	121.8	121.8	8.4	8.4	264.6	264.6	2.2	2.2
Mezam	225.4	225.4	117.1	117.1	285.7	285.7	1.7	1.7
Momo	302.2	302.2	57.5	57.5	568.4	568.4	-	-
Ngoketunjia	226.4	226.4	38	38	199.4	199.4	-	-
Total	1,580.0	1,580.0	342.4	342.4	2,807.8	2,513.3	31.4	3.9

Source: NIS, 2017

In July 2017, the Region had in total: 357.2 km of paved roads, 2,008 km of unpaved roads, 8,258 km of other tracks/paths/trails, totalling 10,910.9 km (MINTP, 2017).

According to the Ministry of Public Works, an asphalt road:

- Is in good condition when easily circulated without potholes ;
- Is in average condition when some obstacles impede traffic, even occasionally: potholes, vegetation invading the surroundings of the pavement or others ;
- Is in poor condition when the road is very deformed and potholes are numerous and make traffic difficult.

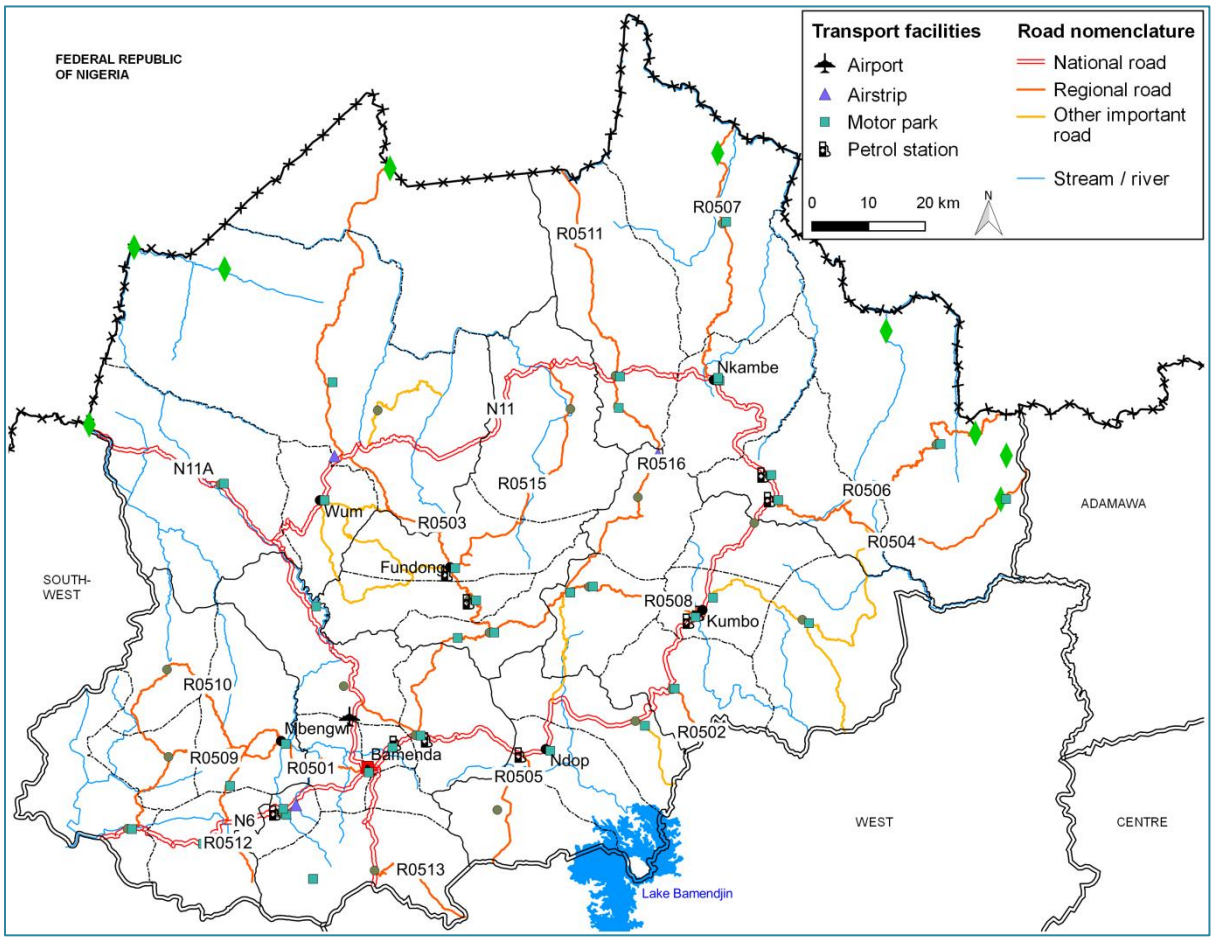
And a dirt road:

- Is in good condition when travelling easily, at a speed exceeding 60 km/h ;
- Is in average condition when a 4x4 vehicle can practice it, but at an average speed between 40 and 60 km/h ;

- Is in poor condition when the road is very deformed, it is difficult to circulate easily and the average speed cannot exceed 40 km/h.

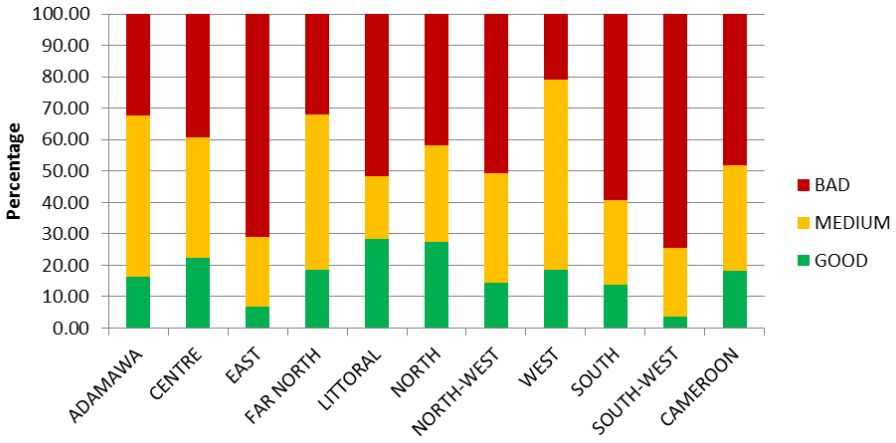
The graphs below show the state of the main road network in the first semester of 2017 of all Regions of Cameroon and the state of the road network in the Region.

Figure 131: State of the main road network in the North-West Region (as of first semester 2018)



Data source: based on data from OSM, MINTP, and field survey IU/CPAC/geomer

Figure 132: Comparison of the state of the main road network in the 1st semester 2017 for all regions of Cameroon

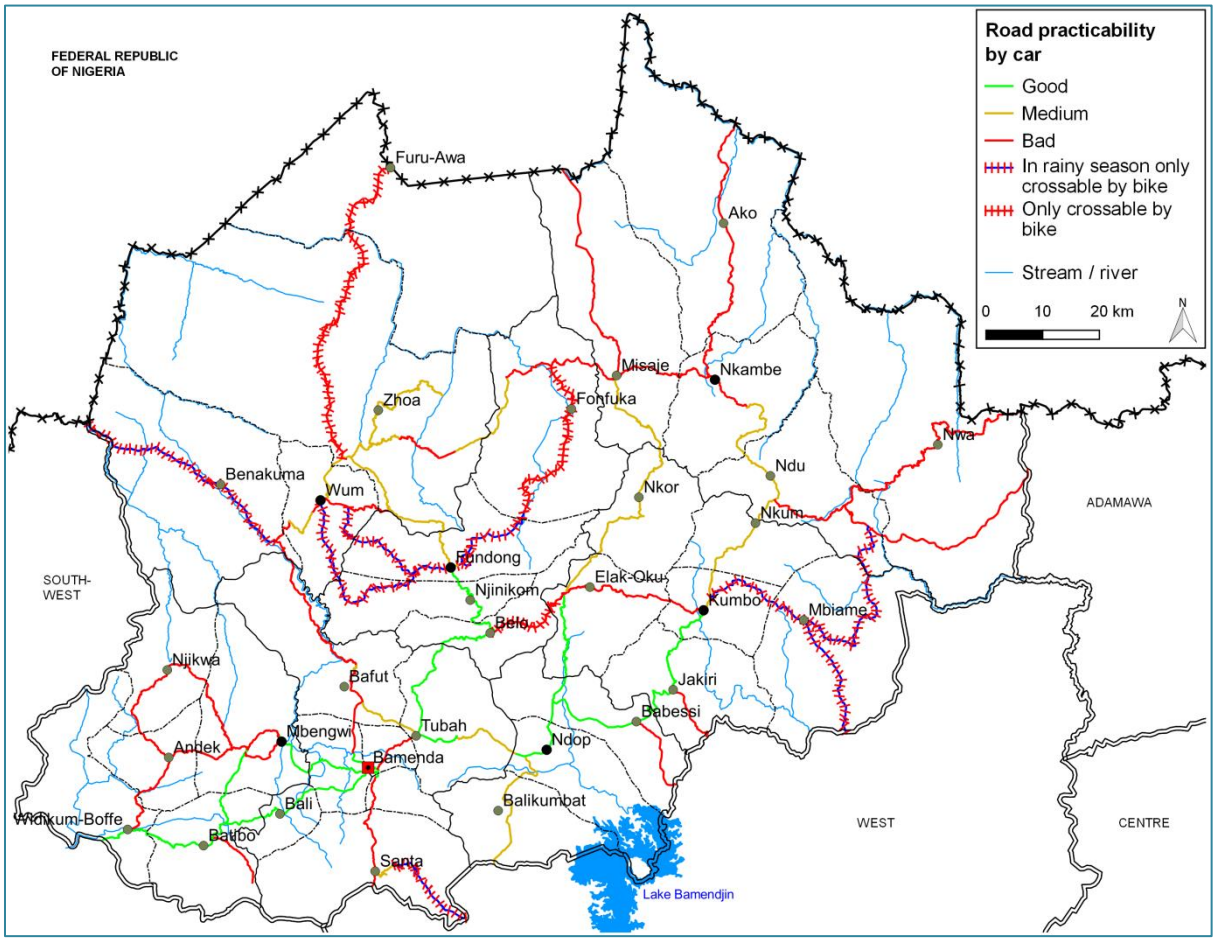


Source: MINTP, 2017

7.1.3. Accessibility

The national road N6 reaching south Bamenda passes through Santa from Mbouda, a city of the West Region. It continues to Enugu in Nigeria via Batibo, Mamfe and Ekok. The Bamenda-Enugu Corridor is part of the Trans-African Highway; it is very important for trade between Nigeria and the North-West Region, and also with Cameroon. This N6 national road also connects the North-West to the South-West. It should be noted that the road going from south Babadjou-Santa-Bamenda section is in a bad state. Its rehabilitation is ongoing and is financed by the World Bank. Some roads within the city will benefit from this rehabilitation project.

Figure 133: Main road network and transport facilities in the North-West Region



Data source: based on data from OSM, MINTP, PNDP, and field survey IU/CPAC/geomer 2018

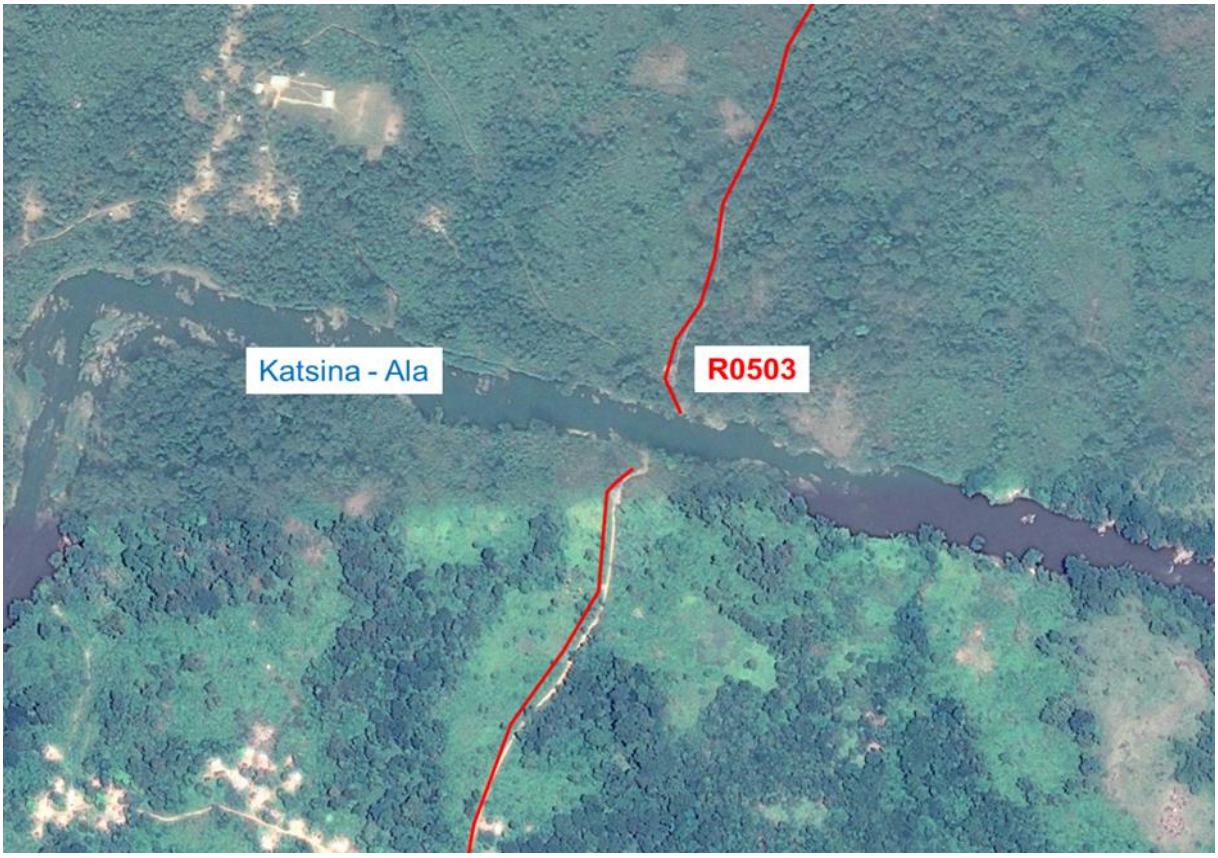
The Ring-Road was identified as a priority development project in 1983. Its route connects five departments out of seven in the Region: Mezam, NgoKetunjia, Bui, Donga-Mantung, Menchum, making a loop of divisional capitals (Bamenda – Wum – Nkambé – Kumbo – Ndop - Bamenda). Because of budgetary constraints, only 30% of the 358 km are tarred roads and in good state. Once this project is completed, this road network will promote tourism, facilitate the development of the Region by significantly promoting trade with Nigeria, the opening up of production basins, in short agricultural development and especially also the transport of food to other parts of the Region and South-West, Littoral and West Regions. According to some studies, the State of Cameroon should mobilise 143 billion FCFA for this project. The steps to find funding are ongoing between the State and development partners such as: the African Development Bank, the Islamic Development Bank, the World Bank, etc. It should be noted that in the context of road maintenance, the State has planned for 2018/2019 budgets for certain sections of the Ring Road.

It can be noted with satisfaction that the Ndop-Kumbo section of this Ring Road, 109 km long at the intersection of the N6 road, is asphalted and the state of the road is good while other sections are asphalted entirely or partially. Bamenda-Ndop (45 km) is asphalted but maintenance-free, the road is deteriorating. Bamenda-Bafut (18.21 km) asphalted, is in bad condition, as Bafut-Befang (39.95 km) of which 17 km are asphalted and Befang-Wum (16.28 km) of which 10 km asphalted; both sections are in poor condition. The North-West Region is connected to Adamawa by the Sabongari axis (R0504, North-West) to Atta (Adamawa). Unfortunately, this dirt passage is also in a very bad state, like the dirt road Ndop-Bambalang-Foumban in West Region. The R0502 connects Jakiri to Foumban (West Region) through Bangouren. It is also in a bad state. Similarly, the R0505 dirt road from Ndop joins the West Region via Balikumbat (North-West) and Bamenyam (West).

The department of Donga-Mantung is connected by tracks with Nigeria from Nkambé-Nwa or Ndu-Sabongari-Nwa to the north-east, and to the north by Nkambé-Ako-Abonshie with the crossing of the bordering river Abong by canoe.

The department of Menchum has also connections with Nigeria from four localities: Fura Awa in the North, but the crossing is done either by canoe during the rainy season or on foot or by commercial bike riders in the dry season because of the absence of a bridge on the Katsina-Ala River. Occasionally Fura Awa is accessible from a bypass in Nigeria; north-west of Menchum. Trade with Nigeria is also possible from Bawuru across a track and Bawuru is accessible by car from Befang-Benakuma (Befang being connected to Wum and Bafut on the Ring Road); Bawuru-Akwaya (South-West) also drives to Nigeria; and finally, from Esu, one can arrive in Nigeria by Gayama or Fura-Awa.

Figure 134: Absence of a bridge across the river Katsina-Ala at Fura Awa



Source: made with image from Google Satellite Services

The inter-urban transportation of people and goods in the North-West Region is assured by private vehicles and minibuses that connect the so-called “motor parks” (Figure 133). From these facilities, the

travellers can change to a taxi or motorcycle of the intra-urban transport to reach their final destination. Motor parks are often located at markets.

Table 96: Classified road network in the North-West Region, state as of July 31st, 2017

Categories	Linear (2015)				Network status (%)					
	Asphalted		Earthen (km)	Total (km)	At December 30, 2016			At June 30, 2017		
	(km)	(%)			Good	Average	Bad	Good	Average	Bad
National	203.04	45.00	247.38	450.42	16.20	52.90	30.90	39.48	49.33	11.19
Regional	74.00	31.00	168.53	242.53	5.20	37.80	56.90	11.19	19.03	69.78
Departmental	0.00	0.00	353.69	353.69	5.60	37.40	57.10	0.00	41.43	58.57
All roads in the North-West region	**277.04**	**26.00**	**769.60**	**1,046.64**	**9.70**	**35.40**	**54.90**	**14.42**	**34.91**	**50.67**

Source: MINTP

The detailed table of the state of the road sections can be found in the annex (part 1 section 4.1 Transport infrastructures), although it uses the old road nomenclature and does not include the newest maintenance works, which have been carried out between Bambui and Ndop in 2018.

7.1.4. Main Issues in transportation in the North-West Region

The state of transport infrastructure in the region is not well developed and it needs urgent attention. For the road network, incompletion of the construction and tarring of the Babadjou-Bamenda road, the ring road true development will be hard to come by. There is also the need to link all the Divisional Headquarters to the Sub-Divisional Headquarters with good roads network.

Transportation in the North-West Region depends mainly on the road sector. The poor state of the roads especially during the rainy season is an impediment to the development of the Region. For so long the State of Cameroon did not have sufficient means for road maintenance. Since the HIPC (Highly Indebted Poor Country) program was reached in 2006, the State is making efforts to rehabilitate some roads, unfortunately, the incompetence of the SMEs in charge of the maintenance due to the lack of technical supervision and the limited financial means associated with the late payments of SMEs by the State have negatively affected the expected results. As a consequence, road transport suffers from insecurity and discomfort. In addition to all this, means of transportation on various axes are used or outdated.

Traffic interruptions due to breakage of the works of art (bridges, culverts), the absence of bridges on certain routes (for example, the crossing of the Katsina River in the Fura Awa area) are major obstacles that do not favour safe transport of people and goods.

The absence of air links between Bamenda and the neighbouring cities of Nigeria is also a handicap for travel in this area.

For the moment, the dependence of roads links with Nigeria by the N6 road limits trade with this neighbouring country. Trade is decreasing with the socio-political crisis in the North-West and South-West Regions.

The hilly nature of the North-West Region does not favour the development of other means of transportation; the development of a railway for example in the Region will be very difficult. Finally, there is no longer any need to point out the glaring lack of infrastructure between the North-West Region and its various boundaries; it is recalled that historically, neighbouring regions or countries with real comparative advantages in the transport sector have guaranteed their prosperity and economic power. At a time of globalisation characterised by almost unlimited mobility, accessibility has become the key to the attractiveness of an economic market. The North-West Region would be an attractive economic space if the regional and border links had suitable modern infrastructures.

7.2. Water and Energy

7.2.1. General facts

Water and energy are the keys to sustainable development. Water is needed to produce energy and energy is needed to exploit the water. There will be possible sustainable development at the national level only with better access to water and energy. With population growth, increasing urbanisation and growing economies, needs are increasing dramatically in energy and freshwater, while many regions such as the North-West are already experiencing significant shortages.

Water and energy are two sectors that are increasingly linked and interdependent in human and economic development. It takes a lot of water to produce electricity in the dams or to provide the cold source of thermal power plants, and also more energy for water's pumping, treatment, transfer and desalination.

Even if the energy is not visible, its effects are there, all around us. All that exists needs energy to function. The sun that makes plants grow, wind that drives the boat, wood that burns in our kitchens, dam that produces electricity, oil that shines our storm lamps. Actions, movements, heat, and electricity, are all energy. It would not be pretentious to accept the logic that the amount of energy consumed per capita is a clear indicator of the level of development of a country. According to SEG, the domestic consumption of primary energy per capita in 2014 was 0.33 toe, only 13% of the world average (2.56 toe) and eleven times less than the French average (3.67 toe). The North-West Region and Cameroon in general are characterised by insufficient energy supply despite the fact that it has potential deposits of natural gas, oil, hydroelectric power and other renewable energies (solar, biomass, wind energy). The table below gives a general overview of the energy production in Cameroon by source, and it is clear through this table that energy production in Cameroon is still dominated by biomass (50.2%), followed by oil (39.6%) and comes very far behind hydropower (4.5%).

Table 97: Primary energy production in Cameroon by source (ktoe)

Source	1990	%	2000	%	2010	%	2014	%
Petroleum	6,927	63.1	5,864	52.6	3,350	39.9	3,867	39.6
Natural gas	-		-		259	3.1	556	5.7
Total fossils	6,927	63.1	5,864	52.6	3,609	42.9	4,423	45.3
Hydraulic	228	2.1	296	2.7	366	4.4	436	4.5
Biomass waste	3,820	34.8	4,985	44.7	4,429	52.7	4,897	50.2
Total Renewable Energy	4,048	36.9	5,281	47.4	4,795	57.0	5,333	54.7
Total	10,975	100.0	11,145	100.0	8,405	100.0	9,756	100.0

Source: International Energy Agency

The water in turn is also indispensable for life. Cameroon in general and the North-West Region in particular are full of enormous hydropower potential to solve all water-related energy problems, drinking water supply for all households and all the needs of other industries such as agriculture, livestock, etc.

Cameroon's water resources consist of rainwater, fluvial and underground water resources. According to information published by MINEE, the distribution of meteoric waters is quite heterogeneous. They increase from the North to the South of the country. Rainfall ranged from 561.1 mm at Makari in the Lake Chad Basin to 9,763.9 mm at Debundscha in the coastal river basin. The river or surface water resources are grouped into five river basins so the contributions at the national scale are as follows: the basin of the coastal rivers (94.82 km³) and that of the Sanaga River (63,18 km³) are the largest and account respectively for 35.4% and 23.59% of Cameroon's surface water resources. With contribution percentages of 16.39% (43.91 km³) and 12.49% (33.45 km³) respectively, the basins of Niger and Congo have intermediate contributions, the lowest contribution being recorded for the Lake Chad Basin whose surface water resources represent 12.14% of the national volume.

Table 98: Quantitative summary of water resources

Basin	Water volume (km³)	National contribution (%)
Lake Chad	32.52	12.14
Niger	43.91	16.39
Sanaga	63.18	23.59
Congo	33.45	12.49
Coastal rivers	94.82	35.4
Total	267.88	100

Source: MINEE, 2009

As for groundwater, most of Cameroon's resources are divided into two main types of geological formations: sedimentary formations and the basement zone. Among the sedimentary formations, three large sets of reservoirs stand out: the sedimentary basin of Lake Chad in the Far North with a volume of 3.2 km³, the sedimentary basin of Benue in the North with 15.75 km³, and the sedimentary basin of the Coastal Region in the South-West of the country with 21.6 km³. The basement area, which represents more than 90% of the territory, stores only 27.51% of the underground water resources, ie 15.4 km³. A small proportion of water resources are found in alteration formations, faults in crystalline and volcanic areas. It should be noted that there are some secondary sedimentary basins that are very poorly known. The North-West Region, located halfway between the Benue and Sanaga Basins, has a high hydraulic potential. The Menchum River drains a large area of the Region with its tributaries which are Katsina-Ala, Kindi, etc. In addition to the Menchum, another river runs through a large part of the Region; it is the river Noun which takes its source on the side of Mont-Oku and descends to reach the plain of Ndop.

The state of water and energy infrastructure in the region is not well developed and it needs urgent attention. Especially harness hydro-electrical energy from River Kasina Alah and Menchum Fall. Equally, given the windy nature of the Region, renewably energy through the construction of wind turbines especially around Santa, Fundong, Kumbo and Ndu.

7.2.2. Institutional, administrative and political organisation of water and energy

Historically, the Directorate of Mines was placed under the supervision of the Ministry of Public Works in 1961. The 1972 government's reform transformed it into the Autonomous Ministry of Mines and Energy. Then, it became the Ministry of Energy and Water in 2004 by Decree N° 2004/320 of December 08th, 2004, the current Ministry of Water and Energy was created by Decree N° 2011/408 of 09th December 2011 on the organisation of the Government.

This section presents the institutional and administrative framework that underpins the operation of the water and energy sub-sector. It also shares the policies envisaged in this sub-sector.

The institutional and administrative framework of the water and energy sub-sector of Cameroon generally includes:

- The Presidency of the Republic which defines the general policy of the subsector;
- The Prime Ministry which coordinates the Government's action and consequently the ministries involved in the sub-sector;
- The Ministry of Finance, which provides financial supervision;
- The Ministry of Water and Energy (MINEE), which is responsible for the development and implementation of the Government's policy on the production, transport, and distribution of water and energy;
- The Ministry of Economy, Planning and Regional Development (MINEPAT) which, in liaison with MINEE, ensures the promotion of investments in the sub-sector;

- The Ministry of Scientific Research and Innovation (MINRESI), in liaison with MINEE, is responsible for the promotion of new energies. He is also responsible for research in the energy and hydrological fields.

In addition, other Public Administrations are also actors in the Water and Energy sub-sector. In particular, the Ministry of Territorial Administration, the Ministry of Decentralisation, the Ministry of Agriculture and Rural Development, the Ministry of Livestock, Fisheries and Animal Industries, the Ministry of the Environment, Protection of Nature and Sustainable Development, the Ministry of Mines, Industry and Technical Development and the Ministry of Public Health. Civil society and NGOs are also involved.

7.2.3. Energy Supply

7.2.3.1. The energy policy in Cameroon

Today, the population is growing rapidly and energy needs are growing. The most used energies in the world and in Cameroon in particular are polluting and will eventually be exhausted. In order to reduce the energy deficit in Cameroon, to coordinate actions between different actors and to improve the legal and regulatory framework in this area, MINEE established a sectoral energy policy.

Aims to achieve the following objectives:

- Develop and guarantee the individual and collective access of the population to modern energy services in the long term;
- Reduce the negative impacts of the energy sector and the laborious burden of women and men;
- Ensure everywhere, and at all levels of consumption, a sufficient, efficient, reliable and clean energy supply;
- Improve the country's external energy balance;
- Optimise the efficiency of Cameroon's energy sector in the use of human capital and inter-sectoral synergies;
- Make energy an asset of the Cameroonian industry in the global industrial competition;
- Involve financial markets and major industries in the development of Cameroon's energy sector;
- Make energy a factor of integration of Cameroon;
- Reduce the impact of energy on Cameroon's natural, socio-economic and cultural environment.

7.2.3.2. Organisation of the electricity sector in Cameroon

This sector is generally divided into 5 phases which are production, transportation, processing, distribution and marketing. Despite the reform of the electricity sector, which aimed to increase access to electricity throughout the Cameroonian territory in the late 1990s, it is clear that the current situation of power cuts has been a failure caused by energy deficits.

The electricity grid operated by Energy of Cameroon (ENEO), the main electricity distribution and marketing company in Cameroon, includes the Northern Interconnected Grid (RIN), which serves the northern part of Cameroon, namely Adamawa, the North. and the Far North, the Southern Interconnected Grid (RIS) serving the Central, South, West, South-West, Littoral, and North-West regions, and the Eastern Isolated Grid (RE), which supplies electricity to the East of the country. The Northern Interconnected Grid is supplied by the Lagdo hydroelectric power station, while the Southern one is supplied by the Edéa, Song-Loulou power stations and thermal centres built in the different cities of Douala, Bamenda, Limbe, Kribi, etc. However, the RE is supplied by an autonomous thermal power plant installed in the city of Bertoua. The main current plants for generating electricity are shown in the table below.

Table 99: Main sources of electric energy in Cameroon

Label/Year	Power in MW
	2016
Public Hydroelectric Plants	
Lagdo	72.00
Song Loulou	384.00
Edéa	276.20
Public Thermal Power Plants	
ENEO	217.60
DPDC (Dibamba Power Development Corporation)	88.00
KPDC (Kribi Power Development Company)	216.00
ETP (Emergency Thermal Project)	100.00
Auto-production	
Onshore thermal auto-production	950.40
Offshore thermal auto-production	20.70
Solar auto-production	2.45
Wind auto-production	0.00
Micro Hydropower auto-production	0.09
Total	2,327.45

Source: National Institute of Statistics, Cameroon Statistical Yearbook, 2016 edition

Due to the deterioration in the quality of the electricity supply and the poor performance of the company in charge of the production, transmission and distribution of electricity, the government authorities were forced to liberalise the electricity sector in 1998. A concession contract was signed between the Government and the Applied Energy System Group (AES-Corps) giving birth to a new company in charge of the production, transmission and distribution of electricity in Cameroon: AES-SONEL, renamed ENEO Cameroon SA in 2014. The State has several structures each with a specific mission. It is the Electricity Sector Regulatory Agency (ARSEL), Electrification Rural Agency (ERA) and the Electricity Development Corporation (EDC) whose main mission is the promotion of investments and increasing the supply of electrical energy to businesses. A last public company was created in October 2015 in charge of the management of the electricity transmission network.

Apart from above mentioned stakeholders, several other providers offer their services in the form of outsourcing to marketing and rural electrification companies. Several other private operators are helping to increase the supply of electricity and improve the access rate in the North-West Region. These are individuals and churches, which install mini-thermal power plants and photovoltaic panels.

In addition to electric power, many other actors are active in the exploration and distribution of fossil fuels, which are not only the primary source of energy for land and air transport but also the second largest source of energy for households in the Region. The table below summarises the various actors involved in the energy field in Cameroon in general and in the North-West Region in particular.

Table 100: Key actors in the energy sector in the North-West Region

Actors	Name	Responsibilities
ARSEL	Electricity Sector Regulatory Agency	regulates, controls and monitors the activities of operators in the electricity sector
ENEO	Energy of Cameroon	produces and distributes electricity
KPDC	Kribi Power Development Company	produces electricity
DPDC	Dibamba Power Development Corporation	produces electricity
EDC	Electricity Development Corporation	Promotes the investment and the increasing of electricity offer
ERA	Electrification Rural Agency	promotes rural electrification
SNH	National Hydrocarbons Corporation	handles the research and exploitation of hydrocarbons
CSPH	Hydrocarbons Prices Stabilisation Fund	ensures the mechanisms of stabilisation and equalisation of hydrocarbons prices
SONARA	National Refining Company	ensures the refining of petroleum products
HYDRAC	Hydrocarbons Analysis Controls	controls the quality and quantity of petroleum products on the market
SCDP	Cameroon Petroleum Depot Company	stores and distributes petroleum products
Gas Stations		store and distributes petroleum products
Individuals		store and distributes petroleum products

Source: author, with the information from MINEE

7.2.3.3. Production and distribution of electrical energy in the North-West Region

As stated at the beginning of this section, the Cameroonian electricity network is an interconnected network and the North-West Cameroon depends in particular on the large electricity production of the South grid. To compensate for the recurrent energy deficits observed in the Region, the government has built a 25.4 MW light fuel thermal power station in the city of Bamenda which was finally transferred to AES-SONEL in 2013 to bring a definitive solution to the management of this infrastructure, which was at the centre of a discord between the Ministry of Energy and Water, AES-SONEL and Electricity Development Corporation (EDC) in January 2013.

Other independent actors produce electricity using mini-generators and biogas collected locally through organic waste. The attached table shows the biogas production centres identified in the Region for the production of electricity.

Table 101: Biogas production centres

Centre	Bafut	Mankon	Chomba	Nkwen	Menda-Nkwe	Akum	Sabga	Bambui	Wum	Benakuma	Kumbo	Ndop
Number	4	3	2	2	22	3	1	2	1	1	2	2
Total	45											

Source: author, with the information from MINEE

There are two types of networks: the transmission network that can carry energy from generation sources to HVH/HTA transformers, also called source stations, and the distribution network that carries the power of the HVH/HTA transformer to the end customer. For the North-West Region, there is only one 36 MVA power distribution station for the transmission of energy from the West Region Interconnection Substation with a power of 90 KV to the various transformation sites (transformer stations) of the Region. The high, medium and low voltage transport in the Region is carried out using pylons and

Almelec 148 mm² conductor material, wooden poles and Almelec 93mm² conductor material respectively. As for the distribution network, it is essentially provided by transformer substations installed in several localities in this Region.

However, two key actors are involved in the distribution of energy in the North-West Region: the Ministry of Water and Energy, which is responsible for distribution in rural areas through the Electrification Rural Agency and ENEO SA which deals with distribution in urban and peri-urban areas.

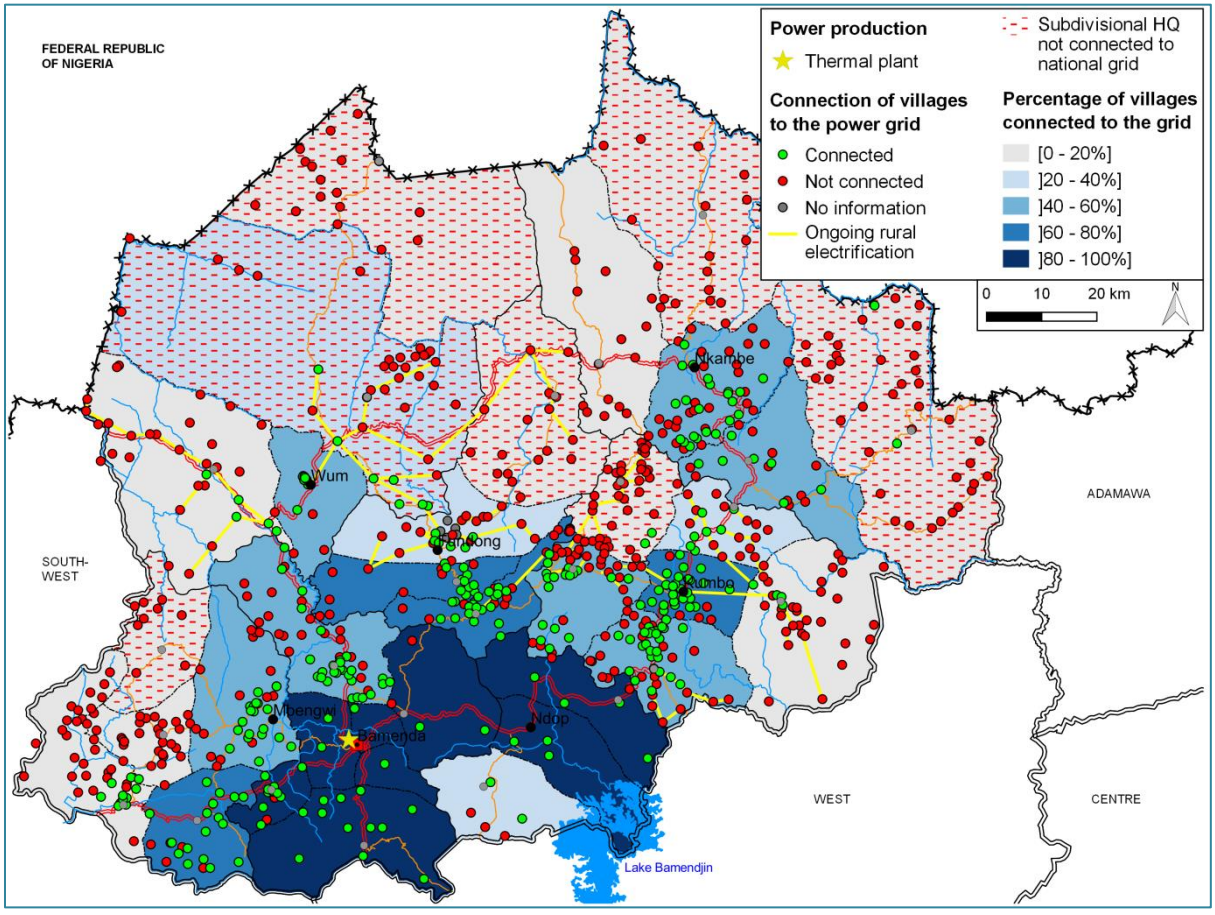
According to information gathered from MINEE and field experts, 280 out of the 776 villages in the Region have access to electricity. The table below gives a general overview of the areas supplied by these two distribution structures.

Table 102: Rural Electrification in the North-West (December 2017)

Departments	Number of villages	Number of villages not electrified		Number of electrified villages		Percentage of electrification	
		2016	2017	2016	2017	2016	2017
Boyo	96	69	69	27	27	28.13%	28.13%
Bui	207	126	126	81	81	39.13%	39.13%
Donga-Mantung	133	88	88	45	45	33.83%	33.83%
Menchum	99	83	83	16	16	16.16%	16.16%
Mezam	97	35	35	62	62	63.92%	63.92%
Momo	131	95	92	36	39	27.48%	29.77%
Ngoketunjia	13	3	3	10	10	76.92%	76.92%
Total	776	499	496	277	280	35.70%	36.08%

Source: MINEE

Figure 135: State of the electrification in the North-West Region (December 2017)

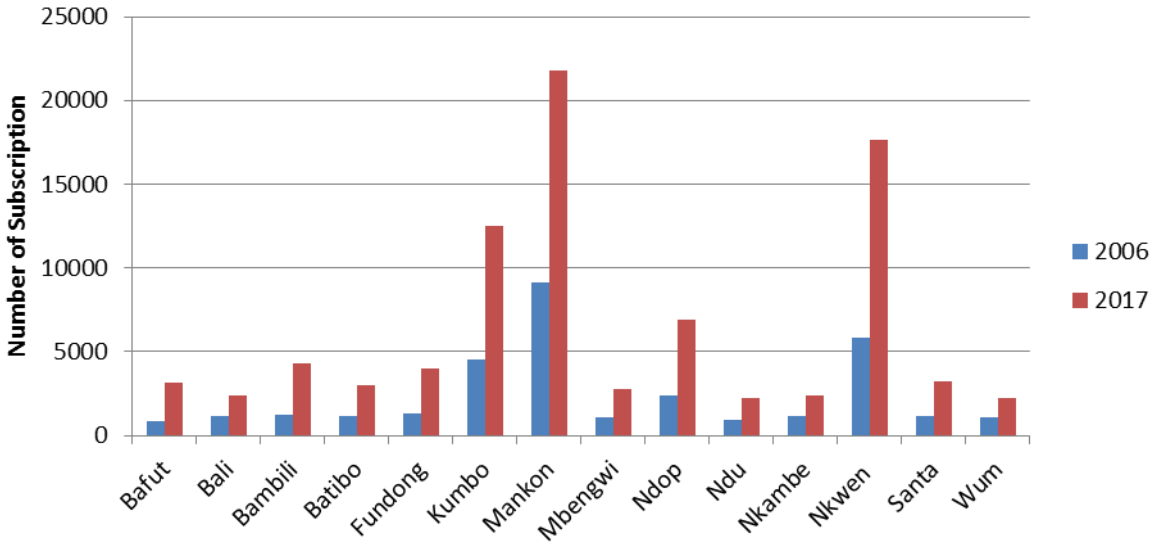


Data source: based on data from NIS, PNDP, and MINEE

Although the energy sector was liberalised in 1998 in Cameroon, the marketing of energy is still a preserve of ENEO SA in the North-West Region. Below is the breakdown by ENEO Centre in the Region.

Through the subscriber chart (Figure 136) in the North-West Region, we observe a sharp increase in the number of subscribers over the last ten years in both large and small cities in the Region. The corresponding table can be found in the annex (part 1 section 4.2 Water and Energy sub-sector).

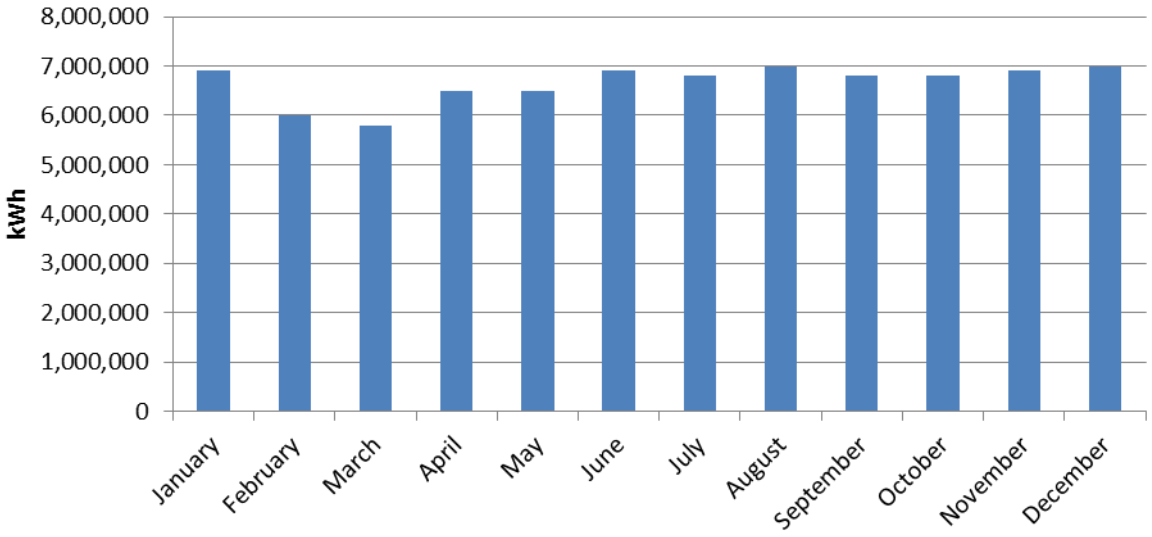
Figure 136: Number of subscriptions per shopping centre in the North-West, Cameroon in 2006 and 2017



Source: ENEO (designed from table)

As the number of subscribers continues to climb, the consumption of electrical energy continues to grow. Figure 137 shows the consumption in the Region during the year 2016. The arrival on the market of several electronic devices (radio, LED lamp, phones, refrigerators) of Asian origin for the majority with affordable cost is the main direct cause of this exponential increase in energy consumption. Other causes are also at the origin of this increase in energy need: it is indeed the birth of several SMEs in the Region but especially the new government energy policy that promotes access to electricity for all.

Figure 137: Consumption of electricity in KWh in the North-West Region in 2016



Source: ENEO

7.2.3.4. Main issues of energy distribution

Although Cameroon has considerable hydropower resources, important in renewable and modest in hydrocarbon resources, it still remains below its energy potential. Its electric potential would be the second in sub-Saharan Africa, estimated at about 20 GW, or more than 115 billion kWh that the country could produce each year if these resources were developed. Current domestic production is estimated at 2.3 GW.

The North-West Region is also interconnected to the Southern Interconnected Grid, it suffers the same consequences as the other regions related to under-production. The fact that the Region is fed by a centralised network whose large production still comes from the Centre and Littoral regions still maintains the price of KW high for consumers; while decentralising this production by the construction of a hydroelectric plant in the Region, the energy losses during transport will decrease as well as the cost of transport and by extension that of KW.

The potential of waterfalls for potential energy production and for energy supply could be further studied to explore potentials. The most relevant waterfalls to be explored are as follows:

- Menchum Division: Menchum waterfall and Karsina-alah
- Momo Division: Abih waterfall
- Donga-Mantung: Adere waterfall, Bongom waterfall.

Apart from under-production, the Region is still one of the most under-supplied energy areas in the country, with just 36.08% of villages electrified in 2017.

The absence of high voltage is also a major obstacle to economic development because an industry demanding a voltage higher than 90 kV cannot be installed in the Region. The hydroelectric plant currently being built in the Katsina waterfall on the Menchum with a capacity of 485 MW will definitely solve short-term energy deficit problems, especially if SONATREL and AER are also responsible for the transport and transmission of electricity throughout the area.

In short, the sector of electric energy would be optimised if the management of this was entrusted to decentralised communities, which will have the choice to develop an energy policy that would suit them. Thus, the sector can truly be liberalised and the monopoly of a single player will disappear with the added bonus of the price of energy discounted.

7.2.4. Water Supply

7.2.4.1. The water policy in Cameroon

The problem of water is at the centre of the concern of government policy. The Strategy Paper for Growth and Employment and the Millennium Development Goals help to guide this policy mainly for the supply of drinking water.

The merging of all water-related activities within a single institutional structure, the Ministry of Water and Energy, should allow a good formulation of drinking water supply policies in urban and rural areas; the management of water resources and the implementation of the various programs, which could make it possible in the medium term to make up for the delay due to the long economic crisis from 1986 to 2006. This led to the privatisation of the sector marked by the absence of necessary investments and non-maintenance of existing drinking water infrastructures.

For this, the five strategic axes below have been defined by the MINEE:

- Continue and implement the development of Integrated Water Resources Management;
- Pursue the implementation of the Public/Private Partnership for urban water supply but also for the other sub-sectors (sanitation, rural hydraulics);

- Rehabilitate and strengthen equipment to achieve the MDGs;
- Strengthen the regulatory and decentralisation institutional frameworks;
- Securing funding for the development of the domain.

Water requirements in the North-West are characterised by:

- Domestic needs: they are determined by the size of the population in urban and rural areas. The specific consumption is 50l/day/person in urban areas and 3l/day/person on average in rural areas;
- Water needs for hydropower production;
- Water needs for livestock;
- Water needs for irrigation (rice fields in Ndop, tea plantations in Ngo-Kentunjia and Donga-Mantung);
- Water requirements for fishing, fish farming and forestry;
- Water needs for the environment, tourism and recreation.

Water needs are met by surface water and groundwater.

Cameroon's Urban and Peri-Urban Hydraulics Master Plan covers the whole of Cameroon. Initiated by CAMWATER, it is divided into four zones:

- Zone 1: cities of Douala, Yaoundé and Soa;
- Zone 2: cities of the Centre, South and East Regions;
- Zone 3: cities of the North-West, West, South-West and Littoral Regions;
- Zone 4: cities of the Adamawa, North and Far-North Regions.

The North-West centres concerned are as follow:

Ako – Bali – Bamenda – Batibo – Fundong – Fura Awa – Jakiri – Kumbo – Mbengwi – Ndop – Njinikom – Njikwa – Nkambe – Nwa – Tubah – Wum.

7.2.4.2. Water supply in the North-West Region

Until early 2018, the drinking water sub-sector was managed mainly by CAMWATER and “La Camerounaise des Eaux”. Today, this sub-sector is managed exclusively by CAMWATER on behalf of the State. Some decentralised territorial authorities, NGOs or private sector intervene in the sub-sector.

For example, the town of Kumbo in the Bui Division is supplied by the Kumbo Water Authority (KWA); Tubah's drinking water supply network is divided into two sub-sectors, Bambui and Bambili, which are managed by two management committees linked hierarchically to Tubah Town Hall (Bambui Water Authority and Bambili Water Authority). In Bali, the drinking water management is done by “Bali Water Committee” called BANDECA.

Populations are supplied from the national distribution network or individual, public or private standpipes, boreholes, wells or unmanaged wells, sources, streams, swamps and rainwater. Through the capture of river or lake water, CAMWATER produces drinking water after treatment. The distribution is done by network or fountains.

Organisations from civil society, communes, churches and NGOs also distribute drinking water from sources using standpipes. They also use boreholes and wells. Rural populations are supplied by spring water, boreholes and wells as well as by river or swamp water.

In the case of Bamenda, most of its population is supplied by private connections and standpipes from the CDE network currently held by CAMWATER. At the periphery of the city of Bamenda, some residents are sourcing from sources, traditional wells and public or private boreholes equipped with pumps with human motricity.

Bamenda Up Station is fed by the water collected from a river, which is conveyed to a desander located next to the river, then taken to a treatment station (flocculation-decantation-filtration) then it is stored in a 600 m³ tank for distribution by gravitation.

Bamenda Down Town is supplied from raw water from the TANTI dam, built on a lake collecting water from several rivers with a capacity of 2.1 million m³. Two tanks of 600 m³ and 1,250 m³ guarantees the distribution of drinking water in Bamenda Down Town.

Already in 2012, according to a study commissioned by CAMWATER, Bamenda and its surrounding area had 389,589 inhabitants, of which 89.3% for the three districts of Bamenda, i.e. 347,903 inhabitants.

The drinking water needs of Bamenda and its surroundings were of the order of 2,967,105 m³/year corresponding to 8,129 m³/day or an average of 20l/day/inhabitant.

According to this study, the unit charges recorded for the various categories of consumption are considered acceptable and sometimes low, knowing that the specific consumption of connected households is of the order of 74l/day/capita, that of the domestic non-connected varies between 0.43l and 2.63l/day/inhabitant, the specific consumption of the collective use (administration and commercial buildings) is of the order of 2.83l/day/capita. Industrial consumption is insignificant. The service rate of Bamenda is 11.3%.

In 2012, Bamenda had approximately 237.1 km of pipes with a diameter of less than or equal to 400 mm. There were 11,713 private connections and 53 fountains.

The table below provides information on drinking water supply in urban centres in the North-West following an evaluation of the consulting firms contracted by CAMWATER.

Table 103: Supplier of drinking water in urban centres

Centre	CAMWATER	Community Water	New Station Project
Bamenda I	Yes	Mendankwe	Yes
Bamenda II	Yes	No	No
Bamenda III	Yes	Yes	No
Ndop	Yes	Yes	No
Mbengwi	Yes	Yes	No
Batibo	Yes	Yes	No
Nkambe	Yes	Yes	Yes
Jakiri	Yes	Yes	No
Njinikom	Yes	Yes	No
Jikejem	Yes	Yes	No
Fundong	Yes	Yes	No
Wum	Yes	Yes	Yes
Kumbo	Yes	Yes	No

Source: Regional Delegation of MINEE

NB: Many communities in the North-West Region have clean facilities for drinking water. In some urban centres, water supply is managed by CAMWATER and community organisations with clean equipment.

As for rainwater, there are huge potentials for rain water harvesting from roofs and pavements that are however at the moment not developed in a systematic way. Only at times of water supply problems during the rainy season people put buckets under the roof side, or some private households possess a tank to collect water from their roof.

Table 104: Water supply in the North-West

Centre	Number of inhabitants 2012	Institution or Organisation in charge of DWS*	Power System DWS*	Peak requirements (m3/J)	Storage or distribution of tanks (m3)	Number of subscribers	Desert rate	Number of fountains
Bamenda	347,903	CDE	Two catchments of (river + lake) and treatment		Three tanks 600 m^3	11 713	19.30%	53
		CAMWATER			1,250m^3			
Ndop	26,023	CDE	River catchment and treatment	504	150m^3	1 046		
		CAMWATER						
Kumbo	112,101	Kumbo Water Authority (KWA)	Four river catchments + treatment	2,400	Two tanks	4 028	33.20%	
Nkambe	19,321	CDE	River catchment + treatment	607	Tank 300m^3	796		3
		CAMWATER			Tarpaulin storage 200m^3			
Wum	34,660	CDE	River catchment + treatment	711	450m^3	713		9
		CAMWATER			150m^3			
Fundong	22,418	CDE	River catchment + treatment	253	150m^3	499		1
		CAMWATER						
Mbengwi	12,319	CAMWATER	River catchment + treatment	771	500m^3	742		2
Tubah	19,180	Bambui Water Authority, Bambili Water Authority	River catchment, Source capture	534	Three tanks 125m^3, 10 and 5m^3	752	35%	12
Batibo	11,633	CDE	River catchment + treatment	254	150m^3	505		7
		CAMWATER						
Bali	23,846	Bali Water Committee	Six catchments (4 sources + 2 streams) + treatment	918	Storage 40m^3	1 850		
					Tarpaulin storage 200m^3			
					Distribution 700m^3			
Njinikom	7,443	CDE	River catchment + treatment	168	Storage 300m^3	391		2
		CAMWATER			150m^3			
Jakiri	11,050	CDE	River catchment + treatment	172	Storage + distribution 15m^3	510	55.20%	14
Ako	6,200	Catholic Mission	Two small networks with fountains	135				
		AKO Urban Community						
Njikwa	6,131		Two source catchments		Two tanks of 30m^3 each			6
Nwa	6,225		Two catchments of four sources		200m^3	244		4
					35m^3			
Furu Awa	1,687		Two source catchments		Storage 50m^3			10

*DWS: Drinking Water Supply

Source: Master Plan of Urban and Peri-Urban Hydraulics of Cameroon, Zone 3, summarised by the author

7.2.4.3. Main issues of drinking water supply

- Partial involvement of municipalities or village communities in the construction and management of drinking water equipment and distribution. The lack of energy or energy outages do not allow a quantitative and qualitative supply of drinking water to the population;
- Monopoly of production and distribution by CDE / CAMWATER in some cities;
- Obsolescence and inadequate maintenance of drinking water supply equipment due to lack of human and material means;
- Lack of structure in charge of the management and maintenance of standpipes and boreholes in rural areas;
- Absence of decentralisation.

7.2.5. Wastewater and drainage

In general, wastewater comes from households, administrations and industries.

Wastewater from households and administrations

The wastewater is collected in septic tanks built around different buildings and houses. When a septic tank is full, we proceed to the emptying which is carried out by structures or private individuals in charge of the collection in tank cars. The wastewater is then discharged into selected locations for this purpose. Some households discharge directly this wastewater into public drains, which drain the water into a stream, river or lake.

In rural areas or some urban areas, latrines are used. These waters are poured into these latrines. They infiltrate into the basement and can therefore return to the water supply wells. Often too, these waters are dumped in the nature around the houses.

Wastewater from industries, agriculture, and drainage

The number of industries in the North-West is insignificant; most of the processing of materials is craft work. They also do not treat their wastewater. They are managed like those of homes and public administrations.

Regarding the water quality it is obvious that the disposal of untreated waste and wastewater, runoffs from agriculture (fertilizers and pesticides) as well as the use of surface water for cattle and to wash clothes, bikes and cars causes heavy pollution of streams and rivers, threatens their ecology and the health of the population, spreading water borne diseases and contaminating fish. Groundwater, surface water and (through catchments) drinking water can be contaminated. Ecosystems of rivers, lakes and swamps, some of them being wetlands of international importance can be destroyed

Failure to control rainwater drainage through appropriate sizing of drains, ditches and engineering structures (bridges, culverts, nozzles, etc.) can lead to floods, which produce disasters such as those that have destroyed the rice fields in Ndop and its surroundings in 2017. The size of ditches, drains and engineering structures must take into account hydraulic data in relation to the nearby watershed.

Drains and ditches in and around urban centres are not often mucked out. This is also observed along the roads, leading to flooding and destruction of the roadway.

Main issues

Public outlets are not scientifically identified, which constitutes a danger for the environment and the populations. Non-treatment of wastewater leads to the pollution of streams, rivers and lakes. They sometimes contaminate groundwater. All of this threatens the health of people who use the water from wells, rivers and wetlands. Consumption of fish caught under these conditions also remains a danger to human

health. It is important for developing countries to take into account the need for wastewater treatment. Especially industries should definitely treat wastewater because "whoever pollutes-pays later".

7.3. Telecommunications

7.3.1. General facts

Telecommunications are defined as the remote transmission of information with means based on electronics, computer science and wired, optical or electromagnetic transmission. They are thus distinguished from the post office which transmits information or objects in a physical form.

Currently, telecommunications generally involve the use of electronic equipment associated with analogue or digital networks such as landline or mobile telephone, radio, television or computer. These are also an important part of the global economy.

The impact of new technologies of information and communications (ICT) on the Cameroonian economy is remarkable. According to the NIS, this sector contributes nearly 5% to the Gross Domestic Product. The North-West Region, with its four operators in the mobile market, number of subscribers, number of Internet service providers and value-added service providers, actively contributes to the good national economic performance achieved by this sector of activity. However, we still notice a low competition in the mobile phone sector.

7.3.2. Institutional, administrative and political organisation of the telecommunications

This section presents the institutional and administrative framework that underpins the functioning of the telecommunications sub-sector. This framework generally includes:

- The Presidency of the Republic which defines the general policy of the subsector;
- The Prime Ministry which coordinates the action of the Government and consequently the ministries involved in the sub-sector;
- The Ministry of Finance which provides financial supervision;
- The Ministry of Posts and Telecommunications, which is responsible for the development and implementation of the Government's telecommunications policy;
- The Ministry of Economy, Planning and Regional Development which, in liaison with MINEE, ensures the promotion of investments in the sub-sector.

In addition, other public administrations are also actors in the telecommunications sub-sector.

7.3.3. The telecommunications policy in Cameroon

The world is now a global village. Cameroon as a whole and the North-West in particular are developing infrastructures in order to remain interconnected with the rest of the world. In order to make this sector more competitive, productive and to better coordinate actions between different actors and to improve the legal and regulatory framework of this field, MINPOSTEL has set up a policy whose main objectives are:

- Liberalisation of the mobile telecommunications sector;
- State disengagement from the productive sector;
- Separation of Posts activities from those of Telecommunications and ICT;
- Presence of a public fixed telephony operator.

- Creation of the ART (Telecommunications Regulatory Agency) responsible for regulating, controlling and monitoring the activities of operators in the sector for the benefit of consumers.

7.3.4. Organisation of the telecommunications in the North-West Region

This business sector is divided into four main areas: radio broadcasting, television broadcasting, telephony and Internet. At the centre of these different communication technologies is the transmission of data which only becomes effective in the presence of certain technical infrastructures.

Apart from the mobile telephony that has been liberalised and therefore the various actors are free to build their own infrastructure and offer services of their choice, the other sectors are still managed by the public operator which is CAMTEL.

Fixed telephony

Although in decline, the fixed phone is a wired communication system that is prevalent in businesses in the Region. This communication system includes remote connection units, self-routing centres, transit centres (National and International) and rural telephone centres. The centres are connected by inter-urban radio links and relay stations and some fibre optic links. International communications are provided by satellite and SAT3 fibre optics.

Mobile telephony

This is the most widespread data transmission model in the Region. Open competition in this area by the Government has seen this sector grow rapidly after few years. Cameroon as a whole and the North-West Region in particular have gone through the last five years from the second generation of data transmission with the Global System for Mobile Communications (GSM) to 4G. 4G is the fourth generation of standards for mobile telephony with data transmission higher than theoretical speeds above 100 Mbit/s.

Radio and television broadcasting

Radio and television are signal-emitting techniques (analogue, digital, video and audio) intended to be received directly by the general public for both individual reception and community reception. It remains to this day the main source of information for the Region. To transmit the data, the operators of the sector make use of CAMTEL's infrastructure but also of their own equipment of emissions. There are about forty public and private promoters of Radio and Television stations (Regional Delegation of MINPOSTEL, 2018).

Internet

It is an international telematics network that was born from the American military network ARPANET in 1969 resulting from the interconnection of networks using a common communication protocol. The Region benefits partly from the optical fibre that passes through it and reaches Bamenda. Another means of internet access used by Internet providers in the Backbone (core network) is the VSAT (Very Small Aperture Terminal). VSAT refers to a two-way satellite communication technique that uses parabolic dish antennas with a diameter of less than 3 m on the ground and that target a geostationary satellite.

Although many operators are present in the Region, access to the Internet is still limited in rural areas and the costs are still quite high regardless of the quality of the services requested.

7.3.5. Main actors of the telecommunications in the North-West Region

The State of Cameroon created in 1998 CAMTEL as the national public operator that manages telecommunications while liberalising the field of mobile telecommunications. It then has several structures each with a specific mission. These are the Telecommunications Regulatory Agency (ART), the National Agency for Information Technologies and Communication (ANTIC). Apart from these actors, several

other private operators are helping to increase supply and improve access to telecommunications services in the North-West Region. These are large multinationals that not only provide a multitude of data services offerings, but also create many jobs in the Region. Cameroon Radio and Television (CRTV) is certainly a public media but remains a major operator of telecoms in the Region by the technical infrastructure it has and the human resources it mobilises. The table below summarises the various actors involved in the telecommunications field in Cameroon in general and in the North-West in particular.

Table 105: Major actors in the tele-communications sector in the North-West Region

Actors	Full Name	Responsibilities
CAMTEL	Cameroon Telecommunication	Telecommunications Network Management
ANTIC	National Agency of Information and Communication Technologies	Promotion and monitoring of the action of public authorities in the field of ICT
ART	Telecommunications Regulatory Agency	Regulates, controls and monitors the activities of telecommunications sector operators
MTN	Mobile Telephone Networks	Mobile operator and Internet
ORANGE		Mobile operator and Internet
NEXTTEL		Mobile operator and Internet
YOOMEE		Mobile operator and Internet
CREOLINK		Internet service provider
RINGO		Internet service provider
CRTV	Cameroon Radio and Television	Public audio-visual media
Cable Operators		Radio and television access providers
Radio and Television Stations		Private audio-visual media

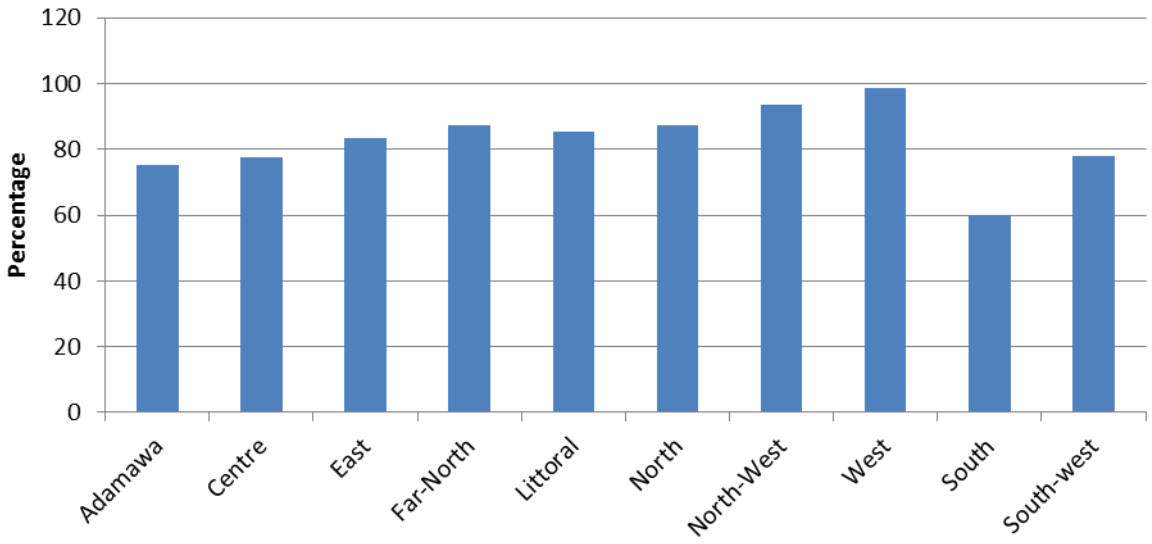
Source: Regional Delegation MINPOSTEL

Cable operators, radio and television stations are listed in a table in the annex (part 1 section 4.3 Telecommunications sub-sector).

7.3.6. North-West telecommunications network coverage

The fact that this Region is one of the smallest in Cameroon with an area of 17,300 km² makes it one of the most covered areas in Mobile and Audio-Visual Telecommunications Network. This is due to the fact that the majority of the operators have infrastructures which are most often installed in the headquarters of the Region and the divisions and in some headquarters of subdivisions. The coverage rate remains the second highest in the country after the West Region in this sub-domain in terms of localities covered.

Figure 138: Mobile network coverage rate by region in 2015

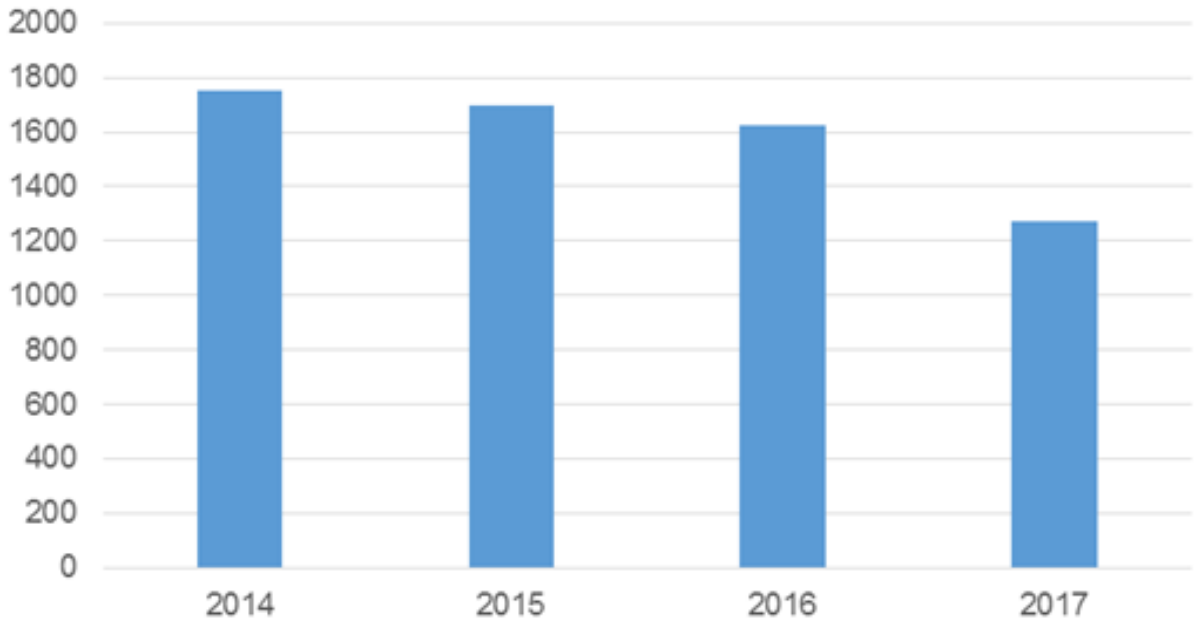


Source: ART

However, the fixed telephony offer is still possible only in certain large administrative units like divisional headquarters in the Region. The coaxial cable transport network that provides data transmission remains archaic and almost non-existent. In view of the statistics to be observed below, it is hard to realise that this sector of activity is losing momentum.

However, the quality of the services offered remains inadequate. Despite this high coverage data transmission remains very slow.

Figure 139: Fixed telephone subscribers in the Region



Source: ART

7.3.7. Main issues of telecommunications

The telecommunications sector is one that has probably seen a lot of room for improvement in recent years. The North-West is one of the most covered regions of Cameroon's telecommunications network. However, important findings were made during our study. Disparities in offers still exist between rural and urban areas. Although already underway, the extension of fibre optics, which is expected to improve the quality of offers, is hardly noticeable in rural areas and some administrative units. The fact that each operator has its own installation greatly influences the cost and the quality of the offers because the installations cost them dearly. The impossibility for certain small operators to have certain relay antennas and the fact that existing ones cannot be shared, reduces the coverage and competition in the Region, hence the need for a better data transmission policy.

7.4. Waste

According to traditional conception, the waste is a deliberately abandoned object that the owner does not want to recover. Within the framework of the Cameroonian context and in particular through article 4 paragraph C of the Framework Law of 05th August 1996 relating to the management of the environment, waste is defined as any residue of a process of production, transformation or use, any substance or material produced or more generally any piece of furniture or building abandoned or destined for abandonment.

Given the problems generated by waste on human health, the quality of fauna, flora and the environment, the issue of waste management is a contemporary concern of states and local and regional authorities. It therefore deserves concerted action by all public and private actors in society.

7.4.1. Institutional, administrative and political organisation of waste management

In Cameroon, the President of the Republic defines the national environmental policy. Its implementation is the responsibility of the Government which applies it in concert with the decentralised territorial council, the basic communities, and associations of environmental protection.

At Government level, the ministries in charge of waste management are:

- Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED)
- Ministry of Urban Development and Housing (MINDUH)
- Ministry of Public Health
- Ministry of Industry, Mines and Technological Development

The main actors rely on regulatory texts in Cameroon, namely:

- Law Nº. 89/027 of 29th December 1989 on toxic and dangerous waste
- Law Nº. 11-03-1990 on the protection and enhancement of the environment
- Law Nº. 28-00-1990 on Waste Management and Disposal
- Law Nº. 96/12 of 10th August 1996, on the Framework Law on the Environmental Management
- Law Nº. 98/005 of 14th April 1998 on the water regime

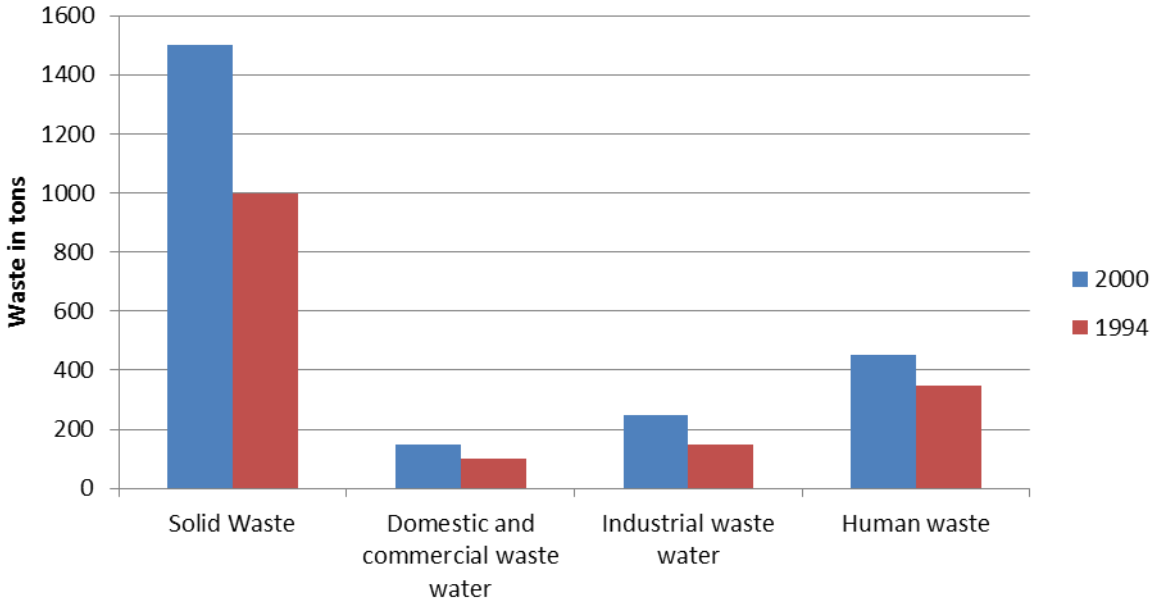
It should be noted that the waste management strategy also takes into account international legal instruments and commitments: for example, the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes, and those of the World Health Organisation (WHO).

7.4.2. Waste collection in the North-West Region

There are generally different types of waste:

- Solid waste
  - Household waste from households, hotel, accommodation and administrative activities;
  - Some hospital waste (waste assimilated to household waste, waste with infectious risks, chemical and toxic waste, radioactive waste). In short, we distinguish hospital waste at risk and specific waste;
  - Industrial waste, etc.
- Liquid waste
  - Wastewater (see chapter 7.2.5);
  - Soiled oils;
  - Groundwater contaminated by decomposing bodies, from people who do not bury their dead in cemeteries

Figure 140: Comparative evolution of emissions from the waste sector in 1994 and 2000



Source: Second Communication on Climate Change, MINEPDED, 2014

The main information that emerges from this diagram is the increasing evolution of waste with pollution.

The main actors for waste management are the different delegations of the ministries concerned, de-centralised territorial authorities, HYSACAM, associations and populations.

For a long time, the Urban Community of Bamenda (CUB) took care of the garbage collection of this city, which is poured into a dump in MAGAJI NKWEN. Since 2017, the CUB has signed a contract with HYSACAM which ensures this mission. Garbage bins are not available everywhere. Populations create spontaneous dumps especially in public places like markets, schools, making the city unhealthy. Plastics flood some neighbourhoods and end up with other waste in gutters or rivers during the rains while posing a real problem for the environment. The lack of general awareness in the population does not facilitate collection even where there are garbage bins. They simply throw the garbage on the floor. The garbage collection by HYSACAM is not regular and it does not cover all the districts of the city.

Figure 141: Public landfills in Kumbo

Source: NW field survey 2018

HYSACAM is also operational in Kumbo where we meet the same problems as in Bamenda. Here, a particular waste adds to it in the dry season: the dust, which invades the environment in certain districts with the passage of the cars and the motorbikes taxis. Dust intrudes in shops, houses. It is consumed in large quantities by populations who are thus exposed to serious health problems.

Other urban centres in the Region do not benefit from HYSACAM services. Municipalities organise themselves as they can to manage waste. Sometimes this service does not exist and everyone gets by with his trash as he can.

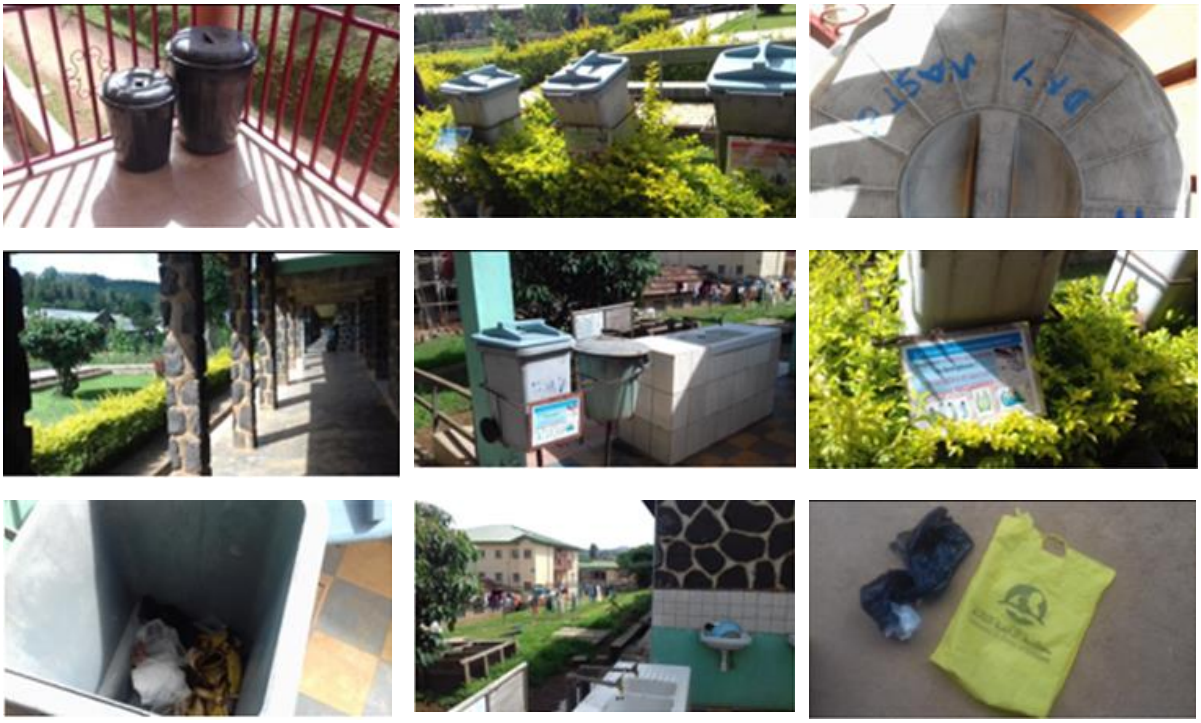
7.4.3. Waste treatment in the North-West Region

People often burn garbage piles to get rid of them. This pollutes the air and exposes people to serious health problems. Some solid wastes such as steel carcasses, used batteries and others are collected by individuals for resale to the companies that need them as raw materials. Many things are constantly repaired or reused (iron, building materials, wood) in another way, like paper bags for cement to carry groceries or vegetables. Also, people traditionally use leaves and grasses for natural packaging, especially for food. Organic waste is often reused on farms, turned into compost for small farmers or to boost the production of the food industry or to produce biogas. In case it is dumped there are animals like goats and fowl that eat it. Therefore, and also because of the relative height and cool climate, the odours even close to landfills are relatively low.

In Ndu for example, despite the limited financial means and techniques, the municipality tries to supervise the population with awareness. Waste is sorted, much of the household waste is transported by farmers to fields where it is dumped and is later used as fertilizer. A large part of the waste is recovered by the municipality. Passages of a suitable truck in the neighbourhoods are scheduled two to three times a week for the collection of waste packed in plastic bags.

The treatment of hospital waste poses a huge problem almost in all centres despite the legislation in this area. At St. Elizabeth Hospital in Shisong (Kumbo), officials try to manage the waste. Household waste is sorted into three types: plastics, metals and glasses, organic waste. Here, they use incineration and burial techniques. Wastewater from the Cardiology Hospital is treated before discharge.

Figure 142: Waste sorting at St. Elizabeth Hospital in Shisong (Kumbo)



Source: NW field survey 2018

In rural areas, waste is dumped in nature around homes, rivers, swamps. The dead are buried anywhere, which is dangerous for the health of the people and the environment.

Industrial waste, even insignificant in the Region, is also a problem. There is not a culture in industries for them to treat their waste. We still note the presence of some sorting centres and treatment of this waste.

Table 106: Manifesto for follow-up waste delivered in the North-West Region in 2015

Delegation	Number of issued manifestos	Type of waste	Quantities transported in 2014	Treatment centres
Regional	130	Scrap	1,924 tons	PROMETAL. METAFRIQUE. BOCAM and BOCOM (DOUALA)
		AES SONEL/ENEO Waste	93 tons	
		Used filters	2,689 kg	
		Used oils	67,039 liters	
Donga-Mantung	2	Used oils	500 liters	BOCOM Petroleum.
		Scrap	12 tons	Ste ACIERIESCOULEE CONTINUE Douala
Menchum	8	Scrap	1,045 tons	PROMETAL. METAFRIQUE. (DOUALA)
Mezam	20	Scrap	235 tons	
		AES SONEL/ENEO Waste	10 tons	
		Used filters	1,100 kg	
		Used oils	22,000 liters	
Ngoketunjia	16	Scrap	94 tonnes	DOUALA
		Used filters	250 kg	
Total	176	-	-	-

Source: RD-MINEPDED

In addition, there are associations of biogas producers in the Region, the main one being the Association of Biogas Producers based in Bamenda, which uses some of the organic waste collected. The gas produced serves:

- In industries and kitchens
- For home lighting
- For domestic and animal heating
- For generators
- For water heating in houses

Other products in the production of this gas are used as disinfectant, foliage fertilizer, pesticide and deodorant.

This organisation has several production centres in some localities as described in the Table 101.

7.4.4. Issues of waste management in the North-West Region

Nature and the environment pay the fees while the prescription is clear "whoever pollutes-pays later". Although a national policy has been put in place and some people have become aware of the impact of waste in the environment, there are still many obstacles to their proper management in the Region. These include:

- The unavailability of modern technologies;
- The lack of qualitative and quantitative preliminary studies on the production of waste;
- Social acceptance;
- Financing costs;
- The social environment;
- Choosing a safe and environmentally friendly treatment option;
- Information, education and communication actions;
- The use of powerful evaluation tools.

In summary, waste management is still a major project in the Region.

It is worth working with the Services of MINEPDED, Regional and Local Collectivities to put in place transformation and waste management in the seven Divisional Headquarters and other towns with a dense population settlement.

7.5. Assessment of the situation in technical infrastructure

Table 107: SWOT summary of Transport

SWOT summary: ***Transport***	
STRENGTH	**WEAKNESSES**
• Operationality of the Ring Road despite its poor condition • Existence of the Bamenda-Enugu Corridor • Proximity of the Region with the Federal Republic of Nigeria	• Limited or non-existent access to Nigeria from the departments of Donga-Mantung and Menchum • Lack of regional decision-making bodies endowed with financial and human resources for road maintenance • Extreme centralisation of decision-making bodies in charge of transport policy located in Yaoundé, far from the Region • Lack of air transport between the Region and the bordering states of Benue, Taraba and Cross River of the Federal Republic of Nigeria • Incompetence and lack of financial resources of SMEs in charge of maintenance • Absence of an urban and interurban mass transport system in the Region. • 419 uncompleted development projects • Social and technical infrastructures were vandalized from 2017-2020 (no proper documentation exists so far).
OPPORTUNITIES	**THREATS**
• An improved transport system can create opportunities for agriculture and touristic dynamics in the Region • Great Nigerian market to conquer if the cross border transport system is available • Interconnections of the Ring-Road from Kumbo and Wum with Nigeria in addition to the N6 • Improvement of accessibility within the Region at all seasons by asphalting the 358 km Ring Road • Grow agricultural and tourism sectors by facilitating accessibility in Nigeria • Establishment of real decentralisation.	• Accessibility dependence in Nigeria by the N6 (Bamenda-Enugu Corridor) • Very rugged terrain with natural hazards that could disrupt transport especially during the rainy season. It limits or even compromises the development of certain means of transport (example: railway) • Lack of capacities for maintenance of the road network according to an appropriate program and standards • Breaking of the structures • Corruption in the procurement and execution of some road construction and maintenance works

Table 108: SWOT summary of Water and Energy

SWOT summary: ***Water and energy***	
STRENGTH	**WEAKNESSES**
• Available water sources • Available data on water needs • Regulatory texts available • Decentral water supply (wells) for most households available and in sufficient quality • Electricity for most urban households available (but insufficient continuity) • Large potentials for hydropower, solar energy, and biomass	• Limited continuity of water supply for households and businesses • No water pricing system in place to reduce consumption and to gain resources for investments in the water supply system • Lack of sufficient electrical energy • Aging infrastructure, inappropriate maintenance (infrastructure management governance) • Lack of financial resources at regional level • Lack of facilities management in rural areas
OPPORTUNITIES	**THREATS**
• Strengthening good practise in the decentralised management of water resources (collection systems etc.); pilot projects, guidance, trainings • Growing political will • Implementation and use of renewable energy; decentralised for rural areas • Implementation of decentralisation in the production and distribution of water and energy • Strengthening decentralised cooperation	• Climatic change impacts on the water cycle • Centralisation of policies and means of action in Yaounde • Limited financial resources available • Awareness of the water management needs limited • Lack of follow-up and maintenance of infrastructures • Dependence on the monopoly of ENEO and CAMWATER

Exploitation of strength

- The possibility of a hydroelectric power plant should be studied.
- Photovoltaic panels for public lighting and households should be installed in view of the sunshine observed in this area of the country.
- Small scale decentralised hydroturbin power can be exploited from major rivers.

Remediation of weaknesses

- Low fossil energy holdings encourage investment in renewable energy.
- Electricity cuts due to the obsolescence (poles falling down) of the local transmission and distribution network can be definitely avoided with the installation of an underground energy transmission plan or concrete poles.
- Biological energies are those advocated by international organisations, hence the need to encourage not only public authorities and decentralised authorities but also individuals to set up bankable projects in this sector.

Exploitation of opportunities

- Through decentralisation, each community could set up its territorial electrification program.
- The electric energy sector, which was liberalised in the late 1990s, would be boosted if independent producers truly integrated this sector. Especially since they could benefit from many advantages coming from the Government as private investors.

Elimination/reduction of Threats

- Once installed, the infrastructures for the production, transmission and distribution of electricity are generally abandoned. Many interruptions of the network are to be observed due to the poor quality of the installations and fires caused by sabotage or inadvertently through bushfires. These different threats can be avoided by reinforcing the control, monitoring of the works and by focusing on the quality of existing installations.

Table 109: SWOT summary of Telecommunication

SWOT summary: ***Telecommunication***	
STRENGTH	**WEAKNESSES**
• Presence of basic infrastructures • Presence of several operators	• Insufficient tenders • High cost of tenders • Poor network quality in some localities • Lack of regulation in data transmission
OPPORTUNITIES	**THREATS**
• Optical fibre • A young population • Multitude of services not yet exploited • Installation of independent suppliers	• Cybercrime and lack of regulation in this regard • Wooden posts exposed to bush fires and bad weather • Dependence on the CAMTEL monopoly

Exploitation of the available Strength

- The multitude of operators in the sector avoids the monopoly of an operator in telephony because competition necessarily leads to an improvement of the supply and the reduction of the cost thereof.
- The Region already has basic infrastructure that needs to be reinforced to improve the quality of services offered.

Remediation of Weaknesses

- The duplication of urban and interurban transmission infrastructures should be avoided so that the cost of the installations no longer weighs on the consumer.
- Announced as the latest technology in mobile telephony, the 4G is still slow to bear fruit. It is imperative that the different operators strive to make this new technology effective to promote smooth data transmission.

Exploitation of Opportunities

- It is generally claimed that youths are the future of the nation. This Region of the country has a very active youth, even in social networks and the digital economy. The political will expressed at the highest level of the state should be effective on the ground so that this sector of the economy can develop better.
- Optical fibre is a physical transmission medium that allows the transmission of high-speed data through optical rays. The total coverage of the Region will encourage several other operators who have been reluctant to set up shop and the services offered will become even better.

Elimination/Reduction of Threats

- The lack of legislation on cybercrime, the lack of security services (structure and specialised staff) for the prevention and punishment of criminal acts expose Cameroon to all forms of perversion in this area. An example of this is the unauthorised access to information systems by public companies and institutions with the possibility of data corruption and harm to morality. It is necessary to put in place an appropriate regulatory and legal framework, firstly to deal with disputes in the field.
- Once installed, the infrastructure for the transport of telephone cables is generally abandoned. Many interruptions of the network are to be observed due to the poor quality of the installations and the poles which are vulnerable to bushfires and weather. These different threats can be avoided by reinforcing the control, the monitoring of the works and by putting an emphasis on the quality of these. The installation of fibre optic throughout the territory can completely eliminate these threats.

Table 110: SWOT summary of Waste Management

SWOT summary: ***Waste Management***	
STRENGTH	**WEAKNESSES**
• Political will expressed at the highest level of the state • Composting • Waste management systems installed (on low level) in Bamenda and in Kumbo, including separation and some recycling • Pilot projects for waste management existing in the region (e.g. Shisong Hospital)	• Poor waste collection, separation and recycling in practise • Lack of waste treatment infrastructure • No regional or local waste management concepts exist (avoid, collect, separate, recycle, dispose) • Low awareness of people and governance on the environmental impacts and economic values of waste (e.g. the impact of unorganised waste disposal on the water system) • Insufficient tenders
OPPORTUNITIES	**THREATS**
• Recycling, which create values from waste • Fertilizer production industry • Decentralisation	• Low awareness at the level of the population on the necessity of waste management (including reduction of waste, adequate disposal, separation and collection) • Climate change impacts • Intoxication • Pollution

Exploitation of the available Strengths

- The various laws on toxic and hazardous waste relating to the protection and enhancement of the environment, waste management and disposal show that public authorities are very attached to waste management and to the ecological balance of our environment. Covered by this battery of measures, several other actors should accelerate the establishment of their structures while knowing that the protection of the environment remains a major stake for this Region.
- With plenty of space left over, rural, peri-urban and even independent organisations in cities should invest in producing more compost. It can be exploited by small farmers or sold to large companies specialised in the food industry to boost their production.

Remediation of Weaknesses

- Although the waste collection and treatment sector has been liberalised, there are almost no health and sanitation services in this part of the country. Other service providers could integrate the sector to significantly strengthen it.
- Good collection and sorting of waste would enhance compost production. These goals can be achieved by large awareness campaigns, information and communication.

Exploitation of Opportunities

- Many solid or liquid wastes must be treated and reused, which is recycling. The production costs of certain items will be revised downwards while at the same time reducing the prices of these items on the market, which is an aspect of circular economy.
- Organic waste is at the base of biogas production, which is at the heart of the energy transition and another aspect of the circular economy, and could also be a source of many local jobs.
- The establishment of a true fertilizer industry in the Region should not only create jobs but also reduce or eliminate environmental threats by disposing of organic waste in the bottoms of our rivers and backwaters.
- Another great opportunity to seize is still Decentralisation. Waste management would be better monitored by local and regional authorities. They will have a better insight into the situation locally and will be able to develop a better policy.

Elimination/Reduction of Threats

- Through the pollution of its subsoil by the mismanagement of wastewater, contaminated oil and some other organic waste, the populations are exposed to the risks of intoxication and epidemics. The archaic incinerations of waste as practiced in the Region release greenhouse gases. These effects contribute to the destruction of the ozone layer, thus causing climate change. To remedy the situation, it is imperative to provide the competent services with modern techniques of waste management so that the environment, human and animal lives are preserved.

8 Social Infrastructure

Social infrastructure includes facilities and services that maintain and improve the standard of living and quality of life in the North-West Region. It directly impacts the wellbeing of the population.

8.1. Education

Several institutions provide education services to the population of the North-West Region. The state is the main institution in terms of coverage, number of schools, number of pupils and students. Confessional groups like the Catholics, the Presbyterian, the Baptist, Moslems and some Pentecostal churches also provide education. Added to the above mentioned institutions are private education service providers. The national education policy structures the sector into basic education, secondary education and higher education. Basic education involves the nursery and primary schools, secondary education involves the secondary and high schools while higher education involves the universities and other training institutions of higher learning. All of these sectors operate in the North-West Region.

Education has a cost in Cameroon. The fee for pupils is lower in the public schools compared to the confessional and private schools. The government declared primary education in public primary schools free since the year 2000. That simply means that there is no tuition fee. Other needs cost must be taken care of such as uniforms, books, registration fees and the Parents Teacher Association (PTA) fees which are all compulsory. The State is today applying the One Text book per subject per level to reduce the cost of textbooks which was very high. More than half of total enrolment is found in public schools with lower cost. The confessional and private schools and colleges have a higher cost since the tuition fees are fixed by the owners. The situation in the North-West Region is one wherein parents register their children in schools or colleges at various levels depending on their income. Tuition and fees at the secondary school level remain unaffordable for many families. The confessional and private schools though expensive have played a significant role in educating children whose parents can afford them.

In the financing of education in Cameroon, the government instituted the payment of school fees as generated income to which is added the state subvention. The primary school fee was suppressed on the 10th of February 2000. University education was free up to the reforms of early 1990. At the secondary school, there have always been school fees.

One of the most important mechanisms in the management of schools in the North-West Region is the Parents Teachers Association. They function at the level of the schools only and contribute in significant financial resources for the construction of the school, the payment of the salaries of locally recruited or part time teachers, teacher salaries, purchase of furniture such as tables, benches, etc, purchase of books for the library as well as computers for the laboratory and administration. Through a joint executive elected from parents and teachers, they oversee the management of the resources generated and provided. A significant part of infrastructure and equipments in most public schools are provided by the PTA. The success of the functioning of the PTA and its significant contribution to the construction, equipping and management of schools and colleges in the North-West Region is attributed to the community development spirit.

Because of the high population in urban and semi-urban areas, the creation and infrastructure investment in schools favours these areas. The further the distance away from the urban areas the fewer the schools created and the poorer the infrastructure. It should be noted that the population density, number or concentration vary a lot between the urban and the rural areas and so is the demand for education services between the urban and the rural areas. The creation of schools and the investment for infrastructure for example is superior in Bamenda, the regional headquarter, or in Ndop, the divisional headquarter of Ngoketunjia than in Bafanji which is just a purely distant rural area.

Two sub-systems of education, the Anglophone sub-system and the Francophone sub-system operate in Cameroon. Experimental teaching is going on in some selected schools in urban areas for a harmonised group of students referred to as Special Bilingual Class. The students are taught in both languages in these specialised classes. The government of Cameroon might in future adopt the teaching of every student in both languages. Operating two non-harmonised sub-systems is not good for mobility. Students study in the same institution and graduate with different certificates. While the francophone obtains the BEPC, Probatoire and Baccalaureat certificates at the secondary and high school, the Anglophone obtains the GCE ordinary and Advanced levels certificates. It is obvious that the programmes are different, the teaching is different, the evaluation is different and so are the certificates.

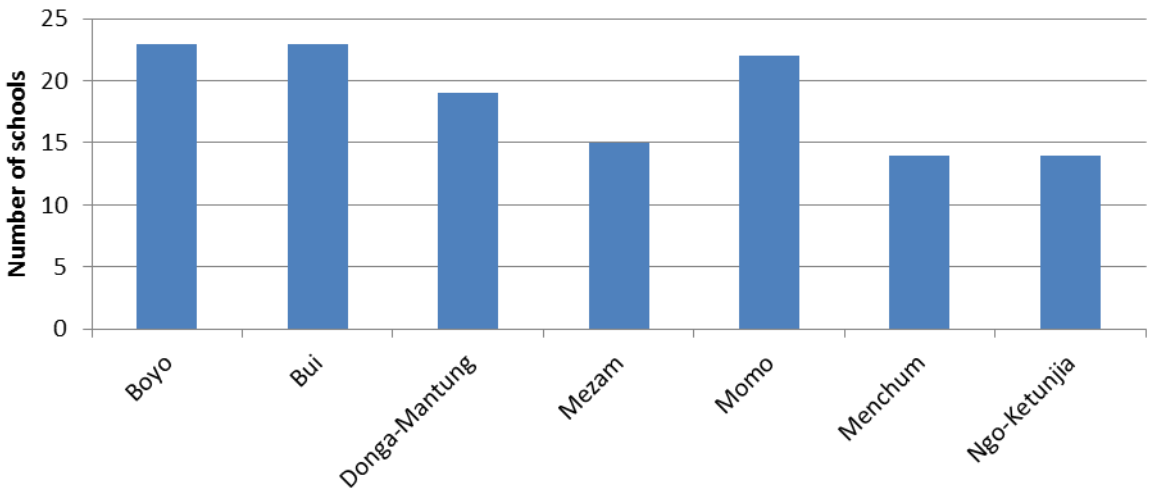
8.1.1. Nursery, primary and secondary education

The secondary and the higher education sectors offer general and technical education. It should be noted that the regional enrolment rate is highest in the primary sector and more than the national enrolment rate. It was 96.6% for the region in 2015 as against 88.7%. Analysis of quantitative information show major variation in the seven divisions that make up the North-West Region. Variations also exist in the provision of education. This is analysed with respect of the public and private sectors. It should be noted that sex variation in pupils and students do exist in the different divisions. This analysis provides a regional overview of the situation. There are 3,490 schools in the nursery, primary and secondary sectors in 2015.

There is variation when the population statistics per division is used to calculate the number of schools per 10,000 inhabitants. The regional rate is 18 which is satisfactory (approx. 1 school for 600 inhabitants). When this is done for the divisions, Boyo and Bui have the highest rates, which is 23 schools per 10,000 inhabitants, while Menchum and Ngo-Ketunjia have the lowest rates of 14 schools per 10,000 inhabitants. Mezam Division is below the regional rate due to its large population. Regarding the enrolment rate per 10,000 inhabitants, Boyo leads with 3,964 and Bui has the least with 2,830 (see annex part 1 section 5.1 Education).

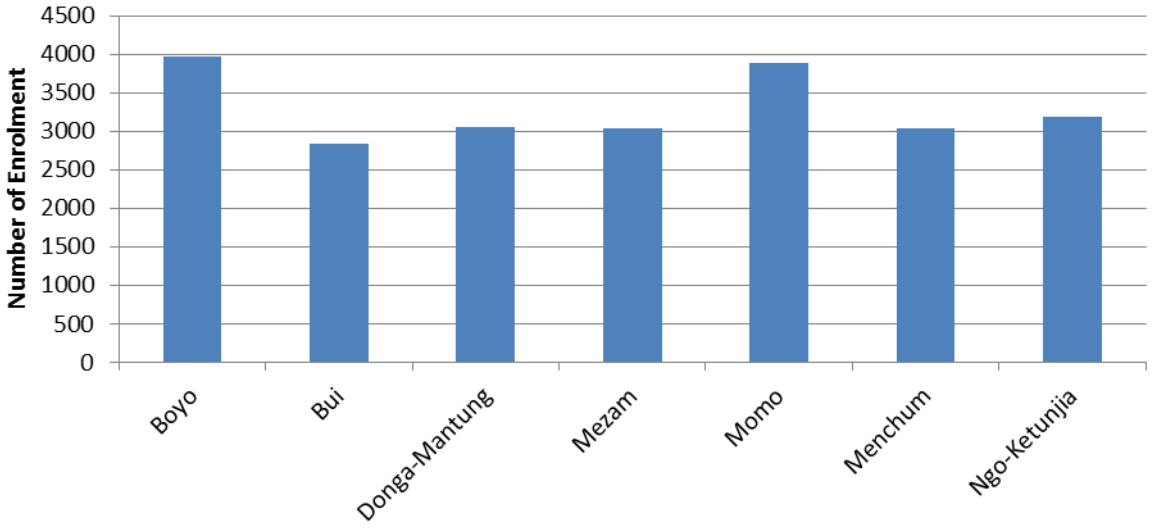
In the absence of official enrolment rates per division and since the population of age of going to school is not known per division, the above enrolment rate has been calculated as the ratio of pupils per 10,000 inhabitants as a substitute. It is meaningful if we consider the assumption that the age structure (age pyramid) does not vary from one division to another and the population below 15 years old represents approximately 43.5% (regional average) of the population in every division.

Figure 143: Number of schools per 10,000 inhabitants per Division



Source: compiled from the 2015 Statistical Yearbook of the North-West Region

Figure 144: Enrolment per 10,000 inhabitants per Division

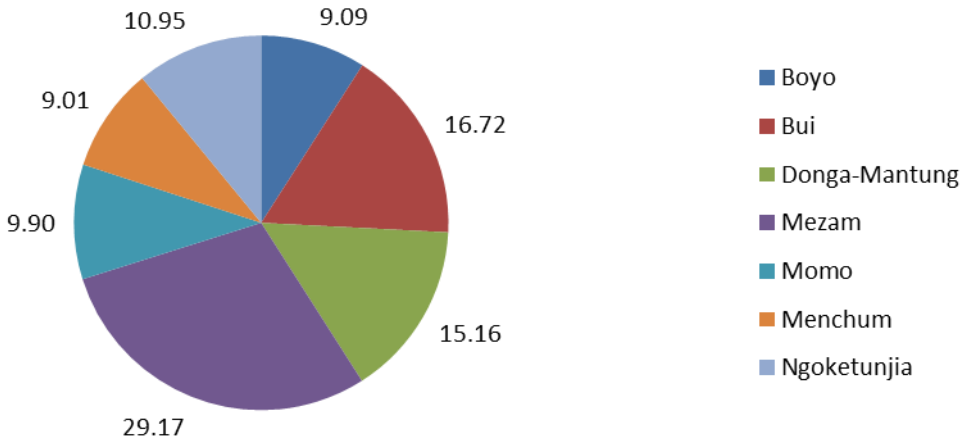


Source: compiled from the 2015 Statistical Yearbook of the North-West Region

According to the NIS Statistical Yearbook of 2015 for the North-West Region, public schools make up 59% while private schools make up 41%. Three divisions, Mezam, Bui and Donga-Mantung have 64.8% of the total number of schools while the four other divisions share the remaining 35.2%. Amongst the divisions with low number of schools are Ngoketunjia and Boyo which are the youngest divisions created in 1990. Mezam division has the highest number of schools which is 859 (representing 24.5%), not far from Bui division with 821 (representing 23.5%). Mezam division has the regional headquarter, Bamenda and several other semi-urban towns like Bali, Bafut, Santa, Bambui and Bambili with numerous pupils and students. Kumbo in Bui division is the second largest town in the region with many schools there and in the surrounding areas. There is variation in the number of schools and variation in enrolment. The total enrolment of pupils and students in the nursery, primary and secondary school is 614,729 in 2015. The sex variation is almost equal with 50.01% made up of boys and 49.99% of girls. The public sector enrolls 72.6% of the pupils while the private sector enrolls 27.4%. As a whole there are more girls than boys in the nursery level, more boys than girls in the primary and more girls than boys in the secondary. The region is well noted for its preference for boys in education but this trend has been slightly overturned. It should be noted that private education provided by confessional institutions and individuals is highly appreciated by the population of the region and from other regions. It is expensive and not within the reach of the common citizen. Three out of seven divisions in the region have 61 % of enrolment which is more than half of the regional total. Mezam division has 29.2%, Bui division has 16.7% and Donga Mantung division has 15.2%. The tables detailing the number of schools and enrolled pupils can be found in the annex (part 1 section 5.1 Education).

The distribution of pupils per Division is shown on the following figure.

Figure 145: Divisional Percentage in Regional Enrolment

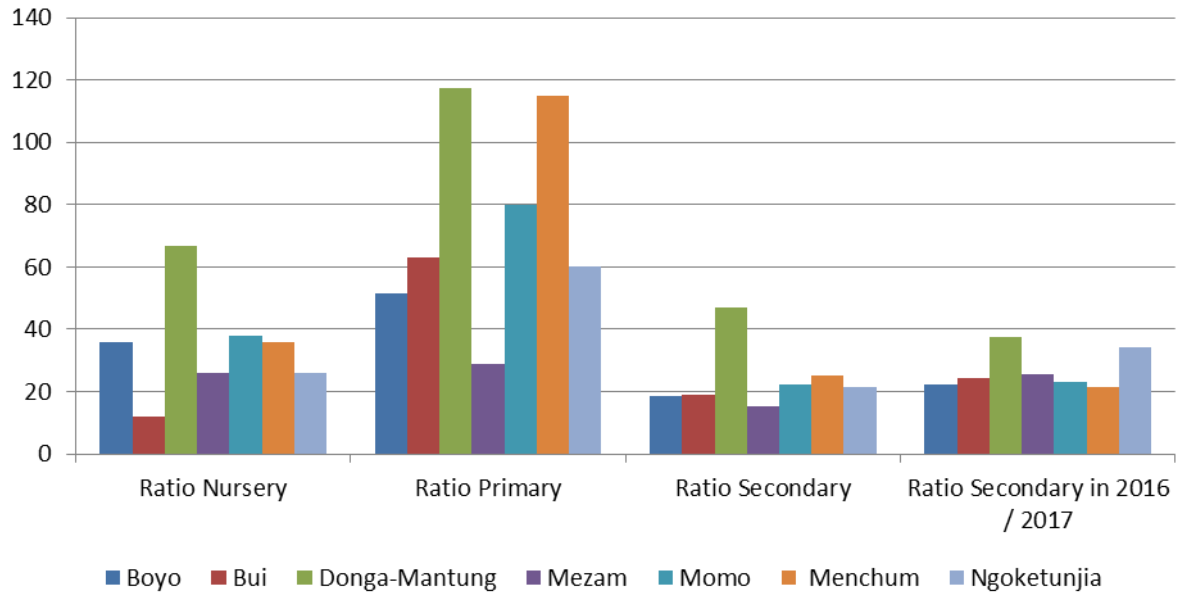


Source: compiled from the 2015 Statistical Yearbook of the North-West Region

The divisions having high percentages in the regional enrolment are the most urbanised, accessible and have several confessional schools and colleges. Variation also exists for teaching staff. The total number of teaching staff for the nursery, primary and secondary schools in the North-West Region is 18,800 in 2015. Mezam division alone has almost half of this number, which is 47%. Many teachers prefer to live and work in or closer to the regional headquarter, Bamenda. They therefore, occupy the semi-urban towns in Mezam division such as Bali, Santa, Bafut, Bambili and Bambui. Mezam division also leads in terms of enrolment. This justifies the high number of teaching staff. The second is Bui division with less than half of that of Mezam division, which is 16%. These two divisions concentrate 63% of the teaching staff of the Region in the nursery, primary and secondary schools. The teaching staff is made up of 43% of males and 57% of females. The overall student per teacher ratio for the region is 33. It varies in the different divisions due to the high variation in enrolment and teaching staff. Mezam division with the highest enrolment and the highest number of teaching staff has the lowest overall student per teacher ratio, which is 20. The highest is 85 in Donga-Mantung division. The student per teacher ratio variations by division and education sector is illustrated in the following figure. The tables showing the teaching staff and students-teacher ratio are found in the annex (part 1 section 5.1 Education).

The annex (part 1 section 5.1) also contains statistics on enrolment, staffing, and number of schools for the year 2017, but only for secondary education. Between 2015 and 2017, the enrolment increased in every division except Mezam where it declined by more than 2500 pupils. The number of secondary schools increased in every division over these two years, with a marked increase for Donga-Mantung, Bui, and Mezam (from 57 to 71, from 99 to 110 and from 125 to 140 respectively). While the teaching staff regionally declined in secondary education (from 10,838 in 2015 to 8,835 in 2017) the divisions of Menchum, Momo and Ngo-Ketunjia gained teachers.

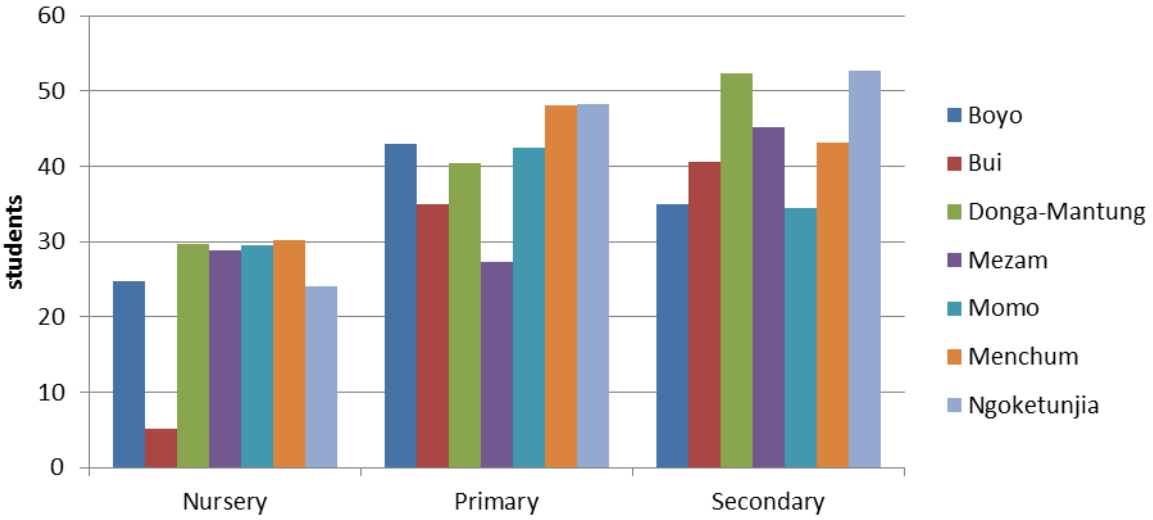
Figure 146: Student per Teacher Ratio



Source: compiled from the 2015 Statistical Yearbook of the North-West Region and Regional Delegation of MINESEC

The number of classrooms is not too different from those of enrolment and teaching staff. There are 16,405 classrooms in the nursery, primary and secondary schools in the North-West Region in 2015. Three divisions have more than 2/3 of these classrooms. The next figure illustrates the variation in students per classroom in the different divisions and different education sectors.

Figure 147: Student per classroom ratio



Source: compiled from the 2015 Statistical Yearbook of the North-West Region

Mezam division has 32.8%, Bui has 19.4% while Donga Mantung has 13.6%. This gives a total of 65.8%. Four divisions share 34.2%. A typological analysis as in the annex (part 1 section 5.1 Education) shows that 60.2% are finished classrooms, 24.7% are semi-finished while 15.1% are provisional. The unfinished and provisional classrooms make up 39.8% which is very high. The regional average student per classroom ratio is 37. Ngoketunjia division has the highest ratio which is 48 while Bui division has the lowest ratio, which is 32. The tables showing the classroom and their ratio of pupils can be found in the annex (part 1 section 5.1 Education).

It is becoming very difficult to decide on the maximum number of students to be admitted into a classroom in the primary, secondary and even university education in Cameroon as a whole and in the North-West Region in particular. Over crowdedness is directly the result of the lack of enough classrooms. The situation is alarming in Bamenda and other semi urban-areas like Kumbo, Bali, Santa, Bafut. The students must be admitted for they will have no other option. This situation exists in public and private schools. Public schools are the first choice for every parent because of the low cost. When the students are not admitted in private schools, the second choice is public schools. They cannot get admission in confessional schools where the maximum number is strictly respected for performance. According to the Cameroon Economic Development report for 2016 published in 2017, the standards set by the Education Sector Strategy states clearly that in primary schools, the maximum number per class is 45 while in the secondary school the maximum number is 60. Despite the call to respect these maximum numbers, primary schools in major urban areas have up to two times the number while in secondary schools the number goes up to 150 in a class. This is the result of the inadequate and uneven distribution of classrooms in the North-West Region.

Disparity between the divisions in the students-teacher and students-classroom ratios is therefore a result of the centralisation of decision making in the recruitment and distribution of teachers, the centralisation in budget allocations and financial transfer and inefficiency of operations at the regional level. The State through its central institutions for basic, secondary and higher education (MINEDUB, MINESEC, MINESUP) manages the recruitment of teachers through public entrance examinations or direct recruitment of contract teachers as well as constructs classrooms. Regional delegations have very little impact on the recruitment and distribution of teachers. Before 2015, teachers trained in the Higher Teachers Training Colleges were placed at the regional delegations for an equitable distribution to the various divisions. This failed largely due to corruption. The central administration is now responsible for it and place teachers directly to schools. The decision to program a classroom for construction is taken in the central administration though proposed by the regional delegation. The reality is that a school is created and goes operational but the first two classrooms constructed by the state are done several years after when the school is already in need of more classrooms. The distribution of qualified teachers in the divisions of the North-West Region is therefore not based on actual need. This is reflected in students' performance. The execution of the policy on how to distribute teachers across regions is partly arbitrary and mired in political intervention.

Since the year 2000, there has been a constant improvement in the creation of primary and secondary schools as well as institutions of higher learning in the North-West Region of Cameroon. This was witnessed in the rural areas. The easy creation of nursery, primary, or secondary schools in the North-West region though highly influenced by political intervention has increased the rate of accessibility. There are one or more primary and secondary schools in almost every village. The abolition of school fees in primary education in the year 2000 spurred an increase in total enrolment (shown on the tables in the annex part 1 section 5.1 Education) and also in the rural areas. It is nevertheless unfortunate that this was not accompanied by a significant increase in the number of teachers and classrooms as well as other education infrastructure in the rural areas. Accessibility in the specific situation of the rural areas in the North-West region is easily analysed using other indicators. Income levels and gender disparities (mostly in primary education) affect school attendance by many children in the rural areas. Thousands of children of primary school age are out of school, either because they dropped out, never enrolled or are expected to enroll late in the North-West Region. Due to the high cost at the secondary school level, even those who complete the primary schools might also not enroll, drop out mid-way or enroll late. Accessibility in terms of availability of schools is high but is low in terms of actual attendance due to other indicators.

Added to the problem of the number of school infrastructure in the North-West Region, is the state of existing school infrastructure. Every school is expected to have classrooms, administrative block, infirmary, library, hygiene and sanitation facilities like toilets, laboratories, playgrounds, dinning shed and

dormitories as well as refectories for boarding schools. These facilities exist in schools found in the urban and semi-urban areas at an acceptable state though not the best, on the contrary to the rural areas, except for schools constructed by partners like the Japanese government for the primary schools. The 5th phase of the Japanese Grant project cost some FCFA 5.5 billion and consisted of the construction of classrooms in some 18 schools in the North-West Region, particularly in Santa, Bafut, Bamenda, Bali, Tubah in Mezam Division, Fundong in Boyo Division and Ndop in Ngoketunjia. The grant also included the offer of offices, toilets, tables and chairs. Plan Cameroon, an international child centered organisation and Shumas Cameroon, a national NGO, and various other smaller national and international NGOs have constructed hundreds of good classrooms in rural areas in the North-West Region. Classrooms constructed through the Public Investment budgets are also in a good state for the first decade. As a whole, the very poor classrooms are those constructed with temporal materials. Much still has to be done to improve on the state of school infrastructure in the region. There is therefore the need not only to increase school infrastructure due to the constantly increasing number of students, but also to improve on the state of infrastructure through quality constructions and maintenance.

8.1.2. Higher education

Before 2010 the North-West Region had no State owned University. The Bambili annex of the Higher Teachers Training College was under the supervisory authority of the University of Yaounde I and had just the first cycle. It was raised to a complete cycle and the Higher Technical Teachers Training College created in 2010. The two institutions were later transformed into the University of Bamenda on the 8th of March 2011. Presently the institutions that provide higher education in the North-West Region include the state, confessional groups and private individuals. The confessional groups like the Catholic Church and the Presbyterian Church and private individuals had been providing higher education in the North-West Region for several years before the creation of the University of Bamenda. The University of Bamenda is presently the lead institution of higher learning in the North-West Region. Created in 2010 with just four out of its eleven schools operating, it now functions in full capacity, operating all of its eleven schools. It is located in Bambili, Tubah subdivision. Before the creation of the State owned University of Bamenda, several private and confessional universities have been operating in the region. Prominent amongst them are:

- The Bamenda University of Science and Technology, BUST in Bamenda III subdivision, Mezam division;
- The National Polytechnic in Bamenda III subdivision, Mezam division;
- The Catholic University of Cameroon, CATUC, in Bamenda II subdivision, Mezam division
- The Cameroon Christian University in Bali subdivision, Mezam division
- The Saint Louis Higher Institute of Nursing and Biomedical Sciences in Bamenda III subdivision, Mezam division;
- The Veterinary Higher Education, Jakiri subdivision, Bui division;
- Nursing School in St-Elisabeth Hospital, Shisong, Kumbo subdivision, Bui division

The privately owned and confessional universities train students in diverse disciplines and for various levels. Many students graduate every year with a Higher National Diploma in several professional disciplines. The student's body is made up of nationals from several regions and from other countries like Gabon and Equatorial Guinea. The growth of these private universities was encouraged by the creation of the University of Bamenda in 2011 which now vets their programmes and training.

8.1.3. Professional training

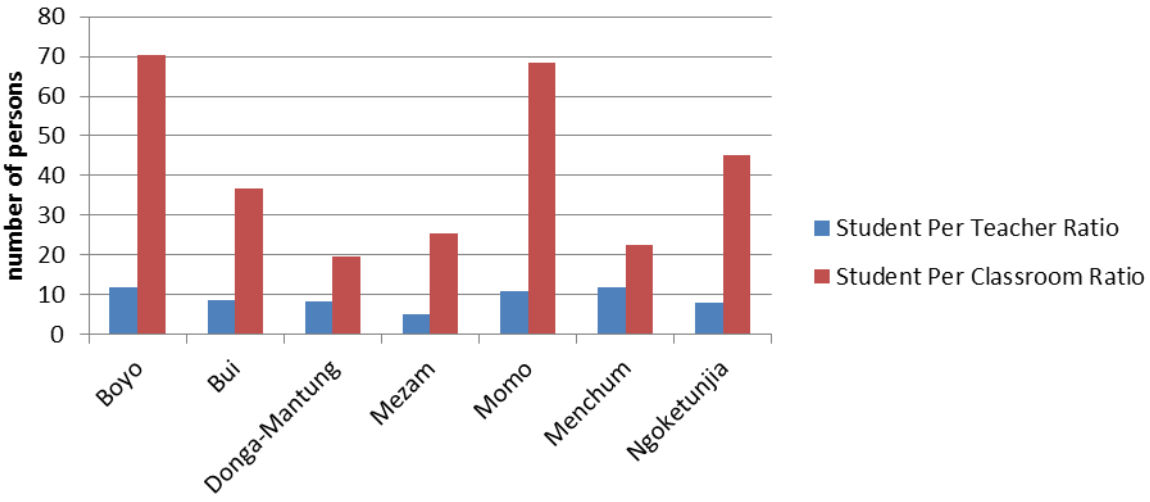
Technical education is carried out in the State owned technical colleges but professional training is carried out in the State owned specialised schools known as Rural Artisan Training Centre, (SAR/SM)

located in all the divisions of the North-West Region. Momo division leads in enrolment and personnel. Also according to the NIS Yearbook of 2015, there are 25 of such training centres in the North-West Region, which for several decades considered technical training as the sector for the unintelligent. There are 171 teachers in charge of 779 students (see annex part 1 section 5.1 Education). Vocational oriented training is carried out mostly in private and confessional institutions. Vocational training is carried out in diverse domains such as dress designing and production, carpentry, mechanics, pastoral activities, catering and decoration, nursing, business management, etc. There are 46 institutions providing vocational training in these varied domains. There are 492 teachers who are experts in their fields responsible for training and drilling the students in various skills. The student number is about 1,400 (see annex part 1 section 5.1 Education). Grade I and II teachers for the primary schools are trained in the Teachers Training Colleges managed by the Ministry of Secondary Education. There is a total of 3,379 students, taught by 435 teachers in 97 classrooms (see annex part 1 section 5.1 Education). Momo division has the highest number of students while Mezam division has the highest number of teachers and classrooms. There are 18 Teacher Training Colleges in the North-West Region amongst which are private and confessional institutions. Prominent amongst these colleges are:

- Government Teacher Training College, Bamenda;
- Baptist Teacher Training College, Ndu;
- Catholic Teacher Training College, Tatum;
- Presbyterian Teacher Training College, Mbengwi; and
- Full Gospel Teacher Training College, Mbengwi.

After their training, the teachers are expected to wait for recruitment by the state, the private sector or the confessional institutions. Many of the trained teachers teach in the several private and confessional schools found in the urban and rural areas of the region. The student per teacher ratio is generally low while the highest student per classroom ratio exists in Boyo division with 70 and Momo division with 68.

Figure 148: Student, Teacher and Classroom ratios in Teacher Training Colleges



Source: compiled from the 2015 Statistical Yearbook of the North-West Region

The main observation is the very unequal student per classroom ratio (ranging from 20 to 70) while the student per teacher ratio is very low.

8.1.4. Specific facts of the situation of education in Mezam and Kumbo divisions

Mezam division is the most urbanised in the North-West Region. It has the regional capital, Bamenda and several other semi urban towns like Bali, Bafut, Bambui, Bambili and Santa. It is the most populated in the region and the seat of administration and commercial activities. It leads in terms of pupils and students' population at the nursery, primary and secondary levels. For these reasons every university or higher institute of learning is located in a sub divisional headquarter in Mezam or in Bamenda in particular. The oldest state owned schools and the most prestigious confessional nursery, primary, secondary schools and higher education institutions are located in Mezam division and precisely in Bamenda. This is the case with Government Bilingual High School Bamenda, Our Lady of Lourdes College, Sacred Heart College and Presbyterian Secondary School Mankon. It has the highest number of schools, colleges and universities and therefore the highest number of enrolment, infrastructure and staff. The Catholic University of Bamenda has its Faculty of Medicine located in Kumbo. It should be noted that every other division has an important contribution in the field of education especially at the primary and secondary levels. They all have several state owned schools and colleges and a confessional school of repute such as Saint Augustine College in Kumbo, St Joseph college in Mbengwi, Saint Bedes College in Ashing, Kom in Boyo division, Joseph Merick Baptist College Ndu in Donga-Mantung, and Saint Mary College in Ndop Ngo-Ketunjia division.

8.1.5. The contributions of religious institutions:

Religious institutions contribute in several ways to the social system and the social infrastructure in the NW-Region. Especially the education and health system depend also on the contributions of religious institutions. But also, employment, wellbeing and social cohesion are significantly impacted by religious institutions.

Education and health:

- Churches intervene in the moral and civic education of the population in the northwest region. They teach the people not to be involved in embezzlement, bribery and corruption, nepotism and tribalism.
- They run mission schools (primary schools, secondary schools and universities). This contributes greatly to the literacy rate of the population of the region. Thus, they seek to eradicate poverty and empower its community members through education and ventures that support entrepreneurship. Education helps empower the community with the necessary knowledge and skills to adapt to global changes.
- Religious bodies like the Baptist, Presbyterian and Catholic Church provide health care services to the population at affordable prices. Examples include the Mbingo Baptist hospital; the Banso Baptist hospital, the Acha Tugi eye care, the Shishong Cardiac hospital and ST Mary hospital Mankon, Sometimes, patients in distress are treated before payment.

Employment, wellbeing and social cohesion:

- They carry out psycho-social services and counselling.
- They contribute to the employment rate of the population of the region by recruiting teachers to teach in mission school and workers (Nurses and Doctors) to serve in mission hospitals thus, alleviating poverty.
- They promote solidarity among the people of the region through church groups. Congregation or group's interaction can detect each other problems economically or spiritually in nature and development activities can materialize from the interaction, e.g. fundraising projects are being organized to support those who cannot meet up with their needs (school fees, etc.).

- Churches offer impressive passionate images that can recognize and tie people together even when there is a lot of resistance and this is because religion is at the centre of values and beliefs that steer the society in the North West Region.

Churches do intervene in conflict resolution between individuals, chiefdoms or Fondoms, local authorities and the state.

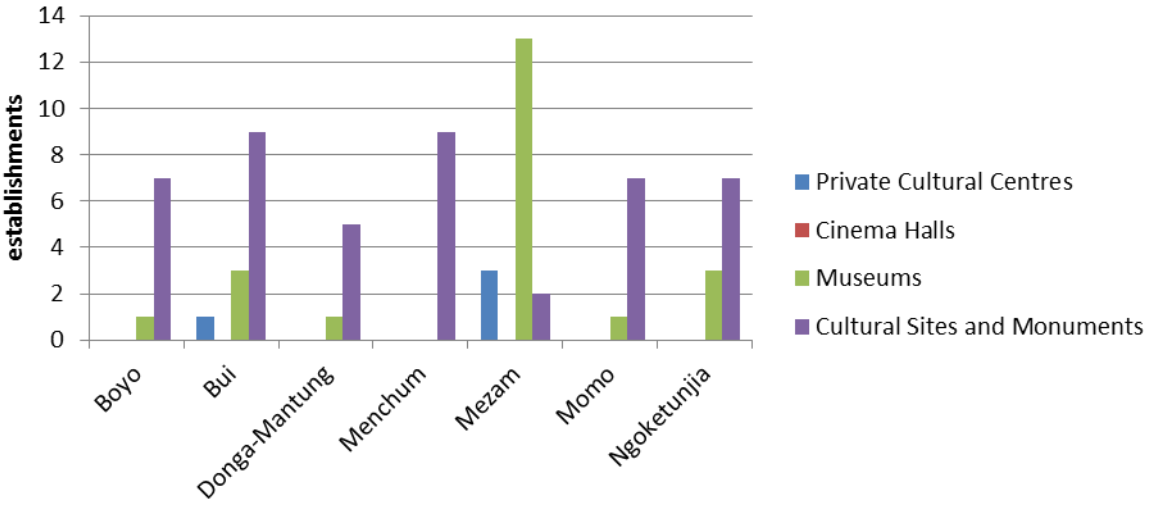
8.2. Culture

For several centuries, the people of the North-West Region have accumulated a rich cultural heritage. They remain today closely attached to their culture whose traits like food, dress, songs and dances, tradition, arts and craft are all showcased openly during joyful and sad events, ceremonies like births and deaths, village gatherings, village festivals, public events like national day, religious events for enculturation like ordinations, etc. These activities are promoted by village cultural and development associations under the supervision of the custodian of tradition, the Fons. Today some Fons are state or private formal sector workers who live in their duty areas. Some are Parliamentarians, Senators, etc and stay in Yaounde but continue to play their role in the culture of their people.

The creation of village cultural and development associations was encouraged by the need to promote the culture of a people and to assure its transmission from generation to generation. It operates in respect of the 1990 law on the Liberty of Association in Cameroon. The rich cultural heritage of Bamenda is evolving as there are several regular cultural manifestations carried out under the auspices of the Ministry of Culture. During cultural festivals for example, various aspects of the culture of the people are exhibited. The North-West Region is famous for its art and craft works such as the traditional regalia, beads, pipes, jewellery, statues, masks, pottery and dishes made out of clay and wood. The most famous is the North-West traditional regalia which has gained international exhibition, used as the official wear of the Cameroon Olympic team since the Sydney 2000 Olympic Games. Today its design has been modernised and it is produced in the form of jackets, suits, skirts, blouses and even the South African Zulu ladies cap design borrowed it. The Ministry of Culture and the Ministry of Sports and Physical Education blend sports and culture to give the North-West traditional regalia an international exhibition. The North-West Region is specific in its gastronomy. Its most popular staple food include achu, corn fufu, vegetables, roasted chicken, pounded beans and Irish potatoes. Its rhythms; njang, mbangahlum and samba cannot be resisted when played by any indigene.

Despite a very rich cultural heritage, facilities to accompany its development have not been put in place. Museums for example are needed to preserve the rich heritage in arts and craft works. Several villages have museums such as the Akum international museum, the Babungo museum, the Mankon museum and the Bafut museum. There is need to preserve the original pieces. The architecture design of most palaces of the villages expresses the strong attachment of the people to culture. The Bafut palace for example is a UNESCO world heritage site constructed in 1901. Other palaces are the Nso, the Kom, the Babungo, the Bali and the Mankon palaces designed with a rich experience of arts and craft work. The next figure shows the number of cultural centres, museums, sites and monuments in the North-West Region as indicated in the annex (part 1 section 5.2 Culture).

Figure 149: Cultural Infrastructure in the North-West Region



Source: compiled from the 2015 Statistical Yearbook of the North-West Region and Regional Delegation of MINAC for the North-West, 2017

Other important sites of interests are:

1. The German fort in Bamenda I subdivision, Mezam
2. The German hospital in Bamenda I subdivision, Mezam
3. The Bamenda General Hospital in Bamenda II subdivision, Mezam
4. The Colonial residences in Bamenda I subdivision, Mezam
5. The Bamenda community hall Commercial Avenue in Bamenda II subdivision, Mezam
6. The Colonial courts in Bamenda I subdivision, Mezam
7. The Military barracks in Bamenda I subdivision, Mezam, now used as army school and Military Hospital
8. The Warders' barracks in Bamenda I subdivision, Mezam, still used as such.
9. The German cemetery in Bamenda I sub division, Mezam
10. The Colonial office in Ndop for the East region administration and the Cottage Hospital in Ndop.
11. The Calvary 14 stations of cross in Njangma, Mbatu, Bamenda II subdivision
12. The 50th anniversary military monument in Bamenda I subdivision

The Bamenda City Cultural Centre occupied the colonial building behind the Public Ceremony Structure in Bamenda II council area precisely at the commercial Avenue. With financial difficulties in managing the centre, the British Council took over the building and after renovation is used it as the British Council library. Today the building hosts a private institute of higher education. Stakeholders in the domain of culture have suggested the use of the abandoned administrative garage as a temporal cultural centre for Bamenda City. Three cinema halls, the Rota, Roxi and National cinema were functional in the 1980s and were closed down in the early 1990s. There are no cinema halls in Bamenda presently. Cultural events and other ceremonies like marriages and meetings are held in village or community halls. Most village communities own halls where cultural activities and development meetings are held. Several activities are carried out in the halls like vaccination of children, party meetings, student's holiday activities, capacity building sessions, etc. The halls are constructed using simple four walls designs. In Bamenda, the Big Mankon hall, the P. C. Azire hall, the P. C. Ntamulung hall, the Bayelle Church hall,

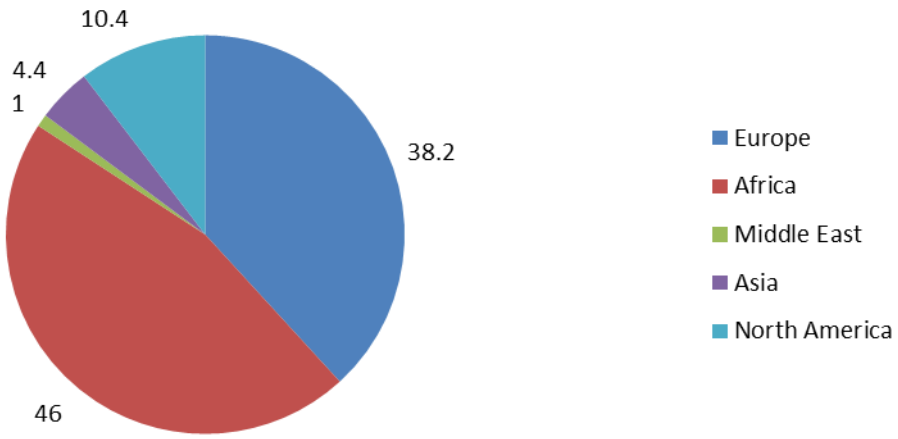
the Futru church hall are amongst the main halls where cultural events take place. Rural areas like Balikumbat also have well-constructed halls.

Music in the North-West Region has greatly evolved. It does not only serve the purpose of entertainment, social satire, and creativity of the youngsters but is now a career used as main income generation activity or as a secondary activity. The North-West Region has a rich musical heritage specific to the region which has had international recognition. The diverse ethnic background in the North-West Region explains the diversity of brands of music. Foreign music from the west and other countries like Nigeria has greatly influenced the originality of the North-West music. The most popular music brands in the North-West Region are the Mbaghalum, the Samba and the Njang. North-West original music has been danced for several decades. There are great musicians and dancers, many of whom have proven their worth at an international level. The pioneer is late Francis Dom from Bui division whose music is still played today. Others like Richard Kings and Ateh Bazor have transformed the purely traditional music using modern instruments now danced even in night clubs.

Several cultural festivals now take place regularly in the North-West Region. During these festivals, the people and their guests celebrate various aspects of their culture, including traditional dances and a display of artistic cultural treasures. The traditional regalia is worn by all and together they dance to the songs produced by various groups using local instruments. It is on such events that one can actually capture the cultural elegance of the region. These festivals attract an important population from other regions of Cameroon and foreign countries like the United States of America. Prominent examples of such festivals include that in the palace of the Fon of Bali known as the “Leila”, the Mankon annual dance, the Nikai of Babungo, the Nso festival known as “Ngonso” and also the Bafut annual dance in the palace of the Fon of Bafut. Statistics regarding the festivals and musicians per Division can be found in the annex (part 1 section 5.2 Culture).

Regarding the arts and craft works, several areas and institutions stand out as major production centres. Ngoketunjia division is an important arts and craft production zone in the North-West Region. Babungo and Bamessing villages are important arts and craft artistic centres and contribute significantly to the production of cultural heritage in the form of arts and craft works. Treasures of the sculptor kings of Babungo for centuries have produced original pieces of arts works found in the Babungo museum developed by the Italian Embassy in Yaounde. The presence of smiths producing iron, craftsmen capable of making efficient tools, many patrons of the arts and talented artists amongst the sculptor kings, the abundance of high quality wood and its excellent geographical position at the confluence of centuries-old trade routes all help to explain why the kingdom of Babungo has been and is still one of the main centres for traditional arts and crafts in the North-West Region. A total of 89 people from 20 nationalities including Cameroon have visited the museum in 2017. According to field statistics, 43% of the visitors are Cameroonian, 9% from France and the United Kingdom and 7% from the United States of America. Representation from other nations ranges between 1% and 4.5%. A regional presentation of the origin is shown on the next figure.

Figure 150: Percentage of origin of the visitors to the Babungo Museum



Source: Babungo museum visitors register for 2016 and 2017

The Presbyterian Handicraft Centre (Prescraft) in Bamessing produces a variety of crafts sold within Cameroon as well as exported to Fair Trade Organizations in Europe and North America: musical instruments like calabash rattles, drums, hand and foot rattles, xylophones, etc. These constitute the best-selling products. Prescraft produces traditional stools, plaques depicting every day scenes, religious plaques, games, etc. A rich variety of baskets are produced in Bali, Bafut, Bamessing and Njah-Etu areas. High quality castings, using the lost wax technique are produced for export and for the local market. A Swiss pottery expert is resident at Prespot, Bamessing.

The royal palace of Oku possesses a woodcraft workshop and a museum with a large collection of wooden pieces of art such as traditional stools and thrones, masks, statues, and costumes of Jujus. Worth mentioning is also the museum on the grounds of the royal palace of Bafut, which describes the history of the Bafut war against the Germans and displays artifacts of this era.

Culture has an economic, social and environmental importance to the people of the North-West Region. It provides employment through the local arts and craft industry. Many local artisans produced works of arts through which they earn a living. Culture contributes to the development of cultural tourism in the region. Tourists though few in number are involved in foreign exchange since they pay for accommodation in hotels, buy food in restaurants as well as local works of arts. Several infrastructures have been put in place to receive tourists in festivals which are used by the local population also. Socially, culture contributes to the education of the local population. Art and theatre for example is now studied in almost all the universities in Cameroon. It leads to the interaction of the local population with foreigners and other national visitors who are people of a certain social class. Socially, culture gives the people a certain pride of belonging, identification and inner satisfaction. The wearing of the North-West traditional regalia during official events, the dancing of the juju during joyful and sad events and the consumption of the stable food are all examples. The culture of the people of the North-West region is directly linked to the environment. Shrines are located in specific natural locations and are protected areas locally. Such locations are visited once a year for rituals. The sacred forest in every village is prohibited for fuel wood exploitation. Arts and craft work exploits the environment for raw materials. Herbalists, soothsayers and modern traditional medicine practitioners all make use of the environment for raw materials. Culture has contributed to raising awareness on the importance of the environment and the need for its protection or sustainable exploitation.

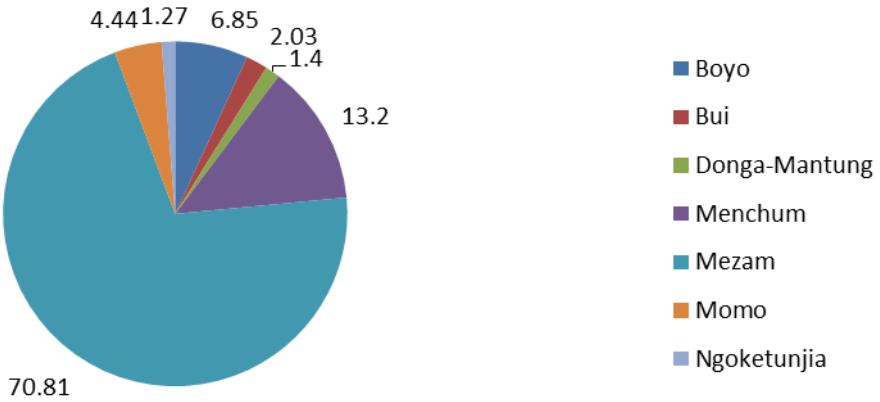
8.3. Sport

The North-West Region has several sporting and recreational infrastructures and has hosted several sports events like the FENASCO “A” and “B” games and the university games of 2017. The Bamenda Municipal Stadium has for several decades been the only sports complex used for every competition like the Elite One, Two and Three, the Top Cup competition, the FENASCO games as well as for other events like outdoor religious assemblies especially by Pentecostal churches, trade fairs, etc. In the month of April 2016, the foundation stone was laid for the construction of a 2,500 seats capacity stadium. Bamenda was amongst the major cities of the country to be chosen for equipment with a modern stadium under a national development program. The Bamenda Olympic Stadium will be the first ever modern sporting infrastructure of any kind to be constructed in the city and the North-West region as a whole. The 2,500 all seated and covered stadium with floodlights covering all four corners of the play ground and a synthetic pitch, will also have locker rooms for players and match officials, modern toilets facilities, reporting booths, press room, offices, an athletic track and two handball, one basketball and volleyball courts, a gymnasium and restaurant. The construction works that were expected to last for six months costing 780 million FCFA and solely financed by the Cameroon Football Federation (FECAFOOT) is still ongoing two years after.

There is also a fitness ground (PARCOUR VITA) at Ntamulung quarters, Bamenda II subdivision, controlled by the Ministry of Sports and Physical Education and the Presidency of the Republic. In addition to these, other sporting and recreational facilities do exist in private and public schools. There are three annual national sports competitions: FENASCO A, FENASCO B and FENASU games for the Ministry of Basic education, Ministry of Secondary Education and the Ministry of Higher Education respectively, organised with the Ministry of Sports. For primary schools, secondary schools and Universities to perform well during these annual sports competitions, they must have sports infrastructure for training.

Playgrounds for some sporting disciplines like football, handball, basketball, lawn tennis exist in every divisional headquarter opened by the council, by schools and colleges (both public and private) or by a sports academy. The second football stadium in the region is located at the Young Sports Football Academy, precisely in Ntenefor quarter, Nkwen Village of Bamenda III sub division, and presently host all Elite one, two and three football matches since the municipal stadium is under construction. The figure that follows gives the percentage distribution of available sports infrastructure in the various divisions of the North-West Region.

Figure 151: Percentage distribution of sports infrastructure



Source: compiled from the 2015 Statistical Yearbook of the North-West Region

Handball has almost half of the total number of stadia in the region, which is 352 facilities representing 44.7 %. This is simply because it is simple to construct and occupies a reduced space. Football stadia occupy over one third of the total number of stadia, which is 37.7%, as shown in the annex (part 1 section 5.3 Sport). Football remains the most cherished sports discipline. The other disciplines do have an insignificant number of stadia. The most important observation is the simple fact that the stadia in the North-West Region are not of any acceptable standards. It is better to refer to them as playgrounds. To host the 2017 university games, the University of Bamenda constructed several stadia of high standards. There is a newly constructed Olympic Stadium, a rehabilitated football playground, three handball stadia, two basketball stadia and two lawn tennis courts.

Several clubs in various disciplines do exist in football, volleyball, handball, basketball and athletics. The male football clubs are of the majority as shown in the annex (part 1 section 5.3.

Football clubs make up more than half, which is 53.3%, of the total number of clubs affiliated in the entire region. Addidas FC, Cammark FC, PWD FC, Kumbo Strikers, Freeboys FC, Bang bullet, National polytechnic FC, Young Sports Academy are some of the popular football teams which have existed or are active in the MTN one and two elite football championship. Despite evolving in a very poor stadium, Kumbo Strikers and Young Sports Academy have won the Cup of Cameroon. More than half of the affiliated clubs are found in Mezam division (58.3%). The athletics clubs in Menchum and Donga-Mantung divisions are very active in the national scene as they are always amongst the top winners in the Mount Cameroon race of hope. A total of 57 coaches in several disciplines and 70 referees of official matches exist in the North-West Region in 2015 (NIS, 2017).

Sports infrastructure in the North-West Region which can be used for national sports events like the National Primary School Games, the FENASCO B, the National Secondary School Games, the FENASCO A, the National Federation of University Sports Games, the FENASU, the MTN Elite One and Two football championship, the Cameroon cup competition amongst other sports events can only take place in Bamenda in Mezam division. Mezam division has several sports infrastructures, the highest number of affiliated clubs and recognised coaches and referees. Sports infrastructure out of Mezam division is a sore sight.

There exist two first Division Clubs in Bamenda at the level of male category (Young Sport Academy and PWD Bamenda) and one female first Division Club. The expected economic gains are very low because of non-availability of standard football complexes (Stadia). Organization of athletic competitions is not available due to lack of adequate sports complex.

There is a parcours vita in Bamenda which is highly under-used given the fact that many other components that makes a parcours vita a complex are lacking. Of late, the parcours vita is almost in the forest and very few people visit the site. The reason being the socio-political crisis in the Region.

There is need to construct at least a thirty thousand seats stadium in Bamenda, fifteen thousand in Kumbo and Nkambe. The other four Divisional Headquarters could be attributed ten thousand seats sport complex. The number of first Division, second Division and third Division teams (male and female) are actually indicators that these complexes are highly needed.

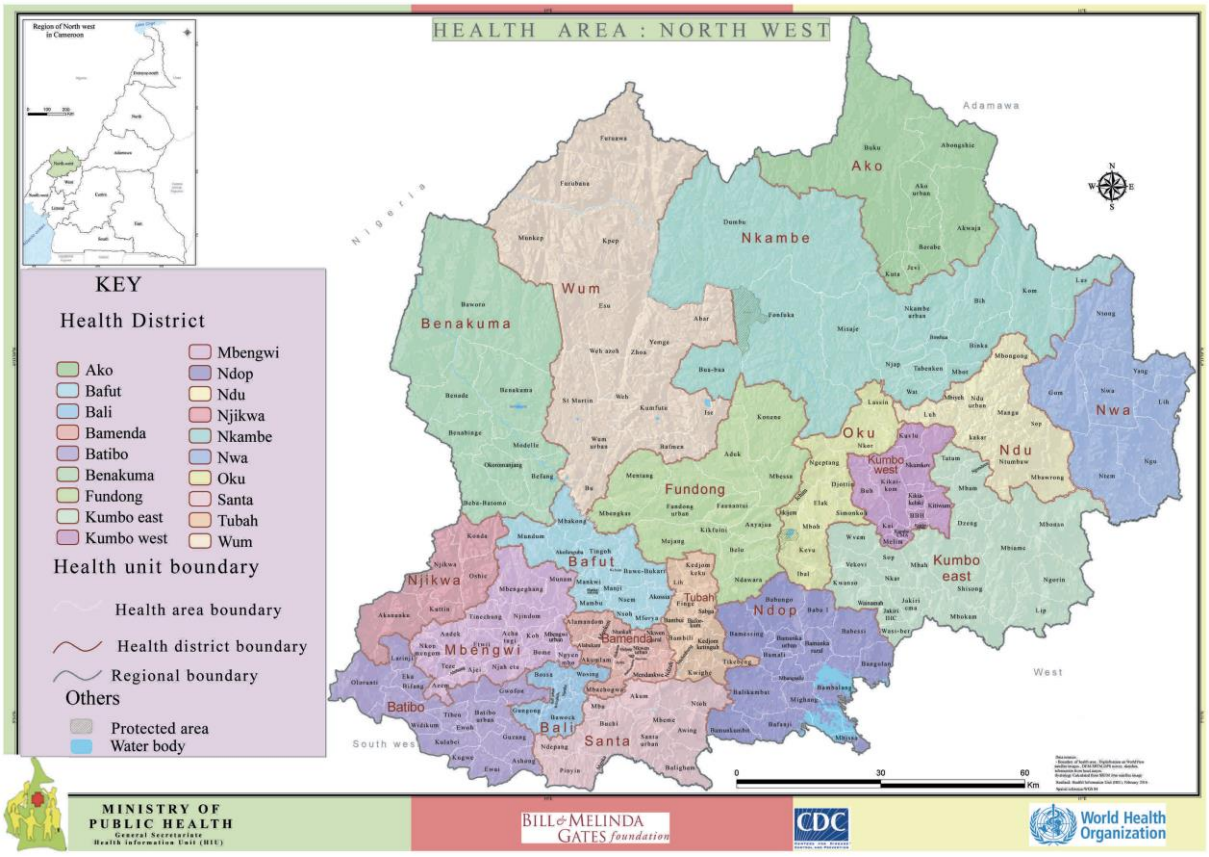
8.4. Health

Health care in Cameroon as a whole and in the region is classified into regional hospitals, district hospitals, and integrated health centres. The region is carved out into zones called health districts and health areas.

8.4.1. The situation of health in the North-West Region

There is a regional hospital in Bamenda 2 subdivision and a referral hospital under construction in Bamenda 3 subdivision under the three years development plan. The region has 19 health districts, each with a district hospital. All the district hospitals are state owned. Confessional hospitals and private clinics are spread out in several divisions and contribute significantly to health care. The Catholic, Presbyterian and Baptist churches all provide health service through some of the best health institutions in the region.

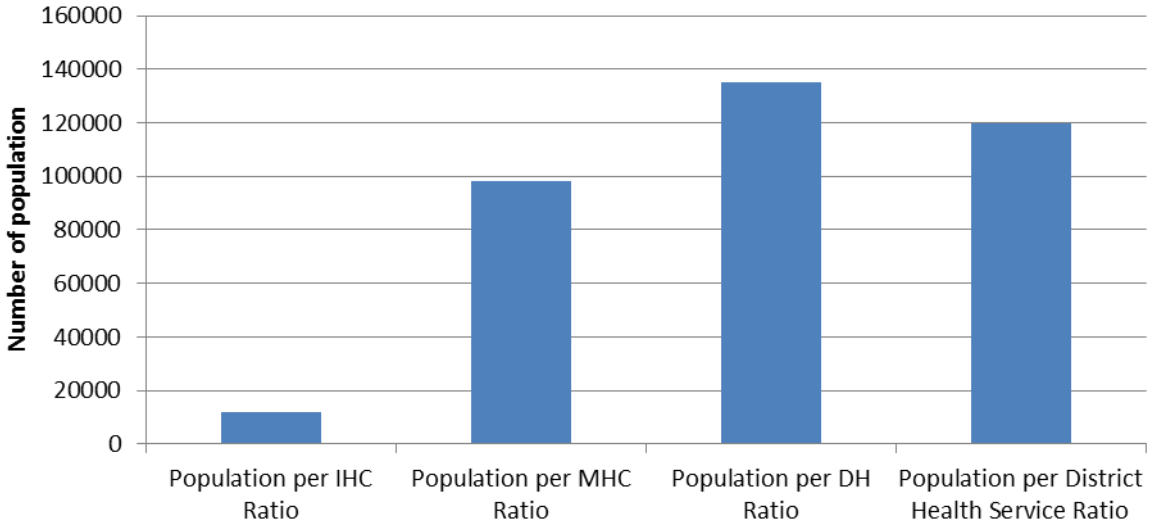
Figure 152: Health District of the North-West Region



Source: MINSANTE, Système National d'Informations Sanitaires

According to the North-West Regional Fund for Health Promotion Strategic Plan (2015 – 2017), the North-West Region in the health domain is divided into 19 Health Districts and 226 Health Areas. The region has one Regional Hospital at the regional headquarter, Bamenda, 19 District Hospitals, 22 Medicalised Health Centres (MHC), 181 public Integrated Health Centres (IHC), 82 private health centres and 17 private pharmacies. These numbers however vary between the Strategic Plan (2015 – 2017) and the NIS Yearbook 2015, stating 229 Health Areas and 198 IHC. The hospital bed ratio is about 1 to 1,000 which does not permit good health care of admitted patients. The ratio of the population to some health institutions are shown on Figure 153. The facilities whose distribution is known per division are detailed in the annex (part 1 section 5.4 Health).

Figure 153: Population per some health establishments Ratio



Source: North-West Regional Fund for Health, PIG, Strategic plan for 2015-2017

The population per public Integrated Health Centre ratio is 11,931, Medicalised Health Centre ratio is 98,157, District Hospital ratio is 134,967 and District Health Service ratio is 119,970. They are unequally distributed over the region. Mezam Division has the highest number of health establishments due to its high urbanisation with towns like Bamenda, Bali, Bafut, Santa, Bambui and Bambili. Private clinics exist and despite the expensive cost of consultation, many patients prefer to go to these clinics and meet renowned specialists, some of whom are retired state workers. They are sure of quality service and benefit from short queues. Health care infrastructure is inadequate in Menchum and Ngoketunjia divisions. Several health establishments have medical laboratories and pharmacies. The laboratories, theatres and labour rooms in most of the district hospitals and health centres are neither well-constructed nor equipped. There is an urgent need for more and better-equipped health establishments. There are mortuaries in five divisions owned by the state and some confessional bodies. Donga-Mantung and Menchum divisions do not have mortuaries.

The regional hospital owned by the state, the Mbingo Baptist hospital, the Banso Baptist hospital, the Shisong Catholic Hospital remain the most equipped health establishments in the regions and serve as referral hospitals to the resident and visiting population. Health facilities of most district hospitals and integrated health centres such as beds, consultation tables, delivery beds/kits, microscopes, etc. are old and inadequate, hence need to be replaced and or, increased at all levels. In the interior areas like Sabongari, Furu-Awa, Fonfuka, Ngie, Njikwa, Zhoa, Nwa and other places, most health care equipment is not available.

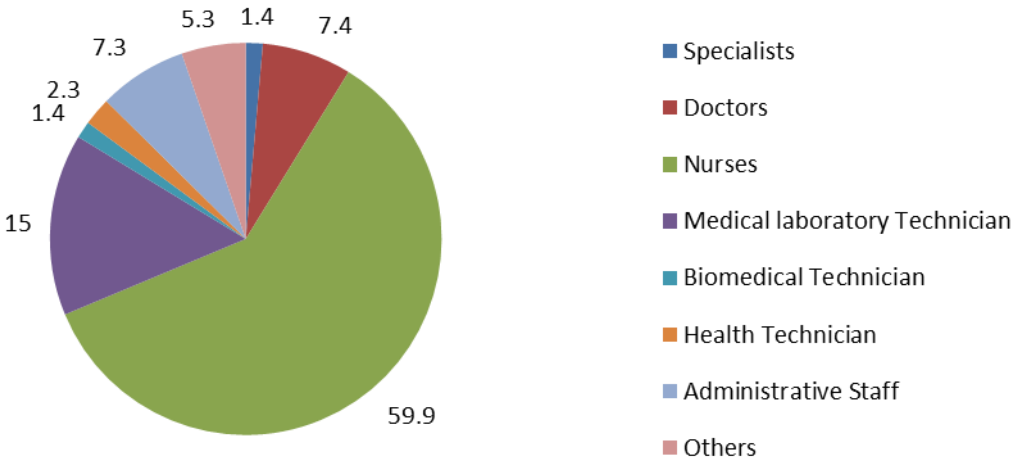
Generic drugs are available in the health units provided through the essential drug programme of the North-West Special Fund for Health (NWSFH). The drugs are given at a subsidised rate to patients in state hospitals. However, the majority of the patients cannot afford for the drugs due to the rate of poverty and resort to alternative medicines (traditional), which have not been tested.

Confessional institutions make a very significant contribution to the provision of health care services in the region. They are well-constructed hospitals and equipped facilities like X-ray, theatre, dental and eye departments, laboratories and pharmacies. The Shisong Cardiac centre of the Shisong Catholic Hospital remains a referral centre for heart health problems in the Central African region. Like the creation of schools, the creation of health establishments also favours the urban and semi-urban areas. The distance, interior and rural areas have very few health establishments. Patients cover very long distances to reach health centres which are without health staff nor medications. Most patients in the rural

areas prefer to carry out consultations in the semi urban or urban areas. The regional hospital for example was opened in 1956. Most of the buildings constructed since then are still in use. They are insufficient and inadequate. The buildings are not adapted to modern hospital technology. It is the same with several other health infrastructures in the region. There is need for offices for hospital administrators, consultation rooms, wards for patients, laboratories, pharmacies, maternity, mortuaries, etc. The Bamenda III sub divisional hospital which was a maternity and child care centre was raised in category but not with the necessary infrastructure. Today it is in high need of adequate health infrastructure. It is common to see nurses sleeping on hospital beds for patients and consultations carried out in the open with no patient privacy.

Health care services are provided by health personnel. The distribution of health personnel by category is shown on Figure 154.

Figure 154: Distribution of health personnel in the North-West Region by category



Source: compiled from the North-West Regional Fund for Health, PIG, Strategic plan for 2015-2017and the 2015 Statistical Yearbook of the North-West Region

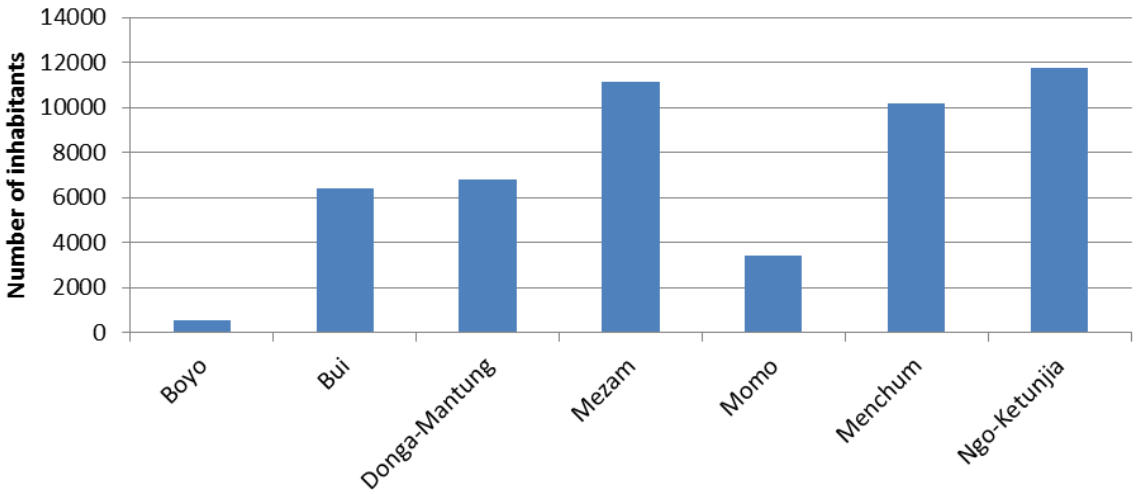
There are 1,355 health practitioners that cover the North-West Region (see annex part 1 section 5.4 Health for the details). Nevertheless, it should be noted that the population found in the interiors have to cover very long distances for health services because of the absence of health practitioners. Discouraged, they abandon and turn to the traditional medicine sector which is fast developing, spreading and today considered as the modern traditional health practitioners. The present situation is far from optimal. The medical doctor / population ratio, nurse / population ratio and specialist / population ratio according to the divisions still remain very low.

Mezam division has the highest number of medical doctors followed by Momo and Donga-Mantung Divisions respectively. Bui division has two renowned hospitals owned by the Catholic Church and the Baptist while Boyo has the same two types of hospitals. The health practitioners are not enough to meet the demanding health needs of the population especially in Ngoketunjia, Donga-Mantung, Menchum, and Boyo Divisions. The situation of the nurses is not different. This is worst in the rural health centres where one could see ward servants and nursing attendants playing the role of the doctor. Most health centres in the rural areas are without health staff. A common phenomenon is that the health staff prefers to work in the urban or semi-urban areas. Those who even accept to work are not permanently on duty. They are present for a few days of the week depending on other private duties. Some health staff have resigned to the private sector refusing to work in the rural areas complaining of the absence of equipments.

There are health establishments because there are diseases. According to the North-West Regional Fund for Health Promotion Strategic Plan (2015 – 2017), malaria consultation accounts for 97% of all the consultations in the region. The epidemiology of the region reveals the major causes of morbidity and mortality are malaria, hypertension, acute respiratory infections, diarrhoea, malnutrition, HIV/AIDS, tuberculosis and injuries. As at the national level, life expectancy at birth stands at 53 years, in the North-West Region maternal mortality rate stands at 1,000 per 100,000 live births (NWRFHP, 2014). In 2014, the infant mortality rate was 42 ‰ in the North-West Region and 66 ‰ in Cameroon. The child mortality quotient was 64 ‰ in the North-West Region and 112 ‰ in Cameroon (NIS, 2017). These high rates are a result of uncontrolled environmental determinants of health, poor infrastructure and limited human resources. In 2015, a total of 20,844 deaths were recorded. Malaria remains the lead health concern in terms of diseases in the North-West Region. The total number of malaria cases diagnosed in 2015 is 171,985 with 46,509 diagnosed in children below 5 years of age (NIS, 2017). Death due to malaria was 7% of total deaths in the region, for children of less than five years was 20% and for pregnant women was 8.8%. Diabetes diagnosed cases and HIV positive cases for children and pregnant mothers are close to 10,000 and 14,000 respectively (NWRFHP, 2015).

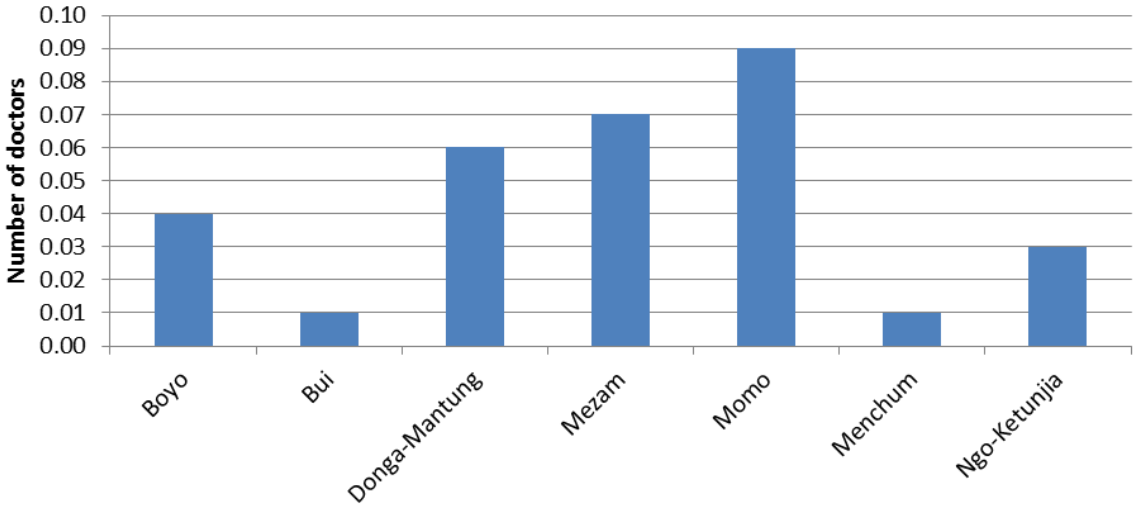
The ratio of inhabitants per health establishments for the region is 7,361 while the ratio per 1,000 inhabitants for doctors is 0.04. This simply means that compared to the population of the North-West Region as a whole, the number of health establishments and the number of medical doctors is very far below the need. Mezam takes the second position after Momo with a ratio of 0.07 per 1,000 due to its role of administrative headquarters, but which is still very low.

Figure 155: Number of inhabitants per health establishment per division



Source: based on data from NIS, 2017

Figure 156: Number of doctors per 1,000 inhabitants per Division



Source: based on data from NIS, 2017

8.4.2. Health specificities in Mezam and Kumbo divisions

Mezam division has the majority of health institutions. Due to its high population it has the highest number of consultations as well as diagnosed cases of diseases. Bui division is the only division with two leading hospitals in the North-West Region; the Banso Baptist Hospital and the Shisong Catholic Hospital. These two hospitals are visited by patients from other parts of the country. Every sub division is supposed to have a CMA or sub divisional medicalized centre. The health districts are supposed to have a district hospital. There are also integrated health centres and health post in the interior areas. The distance covered by patients to health establishments is longer in the rural areas compared to the urban areas. They also have to visit specialised centres like the cardiac centre in Shisong, Kumbo in Bui division, Mbingo Baptist hospital in Mbingo, Boyo Division or to the Regional hospital in Bamenda.

Despite the fact that the public health services are cheaper compared to the confessional and private health services, it is still not affordable to the local population. The preference for self-medication or modern traditional medicine, which is cheaper, is an indicator of the fact that the modern health service cost is not affordable. Some patients do consult and carry out medical test in the hospitals but take the result to the modern traditional practitioner where they can afford the drugs. More and more those who can afford to pay for high health cost in the North-West Region prefer to go to the confessional or mission hospitals. The Mbingo Baptist hospital in Boyo, the St-Elisabeth catholic Hospital in Shisong, Kumbo, the Banso Baptist Hospital in Kumbo, and several others are highly preferred by many due to the quality services offered, the good care offered to patients despite the costly nature. These centres also offer services which are not offered by public hospitals. The St- Elisabeth Cardiac centre for example is a reference centre for patients with heart problems.

In the absence of a modern health insurance which is affordable by the low income population, the Catholic Church has put in place the BEPHA, The Bamenda Ecclesiastical Province Health Scheme (BEPHA) and it has been helping needy people to pay their medical bills. BEPHA came into existence after studies showed that many people suffer misery, sometimes even die because of illnesses due to poverty. Difficulties such as hospital bills, poor medical attention and healthcare, self-medication led to the creation of BEPHA. The benefits of BEPHA are that the patient who has paid the annual contribution benefits 75% of Out-patient, Hospitalisation, Booking, Delivery, and Surgical Operation bills. Each service has a limit (ceiling) up to which one can benefit. For example, it is 75% up to 15,000 FCFA for Out-patient consultation, and 75% up to 70,000 FCFA for Surgery. The maximum number of times one can benefit varies from one Diocese to another. In Kumbo it is 8 times; in Bamenda it is 5 times; and in

Mamfe it is 6 times. A member registers with the sum of 1,000 FCFA. After a member has registered with a thousand francs, he is expected to pay the Annual Contribution for himself and at least three other persons in his Household or Group. The Annual Contribution per person is 3,500 FCFA in Kumbo and 4,000 FCFA in Bamenda. The ten year old Bamenda Ecclesiastical Province Health Assistance scheme (BEPHA) helps members to pool health risks to be able to pay hospital bills. The idea is that with little or no money, members receive health care. It is about charity and solidarity with emphasis on primary health care, which covers para-clinical tests, out/in-patient consultations and drugs. Others are hospitalisation, deliveries, planned and unplanned surgery operations. Tertiary and non-clinically services are not covered. BEPHA counts about 15,784 members in the North-West Region with yearly contributions of more than 60 million FCFA.

The North-West Mutual Fund for Health initiatives count over 21,000 members and over FCFA 100 million as contribution. Resulting from the fact that patients could not afford the high cost of handling their health issues, the mutual health organisations or cooperatives for quality and low cost services promoted by the North-West Regional Fund for Health Promotion (PIG) was put in place. It covers Bamenda, Boyo and Bui Divisions and is a community based health insurance scheme. Families contribute annually into a common fund to solve their health problems. It reimburses 25% to 75% of cost depending on the nature of care. The scheme covers amongst others, emergency surgeries, hospitalisations, planned surgeries, deliveries and a special out-patient package that covers consultation fees, laboratory charges and drugs in health facilities with which the scheme keeps memoranda of understanding. It is however a no-go scheme for chronic conditions that require regular consultations. Beneficiaries are families who pay annual contributions for at least four members. Conceived and launched by the then German International Cooperation (GTZ), now GIZ, in 2004, the scheme later became the product of the North-West Regional Fund for Health Promotion.

8.5. Public buildings

The North-West Region has evolved with all the changes carried out on public institutions over the last three decades. In 1992 the creation of Boyo and Ngoketunjia divisions was accompanied by the change in operational levels of all state institutions in the administrative units. Subdivisional offices were raised to divisional offices and new subdivisional offices created. Such uplift should be accompanied by the construction of public buildings to host civil and military services. Nevertheless, not every ministry for example has a representation in every administrative unit. At the subdivisional levels for example, several ministries do not have a representation so no public building exists for that purpose. For example, only nine ministries are represented in the Nkor council area, Noni.

The state owns a total of 650 buildings which are used for various purposes. They are used for lodging of state top management officials like the Civil Administrators or used as offices. Table 111 presents the number of public buildings.

Table 111: State Property in the North-West Region and use

Division	Number of property	Use	
		Lodging	Office
Boyo	165	5	160
Bui	0	0	0
Donga-Mantung	373	39	334
Menchum	60	5	55
Mezam	0	0	0
Momo	52	8	44
Ngoketunjia	0	0	0
Total	650	57	593

Source: Regional Delegation MINDCAF

Out of the 593 buildings used for lodging and offices in the North-West Region, 406 are rented from private individuals at the total cost of 490,563,500 FCFA yearly. Mezam division hosting the regional delegations as well as the divisional and sub divisional delegations has the highest rents to pay yearly (see Table 112).

Table 112: Yearly cost of renting state buildings

Division	Lodging	Office	Total	Yearly Rents (FCFA)
Boyo	8	55	63	68,544,000
Bui	9	49	58	72,402,000
Donga-Mantung	5	37	42	39,213,600
Mentchum	7	34	41	56,279,100
Mezam	18	73	91	119,688,800
Momo	9	44	53	46,266,000
Ngoketunjia	9	49	58	88,170,000
Total	65	341	406	490,563,500

Source: Regional Delegation MINDCAF

As a whole, there is an acute shortage of constructed public buildings. Several colonial buildings are still used for public services in Bamenda II subdivision. Construction is slow and some works take more than a decade like the governor's office still uncompleted. The renting of buildings affects the quality of services offered since the buildings were in most cases constructed for residential purposes and not for public administration. Several ministries like culture and communication share the same building in Mezam.

It should be noted that public service offices are located in the administrative headquarters, the sub-divisional, divisional and regional headquarter. The site or actual ground depends on the location of state owned land in that particular area. It is also determined by the location of land owned by the ministry or the public institution concerned. This explains why public buildings are not all located in particular site in an administrative headquarter. Also, the distance to some public services becomes longer when the service does not exist in a subdivision or a division. The ministry of Higher Education uses the State universities as its decentralised services and is located in Bambili-Bamenda only in the North-West Region. The ministry of Arts and Culture does not have offices in the subdivisions of the North-West Region. Nevertheless, the maximum distance expected to be covered to a public service is to the divisional headquarter. Every public service is represented at the divisional level. The need for more space and the policy to attract human settlement has prompted some offices especially the councils to be located in peripheral areas like the case of the Bamenda III, Bamenda II and Tubah councils.

8.6. Assessment of the situation in social infrastructure

Retrospective evaluation of the evolution of education in the North-West Region

During the last 10 to 15 years there has been a constant evolution of the education sector in the North-West Region. The total number of nursery schools has increased from 133 in 2003 to 1,022 in 2015. There has been an increase in the number of enrolment from 7,675 in 2003 pupils to 34,978 pupils in 2015. The number of teachers has increased also from 293 to 1,236 and classrooms from 53 to 1,060. During the last 15 years, such a constant increase was witnessed in the primary as well as the secondary sector. The number of schools, enrolment, teachers and classrooms in the primary sector has evolved from 1,265 in 2003 to 1,979 in 2015, 341,783 to 373,726, 4,725 to 6,726 and 1,102 to 10,053 respectively. The number of schools, enrolment, teachers and classrooms in the secondary sector has evolved from 170 to 489, from 84,164 to 206,032, from 3,761 to 10,860 and from 2,136 to 4,752 respectively.

During the past 15 years, there has been a significant increase in any of these statistics. The detailed values can be found in the annex (part 1 section 5.1 Education).

Strict measures have not been put in place to control administrative and academic activities in the education sector. Several teachers are paid by the government but they are absent from their duty post for several years. This is done in complicity with the administration of the school. Control is weak. The government has not taken stringent measures to fight corruption in the education sector. Very high level of corruption exist in the creation of schools, the award of contracts for construction of school infrastructure, the recruitment and posting of teachers, the selection and admission of students and several others. There are Anti-Corruption Brigades in schools made up of corrupt officials. Administrators, teachers and students involved in corruption are not severely punished. There is laxity in control and corruption.

The bilingual sub-system of education being experimented in some selected schools in urban areas should be well exploited by policy makers. Bilingualism is an asset for Cameroonians and so should be the education system. Since French and English are the two official languages used in Cameroon, a bilingual education sub-system should be used instead of the two sub-systems for the Francophone and the Anglophones. A bilingual sub system of education offers more opportunities for the students in careers.

Table 113: SWOT summary of Education

SWOT summary: ***Education***	
STRENGTH	**WEAKNESSES**
• Several schools are created every year in the region and have basic infrastructure • A constantly increasing enrolment • Continuous recruitment and training of teachers • Internationally recognized certificates and sub system of education • General, technical and vocational trainings offered • Internal control mechanisms • Youthfulness of staff	• Low investment especially in distance, interior and rural areas in terms of creation of schools and infrastructure • Overcrowded classrooms • Qualified teachers but untrained in the profession • Two unharmonised sub systems operating • General education dominates and preferred • Laxity in control and corruption in the distribution of teachers in the divisions • High mobility of young staff
OPPORTUNITIES	**THREATS**
• Several stakeholders involved in school creation and construction • Schools can generate good income • Large number of university graduates • Bilingual sub systems to be exploited • Equal opportunities for every sector • Grooming up of young staff by the old and experience	• Many schools need high investment for infrastructure • Low quality of recruits and graduates • Low quality pedagogic input • A sector highly dominates • High demand for family regrouping and corruption

Retrospective evaluation of the evolution of cultural elements in the North-West Region

Over the last one and a half decade, the cultural sector in the North-West Region has greatly evolved in all its domains. Though there have been no new cinema halls, the people have through festivals regularly showcased their culture. Every cultural trait has been promoted and sold to the rest of the world. From staple food, dances, beads, songs and dressing, the people of the North-West Region have remained closely attached to their culture taking it to the four corners of the globe. In every event, they will exhibit an aspect of their culture. The Ministry of Arts and Culture also promotes every aspect of the culture of the North-West Region.

Festivals have been taking place in the villages of the North-West Region for ages. The history is marked by tribal wars before the arrival of the Germans in Cameroon in 1884. The end of a war especially a successful tribal war was celebrated in songs and dance. The region is blessed with several annual festivals during which the arts and craft production of the people are exhibited and during which the best songs and rhythms are danced. Festivals are a celebration of major events like the success and end of a war, the sowing season, the harvesting season and the commemoration of the lives of their ancestors. The Leila festival in Bali is a yearly festival to remember the wars that the Bali Chamba people in general and the Bali Nyonga in particular fought and defeated other tribes in the course of their migration to settle in this present North-West Region of Cameroon.

Table 114: SWOT summary of Culture

SWOT summary: ***Culture***	
STRENGTH	**WEAKNESSES**
• Some basic infrastructure exist for cultural activities • Rich in natural resources and original cultural traits • Original pieces of arts and craft work with market • Several Museums and festivals to conserve and showcase cultural heritage • Fons are custodians of culture	• Existing Infrastructure is not up to standard • Unsustainable exploitation of resources and cultural traits not documented • Arts and craft work not protected • Museums are not constructed to standards and festivals are not regular • The Fons are losing respect in relation to culture
OPPORTUNITIES	**THREATS**
• Existing infrastructure can be improved • People greatly attached to culture linked to natural resources • A local population very skilled in arts and craft • Museums and festivals attract more internal and external tourists • Fons can be used as the people representative on cultural issues	• Advanced dilapidating colonial heritage • Modernity affecting cultural traits and resources are depleting • Arts and craft work left for the ageing • Not every village has a museum and/or festival • Fons are often out of their villages depending on their duty areas

Retrospective evaluation of the evolution of sports in the North-West Region

The region has evolved quantitatively but not qualitatively in sports infrastructures. Several sports infrastructures have been put in place by state and private institutions. The major problem is that the infrastructure is not constructed to standard. A 2,500 seat capacity Olympic Stadium is under construction in Bamenda since 2016. The construction of the stadium was supposed to have been completed for it was programmed to last for six months. There has been an increase in the number of gymnasia in Bamenda and other towns like Kumbo, Bali and Santa. The University of Bamenda in preparation to host the 2017 university games constructed several modern sports infrastructures with Olympic standards in several disciplines like football, handball, volleyball, lawn tennis and basketball. The facilities are used only by university students.

Table 115: SWOT summary of Sport

SWOT summary: ***Sport***	
STRENGTH	**WEAKNESSES**
• Several basic sports infrastructures exist in various disciplines • Highly talented youths in several disciplines • Sports academies exist for parents to send children • Several competitions hold regularly and hosted in the region • Sports is a discipline in the Francophone education official examinations	• Existing sports infrastructure is far below standard • Talents are not detected for follow up • Parents still show little interest in sports for children • Some disciplines do not have regular competitions • Sports is not a discipline in the Anglophone sub system of education
OPPORTUNITIES	**THREATS**
• Several playgrounds exist which can be rehabilitated • Some sports academies created by individuals • Successful sports practitioners can serve as inspiration to others • National competitions can be brought to local level • The youths are lovers of sports activities	• Playgrounds used for other purposes if not fully used for sports • Talented sports practitioners end up in other profession • Alcohol and other societal ills destroying talents • Very few competitions kills talents

Retrospective evaluation of the evolution of the health sector in the North-West Region

The health sector in the North-West Region has evolved over the past years in all its domains.

The North-West Region had just the Regional Hospital that served as the state owned only referral hospital in the region, though confessional hospitals like the St-Mary Hospital, Shisong, Kumbo, the Banso Baptist Hospital, Kumbo and the Mbingo Baptist hospital, Kom, served as referral hospital even to patients taken to the Regional hospital. A referral hospital owned by the state is presently under construction in Bamenda III subdivision to serve the entire North-West and neighbouring areas. This will take the state owned referral hospital to two. There has been an increase in the other categories of health establishments. Integrated Health Centres for example has increased from less than one hundred in 2003 to 198. There are 197 pharmacies with 17 privately owned which fifteen years ago was insignificant.

Generally, in Cameroon it is considered that the public health sector provides the general population with cheap healthcare services and medications. Malaria for children below five years of age is treated free of any payment. Due to funding from foreign partners, medical test for HIV and others like malaria are done for free. The patient is expected to pay for the other cost like consultation, hospitalisation, health kit, test, imagery and drugs. This varies as per the illness, the state of the illness and the number of days of hospitalisation. Generic drugs are sold in public health centres at a cheaper rate compared to the pharmacies. Private and confessional healthcare services are not cheap compared to the public health care. The patients who prefer to go to the private or confessional health services to consult specialists or avoid the long queues in the public health services must pay for all medical services used and the cost of treatment is far much higher than with equivalent procedures obtained through the public sector. Those who can afford to pay for private healthcare are entitled to services from this sector. Cameroon Health insurance is almost non-existent within the country. Generally, the patient and his family members are responsible for the cost of all medical treatments. In the absence of a modern health insurance which is affordable by the low income population, the Catholic Church has put in place the BEPHA, The Bamenda Ecclesiastical Province Health Scheme (BEPHA) and it has been helping needy people to pay their medical bills.

Patients experiences either directly or vicariously from outside sources (friends and relatives) are an important method of verifying whether provision of healthcare is synonymous with high quality in the North-West Region. Due to the diversity of patients in the healthcare sector, service quality varies from patient to patient, and also since each patient possess his/her own unique pre-conception of how healthcare services should be delivered. If patients' expectations meet their perceptions of a service, they tend to view the service as favourable. A satisfied patient is always loyal to the healthcare provider and promotes the provider by positive word of mouth, and is willing to pay whatever the cost to gain better medical care. Enhancing patients' satisfaction is a crucial healthcare determinant in this region since service quality perceptions does not only impact patients derived satisfaction, but also the selection of specialist and non-specialist providers. Patients are always worried about the outcome of the treatment, the process of being treated, the seriousness of the underlying situation and are also anxious about those left back home hence making the overall assessment of service quality more complex and important. Overall, for hospitals to maintain and improve their quality of services, they should not only focus only on the clinical and economic factors, but, also on patients 'expectations and perceptions of care.

Table 116: SWOT summary of Health

SWOT summary: ***Health***	
STRENGTH	**WEAKNESSES**
• Existing health establishments of various categories in several areas • Continuous recruitment and training of health staff • Basic infrastructure exist in health establishments • Diverse services offered by several stakeholders • A growing modern traditional health sector • The existence of mutual health schemes like BEFA and the NWMHF	• The distance, interior and rural areas neglected in the creation of health establishments • There is still a very high need for health staff especially in rural areas • Insufficient and inadequate infrastructure • Services cost not affordable by majority of the people • People prefer the missions' structures over the public structures • No quality assurance in drugs and concoction sold to patients • Low level of sensitisation
OPPORTUNITIES	**THREATS**
• Multiple providers of health services exist • Several training schools exist • Several specialised centres like the cardiac centre in Shisong • Free health campaigns carried out by several stakeholders • A rich knowledge in local pharmacopeia and treatment • Confessional institutions are functioning well with mutual health	• A high degree of brain drain in the health sector • Old, unadapted and inadequate infrastructure • Specialised services not known by the people and high self-medication • The poor remain highly vulnerable • Poor management of mutual health funds • Long distances to cover for health services in the border areas

Table 117: SWOT summary of Public buildings

SWOT summary: ***Public buildings***	
STRENGTH	**WEAKNESSES**
• Several buildings have been constructed to provide public services • Several colonial buildings in use • Public buildings are found in every administrative unit • Increasing vertical constructions of public building. • Several lodging facilities exist for administrative staff • The creation of new administrative units	• Several buildings still to be constructed • Colonial buildings are dilapidating • Several administrative units and services still in need of public buildings • Very expensive to construct vertical buildings • The state spends huge sums for rents
OPPORTUNITIES	**THREATS**
• Available vast state domain for construction of public buildings • Colonial buildings can be transformed or destroyed and space used for new buildings • Private sector provides buildings for public services • Vertical buildings can be easily used by several ministerial departments • Available resources for construction of public buildings like land	• The increased demand for services • Colonial buildings can collapse • Buildings provided by individuals not adapted • Very expensive in terms of maintenance • Population deprived of certain services

Key Stakes

Following the SWOT analysis for social infrastructure, the most important issue observed is the highly insufficient and inadequate infrastructure for education, health, sports, culture and public buildings that exist for a very high and increasing student population, patients, sports practitioners, cultural lovers and public service seekers. Though there has been a constant and increasing investment on social infrastructure, it has not been proportional to the growing needs which have been far above investment. There is also an acute shortage of staff in the education and health sectors. Investment in infrastructure for these two important sectors will be of little or no use if it is not accompanied with investment in staff.

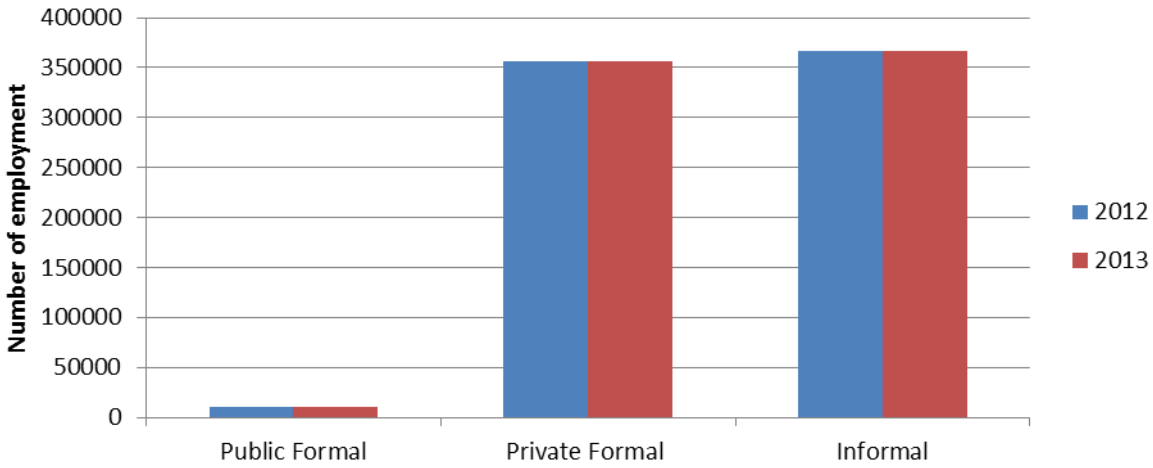
9 Social system

9.1. Employment situation

The formal and informal employment sectors exist in the North-West Region and have had a constant increasing trend. The private formal sector remains the main employer in the formal sector while the agriculture, arts and craft, and petty trading lead in the informal sector. The trend in evolution favours the informal sector.

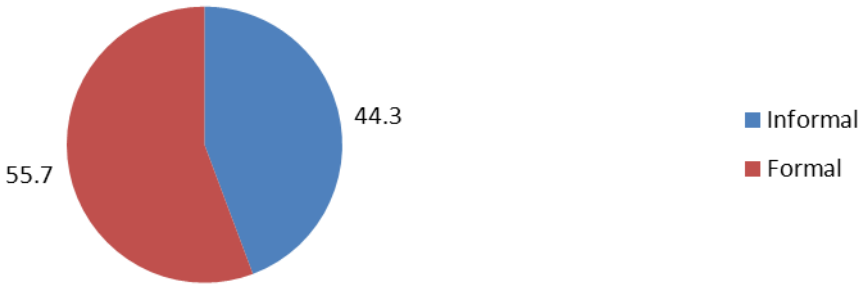
The public formal sector is very insignificant in terms of employment in the North-West Region. State workers are civil servants. The absence of state owned corporations like the CDC in the region has contributed to this insignificant number. Figure 157 and Figure 158 present the variations in the various sectors.

Figure 157: Variations in the employment sector



Source: compiled from the 2015 Statistical Yearbook of the North-West Region

Figure 158: Distribution of formal and informal employments in 2013



Source: compiled from the 2015 Statistical Yearbook of the North-West Region

The private formal sector has 43% of employment compared to 1.2% in the public formal sector in 2013. It should be noted that confessional institutions like the churches and a booming individual private sector contribute to this. The churches through recruitment of staff in the nursery, primary and secondary schools and higher education and in the health sector employ a large number of persons today estimated at close to 250,000 workers. The Credit Unions also employ hundreds of workers in the North-West Region under the formal private sector. Several hotels employ formally in the private sector in

every division. In total, the formal sector represents 44.3% of the employment as against 55.7% of informal employment in 2013.

The informal sector employs the majority. Many inhabitants are still employed in primary activities such as farming, livestock and forest exploitation and quarrying of sand and stones for construction. Those employed in primary production live in the purely rural areas in majority. Some live in the urban area and move to the urban fringe zones and rural areas to carry out their agricultural activities. The primary sector employment is largely informal as it is based on individual initiatives. State corporations that could employ a large number are absent. It facilitates the circulation of income locally as most of the farm produce, manufactured products, and materials are consumed locally.

The secondary sector provides informal employment in small-scale food processing and craft production. It is, however, supported by a dairy and a soap factory. While food processing facilitates the circulation of income, craft production, dairy and soap production bring in income as the end products are sold in and out of the North-West Region. A very diverse informal sector operates in the North-West Region and is made up of the activities such as vehicle repair garages, wholesale and retail of agricultural produce, retail shops and hawkers, small scale catering and recreational services, small scale maintenance and construction works, printing of documents and local publications, intra-urban transportation by motorcycle, urban taxis and clandestine cars, informal money houses and transactions, roadside telecommunication services like Mobile money and call box, etc.

The lead formal employment sector in the North-West Region is the service provision sector. This consists mainly of state services at regional, divisional and sub-divisional levels, state and private higher education workers, regional authorities and agencies located in the North-West Region, international and local NGO's based in Bamenda (SNV, HPI, Shumas, Plan Cameroon, etc), public, systemic, and private educational and healthcare services in Bamenda, financial institutions such as banks, credit unions, money transfer agencies and CIG's, transport agencies, tourists facilities and services in the North-West Region, construction companies, supermarkets and other wholesale businesses.

The formal service sector employs a significant part of the population. Salaries and wages are paid to State workers who live and work in the North-West Region. The formal service sector also facilitates the circulation of money within Bamenda by local expenses and wages paid to those who work in the sector. A young quaternary sector is developing in the North-West Region. This includes those employed or engaged in higher education and research, consultancy, and the emerging information technology. Several categories of income linked to employment can be identified in the region (see annex part 1 section 6.1 Employment situation).

The first, second and third categories of income earners are dominated by formal public and private employment. It should be noted that some successful entrepreneurs and heads of agencies fall in this category. Top civil and military administrators, lecturers, teachers and several others fall in these categories.

In the formal employment especially in the public employment, income is above 500,000 FCFA for super class salary earners with post of responsibility having the rank of Secretary of State for example. There are successful entrepreneurs who earn such income. The lowest income is in the informal sector and is below 25,000 FCFA. Several roadside vendors and bike riders earn such income amounts. A large number of unemployed youths, the males, are involved in the motorbike transport business. The sector which has witnessed a rapid growth in the past years has absorbed a very large number of unemployed youths in the region estimated today at about 500,000 in the entire region. Due to the door to door services that they offer, going into the inner parts of quarters and villages, not accessible to cars and other vehicles, they are preferred by the people.

The call box sector has also absorbed a large number of youths, the majority of whom are females. The sector has witnessed a rapid growth in the past years with the introduction of the mobile money by the

telecommunication companies. Saving, transfer and withdrawal of money has been brought closer to the population who in order to avoid long procedures and queue can now carry out their financial transactions anywhere and at any time.

Mezam division remains specific in terms of employment. It has the highest number of formal employment and has every income categories. It is the only division that has super class salary earners with post of responsibility and that also has very successful entrepreneurs with income of more than 500,000 FCFA. It shares the second category with Bui division but also has every other category like the other divisions. The administrative status of Mezam division is higher than that of other divisions because it has the city of Bamenda, the seat of all regional services. The Governor's office is found in Bamenda, the lone state university in the region is found in Mezam division, successful entrepreneurs in the transport and building materials sectors are found in Mezam division. It also has several satellite towns like Bali, Bafut, Santa, Bambui and Bambili offering various categories of employment. Mezam divisions lead in the number of formal and informal employment and also in the income categories that exist.

9.2. Minorities

The Mbororo Fulani Pastoralists constitute a minority in the North-West Region, accounting for 5 to 10% of the region's total population. Their population is today estimated at about 80,000 in the North-West Region. As Muslims they also constitute a religious minority. Upon arrival they established themselves around Bamenda and Sabga, named after its founder, which became the headquarters of the Mbororo community in North-West Cameroon. They live mainly on highlands with their cattle and transhumance to lowlands during the dry season in search for greener pasture. Their most important wealth is cattle. Cattle rearing are their main economic activity and source of income.

9.2.1. The Mbororo Fulani Pastoralists in the North-West Region

As researched by Jabirou (2017), the origin of the Mbororo Pastoralist to the North-West Region is traced to Kano state and Jos plateau in Northern Nigeria in the mid and late 1880s. Informed about the practicability of rearing cattle in the Bamenda Grassfields they arrived and settled there. Their settlement was peaceful but for several decades now, it has been conflictual due to farmer-grazier problems. They were then considered as 'aliens' or 'strangers' living in a land that was not theirs. MBOSCUDA, the Mbororo Social, Cultural and Development Association was created to secure their rights over individual and communal grazing lands in a hostile and domineering environment of farming neighbours. The Mbororo's practice of extensive grazing and seasonal transhumance collided with the Grassfielders' system of shifting cultivation and crop damage was a recurrent problem. As in consequence, Grassfields farmers looked on the pastoralists' settlement with mixed feelings, and occasionally responded with public protest and violence.

Despite difficulties with the local farming population, many Mbororo benefited from the favourable ecological environment of the Bamenda Highlands and prospered over time. The adoption of a more sedentary lifestyle altered the pastoralists' economic strategies. In order to safeguard their pastoral resources, many Mbororo started to combine their herding activities with limited subsistence agriculture.

With growing wealth, many Mbororo aimed at improving their living conditions by investing in consumer goods and Islamic education. Mbororo youths gradually adopted the practices and consumption patterns of their Grassfields peers, such as frequenting local bars, attending Grassfielders' rituals and festivities, or dating Grassfields partners. It was only gradually that Mbororo individuals became aware of the practical advantages of Western education and started sending some of their children to school.

By the late 1980s just a few Mbororo had undergone secondary or university education. Many families experienced gradual impoverishment. While their family sizes continuously increased, the rate of herd

growth stagnated due to the effects of overgrazing. In addition, farmer-herder conflicts became exacerbated, both as a result of farmers' expansion into grazing zones and the Mbororo's negligence in the adequate control of their cattle herds. Many Mbororo spent considerable wealth on administrative and judicial procedures that benefited state agents rather than producing lasting solutions. As a result, the Mbororo in the Western Grassfields experienced themselves as a politically marginalized and economically exploited minority.

The population of the Mbororo minority group in the North-West Region has been on an increase. This increase simply will lead to the demand for more land for settlement and for pasturing of cattle, which can lead to more farmer-grazier conflicts in the region if not well managed and if the questions of land boundaries and land uses are not settled in local plans.

9.2.2. Specific facts on minorities in the divisions

In the North-West Region, the Mbororo Pastoralists are found in every division and specifically in Sabga, Santa, Wum, Nkambe, Banso, Fundong, Ndop, Bali, Bafut, among others. Their main motive was to secure their pasture grounds, since vacating an area, if only for seasonal displacement, gave way to occupation by other pastoralists. It is worth while noting here that Mbororo establishment in North-West Cameroon would probably not have been successful without facilitation by the British colonial administration. They are scattered over the region in small communities. Every village in the North-West Region has a small Mbororo community. They are represented in decision making by their community head, the Ardo. Specific locations are identified with the Mbororo. Sabga is a specific location and is identified with the Mbororo.

The Government of Cameroon is committed to promote and protect the rights of indigenous peoples. This nevertheless demands not only a politicalwill but through concrete actions. Such an activity's realisation requires a contribution from the State, the minority groups themselves and the host population. The general objective to protect minority groups is in line with the country's efforts to attain respect for human rights for all, including for its indigenous people. Cameroon voted in favour of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and since 2008 commemorates the International Day of the World's Indigenous Peoples on 9th August every year to raise awareness on the protection of the minority group. The January 18th 1996 Constitution of Cameroon states clearly that the State shall ensure the protection of minorities and shall preserve the rights of indigenous populations in accordance with the law. A study carried out in 2015 by the International Labour Organisation office on indigenous peoples in Cameroon identified the Mbororo nomadic pastoralists of the North-West Region as a minority group or an indigenous people. The Mbororo minority group of the North-West Region suffers from stigmatisation, discrimination and marginalisation. They are considered as a group of people with no land owned and as strangers. They are in constant conflicts with other groups of persons such as farmers who attack and kill cattle even when they are farming on grazing land. In respect of the ILO discrimination (employment and occupation) Convention No. 111 ratified by Cameroon on 13th May 1988, the indigenous and tribal people Convention No. 169, ratified by Cameroon, the United Nations Declaration on the Rights of Indigenous Peoples adopted by the United Nations General Assembly on 13th September 2007 and voted in favour of by Cameroon and through several other mechanisms, procedures and programs, the government of Cameroon continues to protect the Mbororo nomadic pastoralists as a minority group whose culture and socio-economic activities should be preserved.

The Mbororo in the North-West Region are involved in other socio-economic activities away from their original activity of cattle rearing. The increasing farmer – herder conflict has led to the intensification of agro-pastoral systems and economic diversification. This involves the cultivation of several crops and animal species at the same time on the same plots. Maize, coco yams, yams, sweet potatoes, beans, Irish potatoes, soybeans, cassava, groundnuts and a variety of vegetables like huckleberry (Solanum scabrum), cabbage, tomato, pumpkin, lettuce, okra and cowpea are cultivated by the Mbororo especially

those having small cattle. They also grow coffee, palm oil, plantain and banana, pawpaw (papaya), kola nut, mango, avocado, plum and guava. The Mbororo women who were involved mainly in the milking and selling of cow milk now alongside sell chicken and eggs. Their involvement in agricultural activities has increased in recent years. Other smaller livestock raised include sheep, goats and poultry. Sheep and poultry are often raised in large numbers compared to goats because the consumption of lamb is higher within the Moslem community, especially during the feast of Ramadan. The Mbororo nomadic pastoralists are now into other socio economic activities like restaurants, dress making, meat roosting, teaching, roadside vending, provision store management, public bus and taxi driving, etc.

The Mbororo in the North-West Region cannot be identified with these new activities they are carrying out. They are very few in these activities and to them it is just a support socio-economic activity carried out for a certain period. These activities are not sustainable to them. When a Mbororo man drives a taxi or an interurban bus for a few years, the money he saves is used to buy cattle and he immediately goes back into cattle rearing.

The following aspects on minorities and potentially disadvantaged groups should be considered when developing further strategic and territorial planning for the regions:

- The Bororos are a minority in the North West Region, found in all the seven Divisions of the Region. Their main activity is Cattle rearing.
- Women's Associations such as Nkumu Fed are contributing a lot in the improvement of livelihood.
- There is also the need to take into consideration the access of people with disability (PWD) to all public and private structures whenever projects are to be carried out.
- Construction of rehabilitation centres in the seven Divisional Headquarters of the North West Region is necessary to reduce the disadvantages for relevant groups in the region.

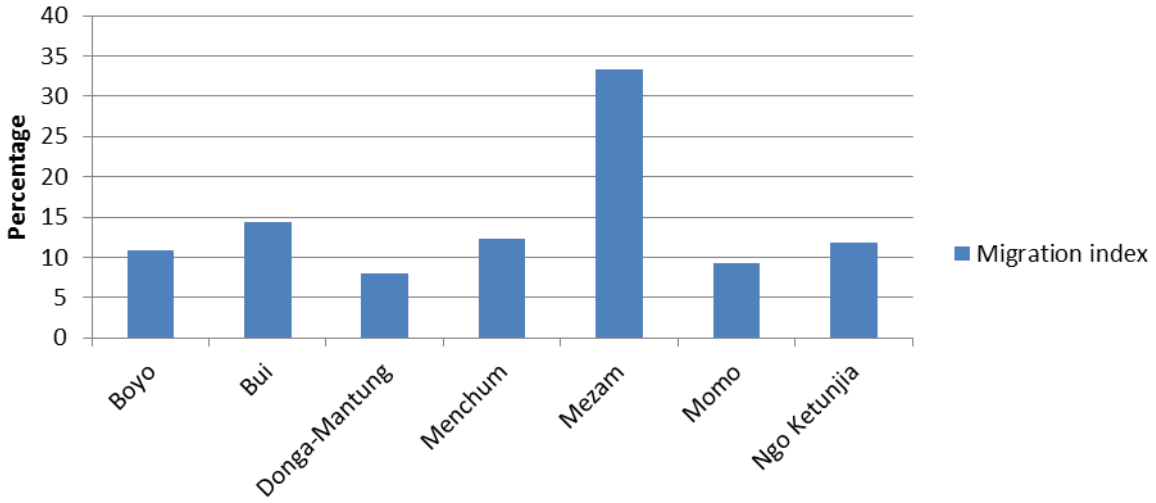
9.3. Migration and rural exodus

The North-West Region is a very dynamic area in terms of movements. The population is continuously on the move. Several categories of movements can be identified. There is immigration, which is movement into the region, emigration, which is movement out of the region, and internal migration, which are movements within the region. Within the region, rural exodus is the major type of movement, which is far beyond return migration to the rural areas. That is, within the region, more persons move out of the rural areas than they do return. Migration involves mostly the youths and the active population. Several reasons can be identified to serve as push and pull factors for the departure and receiving zones. Poor living conditions, unemployment, civil unrest, lack of socio-economic amenities like water, electricity, schools, hospitals and other basic services forced several persons out of the rural areas. Civil unrest in the entire region since late 2016 has been a major reason for movements of persons out of Boyo and Momo divisions to Mezam where relative calm prevails. The rural population is not only pushed out by these factors but they are attracted to the urban areas by the presence of socio-economic facilities and the possibilities for employment in the formal or informal sector and the probable success of petty trading.

9.3.1. Migration in the North-West region

According to the 2005 census, there were 313,879 migrants in a total of 1,728,953 inhabitants. Inter-regional migration accounts for 28.3%, 36.1% for inter-divisional migration and 35.6% for intra-divisional migration. The migration index therefore shows a wide variation between the different divisions. Figure 159 below shows the migration index.

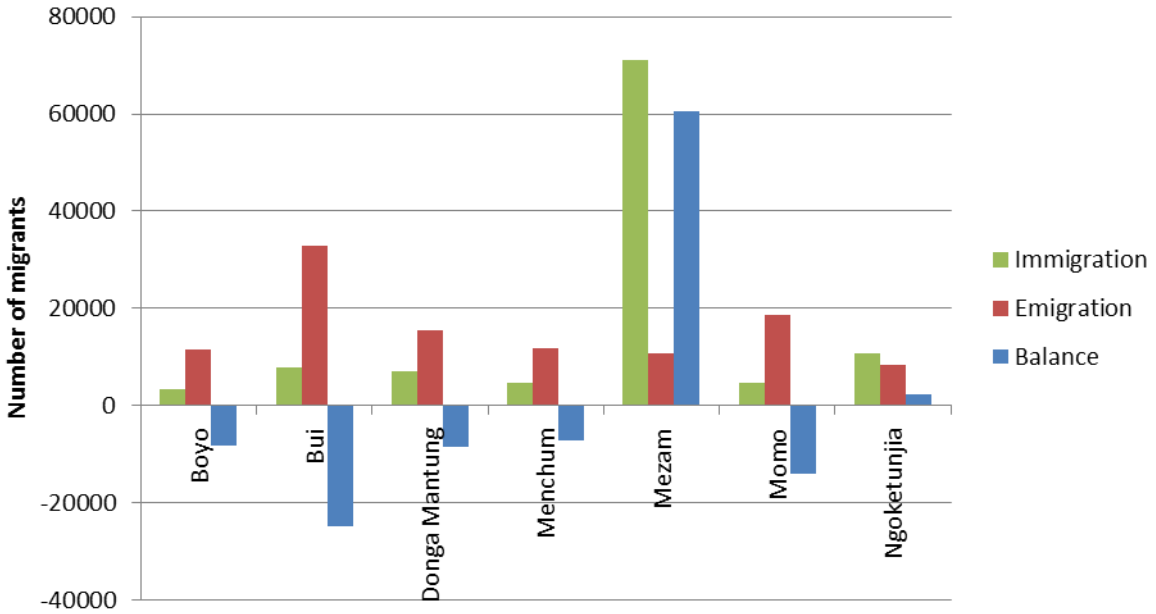
Figure 159: Migration index in different divisions



Source: North-West Region demographic study, NIS, 2017

The migration index is 18.2% for the whole region. This is the lowest in Cameroon. It should nevertheless be noted that the regional migration index of 18.2% is very different from those of the inter-divisional migration within the region. Donga-Mantung has 8.2%, Mezam has 33.8% which is because it is the regional headquarter and the headquarter for Mezam division. Mezam division alone has a high positive migration balance of 60,540. Ngoketunjia has 2,367 while the other divisions have negative migration balance.

Figure 160: Interdivisional migration balance



Source: North-West Region demographic study, NIS, 2017

From the above illustration, five divisions have a negative balance especially Bui and Momo, while Donga-Mantung, Menchum, and Boyo have a relatively small netto emigration. The large distance that separates them from the regional capital and their high degree of enclavements with some of the worse roads in the region can be a justification to this. Mezam division is highly attractive to migrants. It receives

migrants from the other divisions as follows: Bui, 30.2%, Momo, 22.2%, Donga-Mantung, 14.9%, Menchum, 11.9%, Boyo, 11.4%, and Ngoketunjia, 9.4%. Mezam is followed by Ngoketunjia. Nearness and accessibility are the lead reasons. Boyo division receives the least in these terms with about 69.6% of its inhabitants moving to Mezam division. With regards to movement within the region, many people tend to migrate to Mezam to seek for jobs in Bamenda. Mezam Division serves as a transit zone for migrants from other divisions and for emigrants into other regions. Another common type of migration from the rural areas to the city centres around the region is most pertinent amongst girl children who are sent by parents to serve as babysitters. These children often abandon school and end up being exposed to public dangers. In addition, there are seasonal migrations triggered mainly by transhumance and farmers' quest for new farms.

Important movements in the North-West Region have been due to the attraction to agriculturally fertile plains such as Mbaw Plains (Donga-Mantung Division) initiated by the construction of the Kakar–Sabongari road to the Adamawa Region. There was also organised settlement of people in the Mbonso area of Bui managed by the Catholic Church under a settlement scheme. Other areas include Menchum Valley, Ndop plain, Bui (Ber, Nkuv, Ngongba). The eventual closure of the famous Wum Area Development Authority, WADA, after the crisis of the mid 1980s led to the out movement of hundreds of persons who were directly or indirectly employed by the structure. A forced movement was caused by the natural gas disaster that occurred in the Lake Nyos on the 26th of August 1986. On the day after the disaster, most inhabitants (survivals and those of nearby areas to Nyos) started leaving the area for fear of an eventual gas coverage of their area and death. A few months later, survivors and other inhabitants were resettled in other areas like in the Kimbi resettlement camp in Bum Subdivision. The greatest migration within the Region is focused towards its Regional headquarters, Bamenda, for education, job opportunities and business. This has led to an uneven population distribution.

The North-West Region receives several immigrants from all the other regions of the country. Several decades ago immigrants from other regions came mostly from the West, South-West, Littoral and Centre regions, but today they come from every other region. There is an insignificant population of foreigners who are part of the confessional institutions or international NGOs. The national immigrants have different reasons, ranging from business, agriculture, civil servants of the public service, international NGOs, health problems, education, etc. The highest number of national immigrants is from the West Region. Proximity to the West Region is the first cause. They are mostly involved in the commercial sector and own several big business companies in the field of transport, building construction materials, supermarkets, etc. It should be noted that the people from the West make up the oldest immigrants in the North-West Region with many today not easily identified as from the West. Immigrants from the South-West Region come second due to the common national language, English, which is an easy aspect for social insertion.

Migratory exchanges between the North-West Region and other regions have been substantial and historic. Emigrants from Momo, Menchum and Boyo Divisions move to the South-West, Centre and Littoral Regions to work in plantations. Others engage in the informal sector like petty business in towns like Douala, Tiko, Limbe or Yaounde. Emigrants from Mezam migrate towards West, Littoral and Centre regions. They use frequently the Bamenda-Douala and Bamenda-Yaounde highways. Out-migrant streams from Mezam Division predominate in all exchanges except for that with Adamawa and Nigeria where those from Bui and Donga-Mantung divisions dominate.

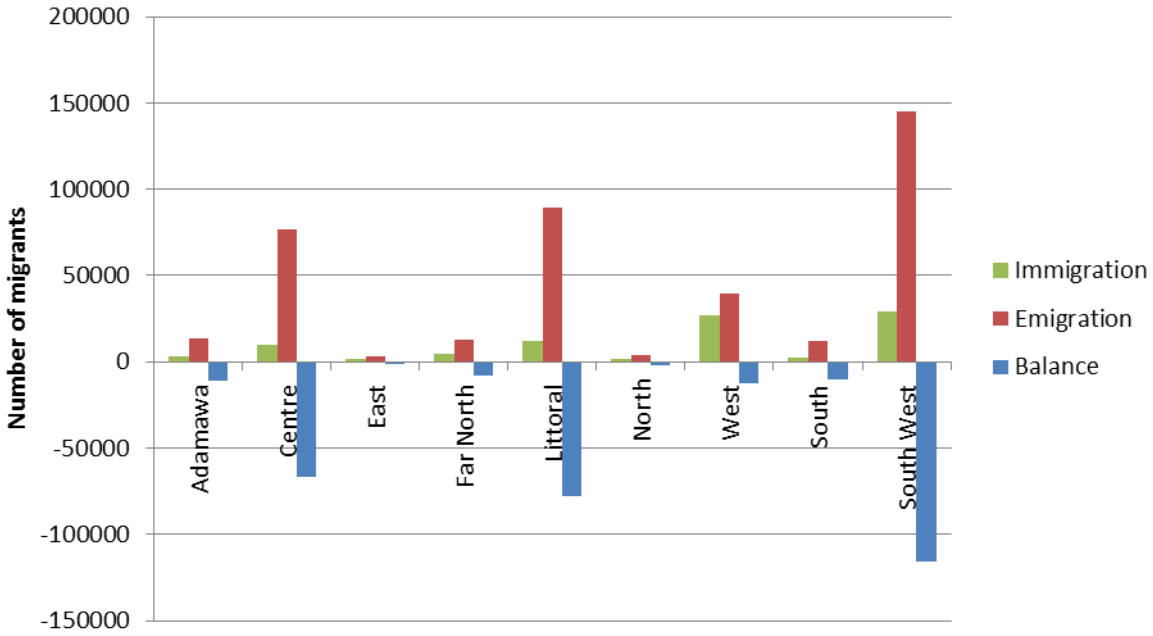
Since 2011, a very large youthful population is moving yearly into the region with the creation of the University of Bamenda. Students come from all the other nine regions of Cameroon. The increase in the number of schools operating in the University of Bamenda has led to an increase in the number of students from the other regions. This has overturned the trend that lasted for several decades of students moving to the University of Yaounde before 1992 for higher education and to Buea, Dschang, Douala, Ngaoundere and Yaounde after 1992. For educational purposes, several students of the region

had to move to Nigeria for higher education to avoid studying in French in the then lone state university in Yaounde.

It should be noted that a very large Nigerian community lives in the North-West Region. The largest community is found in Bamenda, in other smaller towns and in the border areas with Nigeria like Furu-Awa, Sabongari, etc. They make up the largest foreign community in the region. They are in a majority involved in business. Several students in the private higher institutions of learning in Bamenda are from Gabon, Equatorial Guinea and the West region. They make up a small community.

Emigration has greatly reduced in the region. The people of the region move mainly to the South-West region (37%), Littoral (23%), Centre (19%) and West (10%) (see annex part 1 section 6.2 Migration and rural exodus). The detailed balance is shown on Figure 161 below.

Figure 161: Inter regional migration balance



Source: North-West Region demographic study, NIS, 2017

The other regions receive a very insignificant number of people from the North-West Region. The search for a better life, employment and higher education opportunities had forced several persons to leave the region. The region has just the informal sector employing about 55.7% of the population and an insignificant public formal employment sector of 1.2%. The private and confessional formal sector employment is significant in the region. This is what held some persons back. Civil servants move out of the region as well as other formal sector workers when posted by their services, but these movements are insignificant in comparison. It should be noted that until the creation of private higher institutions of learning in the region and the creation of the University of Bamenda in 2011, the majority of students had to leave the region to seek higher education.

Students of the secondary education level whose parents live and work in the other regions who are from the region or not do move in and out of the region during schools reopening and during holidays. Several families in other regions appreciate positively the quality of education at the secondary levels provided by the confessional institutions, and prefer to send their children to study in these schools and colleges like Sacred Heart College, our Lady of Lourdes College, etc.

Many persons move within the region for short and long periods. The duration is determined by the push or pull factors influencing the movements. The same reasons for immigration and emigration are the causes of internal migration. But note should be taken that, within the region, more persons move from

the rural to the semi-urban and urban areas and more from other divisions to Mezam. Rural exodus is rampant amongst youths from rural areas to other regions in search of greener pastures. Emigrants from the North-West Province migrate to the South-West and Littoral Provinces to work in plantations. Others engage in petty businesses in towns like Douala, Tiko, Limbe, and Yaounde while others migrate to towns like Buea, Yaounde, and Dschang for higher studies. Seasonal emigration occurs from Bui, Donga-Mantung and Mezam Divisions to the Mbaw and Ndop plains respectively, in search of pastures by cattle rearers.

The rural exodus pattern shows movement from villages to administrative headquarters. That is from villages to subdivisional, divisional, and regional headquarters. The search for employment, a better living condition, education, health, facilities like water and electricity amongst many are the important reasons for movement.

Several projects are being carried out in Cameroon to facilitate and accelerate the socio-economic and professional insertion of youths. This is done through subvention of informal activities, through mobilisation, capacity reinforcement, entrepreneurship, employment or installation of youths in the production of service delivery units. The youths in a majority are involved in migration. The projects seek to make them stable. The special triennial youth socio-economic and professional plan was launched in 2017 with a 102 billion FCFA package to support such projects supervised by several ministries. An example is the Urban and Rural Youths Support Program (PAJER U) that accelerates the socio-economic integration through junior enterprises of youths between 15 to 35 years of age in 17 development projects. It provides technical, entrepreneurial and managerial assistance in animal breeding, innovations, transformations and the conservation of local materials, hair dressing, metallic works, electricity, electronics, to name just a few. There is also the National Youth Fund (FONIJ) which mobilises funds and finances productive and innovative projects that are in the production phase with the goal of contributing to professionalisation and poverty reduction by favouring the socio-economic and professional insertion of youths. The National Youth Observatory Program (PNV) promotes skills for personal development. The project for the socio-economic insertion of youths for the creation of micro-enterprises in the manufacture of sports equipment abbreviated (PIJMA) train youths between the ages of 15 to 35 on the technics of making sports materials including football, nets, jersey, gloves and a lot more.

9.3.2. Specific facts on migration and rural exodus in Mezam division

The main destination of migrants is to Bamenda, the regional headquarter in Mezam division. The arriving migrants locate themselves based on specific interest in Bamenda Town.

The distribution of recent migrants onto neighbourhoods in Bamenda is influenced by the socio- economic status, origin and economic activity of migrant households. The pattern of distribution of migrant population in Bamenda is characterized by:

- Most senior civil servants are found in GRA and other parts of Upstation and in Foncha Street area;
- Most intermediate civil servants settle in Bayelle, New Layout, Ntamulung and Ntambessi (Ntaghem) where they can easily shuttle to places such as Upstation and Bambili;
- Most University staff is found along the Bayelle-Bambui-Bambili stretch of road;
- Most junior civil servants are dispersed within the inner areas where they can have access to cheap houses;
- Most Bamileke business persons initially reside in the inner areas close to markets and commercial areas and where they can find most people from their places of origin. They are found mostly in Ntambag I and II, Azire A, Atuazire, Mugheb, Sisia and the older parts of Bayelle;
- Most Nigerian business persons are found in inner areas close to markets and commercial areas such as Azire B, Atuazire, Small Mankon, Ntambag II and Mugheb;

- Most Muslims reside in Ntambag II and III which is popularly known as Hausa quarter;
- Most migrants from the North-West Region tend to reside along the directions to their origins. Those from Boyo, Ngokentujia, Bui and Donga-Mantung Divisions reside mostly along the Bamenda-Bambui direction. Those from Menchum Division reside mostly along the Bamenda-Bafut road. Those from Momo Division reside mostly along the Mbengwi road. Those from Batibo and Widikum directions reside mostly along the Bamenda-Bali road.
- Most successful Cameroonian business persons eventually move from the inner areas to middle income or high income areas depending on their incomes and ability to build or rent and to move.

9.4. Transnational flows

9.4.1. Transnational flows in the North-West Region

Crossborder trade of transnational flows of goods and persons is carried out between the North-West Region and other countries. The countries involved in transnational trade with the North-West Region are Gabon, Equatorial Guinea, Chad and Nigeria as well as Japan, China, Dubai, Belgium, Germany and the USA. The main transnational flows are between the North-West Region and Nigeria. This is due to the fact that they have a common border. Trade between the two areas increased with the construction of the Bamenda-Mamfe-Ekok-Enugu-Onitsha road.

The North-West Region as a whole has about two hundred big businessmen who formally import goods from foreign countries. Annually, the customs collect several billions of FCFA paid as taxes by businessmen, although the exact amount is not known. It is nevertheless estimated that about 2/5 of the customs duties are not paid by the businessmen. The Table 118 presents the major products imported by businessmen in the North-West Region and their origin.

Table 118: Some major imported products

Country of origin	Some major products imported
Nigeria	Electronics, tiles, plumbing and electrical appliances, cosmetics, textiles, dresses, shoes, canned drinks, whisky, household utensils, manufactured plastic and stainless steel products, drugs, cars, building construction materials, fuel, cattle and motor cycles
Equatorial Guinea	Wine
Dubai	Telephones, electronics, carpets, textile, dresses and shoes
Japan	Telephones, electronics, cars, cars spare parts and household equipments
China	Telephones, electronics, cars, spare parts for cars, dresses and shoes
Germany	Cars, spare parts for cars, dresses, shoes and household equipment
Belgium	Cars, spare parts for cars, dresses, shoes and household equipment
USA	Cars, spare parts for cars, dresses, shoes and household equipment

Source: Compiled from "Etude socio-économique régionale au Cameroun; Province du Nord-Ouest" by PNUD/MINEPAT, 1999 and updated by field survey in 2017 and 2018

Imported products from Europe and the USA are made up of both new and fairly used products. The market for fairly used products imported from Europe and the USA in the North-West Region is fast growing. The majority of the businessmen are in Bamenda. New and fairly used products from USA and Asia come in through the Douala port and are transported to Bamenda. Small scale businessmen buy from importers in Douala. The North-West Region has no water outlet. Other exports enter through Nigeria and are bought and transported to the North-West Region. Despite the growing market for imported fairly used goods from Europe and the USA, there is still a large preference for goods from Nigeria. Nearness to Nigeria, the sharing of a common language, and the low prices of Nigerian goods make it the first choice for it can be bought by the low income rural and urban dwellers. The large Nigerian community in the North-West Region and are in a majority involved in trade and are dealers in

Nigerian products only. This has led to many North-West citizens to be interested and involved in the import trade with Nigeria also.

The North-West Region exports several produce and products to foreign countries. More manufactured products are imported into the region while mostly farm produces and food processed products are exported. The fertile lands are cultivated by the largely active population. Some major exports are: vegetables, cattle, tea, tomatoes, beans, maize, potatoes, groundnuts, palm oil, arts and craft work. There are no major industries in the North-West Regions. There are some small food processing centres that transform cassava and other farm produces. The Ndu Tea Estate and the Ndawara Highland Tea estate cultivate and process tea which is exported to other parts of the world. A soap factory is located in Bamenda III subdivision in Mezam division. Vegetables are dried and packaged for export to Europe and the USA but the quantity is still insignificant. Original pieces of arts and craft work are exported to Europe, Asia and the USA. The North-West traditional regalia is sold in several markets in North America, Europe, Asia and Africa. Tomatoes are exported to Nigeria for processing as well as potatoes. Potatoes are also exported to Chad as well as plantains. Market gardening produces from the Santa production basin are exported to Gabon, Equatorial Guinea and Nigeria. The exported market gardening produces are: Carrot (Daucus carota), Cabbage (Brassica oleracea), Leeks (Allium porrum), Onion (Allium cepa), Huckleberry (Solanum nigrum), Tomatoes (Lycopersicon esculenttum), Irish potato (Solanum tuberosum), Celery (Apium graveolens), Okra (Hibiscus esculentus), Parsley (Petroselinum crispum), Pepper (Capsicum frutescens), Green beans (Phaseolus vulgaris), Lettuce (Lactuca sativa) and Garden egg (Solanum melongena). Bush mango seeds, banana and eru are exported to Nigeria.

The main trade routes are through the West, Centre and South regions to Gabon and Equatorial Guinea and through the North-West and South-West regions of Cameroon to Nigeria. In these trade activities, formal and informal payments are arranged in advance for all trucks that are using the main corridor. Rates at the border and at control points along the roads are usually fixed by the Ministry of Finance and the Economy. There are nevertheless new informal negotiations with the custom officials in the field until a new rate is acceptable to all parties. These negotiations are usually openly discussed in public media though against the law.

The majority of traders involved in the North-West Region in transnational trade between Gabon, Equatorial Guinea, Chad and Nigeria and Cameroon are small traders and several traders often share the same truck. The 40-ton trucks operate along the major corridors carrying goods of up to 20 traders. Financial trade transactions between the North-West Region and these countries are estimated at several billions.

9.4.2. Organisation of transnational flows

As mentioned, the main transnational trade is between the North-West Region and Nigeria and several roads are used. There are direct major roads as well as alternative roads. There is the Enugu – Abakaliki – Abong – Abonshie – Ako – Nkambe – Ndu – Kumbo – Bamenda which is a second alternative road which is used by some traders to import and export produces and products to and from Nigeria to or from the North-West Region. It is highly insecured and in a very poor state. Nevertheless, the heavy trucks still manage to go through. The advantage to traders is that it is less costly in terms of custom duties to be paid. The Nigerian custom post is located at Abong while the Cameroonian customs posts are located at Abonshie, Nkambe, and Ndu. From Ndu, the trucks continue to Bamenda easily. Annually, about 5 billion FCFA worth of goods are traded with Nigeria through Abonshie to the North-West Region. According to a study carried out by the International Bank for Reconstruction and Development and the World Bank in 2013 on cross-border trade between Nigeria and CEMAC countries and specifically on estimating trade flows, describing trade relationships and identifying barriers to cross-border trade between Cameroon and Nigeria; estimates of the volume of goods that Cameroon imports along this route are 3,000 metric tons annually, while Cameroon's exports are estimated at about 1,000 metric

tons. About 2/3 of the goods exported through Abonshie from Nigeria to the North-West Region remain in Kumbo, while the rest are sold in Bamenda and its surrounding towns.

There is also the Enugu – Abakaliki – Ikom – Mfum – Ekok – Mamfé – Bamenda road which is about 443 km long and comprises the Cameroonian Bamenda-Mamfé-Ekok road sections and the Nigerian road sections (240 km) from Mfum to Enugu. Thanks to the African Development Bank, the road was constructed in 2014 and has radically changed the nature of trade relationships between the North-West Region in particular and Cameroon as a whole with Nigeria. The Bamenda-Ekok road that used to be a nightmare to traders has witnessed a more than triple in its trade quantities. Products are bought in Onitsha, Lagos, Kano, and Aba. Onitsha is the main market followed by Aba. From Kano, textiles are bought and the goods all go to the Bamenda market, the central hub of business in the North-West Region and for surrounding towns like Kumbo, Ndop, Bali, Santa, Bafut, etc. Agricultural goods and non-timber forest products, including eru, potatoes, plantain, banana, and bush mango seeds are exported to Nigeria. The volume of exports along the corridor is estimated at more than 10,000 metric tons annually, with a value of more than 10 billion FCFA. Several stakeholders, public and private, are involved in transnational trade between the North-West Region and Nigeria and there is strong functional specialisation among these actors, largely as a response to the multitude of barriers and policy restrictions. These include customs officials, security personnel, immigration officers, and public agencies tasked with ensuring food safety, agricultural health, and/or quality standards (IBRD/World Bank, 2013). The proportion of women involved in cross-border trade is quite low, estimated at less than 5 percent of the traders on the major Onitsha – Bamenda corridor. The men do the traveling and the women manage the shops. Most women also run other business, such as small restaurants, bars, and convenience stores, which are linked to cross-border trade (IBRD/World Bank, 2013). Illicit trade for fuel, commonly referred to as “zoua zoua” has increased along the Bamenda-Enugu road. Dealers used the part of the road which is not controlled by security agents and used also other untarred roads in villages to smuggle contraband fuel to Bamenda.

There is also an important trade for eru, referring to the species gnetum africanum and the bucholzianum from the South, Centre and East regions through Bamenda to Nigeria using the Bamenda-Enugu corridor. The Cameroonian forest (the South, Centre and East regions) is rich in biological resources diversity notably the two above-mentioned gnetum species referred to as eru, a leafy vegetable used for cooking. Eru is known as okazi in Nigeria. About 70% of those involved in this trade are women as harvesters, intermediaries, and exporters. Daily profit margins during the main season can range from 7,200 FCFA and 72,000 FCFA. Women do not actually travel across the border to Nigeria but are more involved in harvesting and packaging. On the Bamenda-Enugu corridor, eru harvested in the Centre, South and East regions is reassembled in Bamenda, in the North-West Region and loaded onto smaller vehicles. The vehicle used carries 500 kg of eru from Bamenda to Ekok (valued at about 750,000 FCFA), and the cost of transportation and customs payment comes to 90,000 FCFA. Traders pay unofficial fees at the border and are allowed to enter and sell their products in Ikom. The wholesale price of one bundle (one kg) is 500 naira, or about 1,500 FCFA, which comes to about 750,000 FCFA in sales per vehicle. This leaves a net profit margin of about 64,000 FCFA per vehicle, or 8.5% of sales (IBRD/World Bank, 2013).

9.5. Assessment of the situation in social systems

Table 119: SWOT summary of Employment

SWOT summary: ***Employment***	
STRENGTH	**WEAKNESSES**
• A large active population • A largely educated population • Several domains of vocational training and apprenticeship • A high disparate level in education and training	• Large unskilled workforce • Unequal employment opportunities • Low quality vocational training and apprenticeship • Low professional insertion possibilities • A very big informal sector employment • 419 uncompleted development projects • Social and technical infrastructures were vandalized 2017-2020 (no proper documentation exists so far).
OPPORTUNITIES	**THREATS**
• Large active population to be exploited • Ready workforce available for use • Several youths trained with no job or capital to operate • State subvention of insertion into some sectors • A big informal sector to be exploited • Individual initiatives to be exploited • Innovative and creativeness of the people • Support the informal in becoming formal	• Frustration of educated unemployed • Several unsustainable petty businesses • High urban delinquency • Very unstable employment activities

Table 120: SWOT summary of Minorities

SWOT summary: ***Minorities***	
STRENGTH	**WEAKNESSES**
• A Mbororo minority group exist • Increased emancipation and education • Specific locations like Sabga are identified as Mbororo villages or homes • Diversification of livelihood activities • Indigenous socio-economic activities	• A small population number • Resistance to emancipation and education • Several small communities scattered across the region which is a difficulty for representation and insertion • New activities not sustainable but only carried out as temporary solutions to generate income • Loss of indigenous livelihood activities
OPPORTUNITIES	**THREATS**
• Recent diversification of the socio-economic activities • Some successful emancipated and educated members • Locations identified as Mbororo homes are an asset for representation • Socio-professional integration	• The growing minority population may exacerbate the farmer-grazer conflicts through increased pasturing • Culture still closed up • Weak socio-economic communities • A very closed community • Early marriages of women

Table 121: SWOT summary of Migration and rural exodus

SWOT summary: ***Migration and rural exodus***	
STRENGTH	**WEAKNESSES**
• Increasing youthful urban workforce • Growing informal sector in urban areas • Several migration patterns • Multiple reasons for emigration and immigration (economic opportunities, higher education, etc…)	• A rapidly increasing urban population • Decline in working population of the rural areas • Uncontrolled population distribution • Urban areas attracting more persons than rural areas which are becoming depopulated
OPPORTUNITIES	**THREATS**
• A large active urban population • Growing non-farm sector in rural areas • Several categories of migration areas • Increasing urban immigration diversifies the socio-economic opportunities in urban areas	• A very high unemployed urban population • An ageing rural population distribution • Increasing youths movements • Significant urban pull and push factors, making urban areas predominant over rural areas

Retrospective evaluation of transnational flows in the North-West Region

During the past 10 to 15 years, there has been a positive evolution in transnational trade activities between the North-West Region and other countries notably Gabon, Equatorial Guinea, Chad and Nigeria. The constantly increasing population of the region in need of manufactured products and the constant demand of farm products by these countries have been the main factors towards this positive evolution. The close to two million inhabitants of the region is highly in need of manufactured goods which are imported from North America, Europe and Asia. The main retrospective observation in this regard is the fact that there is an increasing importation of fairly used goods compared to new goods. The population prefers the fairly used goods from North America and Europe because they are cheap and last longer. The number of shops for fairly used goods has increased in Bamenda town in particular and in other semi-urban areas like Kumbo, Santa, Bali, Bafut and Nkambe. Every household manufactured need can be bought in these shops. Used cars are imported from North America, Europe and Asia notably from Canada, USA, Belgium, Germany and Japan. This has led to an increase in the automobile pool in the North-West Region. Electronics and other building construction materials are imported from Nigeria. Residents in Bamenda now buy tiles for example directly from Nigeria at cheaper rates instead of going to the shops in Bamenda.

During the past 10 to 15 years there has been an increase in the exportation of farm products to Nigeria like eru and tomatoes, all types of market gardening products from Santa to Gabon and Equatorial Guinea as well as Irish potatoes and plantains to Chad. This has led to an all season cultivation of market gardening product in the entire region. Buyers, collectors and transporters use the 40-ton trucks stationed in Santa and visit the farm villages and markets to buy products which they load into the trucks. When it is full, they transport the products to the country destined for it.

Table 122: SWOT summary of Transnational flows

SWOT summary: ***Transnational Flows***	
STRENGTH	**WEAKNESSES**
• The existence of external and internal markets • The availability of highly demanded farm product • The importation of new and fairly used goods • The involvement of several stakeholders	• A rapidly increasing urban population with supplies not meeting the demand • A growing market for used exported products to the detriment of new manufactured products • Dependence on the agricultural products as major export • More informal custom negotiations
OPPORTUNITIES	**THREATS**
• The good state of the main trade routes (N6) • A growing local market for export goods • A stable external market of several countries • Flexible customs negotiation	• Growing insecurity on trade routes and local markets • Involvement of smugglers on some trade routes • More small traders than large scale bulk trade • More preference of imported goods by the population

Key Stakes

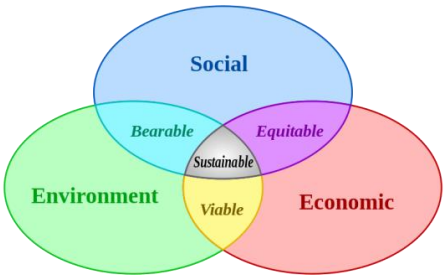
Employment opportunities are few. There is a very active population especially in the rural areas seeking for employment and other facilities in the urban areas. Investing in social infrastructure in the rural areas will reduce rural exodus. Diversifying rural livelihood activities (like tourism and producing cash crops like coffee and cocoa) will create employment and also reduce rural exodus. This will lead to full sedentarisation of the Mbororo pastoralist and might reduce the increasing farmer-grazier conflicts in the region. It is important that the specificities of Mbororo Fulani pastoralists be given more attention in terms of diversification of livelihood activities.

10 Summarising diagnostic assessment for the North-West Region

In the following the most important strengths of the regional territorial situation are summarised. Here the strengths, weaknesses, opportunities and threats are summarised cross-sectorally, building on the assessments in the specific chapters. For the assessment criteria see the sector analysis.

10.1. Assessment criteria: goals for sustainability

The “Regional Territorial Planning and Sustainable Development Plan” has to consider at first the objectives for the territorial development in Cameroon (see project objectives, chapter 1.2). In respect to this the assessment criteria have to build up on the cornerstones of sustainable development:



The UNDP has published the “Sustainable Development Goals (SDGs)”, also known as the Global Goals. They are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. These 17 Goals built on the successes of the Millennium Development Goals, while including new areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, among other priorities. The goals are interconnected – often the key to success on one will involve tackling issues more commonly associated with another (UNDP, 2018).

Based on these worldwide accepted goals the criteria for the assessment of the situation in the North-West Region and the goals for the perspectives were developed, shaped for sectoral SWOT, specified and tailored as much as possible for the specific situation in Cameroon and the North-West Region. By looking in these parts of the diagnostic study on the cross-sector aspects especially synergies shall be

highlighted, that can raise the effects for the future development, both in the positive (opportunities like a shift in the energy sector that can raise their single effects if realised together with others, like economic activities) but also in a negative way (like poverty that can raise the stress on the environment and the risk situation).

10.2. Cross sector SWOT summary

The following main aspects were identified in the diagnostic study for the North-West Region and should be considered with special focus in the further process of territorial development in the North-West. The summary was limited to few, most important aspects from the expert's point of view.

Summarised strengths - to be conserved and further developed	Involved sectors	Priority
Biophysical assets: fertile soils, important biodiversity and ecosystem services, much potentials in renewable energies as well as in mineral resources. These assets offer **large supplies of raw materials** for the industry and for export: mostly agricultural products but also processed materials	Environment, Economy	+
Human assets: young and growing population representing a large available human workforce. It is supported by a **strong and active civil society** with many NGOs already filling gaps or providing services for the administration.	Urbanisation, Social system	++
The North-West Region is already an economic hub: It is a major producer of crops and possesses a few agricultural niches such as rice and tea and potentials for coffee and some processed vegetables (tomatoes) and animal products (cow skin and diary). Furthermore, it benefits from the Ring Road (N11) with connections to the West, Adamawa and Nigeria, which despite some stretches with poor condition are used to transport the goods. The Region is situated on the Bamenda – Enugu Corridor via the Transafrican Highway (N6) offering a good connection to Nigeria The crops (notably corn, potatoes and beans) exported from North-West and the goods imported from Nigeria generate growing incomes from custom duties making the Region potentially an important player in economic exchanges.	Economy, Technical infrastructures	++
Most **driving forces of development** such as: Government's programs to support agriculture and the insertion of youth, institutions of higher education or of vocational education, health structures, etc. are already in place	Economy, Social system, Social infrastructures	+
A combination of poverty and internal migrations have led to a **diversification of the informal economy in the urban as well as the rural areas**. The young people developed skills in craftsmanship (e.g. iron works, mechanical repairs), transport (bikes) and in new technologies (ICT). They would gain support by the development of adequate and affordable ICT infrastructures as well as -legislation. Diversification of the activities is also an important building stone of the circular economy, if supported by the development of an adequate waste management and recycling system	Urbanisation, Social system, Economy, Technical infrastructures	+

Priority: ++ highest, + high, o medium (not shown: - low, -- very low)

The following main weaknesses of the North-West Region should be considered with special focus in the further process of territorial development in the North-West.

Summarised weaknesses– to be reduced	Involved sectors	Priority
A centralised administrative system, which has concrete impacts on the development: e.g. the incapacity for regional decision-makers to tender for services or for the construction/maintenance of infrastructures	All	+
Weak law enforcement and governance issues throughout all sectors although the legal instruments are in place and powerful: protected forest areas, building regulations, mining code, law on waste management and disposal, etc.	All	++
Uncontrolled urban sprawl. The rural exodus added to the growing population has led to a rapid and spontaneous development of settlements which was not followed by the development of the necessary infrastructures, neither for waste and water management nor for health and education. Some of the densely populated urban neighbourhoods are therefore unhealthy and insufficiently supplied with infrastructure, water and energy. Ironically, the lack of such facilities in rural areas is one of the driving factors for the population to migrate to the cities.	Environment, Technical infrastructures (waste), Urbanisation	++
Environmental degradation and loss of natural habitats. In the rural areas, the still growing population translates into increasing land use for cropping and grazing and, in general, into further human pressures on habitats (more exploitation of stones, sands, timber, wood for cooking, natural water resources, etc.). This growing pressure is enhancing soil infertility, pollution of rivers, risks of landslides and massive deforestation also in watersheds and water catchments important for drinking water. Poverty and also the fact that most villages lack electrification increase the pressure on natural resources and risks for more and further degradation or even desertification.	Environment, Technical infrastructures	++
Weak competitivity of the economy, due to poverty, technical (bad roads, water outages and powercuts) as well as institutional setbacks (administrative hurdles, corruption) as well as the Anglophone Issue.	Economy, Administration, Technical infrastructures	++
The needs outpace the investments in social infrastructures, particularly in the secondary and the vocational education, and in the health sector	Social infrastructures	+

Priority: ++ highest, + high, o medium (not shown: - low, -- very low)

The following main opportunities of the North-West Region should be considered with special focus in the further process of territorial development in the North-West.

Summarised opportunities – to be used by further developments	Involved sectors	Priority
Important potentials for the diversification of the economy: e.g. tourism, food processing industry, agroforestry, cash-crops, etc. The improvement of the general accessibility of the North-West Region with better roads and the development of secondary connections to Nigeria (Bawuru, Furu-Awa, Abonshie) would fuel the growth of the secondary and tertiary sectors.	Economy, Technical infrastructures	++
Circular economy: the informal sector in the urban areas is already diversified in its activities. It would bloom if supported by the proper technical infrastructures and waste management. Organic wastes can be used in biogas production while producing manure for the agriculture, scrap metal can be processed and re-used by the iron-crafting workers. The economy has the necessary ingredients to be sustainable, circular and integrated but the lack of technical facilities is the limiting factor.	Economy, Technical infrastructures	+
Decentralisation with administrative and financial autonomy to the regional/local authorities to allow them tendering for their development projects and for construction/maintenance of their infrastructures.	All	++
The decentralised development of technical and social infrastructures has an attractivity effect: in particular higher/vocational education institutions attract the youth. This can be focussed on secondary urban poles (Nkambe, Wum, Fundong) to regulate the human migrations. In a similar manner, it is possible to decentralise the power production (biogas, small hydroturbine) in order to decrease the demand on the main grid and enhance the quality of the distribution in the rural areas. The same can be done with water by harvesting rainwater and become less dependent on piped water or water from streams on moments the pipes do not work. The development of adequate facilities will turn small localities into secondary urban centres thereby relieving the uncontrolled sprawl of the Bamenda – Kumbo axis.	Urbanisation, Social infrastructures, Social system, Technical infrastructures	++
Committed NGOs and traditional rulers that can be actively involved in any sensitisation campaign, from environmental awareness to the promotion of the local economy	All	+

Priority: ++ highest, + high, o medium (not shown: - low, -- very low)

The following main threats of the North-West Region should be considered with special focus in the further process of territorial development in the North-West.

Summarised threats – to be reduced or removed	Involved sectors	Priority
Absence of the Regional Councils: the Regional Plan is meant to assist regional decision-makers, which at this time do not exist or are not empowered with the adequate administrative and financial competences	All	+
Deforestation and loss of natural habitats: Forests have suffered major losses, particularly in the urbanised and in the border areas. In the more densely populated divisions, forests have been replaced by farmland or pastures. In all divisions and even in towns wood represents the primary source of energy This has negative impacts on health and accompanied by a massive loss of biodiversity. Most of the wildlife is now confined to the protected areas and even there under severe threat. Loss of forests in watersheds also disrupts the water cycle and increases the risks of landslides.	Environment, Technical infrastructures	++
Climate change: is altering the cycle of rainfall seasonality and the frequency of extreme weather events will have concrete impacts on the quality of the harvest, the rearing of cattle, the occurrence of pests and on the water balance in general. Severe droughts can be followed by extreme rains. The planning of the water supply infrastructures must take this parameter into account in order to develop a better use of rainwater harvest and adequate drainage systems.	Economy, Technical infrastructures	+
Water pollution: although today the quality of the drinking water is good, it is seriously threatened by intensive cropping (growing use of fertilizers and pesticides), cattle rearing, and the absence of sufficient waste management and wastewater treatment. Locally there can be serious health and environmental problems.	Environment, Technical infrastructures	++
Severe landuse competition if the taking of surfaces goes on uncontrolled and without any planning. This may not only lead to social tensions, but also to a decrease of productivity, degrading of areas, sometimes beyond repair if soil washes away and leaves bare desertified soil and rocks.	Environment, Economy, Urbanisation	++
Bipolarity of urban fabric and dependence on the south axis (Bamenda-Kumbo, N11 and Enugu-Bamenda, N6) exacerbating rural exodus, if the secondary road network is left undeveloped. The non-improvement of the roads will prevent the diversification of the economy in the rural areas by leaving them isolated.	Economy, Urbanisation, Technical infrastructures	++

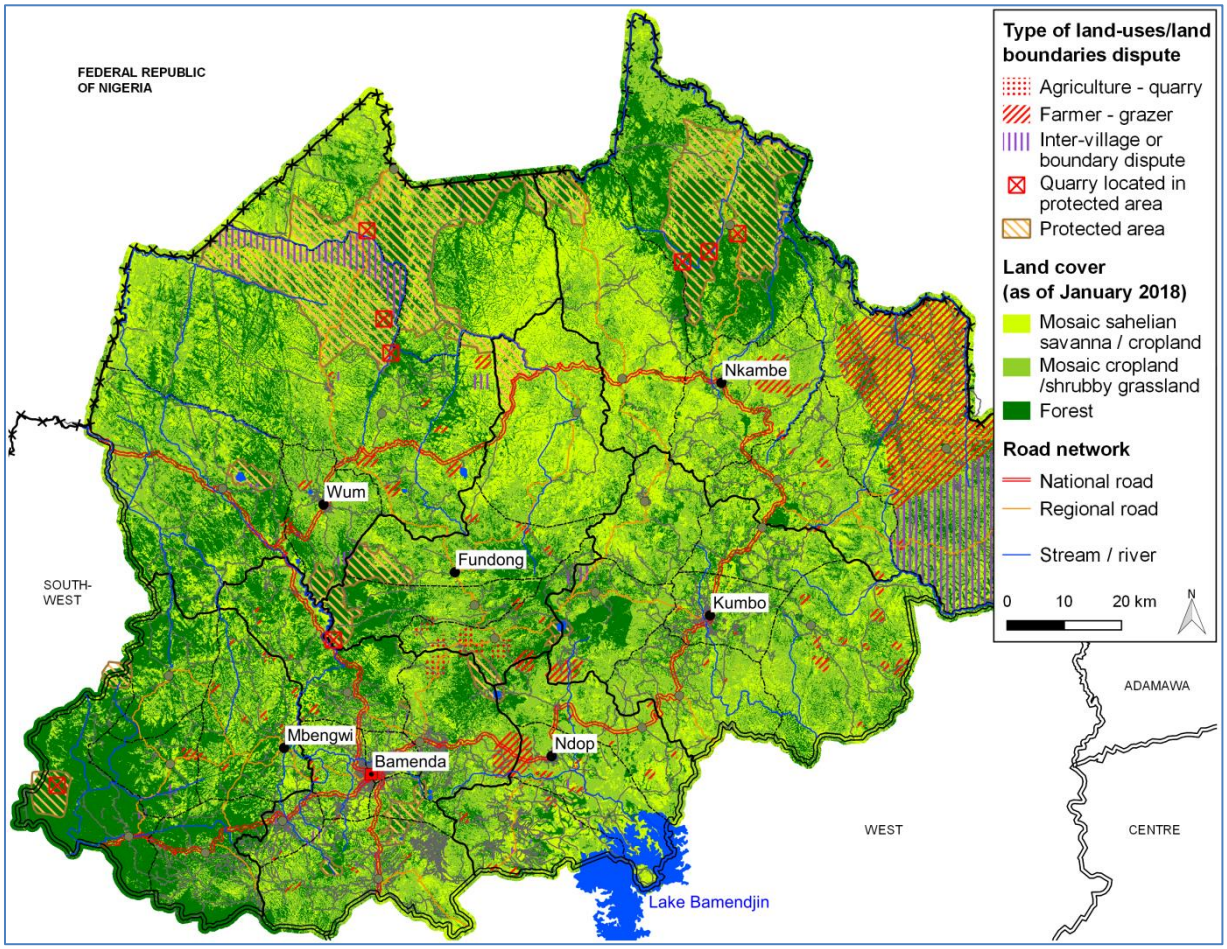
Priority: ++ highest, + high, o medium (not shown: - low, -- very low)

10.3. Land use conflicts and boundary disputes

The priority task of territorial planning is the spatial coordination of stakes and demands of different sectors and interest groups with the common objective to make steps forward in reaching the sustainable development goals (see chapter 10.1). Thus one outcome of the diagnostic study is the identification of conflicts in this regard. These, beside the SWOT results, contribute to the definition of development strategies in the next phase of the project, to contribute to solving the conflicts and doing so to reduce the threats for development in the concerned sectors.

By analysing the different relevant sectors in the North-West Region land use conflicts were identified and mapped. Showing their geographic location always runs the risk of subjectivity. However, to support the transparency and the discussion on land use conflicts and boundary disputes Figure 162 shows for the North-West Region (see more detailed in map 7 a-g for the divisions). The locations were identified with PNDP-officers and stakeholders, but they are expected to be not complete from all stakeholders' points of view. Thus this map shall function as basis for the further discussion on spatial planning strategies for the region.

Figure 162: Land use and boundary disputes in the North-West Region



Data source: based on Landsat-8 images and field survey IU/CPAC/geomer 2018

The most important types of conflicts and disputes are also described in the sector analysis in the report and can be characterised as followed:

Agriculture – Quarry

Mining activities are ongoing or planned in areas where the population has agricultural land. The local population depends on the food and income from agriculture while the peoples and region's welfare also depend on the use of natural resources for building, energy or further economic purposes. The mutual impacts need to be assessed in every single case and solutions for the co-existence of both interests have to be found. First negative mutual impacts shall be reduced (e.g. pollution, destruction of nature and land etc.); second the individual use of the land shall be optimised to allow a coexistence. If this is not possible one stake has to become the priority, the other has to be compensated in a sustainable way or to be fulfilled in other locations.

For agriculture here, the fact is important that this activity and source for local income is closely connected with the locality, also in the light of demography, poverty, migration and rural exodus as well as urbanisation. For locations of natural resources, it was analysed that the level of exploitation in the North-West Region is quite low, but that, due to existing and rising environmental stress the intensification of exploitation shall be done very careful und considering all adverse consequences on social and environmental factors.

Quarry located in protected areas:

For Quarry in protected areas in general the above said (for agriculture – quarry) is valid. However, the difference is that protected areas usually cannot be compensated in no regard. Vital natural areas in the North-West Region are already limited (see chapter 4). Rehabilitation of destroyed nature is almost impossible. Thus protected areas should have high priority although exploitation of natural resources is also important for many economic and even social reasons (income, energy, employment).

Here also the single conflicts need to be assessed in advance. Adverse consequences need to be identified, assessed, and limited by well transparent and integrative planning before activities are started. For ongoing conflicts similar approaches for the individual locations are necessary.

Farmer – Grazer:

Historical developments of different types of agricultural uses lead, when each of them is extending due to additional productivity and demands on land size, to (natural) conflicts. In the case of the farmer – grazer land use conflicts the different land uses are also connected to different groups of the society (different ethnic groups) since from history the groups are living from either farming or grazing.

The conflicts resulting from extending their farming and grazing lands is closely connected with the absence of land titles and official boundaries of land ownership. Thus the conflict cannot simply be solved by the conflicting land users or by planning authorities but are very much a legal and political issue.

In addition, the impacts on the environment differ basically with the land uses, like grazing has completely different impacts on soil, vegetation etc. than farming. Vice versa the natural conditions of an area determine the impacts of land uses significantly. That also means that there are areas with environmental conditions that are more suitable for either grazing or farming or even none of them. In other areas the mutual impacts may be very different.

For regional territorial planning this means that, beside all historic stakes and legal framework, environmental assessments on the suitability for certain land uses should be done identify the best possible land use for each specific area. This should provide objectivity and scientific arguments for a sustainable development considering the stakes of local farmers and grazers.

Inter-village or boundary dispute:

To control urban and rural development in a sustainable manner and following regional strategic development goals (like of the regional development plan) the authority for land use decisions has to be clear and transparent to all land users. Since, in the North-West Region, cadastres that document the borders of properties and villages and also of traditional units are not systematically in place and borders are not commonly accepted. From this disputes about the authority for land use control occur. This consequently leads to uncertainties about building permissions or restrictions, delays in necessary developments or illegal constructions due to confusion and deficits in decision making.

This aspect also influences the implementation of territorial development plans and should be considered when developing the development strategy and implementation plans.

10.4. Key stakes for the future development of the North-West Region

As summarising conclusions from the diagnostic phase and to prepare for the prospective phase the following most important key stakes have been identified by the interdisciplinary expert team. These key stakes are summarised along cross-sectoral impact-chains to allow the overall view in the chances and bottlenecks. These impact chains shall be used in the prospective phase to develop the scenarios for future development by setting different development options for the different related indicators of the sectors to create the scenarios.

Important notice regarding the results and following recommendations of this study

It has to be noted that the diagnostic analysis of this report was carried out according to the project implementation schedule from Oct. 2017 to July 2018. The completion of the diagnostic phase was difficult due to the crisis in the NW-region from 2018 to 2020. All changes in the region regarding the territorial situation, infrastructure (demolition and improvements), changing social and economic situation and environmental impacts of the crisis are not reflected in this report.

At present ca. 419 development projects on social and infrastructural improvements are uncompleted (according to data of MINEPAT 2021). Social and technical infrastructures were vandalized from 2017-2020 and no proper documentation exists so far.

An update of the relevant data and analysis of the situation could not be carried out until the submission of this report. It is strongly advised to update this study and the relevant data before the territorial planning documents are developed. The valuable report "Strategies for the Socio-Economic Revival and Return to Normalcy of the North West Region of Cameroon" (Republic of Cameroon, Governors Office, NW-Region, Jan 2021) should be considered for the update.

Key Stakes

Environment and human development

As the population of the North-West Region is growing at a sustained rate, the use of land for cropping, livestock and settlement is rapidly increasing. We observed a marked loss of forest (and wetlands) everywhere and most intense in the vicinity of populated areas as well as land disputes with cattle herders as a consequence. The degradation of natural habitats is even more concerning since the ecosystems provide services to the communities (such as medicinal plants, touristic potential, resilience to drought events, a balanced water cycle with potable water, etc.). Deforestation on steep slopes with soft soil

drastically increases the risk of landslides in urban areas and disrupts the water balance in rural areas, leading to floods downstream in the rainy season and to drought and disruption of the agricultural calendar as well as the dying of cattle in the dry season.

As the main driving forces of this human pressure on land, we can name poverty, weak law enforcement, weak environmental awareness, and demography outpacing the investments in housing and urban infrastructures. Poverty is a vicious circle: as the poor populations seeks to meet basic needs such as housing and food, they will build their houses without regard to location (on slope, on wetland) or regulation and grow their crops in the vicinity of their houses, which explains the human encroachments we observe in forests of urbanised areas. Besides they will be inclined to use natural water and natural energy (wood) and dispose their waste in the river. The emergency to meet their needs is also the main barrier preventing them from developing awareness for environmental protection. These populations are unfortunately the most exposed to natural hazards and in the absence of lawful construction, they are unable to obtain compensations for their losses. The demographic growth combined with the rural exodus has outpaced the development and staffing of urban facilities and services such as sewage disposal and waste collection and most of the waste ends up in rivers or by the roadside. Indeed, even the waste collected by public authorities is in many cases being discharged in open dumps and numerous households or buildings are discharging their wastewater directly in the environment. Bad roads, dust from desert, bush fires, slash and burning practices and daily cooking on wood cause high percentages of lung and respiratory related diseases. The amount of small particles in the air in some periods of the year is much above international health standards. All of this adds to the environmental degradation of the poor settlements, diseases, child mortality and thus closes the cycle of poverty, vulnerability, and unhealthy environment.

Key stake 1: land use planning

The land use has to be organised in order to tackle the issue of uncontrolled land consumption and existing regulations must be enforced. If nothing is done in this matter, the spontaneous use of land for settlement, livestock and cropping will lead to severe land use competition, and to severe degradation of the environment and deforestation, eventually leading to danger to health and life, as explained above. Assigning priority areas (starting on the regional level) for basic land-uses such as: settlement, cropping, grazing, water catchment protection, nature protection, and waste disposal and in particular find smart ways of combining some of these functions is a first step to address this challenge.

Key stake 2: human development, nature protection, and sanitation infrastructures

The development of a healthy environment for humans cannot be unlinked from the nature protection, the safeguarding of critical ecosystem services, and the management of waste. This will require a better and more systematic waste management and wastewater treatment system, as the current lack of such infrastructures affects directly the living conditions of the poorest and threatens the quality of the water supplies.

The correlation between social and environmental well-being must be considered as a decisive parameter in the prospective scenarios.

Technical infrastructures, economic performance, and decentralisation

The Nigerian and other surrounding central African markets that have shortages of food, deliver a huge opportunity to gain. At the present state, the main corridor to Nigeria is the N6 via Mamfe in the South-West Region. Entry points to Nigeria also exist in the Menchum and Donga-Mantung Divisions, however the very poor state of the road and the difficulties in crossing certain rivers do not allow for bulk exchanges of goods. The development of road infrastructures from Bamenda to the border crossings

would not only stimulate the economy by enabling bulk trade, it would also enhance the attractivity of the border area and of the cities located on the road (Wum, Nkambe, Benakuma) and would relieve some of the traffic congestion going through Bamenda. The concentration of the decision-making power in Yaounde however slows down the process of tendering the required construction work. Besides the stretch of the national road between Mbuda in the West Region, through Santa towards Bamenda, that is considered to be the artery for all socio-economic development in the North-West Region and the roads in Bamenda city centre should have the highest priority in repair and maintenance as well.

The economy is also suffering from the too frequent power failures in energy. No industry or transformation processes can work without a reliable flow of electricity. Constant interruptions of the workflow lead to a weaker competitivity. The current power infrastructures are aging and insufficient, with old generators concentrated in Bamenda, which are supposed to supply the North-West and part of the West Region with electrical energy. Furthermore, the subdivisions in the border areas as well as the vast majority of the villages are still not connected to the national power grid. The same is true for the connections to the supply of drinking water. These distribution systems are also dysfunctional and should be improved. For both (energy and water) some small scale solutions (bioturbines, solar power, biogas and harvest of rainwater) might help.

Key stake 3: basic infrastructure and decentralisation

Basic needs of heavy infrastructures are not met. Bad roads, power failures, and water shortages are affecting the performances of the economy of the North-West. Decentralisation giving financial and administrative autonomy to regional decision-making bodies would facilitate the tendering for the required construction work and maintenance. The empowerment of regional authorities and the creation of the Regional Council is a decisive parameter to take into account when elaborating on the prospective scenarios.

Institutional framework, social infrastructures, and informal economy

The economy of the North-West is characterised by the predominance of the subsistence agriculture (primary sector) with most of the goods being sold unprocessed and consumed locally and of the informal services (tertiary sector). The Government of Cameroon should act on both fronts in parallel to diversify and formalise the economic activities. Indeed, the informal sector already shows much diversification such as handicraft and artisanal work (woodcraft, iron work, weaving), mechanical repairs and constructions and ICT. The institutional environment however does not encourage the craft workers to create small or medium-size enterprises. Most of them are VSE (very small enterprises) if not informal individual businesses. Not only the registration of businesses is not an easy task, but also land titling remains a prohibitive process for small income earners.

The specialisation of the economy should concur with investments in social infrastructures. Opportunities to acquire technical professional skills should be offered to the young untrained population through practice-oriented vocational education.

Key stake 4: diversification of the economy

Based on its biophysical assets, its availability of agricultural products, and its young population, the North-West has all the ingredients to specialise its economy. Following leads have been envisaged in the report:

- diversification of the primary sector: new crops (wheat, tomatoes), revamping of cash crops like coffee/ tea, rice and cocoa, agroforestry and afforestation (sustainable timber production);
- food processing industry: canned food, dairy products, meat products to allow their export;
- mining industry;
- textile industry;
- tourism;
- sustainable energy production (biomass, hydroturbines, etc.).

The diversification of the economy will decrease the dependence of the Region on one sector as well as generate higher income employments for the population.

Key stake 5: formalisation of the economy

One of the most important stakes for the development of the North-West will be to formalise the large informal economy by easing the administrative and fiscal burdens. Indeed, people have currently low incentives to “go formal” as the registration process of a business is costly and challenging. Although it provides a (precarious) living to many people, the informal economy is a net loss for the State of Cameroon in tax revenues. If the formalisation of the economy is successful, the taxable base will increase therefore lowering the individual tax burdens and increasing the revenues for the State, which will determine its future capacities to develop the social and technical infrastructures.

Circular economy, infrastructures, and local development

Synergies of infrastructure improvements, improved (rural) living conditions, reduction of stress of the environment and creating business opportunities must be identified and supported. This includes not only technical but explicitly also social infrastructure.

- Proper electrification of rural areas with decentralised production units. This would not only relieve the demand on the main power grid already suffering outages, it would also relieve the pressure on forests, suffering from clearing and cutting by the rural populations for firewood. Small biogas installations deserve a particular attention since they can use the local biowaste as fuel and create fertilizers as by-product of the decomposition process.
- The youth in the urban areas is well versed in informal services related to ICT. In order to formalise this sector, intutions of technical education in the information technologies are required along with better communication infrastructures (better connectivity to Internet). They should not all be concentrated in Bamenda but should benefit secondary poles (Kumbo, Nkambe, Wum).
- In the light of the current dramatic losses of forest and wildlife, a circular exploitation of forests is required. Eucalyptus and indigenous species should be planted where they do not compete and cut at a rate not exceeding their re-growth. In watersheds and water catchment areas Eucalyptus must be replaced by indigenous species. A more systematic approach and an intense acceleration of compensation for forest lost to agriculture by afforestation should be envisaged.
- Needless to say that the existence of a proper, practicable road can change the fate of an area as it unlocks its potential, and that for the North-West Region, most of this potential is out of reach or underexploited (e.g. mineral resources and agricultural production of the border divisions).

The current trend is toward a sustained migration from the border divisions because of people looking for better infrastructures and living conditions not only in the Bamenda – Kumbo urban axis but also in other selected remote rural areas. It leads to a rapid depletion of natural resources in this area combined with a growth of settlements that outpace the development of the required infrastructures for sanitation and human development. On the other hand, the distant areas are left behind in their development because unattractive.

Key stake 6: spatial equality in planning and development

Throughout the further planning process, the strong bipolarity of the Region concentrating most of the infrastructures, activities, and people between Bamenda and Kumbo, must be taken into account and addressed in order to achieve a development that is spatially balanced, which is a prerequisite to its sustainability. Indeed, no model of development can be sustainable if everyone wants to leave to live in the same place, so it must offer viable economic alternatives to every Division.

Key stake 7: spatial equality in supply and accessibility to social infrastructure

The bipolarity of the Region concerns not only technical infrastructure but namely also health infrastructure and education. This disparity has strong consequences for the social and economic quality of life in rural areas, for future chances for people in rural areas and consequently for the internal migration and rural exodus. The goal of the generally comparable living condition throughout the region should be further developed in the planning process.