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ALLIANCE FOR FOOD SOVEREIGNTY IN AFRICA

MBOSCUDA

A NATIONAL STUDY ON THE POSSIBLE INCLUSION OF AGRO-ECOLOGY INTO THE CLIMATE POLICY FRAMEWORK OF CAMEROON

December 2020

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This study is issued by MBSCUDA National as part of the project *"the possible Inclusion of Agro-ecology into the National Adaptation Plan of Cameroon",* with support of the Alliance for Food Sovereignty in Africa (AFASA). The Aims of the study is present agroecology as means to help achieve a balance between mitigation and adaptation, and if included in climate policies may be more socio-economically efficient and may even foster sustainable development of the country.

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The views expressed in this study are those of the authors alone and do not represent the institutional position of MBOSCUDA and AFSA.

Table of Contents

List of Figures

List of Tables

General Introduction

Under the sponsorship of the Alliance for Food Sovereignty in Africa (AFSA), the Mbororo Social and Cultural Development Association (MBOSCUDA)[1] requested the development of a strategic country report within the framework of the campaign to influence national climate policy frameworks, plans and strategies to reflect agro-ecology as an adaptation and mitigation measure for climate change. Cameroon is thus amongst the 12 countries that have agreed to undertake this study. A one-day validation workshop to be facilitated by the consultant has been previewed when a consolidated draft is made available.

The synergy between mitigation and adaptation as is considered as an approach in which both mitigation and adaptation measures are addressed without any prioritization, mainly undertaken within a systems-thinking context to address climate change issues. Synergies between mitigation and adaptation can increase the efficiency of climate change measures, making it more attractive to funding agencies. If the balance between mitigation and adaptation could be achieved, climate policies may be more socio-economically efficient and may even foster sustainable development. Thus, synergy approach is gradually gaining impetus as a basis for future climate policy. As climate change is projected to hit the poorest the hardest, it is particularly important that developing countries such as Cameroon pay particular attention to the management of its natural resources, especially its large expense of dense tropical

1 MBOSCUDA is a Cameroon-based non-profit organization founded in 1992. MBOSCUDA aims at improving the living conditions of the Mbororo pastoralists in Cameroon and to work towards the promotion of the socio-cultural, political and economic conditions and rights of the Mbororo people. MBOSCUDA has over 6,000 registered members and has carried out several projects in the Regions of the East, West, Northwest, Southwest and North. Its main objective is to strengthen unity and cooperation among the Mbororo community and the promotion of their economic, social and cultural development.

rainforests of the Congo Basin, which can play a vital role toward mitigating and adapting to climate change. In Cameroon, as in other countries of the Congo basin region, policy processes and activities related to climate change have been hitherto geared mostly toward mitigation and related questions, with limited concern about adaptation issues.

In 1992, Cameroon signed the UNFCCC convention and ratified it in 2004, signifying its readiness to contribute in the reduction of GHG emissions. This provided a basis for concerted international action to mitigate climate change and adapt to its impacts. Cameroon has also signed and ratified the Kyoto Protocol and has been taking part in deliberations leading to future regional and global climate change response processes. Like most countries in the Congo Basin, Cameroon is well represented in REDD/ REDD+ debates and is also engaged in the REDD+ readiness process. Also, in 2005, the government developed and submitted the country's First National Communication to the UNFCCC, principally focusing on climate change mitigation and related issues.

The Growth and Employment Strategy Paper (DSCE) and the Poverty Reduction Strategy Paper (PRSP) are basically void of substantial issues on forest management actions and other measures required responding to the effects of climate change. However, as the impacts of climate change are being felt, adaptation is moving up the scale of climate change discourse in Cameroon. In June 2015, Cameroon validated a National Adaptation Plan for Climate Change (NAPCC). Furthermore, in addition to mitigation-related issues, adaptation strategies to curb the impacts of climate change were proposed in the country's Second National Communication to the UNFCCC (NC2) submitted in September 2015 (MINEPDED, 2015). This is a step toward synergy, further accentuated by propositions to integrate mitigation and adaptation strategies in national plans and development policies (Cameroon's INDC, 2015).

Regarding the evolution of agricultural and environmental management in Cameroon, focus has been laid mostly in the rural areas through agricultural modernization and environmental protection programmes and policies. In the environmental domain, efforts made so far have yielded in the elaboration of : (i) The first and second national communications of climate change (ii) The National Adaptation Plan to Climate Change (NAPCC) (iii) National Plan to combat desertification; (iv) the development of a national strategy for the Reduction of Emissions linked to Deforestation and Forest Degradation and the consideration of sustainable management, increase in carbon stocks and conservation (REDD +) ; (v) the development of a Nationally Determined Contribution (NDC) document; and (vi) participation in the Great Green Wall initiative and the initiative for the restoration of African forest landscapes (AFR 100).

In the agricultural sector we have two major strategic documents: the Rural Sector Development Strategy (SDSR) and the National Agricultural Investment Plan (PNIA) which have not in any way made reference to agroecology. Despite the results obtained so far, the agricultural production system remains influenced by climatic phenomena, like: (i) the decrease in precipitation; (ii) increase in annual average temperature; (iii) the resurgence of extreme events throughout the country (droughts, severe storms, floods, landslides, mudslides, rock fall, landslides, etc.); and (iv) weakness in the implementation of environmental management measures in other areas of development. Adaptation and mitigation efforts are less visible in the agricultural sector. Detail analysis of these strategic documents show that much attention is given to climate smart agriculture and low carbon agriculture and terminology like agroecology hardly mentioned. The need to lobby for the inclusion of agroecology in policy documents should be a permanent agenda that would be of strong influence during the revision process.

Objectives and Deliverables of the Study

Objectives

* Create an understanding of existing climate and climate related policies, plans, strategies, regulations and frameworks at national level.
* Identify critical entry points within the identified policy frameworks.
* Propose approaches to guide the integration of agro-ecology in the national legislation and frameworks identified.

Deliverables

1. The expected deliverables of the study shall be a report highlighting:
    * Analysis of existing climate related legislation, policies, frameworks and strategies.
    * Gaps and possible entry points for national level advocacy for the inclusion of agroecology.
    * Proposals/ recommendations on possible spaces/platforms for agroecology advocacy.
2. PowerPoint presentation of the study findings.

Methodological Approach

This national study shall be conducted through a series pf consultations and desk review.

- **Desk review** of the following policy documents has been envisaged, including:
    * The National Adaptation Plan of Action to climate change (NAPCC);
    * The National Communications on Climate Change;
    * The National Determined Contributions (NDC);
    * The National Agricultural Investment Strategy (PNIA);
    * The Rural Sector Development Strategy (SDSR),
    * The growth and employment strategy document (DSCE);
    * The REDD+ National Strategy (SN-REDD+);
    * The National Biodiversity Strategy and Action Plan (NB-SAP);
    * The National Strategy to Combat Desertification and its Action Plan (PAN-LCD);
    * Etc.

- **Consultations with stake-holders**
  A preliminary cartography of stakeholders that shall be consulted has been proposed. These include Ministries, Organized groups and associations, technical and financial partners, research institutions, the private sector, parliamentarians and the media.

Table 1: Stakeholders

Category of stakeholders	Key actors	Organised groups
Sector Ministries and other relevant administrations	MINADER, MINEPIA, MINEPDED, MINFOF, MINAS MINDCAF, MINAT, MINDEVEL, MINEPAT MINPROF, MINCOM, MINFI, MINEE, MINMIDT; PNDP, FEICOM ONACC, INS, CILS, Chamber of Commerce, Chamber of agriculture	Multi-sectorial committees and Technical secretariats
Civil Society	Associations, NGOs, Farmer Cooperatives, CIGs	Climate change platforms, Forest and Community platforms, Farmer associations
Indigenous peoples	MBOSCUDA, ASBAK, AJEMBO, OCBB, RACOPY, etc	Indigenous peoples platforms
Private sector	Agro-industries, Forest exploitation companies	GICAM, Syndustricam, AEFB, CCIMA, GFBC
Local Communities and Gender	Traditional authorities, religious authorities, elected officials, women, youths, local councils	Associations of traditional leaders, CVUC, REFACOF, ACAFEJ
Technical and Financial Partners	World Bank, FC-PFE, BAD, USFS, GIZ, AFD, JICA, WWF, COMIFAC, UICN,	REDD+ subgroup, CCPM
Research institutes	IRAD, INC, INS, IRD, CIFOR, IITA, CIRAD, CRESA, Universities, ENEF , ICRAF	No known platform
Media	Radios, Written press, Television	Press-club REDD+ Radio environment IUCN, RECEIA (Networks of Communicators on the Environmental Information in Central Africa)
Parliamentarians and Mayors	Elected officials	REPAR, CVUC

This study was conducted in three phases as illustrated below.

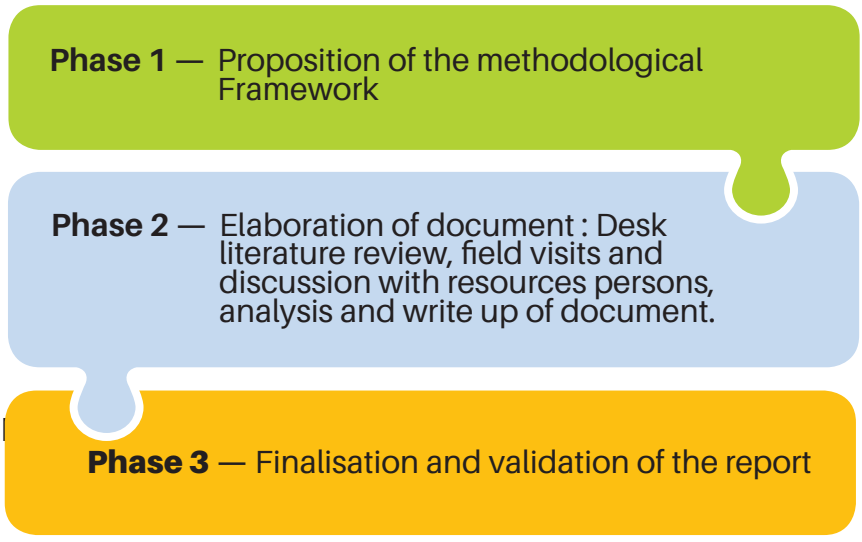


Figure 1: Phases of the methodology

III. DEFINITION OF TERMS/GLOSSARY

Agroecology: According to the FAO[2], agroecology is based on bottom-up and territorial processes, helping to deliver contextualized solutions to local problems. Agroecological innovations are based on the co-creation of knowledge, combining science with the traditional, practical and local knowledge of producers. By enhancing their autonomy and adaptive capacity, agroecology empowers producers and communities as key agents of change. Rather than tweaking the practices of unsustainable agricultural systems, agroecology seeks to transform food and systems, addressing the root causes of problems in an integrated way and providing holistic and long-term solutions. This includes an explicit focus on social and economic dimensions of food systems. Agroecology places a strong focus on the rights of women, youth and indigenous peoples.

Agroecological practices are based on ecological inputs and processes, as well as the provision of ecosystem services. Agroecological practices contribute to the different goals of sustainable agriculture: to provide sufficient food for a growing world population, not to be harmful to the environment and natural resources, to limit use of non-renewable energy, and to ensure economic viability for farmers and their communities. Organic farming, diversified crop rotations, biological pest control, extensive agro-pastoral systems and agro-forestry are examples of farming method using agroecology.

Climate Change: is the long-term change in the weather patterns in a region. Another term interchanged with climate change is global warming. Global warming is the rise in Earth's temperature which persists for a decade or longer. There could be several causes for climate change. The climate change that we face today is the effect of the rising concentration of carbon dioxide. The primary source of carbon dioxide is the burning of fossil fuels.

Mitigation: is an intervention that comprises all human activities aimed at reducing the emission sources or enhancing the sinks of greenhouse gases.

Adaptation: Any adjustment in natural or human system in response to actual or expected climatic stimuli or their effects, aimed at moderating harm or exploiting beneficial opportunities or adjustment of ecological, social and economic systems to survive the effects and impacts of identified or anticipated risk. It refers to a change in procedures, practices and structures to moderate/stamp out potential harm or exploit beneficial opportunities resulting from climate change. Adaptation can be proactive or reactive, public or private, spontaneous or planned.

It has four main goals which should underpin all measures put in place:

- to protect persons and property in relation to safety and public health;
- to take social aspects into consideration and avoid inequalities with regard to risks;
- to limit costs and reap benefits;
- to preserve natural heritage

Vulnerability: The degree of a system's inability to cope with the adverse effects of climate change, especially climate variability, and extreme climate events. Vulnerability depends on the character, size and rate of climate variability a system is exposed to, on the system's sensitivity and adaptive capacity.

2 10 elements of agro-ecology, FAO, 2017

Adaptive capacity: System's ability to adapt to climate change (including climate variability and extreme climate events) to moderate potential harm, exploit the beneficial opportunities, or to adapt to the impacts.

Resilience: Community's ability to resist, absorb, accommodate and correct the effects of a hazard in a timely and efficient manner, preserving or restoring its basic structures, functions and its essential identity.

Hazard: A likely natural event whose threat to life, health, property or the environment is assessed.

Mitigation: Human intervention at source to reduce emissions of greenhouse gases, or increase the storage of these gases (well).

Deforestation: is the allocation of forest land to a different use or the long-term reduction of the rate of canopy cover below the 10% threshold (Kanninen et al., 2007). Even more, it is the transition from a forest land use class to a non-forest land use class (pastures, cultivated land, etc.) or the conversion of the forest to another land use or the long-term reduction of tree cover below the minimum threshold of 10% (FAO, 2010).

Degradation: is the direct loss of long-term forest carbon stocks due to human activities that result from the long-term reduction in canopy cover rate above the 10% threshold (GOFC- GOLD 2013, Pearson et al., 2017).

Sustainable development: Development that meets the needs of the present without compromising the ability of future generations to meet theirs (Bruntland, 1987). In other words, the modes of production and consumption must respect the human or natural environment and allow all the inhabitants of the earth to meet their basic needs: food, housing, clothing, education, work and live in a healthy environment.

Green economy: "an economy that results in improved human well-being and social equity, while significantly reducing environmental risks and scarcity of resources" (UNEP, 2012); It is also an economy whose growth in terms of income and jobs is determined by investments "to reduce carbon emissions and pollution; enhance energy efficiency and resources; prevent the loss of biodiversity and ecological services (MINEPDED / National Forum on the Green Economy (FONEV) 2019).

Drivers of Deforestation and Degradation: The drivers of Deforestation and Degradation (DD) can be underlying or direct. Direct drivers are directly caused by human action or immediate actions that directly impact forest cover and carbon losses. Indirect or underlying drivers, for their part, result from interactions and complex processes between different social, political, economic, cultural and technological fields which are most often far from their areas of impact. These influence the direct causes that take place at the local level and which have consequences at the national or global level (ibid). In the context of REDD +, "drivers" (called "drivers" in UNFCCC decisions) are the actions and processes that drive Soil Degradation.

Payment for Environmental Services (PES): Voluntary transaction where a well-defined environmental service (or land use likely to provide this service) is "purchased" by a purchaser of an environmental service from a supplier of an environmental service, if and only if the supplier secures the provision of environmental services.

REDD +: Process of Reducing Greenhouse Gas Emissions from Deforestation and Forest Degradation. The readiness process for REDD envisions putting in place a mechanism through which a country is paid either to reduce its Greenhouse Gas (GHG) emissions from deforestation or degradation, or to conserve or increase its stocks of forest carbon or for the Sustainable Management of Forests.

Environmental services: Benefits that human derive from natural ecosystems without having to act to obtain them.

Rural sector: All the activities which contribute to: (i) plant, animal, fishery and forestry production; (ii) the production of environmental and social services in rural areas and; (iii) sustainable management of rural areas, natural resources and the environment (MINEPAT, 2019).

Agro-ecological Zone: Refers to is a cartographic unit that is defined by climate, soils and geology and / or vegetation cover, and having specific constraints and capacities relating to land use, including soil type areas. It specialises the potential and the constraints per unit more or less homogeneous by the climate, the vegetation and the biophysical sets (IRAD, 2000).

1 Cameroon Geographical and Socio-Economic Profile

1.1 Geography and Climate

Located on the Gulf of Guinea, Cameroon is the crossroad between Central Africa and West Africa. The geographical location of Cameroon accounts for its varied landscapes of mountains, desert, rain forest, savannah grassland, and coastline, climates and communities that have earned it the name "Africa in miniature". Cameroon's land area is 475,440 km^2; it shares boundaries in the North-west with Nigeria (1,720 km), in the North-east with Chad (1,122 km), in the East with Central African Republic (822 km), and in the South with Congo (520 km), Gabon (298 km) and Equatorial Guinea (183 km). It has a 364 km of jagged coastline along the Atlantic Ocean. The coastline lies on the Bight of Bonny, which is part of the Gulf of Guinea and the Atlantic Ocean.

1.1.1 Topography

The relief of Cameroon is sub-divided in various types: Block Mountains like the Fako and the Adamawa, mountainous plateaux in the west, and marginal swell bead of basement complex like the Mindif and Mandara. The latter are a characteristic and component of tropical basements.

In general, the relief of the country is very varied; it is made up of mountains, highlands and plains, divided into three major sets:

- Volcanic mountains located on the dorsal of the West Cameroon, stretching from South-West to the Adamawa.
- In the South-East of the mountainous diagonal, the vast highland overlooks the littoral plain.
- In the North of the Adamawa, the volcanic relief of the Mandara Mountains overlooks the Benue Valley and Logon plains.

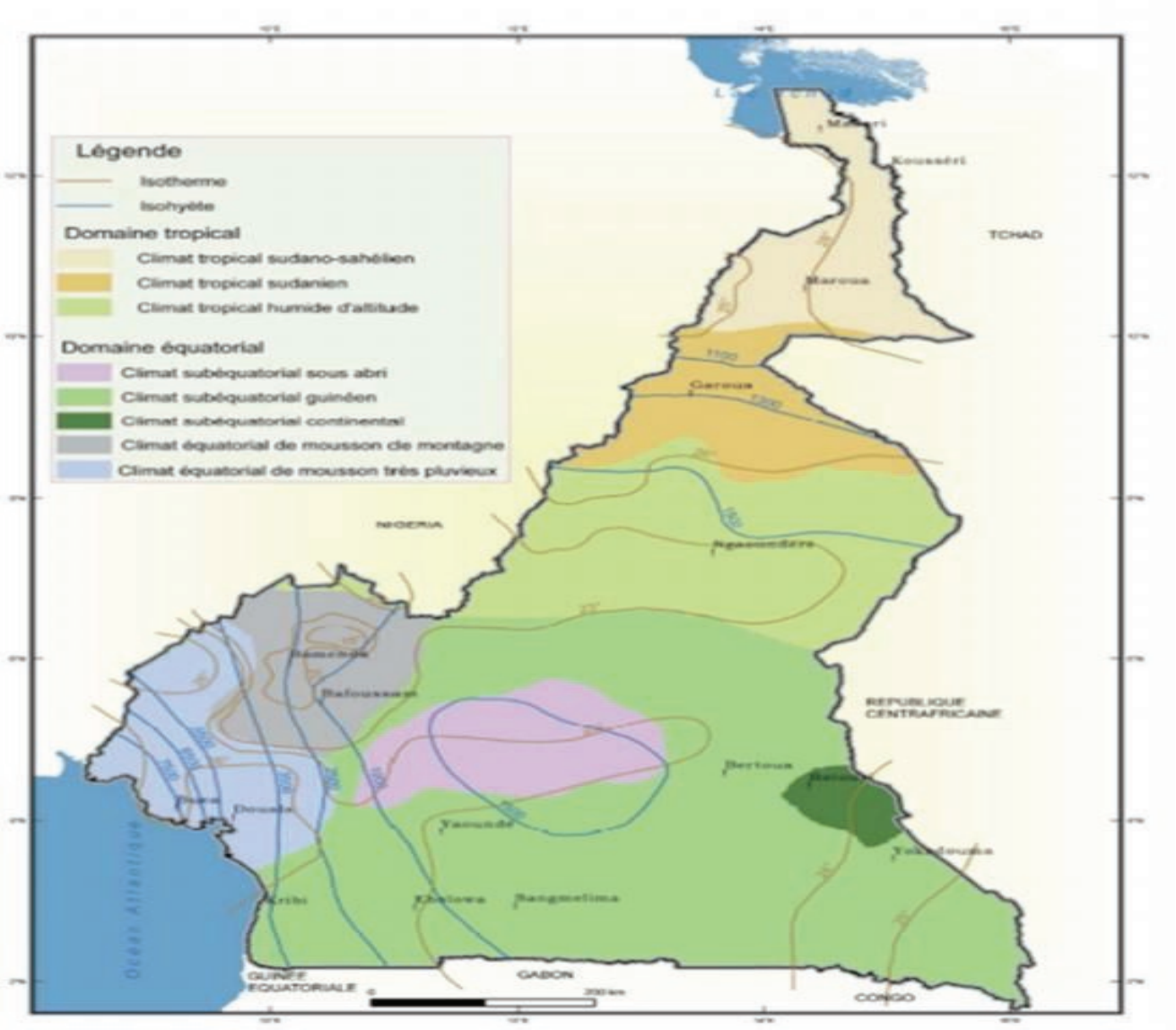
1.1.2 Climate

The climate is characterised by its diversity due to the influence of the sea, relief, and latitudinal extension of its territory. Thus, it can be divided into three major climatic zones, presented as follows:

Equatorial climate. This climate type is Found to the south of the country, this climate is characterized by heavy rainfall, constant high temperatures with small temperature ranges and progressively sparse vegetation of two types as the distance from the equator increases:(i) the Guinean type, which predominates on part of the coast and the south-Cameroonian plateau, with four well-demarcated seasons: a season of light rains (March through June), a short dry season (July and August), a season of heavy rains (September through November), and a long dry season (December through February); (ii) the Cameroonian type, near Mount Cameroon, extending to the mouth of the Sanaga River and the high plateaus of the West. Its main feature is extremely heavy rains, which fall during a single annual nine-month season from March to November. Some abnormally dry periods have been reported, spanning four to five years, according to the weather stations, or even 11 years in the Eséka and Kribi area.

Tropical Sudano-Sahelian climate This climate has an average temperature of 22°C and 1000 mm of annual rainfall, the dry season last between seven to nine months and scarce rainfall of 900 to 300 mm/year from south to north. The average annual temperature is over 28°C in the Far North and declines fairly steadily as far as Adamawa, except in the colder Mandara Mountains and the hotter Garoua area. This climate has two variations: (i) the tropical Sudanian type in the north, with two seasons: a rainy season of seven months (extremely hot from May through June and very cool and humid from July through October), coupled with a five-month dry season (cool from November through January); and (ii) the tropical Sahelian type in the Far North, with high temperatures but irregular rainfall and two seasons: a dry season from December through January and a rainy season. Abnormally dry seasons last five to eleven years – however, with rainy interludes of one to two years. These periods are separated by three to four years in the Mandara Mountains, ten to eleven years along the Yagoua-Limani dune ridge and five to six years in the rest of the zone.

C. Humid tropical climate Located between 7° and about 10° N latitude, this is a transitional zone between the two types mentioned above, averaging 40 to 70 days of rainfall. Abnormally dry periods have been recorded in the highlands and southern Adamawa plateau. These periods have lasted eight to twelve years in the centre and east of the forest-savanna, transition zone with five to six years in the western Adamawa plateau and three to four years in the western highlands. Figure 2 shows the climate zones of Cameroon.



Source: MINEPAT, 2016

Figure 2: Climate zones of Cameroon

1.1.3 Climate projections

The most direct effect of global warming in Cameroon is the rise in the average temperature. By 2030 (2025-44), temperatures are projected to increase by 1°C-1.4°C over the base period (1986-2005). By 2040 (2035-2054), the difference between the two warming scenarios will be more pronounced, with a projected[3] increase of 1.4°C in the low warming scenario and an average increase of 1.8°C in the high warming scenario. As illustrated in the figure below, the average temperature increase in the different regions of Cameroon is relatively homogeneous.

Unlike the temperature projections, annual precipitation projections are more uncertain. In the majority of regions in the country, the projections of different models differ with respect to the sign of the change (increase or decrease). Only in the northern Far North region are relative increases observed. This relative change should be interpreted with caution, since precipitation in the Sahelian region is low. For the rest of the country, the relative changes are below 5 per cent.

3 World Bank, Changement climatique et Gestion des risques de catastrophe au Cameroun, 2017

The annual precipitation projections do not permit conclusions to be drawn about changes in the frequency and intensity of extreme events such as heavy rains or droughts. Thus, the small increases or decreases observed in annual precipitation do not permit conclusions about extreme weather events linked to precipitation.

1.1.4 Effects of climate change on the agriculture sector

Agriculture is the sector most sensitive and vulnerable to climate variations and the one in which the relative risk is highest, given the limited resilience of households. By way of illustration, in 2010 the productive capacity per economically active person in Cameroon's agriculture sector was five times lower than that of a person in the industrial sector and roughly half that of a person working in the service sector.

Climate change has resulted in an increase in the frequency, intensity and duration of heat- related events, including heat waves, in most regions of the earth. The frequency and intensity of droughts have increased in much of Africa. Cameroon is no exception, and is even particularly exposed because of its territories in the Sahelian zone, severely affected by desertification, and those in coastal zones, threatened by the rise in sea level. and already facing an abnormal recurrence of extreme climatic phenomena such as strong winds, high temperatures or heavy rainfall that endanger human communities, ecosystems and the services they provide. Due to the great agro-ecological diversity (ZAE) in Cameroon, the nature of climate change varies widely from one region to another, and their impacts differ.

Over the past 50 years, we have noted:

- A decrease in precipitation since 1960, -2.2% per decade. The decrease in rainfall concerns in particular the ZAE of the high plateaus, and especially the Sudano- Sahelian ZAE.
- The increase in the average annual temperature of + 0.7 ° C from 1960 to 2007. The agro-ecological zones most affected by the rise in temperatures are the forest ZAE with bimodal rainfall and the ZAE of the high Guinean savannas.
- The resurgence of extreme events throughout the country: droughts, especially in the Sudano-Sahelian ZAE and the high Guinean savannah ZAE, more frequent and violent storms, floods and mass movements, in other words landslides, mudslides, rock falls, landslides, etc. caused by intense precipitation.

1.1.5 The climate changes expected in the future in Cameroon can be assessed on at least 4 aspects:

- Future precipitation: a drier climate in the North and hotter and humid in the South, with however high variability over the whole of Cameroon.
- Future temperatures: the scenarios predict a warmer climate throughout the country but in particular in the North.
- Future extreme events: climate projections in Cameroon show an increase in the frequency and magnitude of: droughts, in particular in the Sudano-Sahelian ZAE; erosion especially in the coastal EAZ; floods in the Sudano Sahelian, coastal and forest ZAEs with bimodal rainfall, land movements in all the ZAEs.
- Rise in sea level: projections give an elevation between 9 to 38 cm in 2050 and 86 cm in 2100.

The impacts of climate change on agro-sylvo-pastoral productivity

Climate change has already affected food security due to warming, changing precipitation patterns and the increased frequency of some extreme events as presented in Box 1.

Box 1: The economic impact of climate change on agriculture in Cameroon

A World Bank study (2007) examined the impact of climate change on agricultural crops in Cameroon. The country's economy is essentially agrarian and agricultural, and the exploitation of natural resources remains the engine of the country's economic development. Fluctuations in national income are due not only to the drop in global demand for Cameroon's traditional agricultural exports or to errors in the formulation of economic policies, but also to climatic vagaries. Based on a farm-level survey of more than 800 farms, the study measured the relationship between climate and net crop income.

Net income declined depending on climate, water flow, soil and economic variables. In addition, uniform scenarios assume only one aspect of climate change and that the change is uniform across the country. The analysis reveals that net incomes decrease as precipitation decreases or temperatures increase on all farms surveyed. The study reaffirms that agriculture in Cameroon is often limited by seasonality and moisture availability. Although other physical factors, such as soil and terrain, have an important influence on agriculture, climate remains a dominant influence on the variety of crops grown and the types of agriculture practiced.

Source: Molua E., Lambi, C. (2007).

4. "The economic impact of climate change on agriculture in Cameroon". Policy Research Working Paper 4364

The rain fed crops that will be most affected by climate change are maize, rice, groundnuts and soy, whose yields could fall by 7 to 9 per cent by 2040. The yields of irrigated crops (rice, maize and sugar cane) are projected to fall by 6 to 7 per cent by 2040. These projections should be taken into account when choosing the value chains to target with agroecology interventions in Cameroon to ensure the resilience of these crops to the multiple impacts of climate change.

1.2 Agro-Ecological zones

Because of its geographical diversity, Cameroon is divided into 5 major agro-ecological zones (Figure 3) that globally correspond to the 5 natural regions of the country. They include; the Sudano-Sahelian, the Guinea Savannahs, the Western Highlands, the Bimodal and the Mono- modal rainfall zones.

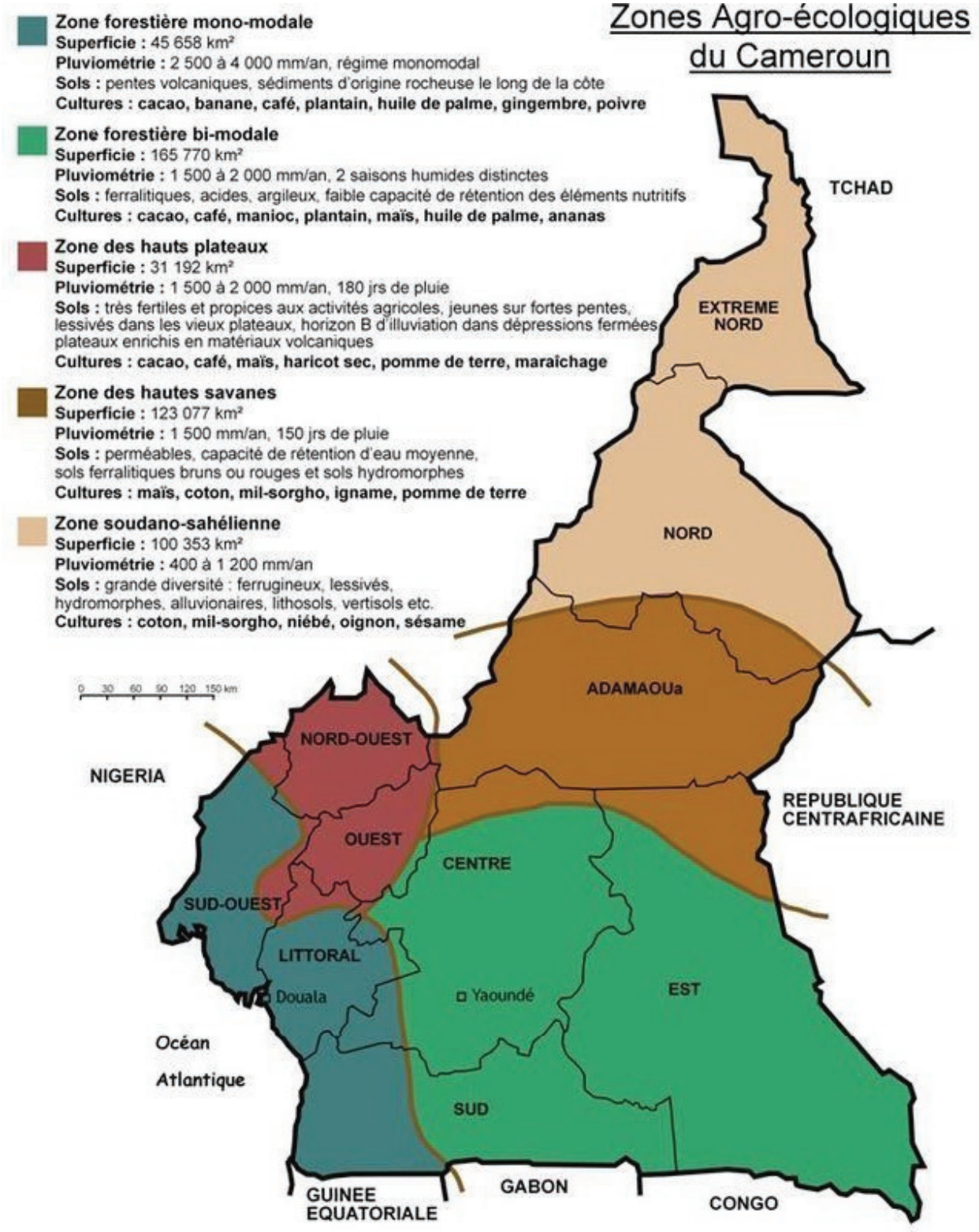


Figure 3: Agro-ecological and administrative zones of Cameroon
Source: IRAD, 2008

Each agro-ecological zone has specific bio-physical and climatic characteristics that favour the cultivation of specific crop types as described below.

AEZ 1 - Sudano-Sahelian

It lies between 8°36" at 12°54" N latitude and 12°30" at 15°42" E longitude. It covers approximately the administrative regions of the North and the Far North. The climate is characterized by monomodal rainfall of varying duration and intensity (from 400 to 1200 mm per year). Temperatures vary in the same direction, with averages reaching 28° C in Garoua, while the maximums are around 40 to 45° C in April. Here, the contrasts of rainfall and relief favoured the alternation of vertisols lithomorphs associated with the vertisols and both favourable to the cultivation of sorghum (Mouskouari), ferruginous soils more or less leached exploited for the crops of the rainy season and halomorphic soils (leashed), rather sterile. The crops grown are Sorghum, cowpea, millet, maize, rice, market gardening, water melon, onion, sesame, soybean, vegetables, cotton, as well as fish, cattle and small ruminant.

AEZ 2 - High Guinean Savannahs

It lies between 5°42" to 8°36" N latitude and 11°24" to 14°36" East longitude. It essentially covers the Adamawa Administrative Region and the northern part of the Mbam Divisions (Centre Region) and Lom-et-Djerem (Eastern Region). It is largely made up of a vast plateau of altitudes between 900 and 1500 m, with peaks reaching 1800 m. The climate is Sudanian, tropical humid with two seasons a year. The average annual rainfall is about 1500 mm, with about 150 days of rain. Due to the altitude, temperatures are moderate, with monthly averages in the order of 20 to 26° C. Crops and animals found here include peanut, rice, maize, cassava, sweet potato, yam, cocoyam, beans, vegetables, coffee, pig, poultry, cattle, small ruminants, fish etc.

AEZ 3 - Western Highlands

This area, between 4°54" to 6°36" North latitude and 9°18" to 11°24" East longitude, covers the Western and Northwest Administrative Regions. It offers a great diversity of reliefs: around 1240m of altitude stretches out the Bamoun plateau; the Bamiléké plateau, which goes up to the mount Bamboutos (2740m) and the volcanic plateaus of Bamenda are, located around 1800m. The climate is the "Cameroonian altitude" type, marked by two seasons of unequal length: a dry season more marked than in the bimodal zone and which runs from mid-November to mid-March, and a rainy season which lasts from mid-March to mid- November. Average temperatures are low (19° C), and heavy rains (1500 -2000 mm) fall in a single mode configuration. Landscapes, characteristics of medium mountains, present savannah vegetation in places, staggered plateaux, low basins and plains crossed by gallery forests. All kinds of crops are produced here including maize, rice, cocoyam tubers, cassava and cocoyam for marketing, oil palm, citrus fruits, Robusta and Arabica coffee, tea, cocoa tree, spices Banana, sweet potatoes, vegetables, cattle, fish, small ruminants.

AEZ 4 - Monomodal Rainforest Zone

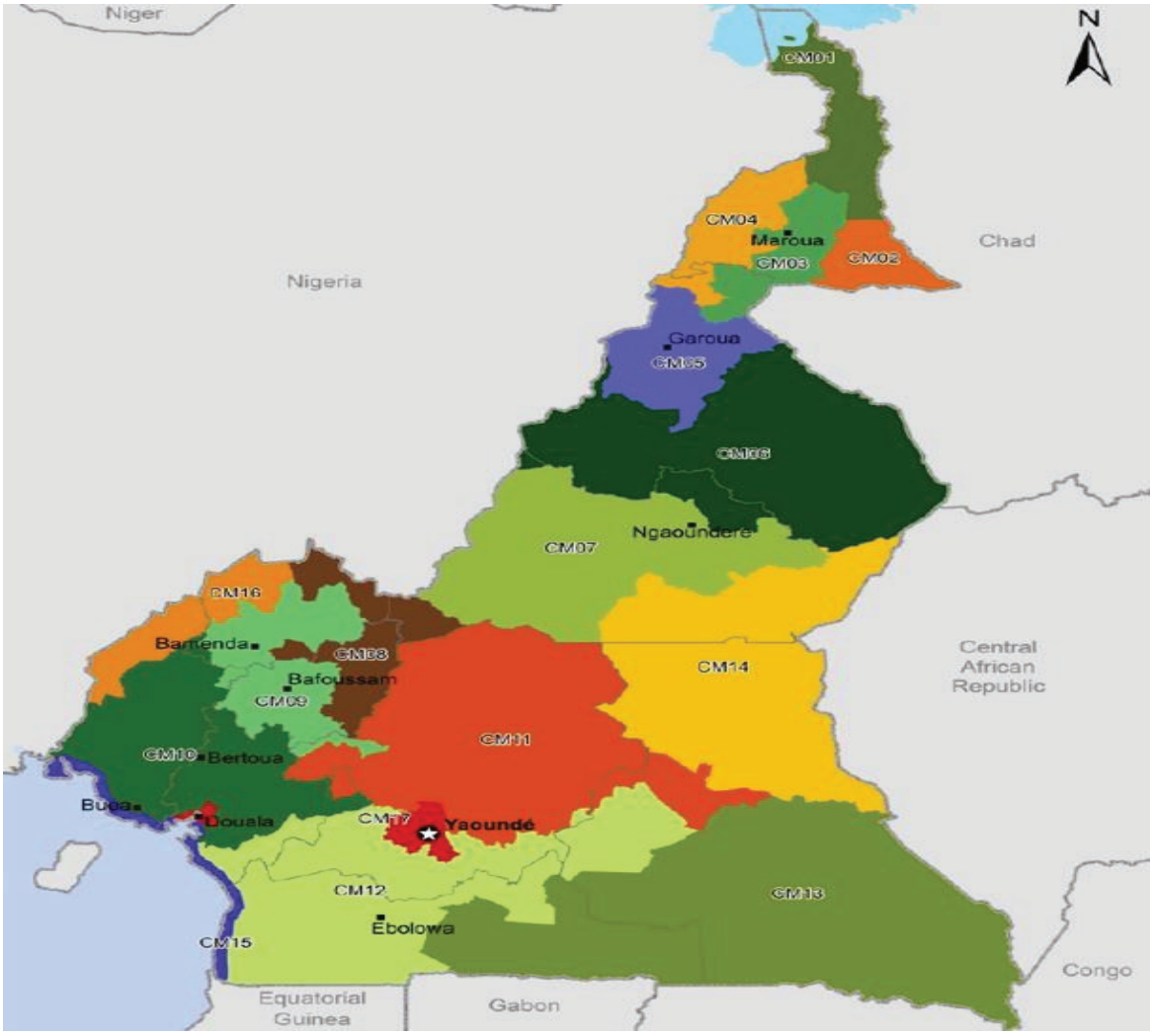
The area is between 2°6" and 6°12" North latitude, and 8°48" and 10°30" East longitude. It covers the Littoral

and South-West Administrative Regions, as well as the coastline of the Southern Region (Ocean Department). There are the volcanic slopes of Mount Cameroon which culminate at 4095 m and other summits such as the Manengouba, Koupe and Nlonako Mountains. The climate is of the "Cameroonian" type, very humid and warm, a variation of the equatorial climate. Rainfall is abundant, averaging 2 500 to 4 000 mm, with the exception of Debundscha, considered to be one of the wettest regions in the world, with 11 000 mm of water per year falling in a monomodal rainfall pattern with a very mild dry season. The temperature varies between 22 and 29°C and the air humidity between 85 and 90%. Alongside the annual food crops, the area is full of large export farms: coffee, cocoa, tea, banana (sweet banana and plantain), palm oil, rubber, as well as fish, and small ruminants etc. This area is the main palm oil production basin in Cameroon.

AEZ 5 - Bimodal Rainforest Zone

The area is between 2°6" to 4°54"/5°48" North latitude and 10°30" to 16°12" East longitude. It extends over most of the south Cameroonian plateau between 500 and 1000 m altitude. It covers the Centre, Eastern and Southern Administrative Regions (except the Ocean Division). Warm and humid, the climate is of the "Guinean" type, with average temperatures of 25° C and rainfall of 1500-2000 mm per year, divided into two distinct wet seasons allowing two crop cycles and a spread out agricultural calendar with sowing and staggered harvests. The vegetation is composed of dense semi-deciduous and evergreen forests. Shifting cultivation followed by bush fallowing to regain soil productivity is traditional. These are mainly perennial crops (cocoa, Robusta coffee, various fruit trees) and annual and multiannual (plantain, sugar cane, maize, tobacco, vegetable crops, tubers, etc.) as well as fish, small ruminants that are produced here.

The existence of varied agroecological zones has favoured the cultivation of various crop types that has itself resulted to differentiation in subsistence and livelihood as illustrated in figure 4.



Cameroon - Livelihood Zones

- CM01 - River Logone Flood Plain: cattle, goats, sheep, fishing, irrigated rice, maize, sorghum, and cross-border trade
- CM02 - Duck's Beak': cotton, pigs, poultry, cattle, rainfed sorghum, and pulses
- CM03 - Piedmont: surplus off-season sorghum, market gardening, livestock, and trade
- CM04 - Mandara Mountains: potatoes, onions, garlic, maize, soya, tubers, and cross-border trade
- CM05 - Benue Plain: groundnuts, cotton, maize, irrigated rice, onions, cattle, and fishing
- CM06 - Faro-Mayo Rey Lowlands: maize, yams, cotton, soya, and groundnuts
- CM07 - Adamawa High Plateaux: cattle, maize, cassava, yams, sweet potatoes, beans, and honey
- CM08 - Tikar Plain: maize, irrigated rice, coffee, fishing, and livestock
- CM09 - Western Highlands: maize, market gardening, beans, potatoes, eggs, tubers, and coffee
- CM10 - Mount Cameroon Forset: cocoa, palm oil, coffee, rubber, plantain, tubers, pepper, and snails
- CM11 - Sanaga-Mbam Plain: cocoa, plantain, pineapple, market gardening, cassava, yellow yams, smallstock, and poultry
- CM12 - Degraded Forest Center-south: cocoa, pineapple, cassava, maize, market-gardening, small livestock, and poultry
- CM13 - Dense Forest Southeast: cassava, plantain, macabo, cocoa, coffee, palm oil, wild foods, smallstock, poultry, and game
- CM14 - Lom-Pangar Grassy Savannah: cattle, cassava, maize, groundnuts, fishing, and artisanal mining
- CM15 - Coastal: artisanal fishing, shrimps, cross-border trade, forest gnetum leaves, palm oil, cassava, and coconuts
- CM16 - Western Cross-border Trade: tapioca, palm oil, tomatoes, rice, cocoa, cattle, gnetum, and forest products
- CM17 - Urban

Figure 4: Subsistence livelihood mapping

Source: MINADER (Nov. 2019). Livelihoods Zone Map and Descriptions for Cameroon

A Report of the Famine Early Warning Systems Network

1.3 Population

According to the Central Bureau of Censuses and Population Surveys (BUCREP), three (03) censuses have already been carried out in the past in Cameroon (1976, 1987, and 2005). At the time of independence, Cameroon's population was estimated at 2,600,000. In 1976, it was 7,663,246 inhabitants, 10,493,655 in 1987, 17,463,836 in 2005, 23,248,044 in 2017 (SND

project), 24,348,251 in 2019 (BUCREP estimates). Between the first census of 1976 and third census 2005, Cameroon's population has more than doubled. The 4th census was planned since 2015 and precise data should then be available. But until 2019, this operation did not take place. The budget necessary for the implementation of the planned census was estimated at 26 billion CFA francs, counting on direct financing from the national budget, but also on external subsidies. Nevertheless, Cameroon's population is characterized by rapid growth due to a high population growth rate coupled with immigration from neighbouring countries and internal migration recently aggravated by conflict and insecurity. The majority of the population is young (over 50% of the population is under 17 and 3.5% over 65). 43% of the population is under 15 years old, 78% of the population is aged 0 to 34 years old, while only 6% is 60 years old and over (SND project, 2019). In this young population, women represent 51%. 53.2% of the population lives in urban areas. In addition to cities with high population density, some regions, especially in the North and West, are densely populated. According to United Nations average estimates and projections, Cameroon will have a population of 37 million by 2035, which represents an absolute population increase of around 20 million between 2005 and 2035. The total projected increase will be distributed between urban areas (20 million) and rural areas (17 million). With an average annual growth rate of 2.4% since 2005, the population could reach 46,496,000 inhabitants in 2046.

Notwithstanding, it still ranked 153rd out of 187 countries on the last list of the Human Development Index (HDI), published in 2015. More than one third of the population lives below the poverty line – a situation that has changed little over the past 15 years. Children are the ones most affected by this poverty: today in Cameroon, children born to the poorest families are twice as likely to die before the age of 5, twice as likely not to finish primary school and four times as likely to experience stunting as other children.

Agriculture is the primary income-generating activity in these regions, and populations are vulnerable to climate and environmental shocks. Between 2007 and 2014, the number of poor grew by 12 per cent nationally, and inequalities by 7 points[3] (World Bank, 2018). The number of poor people more than doubled in the North and Far North regions in the period 2001- 2014, climbing from 2.1 to 4.5 million. Urban poverty fell between 2007 and 2014 (13 per cent to 9 per cent), while rural poverty rose (55 per cent to 57 per cent).

Gender: Women account for 50.6 per cent of the total population and 50.3 per cent in rural areas. Their unemployment rate is 1.14 times that of men in the most economically active age group (30-49 years). According to the survey on employment and the informal sector, more women are underemployed than men, with wider gaps in urban areas than rural areas. The same trend is observed in invisible underemployment; that is, 60.4 per cent of women are employed in domestic work/apprenticeships or other informal jobs. Underemployment is a fact of life for 86.9 per cent of women versus 67.6 per cent of men. Cameroon's population is extremely young, half of it under the age of 17.

Marginalised groups: Across the country, the marginalised groups are the Mbororo, nomadic cattle and goat herders living in the highlands, followed by the Bakwele– hunter- gatherers found in the East and South regions. In fact, in Cameroon, the Centre, South and East regions are one of the last bastions of Pygmy peoples in Central Africa. These communities are generally marginalized by their Bantu neighbours, excluded

from access to land, factors of production and positions of authority in mixed associations or development groups (GIC, GIE, etc.). This marginalisation is due to their nomadic way of life and their unstable presence in several territories. They are hunter-gatherers, but after a number of projects targeting them in recent years with support from bilateral and multilateral funders (World Bank, Belgian Technical Cooperation, European Union, etc.), these communities are becoming more settled and increasingly engaging in supplementary crop farming (cassava, plantains, maize, etc.) and small-animal husbandry (poultry, goats, etc.).The groups at risk are children and adolescents, who are involved in all production systems without direct access to the income they generate, which is managed by the heads of household. Child labour in rural areas is widespread in all production sectors, with work sometimes interfering with their schooling; this situation has worsened with the economic crisis, young girls being the most adversely affected group. Poor people in these areas are also considered a risk group. Indeed, it has been noted that the poorest populations benefitting from socio-economic subprojects have trouble coming up with their counterpart funds and financially contributing to maintenance of the works constructed/installed. **Indigenous peoples**: It is stated in preamble of the constitution of Cameroon that "the State shall ensure the protection of minorities and shall preserve the rights of indigenous populations in accordance with the law". The three major indigenous people's groups in Cameroon live in geographically different regions and their social structures and livelihoods are very different. The three main groups are: Kirdi, the Mbororo (including the Wodaabe, the Jafun, and Galegi) and the 3 subgroups: Bagyeli/Bakola, the Baka and Bedzang.

In 2007, Cameroon voted in favour of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) but has not ratified convention 169. Cameroon is a State Party to the African Charter on Human and Peoples' Rights.

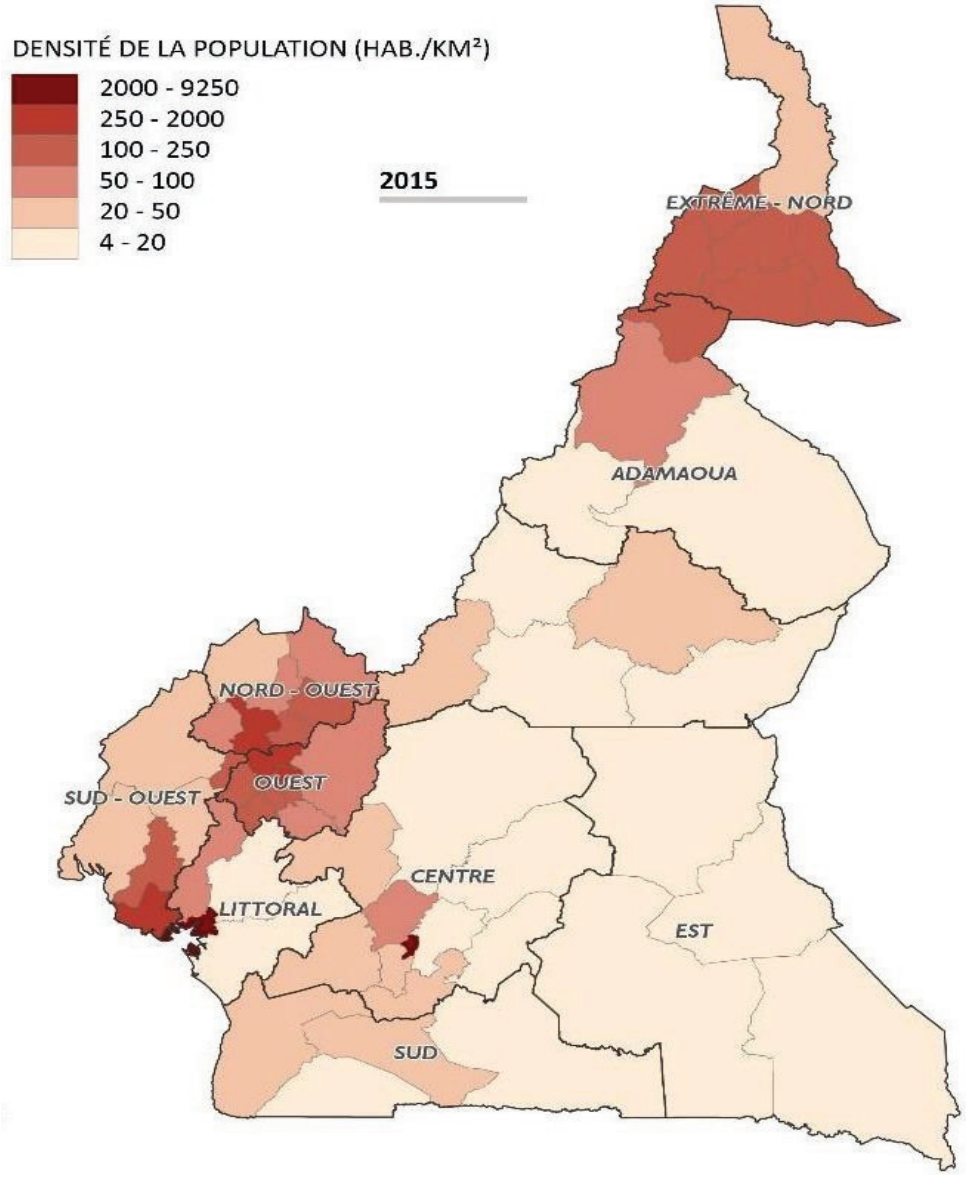


Figure 5: Population density per division

Source: MINEPAT-STUDI International – SNADDT, 2016

1.4 The Economy

The average annual economic growth rate is 5.7% for the period 2013-2015. The Growth and Employment Strategy Paper (DSCE) has forecast an annual economic growth rate of 6.1% by 2020. Recent studies on Cameroon's economy reveal that the country is largely exposed to factors unfavourable externalities. Revenues from the petroleum sector fell from 4.8% of GDP in 2013 to 4.3% of GDP in 2014 and 2.5% of GDP in 2015, in parallel with the sharp drop in international oil prices; this had a negative impact on economic growth and public investments that could stimulate the country's economic growth. Between 2010 and 2015, the GDP growth rate increased, remaining close to the DSCE forecast. This performance is justified by the start-up and implementation of several structuring projects on which the growth strategy has focused. Between 2010 and 2017, the GDP growth rate was 4.7% against 3% for the PRSP period, i.e. a gain of 1.7% between the two periods.

Per capita income doubled between 2003 and 2014 before falling. It experienced an average annual growth of 5.2% between 2003 and 2017 to reach 1370 dollars in 2017 but still remains between the thresholds of 1006 to 3955 dollars (in 2017 value), which still classifies Cameroon in the category of lower middle income countries. The ambition for Cameroon is to reach, by the end of the second phase of vision 2035 (in 2027), the level of the upper bracket of middle-income countries (incomes between 3,956 and 12,235 in value 2017). This is equivalent to a triple increase in GNI / capita before 2027 (SND project, 2019).

Regarding employment, 90.5% of the active population works in the informal sector. The formal agricultural sector represents 53% of the GDP while the informal agricultural sector represents 37.5%; but it also covers 5.8% of the public sector and 3.7% of the formal sector, respectively. In 2014, forestry accounted for around 4% of GDP at around 62 million euro's, which accounts for the largest share of tax revenue from natural resource development. The government's goal is to reduce poverty to a socially acceptable level, to become a middle- income and newly industrialized country, and to strengthen the democratic process and national unity.

According to the National Institute of Statistics (NIS), the primary sector remains the main engine of the national economy both for its contribution to the GDP (45% in 2009) and for its impact on other sectors. Growth was driven by industrial agriculture based on export. Over the past decade, exports of rubber and cotton have continued to increase while that of cocoa has seen the opposite (DSCE, 2009).

In 2010, following a deep economic recession from 1985 to 1994, the Cameroonian economy began to rebound, particularly in the export sector. The annual GDP growth rate gradually rose, increasing from 3.3 per cent in 2010 to 5.6 per cent in 2013. Cameroon's growth has been driven by exports of primary goods of agricultural or petroleum origin. Export receipts have been one of the basic sources of public and private investment. Rural exports account for roughly 55 per cent of the receipts, in contrast to 30 per cent for oil and gas. The main agricultural export products are cocoa, cotton, coffee, bananas, rubber and palm oil Cameroon's agricultural GDP has been estimated at 22.82 per cent, according to 2015 World Bank statistics. Agriculture is dominated by some 2 million smallholder farmers, who are very sensitive to weather phenomena and highly dependent on the available natural resources and whose production systems play a major role in the degradation or preservation of these resources.

Agriculture is the backbone of Cameroon's economy, employing 70% of its workforce and providing 44% of its gross domestic product and 30% of its export revenue. Cameroon produces several agricultural commodities for export and domestic consumption. The most important of these, which vary by agro-ecological zone are

cocoa, coffee, cotton, banana, rubber, palm oil, sugarcane, tobacco, tea, pineapple and peanuts for cash crops, and plantains, cassava, corn, millet, sorghum, yams, potatoes, sweet potatoes, dry beans, and rice for food crops. Animal husbandry is practiced throughout the country and is particularly important in the northern region. Growth was driven by export-based industrial agriculture. During the last decade, rubber and cotton exports kept increasing while that of cocoa was experiencing the contrary (DSCE, 2009). From 2016, a slowdown in the economy was observed following the fall in the prices of raw materials which started since 2014, in particular the oil crises, and of security in the Regions of the Far North, East, Northwest and Southwest. The Covid19 situation has come to drag the economy further down the drain and the growth rate for 2021 is expected to be less than 4%.

2 Analysis of Existing Climate Related Legislation, Policies, Frameworks and Strategies

2.1 Policies, Plans and Strategies

2.1.1 The 2035 Development Vision: Cameroon's Economic Emergence

The 2035 economic emergence vision is the development compass that all plans, strategies and programmes must align with to be credible in the eyes of the Government and of development partners. The 2035 economic development vision for the Republic of Cameroon harbours entirely the agro-ecology concept. The Vision 2035 is to be implemented in three phases: phase 1 (2010-2019), Phase 2 (2020-2027), and phase 3 (2028-2035). The country is presently implementing phase 1, whose overall objective is to modernize the economy and accelerate growth and has the specific objectives of:

- Increasing Cameroon's overall economic productivity significantly so as to address urgent sector crises (food, energy, financial and employment,
- Raising the investment rate significantly so as to attain two digits economic growth,
- Lowering the poverty rate to less than 25%, and
- Improving the business climate and public and corporate governance: The major pillars of this vision include:

  At the macroeconomic level: a need to accelerate growth by stepping up investment in infrastructure and modernizing production while maintaining macroeconomic stability. This will go a long way to address energy crisis that currently inhibits growth. Efforts to be made alongside such initiatives will ensure considerable improvement of the business climate and governance to facilitate mobilization of domestic and external financing which are indispensable for economic growth.

  At the sector level: to address food crisis and re-make Cameroon, the breadbasket of the Central African region. This will require intensification of land use planning, build resilience through sustainable agriculture, diversification of forest-based food products (community- based forestry), rationalize pastoral and fishing activities and restructure the rural sector for greater professionalism, currently dominated by few large concerns; to one of pre-dominant medium-scale undertakings. To transition to greater industrialization supported by a bold regional trade policy and favour the gradual dominance of the secondary, and more professionalized, and specialized, job-generating tertiary sector. This should go

hand in hand with revamped foreign trade favoured by a more active integration with global markets.

At the social and demographic level; to transform the citizens into the main actors of their own development through a bold capacity-building policy on decent job creation through innovation, and to recognize constraints faced by women, indigenous peoples and youths and address these; raising average life expectancy by improving on the living conditions of the population; broadening the development, supply and quality of social services, reproductive health, education and family planning, taking into account economic growth requirements, narrowing the gaps between the rich and poor by improving on the distribution of the fallouts of economic growth, enhanced national solidarity and the social protection of the underprivileged.

Two vital strategy papers have been developed to operationalize the 2035 vision namely; the national Poverty Reduction Strategy Paper (PRSP), the Growth and Employment Strategy Paper (GESP), with the 2035 Vision of Cameroon to:

- Eradicate poverty by reducing it to less than 10% through accelerated job creation and growth, as well as adopting bold policies for income redistribution by increasing, extending and improving social services, including health, education, training, water, electricity, roads, etc,
- Envision Cameroon becoming a middle income country by seeking to increase the median income by consolidating economic growth rate over a long period, through diversification of economic activities,
- Pursue industrialization in phases, enabling the country transform primary products and raise the share of manufactured products to accounting for at least 23% of the GDP by 2035,
- Become an emerging economy, by mainstreaming the countries' economy with the global one in terms of trade (substantially increasing exports) and developing the financial services sector (opening up of local financial markets to foreign investments).

The operationalization of Vision 2035 over the first 10 years of its implementation has been effectively guided by the Growth and Employment Strategy Paper (DSCE 2010–2020), which seeks to: (i) boost average annual GDP growth to 5.5 per cent; (ii) reduce underemployment from 75.8 per cent to less than 50 per cent; and (iii) reduce financial poverty from 39.9 per cent in 2007 to 28.7 per cent by 2020. In line with the DSCE, the Rural Sector Development Strategy (SDSR 2010–2020) was adopted to promote modern, sustainable and competitive agriculture based on small family farms.

In addition, the government, in collaboration with many external/international research and funding agents, has been making significant efforts to improve agricultural productivity. The government is mitigating production constraints and wants to ensure food security by increasing the production of food stuff and other crops that could substitute imports. To meet these needs, the government has set a target in 2015 to train 30,000 farmers per year in 35 centres for agricultural training. In addition, the government has authorized the creation and operation of more private and government-supported institutes of higher learning to train more students in the field of crop production, crop protection, agro-economics, and food technology/processing. Since 2009, the government has developed an emergency plan, through the Ministry of Agriculture and Rural Development, to increase agricultural production by providing farmers with improved planting materials (for rice, plantain, maize, fruit trees, beans), increased pesticide and fertilizer subsidies from 20 to 50%, granted loans at low interest rates, created pools of agricultural machinery support of up to 15%, acquired hundreds of tractors and increased the capacity of processing, storage and packaging. The National Agricultural Extension and Research Program (PNVRA) provided technical and financial guidance to farmers through outreach activities.

In April 2014 and in line with the 2035 vision, Cameroon adopted a seven year (2014-2020) National Agricultural Investment Plan. The aim is to invest about FCFA 3.35 trillion into the development of agriculture in the country. The four priority areas for this investment plan are:

- Development of the agricultural sectors (plants, livestock, fisheries and forestry);
- Modernization of production infrastructure in rural areas and improved mechanisms for access to finance;
- Management and sustainable use of natural resources; and
- Capacity building of stakeholders in rural development and the promotion of collaboration among these stakeholders.

Cameroon has a National Strategy for the Development of Rice Growing that seeks to improve the productivity and competitiveness of local rice by mitigating the constraints to production. The priorities and strategic directions include:

(i) support for the acquisition of agricultural inputs,
(ii) basic planning of irrigable areas and the rehabilitation of infrastructure and agricultural equipment in the large rice irrigation schemes,
(iii) supporting producers with structuring and professionalization, and
(iv) support for processing and marketing of rice.

2.1.2 The National Development Strategy (SND) 2020-2030

This strategy, which is the second phase of the DSCE, the rural sector represents a major component in modifying and improving the structuring of the Cameroonian economy. With regard to the development of large agricultural areas and access to land, the main orientations of the SND focused on:

(i) opening up production basins;
(ii) the development of large hydro-agricultural areas which will be allocated as a priority to large and medium-sized farms, with particular attention given to development actions targeting priority agro-pastoral sectors in connection with the development of agro-industry (rice, corn , cocoa / coffee, cotton, sugar cane, palm nut, rubber, plantain, wood, milk, cashew).

The Government will also ensure (i) consistency between land development, allocation and development interventions; and (ii) taking into account agricultural, pastoral, forestry and environmental aspects in land management while continuing the process of internationalization of the appropriation and use of arable land which is already well underway. At the same time, the Government shall bring the land reform process to a successful conclusion, as well as the processes of **drafting the rural code and the pastoral code.** Likewise, the finalization and implementation of land use planning tools (national development plan, regional plans, local plans, etc.) are catalysts for development actions in the rural sector in general and for land use planning for agricultural areas in particular.

To implement its strategy, the authorities plan to:

(i) strengthen its actions in terms of sustainable management of natural resources (soil, flora, fauna, water);take adequate measures for adaptation and mitigation of the effects of climate change. In addition, to cope with the perceptible consequences of climate change, in particular floods and landslides of which some of our cities and countryside are victims, the Government proposes to put in place a series of resilience measures throughout the territory and particularly for areas with fragile ecology.

Sustainable management of natural resources: In order to improve the impact of soil management on

production, the Government intends to:

- take into account the comparative advantages of each Agro-Ecological Zone in the implementation of projects and other investments in the agro-sylvo pastoral sector;
- encourage the rational use of soils through responsible cultivation practices, which consist of soil restoration, the abstention from slash-and-burn agriculture practices, the rational use of fertilizers and pesticides, and other modern techniques facilitating the sustainable soil management;
- prepare soil and pedological suitability maps for better knowledge and use of soils.

Regarding the management of water resources, the Government will be concerned with:

- Capitalizing on the immense potential offered by the marine and aquatic areas;
- Rationalize the use of water resources through new practices and technologies;
- Pursue actions aimed at developing the blue economy,
- Put in place operational flood prevention mechanisms;
- Intensify actions to combat water hyacinths.

2.1.3 The Nationally Determined Contributions (CDN)

Before developing its NDC in 2015, the Cameroonian government had earlier realized in 1995 inventories of greenhouse gas (GHG) in the energy, industrial, agricultural, land use and waste sectors (Ministry of Environment and Forests, MINEF, 2005). In 1997, a new financial assistance from the Global Environment Facility enabled Cameroon to prepare its First National Communication by developing inventories of greenhouse gas emissions, with 1994 as a base year. Thus, a first National Communication on the GHG inventory in Cameroon was prepared and sent to the UNFCCC in 2005, with 1994 as the reference. The second National Communication on the GHG inventory in Cameroon was issued to the UNFCCC in 2015, with 2010 as the reference.

The NDC of Cameroon has a long term ambition of Green House Gas (GHG) reduction. The previewed GHG emissions to be reduced is 32% compared to the 2010 baseline scenario for the target year 2035, and conditional on international support in the form of financing, capacity building and technology transfer actions.

In 2016, Cameroon ratified the Paris Agreement on climate change and had the obligation to report on the implementation of the Nationally Determined Contribution (**NDC),** which sets out its road map for reducing emissions and adapting to climate change. Agriculture features prominently in the NDC, which outlines the country's plans for promoting good agricultural and livestock practices and sustainable water management and sustainable forest management systems. The sustainable agricultural practices mentioned in the NDC have characteristic traits of agro-ecology, but in real terms this notion has to be well integrated in the revised NDC.

Cameroon's Nationally Determined Contribution (NDC) is rooted in the vision that the country has set for its future by 2035: to become an emerging country. This overall objective is accompanied by a set of intermediate objectives:

(i) poverty reduction;

(ii) attainment of the status of middle-income countries,

(iii) attainment of the status of a Newly Industrialized Country and

(iv) consolidation of the democratic process and national unity while respecting the diversity that characterizes the country.

In economic terms, this will involve sustained growth, an agricultural revolution based on increased productivity, and a doubling of the secondary sector's share of the GDP structure (from 19 to 38%). This Vision, which provides an image of the country by 2035, aims to make Cameroon an emerging, democratic and united country in its diversity. The Growth and Employment Strategy Paper (DSCE), which is based on the Vision, aims to address the causes that have hindered the rational management of wealth by setting the following overall objectives:

(i) remove land constraints to facilitate the development of communication infrastructure, stimulate the creation of medium and large farms in the rural sector, control urban development and improve the business climate,

(ii) rationalize the allocation of land resources and improve the governance of the State's heritage,

(iii) strengthen the capacities of administrations in charge of domains, land affairs and State heritage and

(iv) facilitate regional integration and support the implementation of decentralization

Cameroon is a low GHG emitter (2nd National Communication). This ambitious development strategy will result in a significant increase in emissions. Cameroon intends to reduce the carbon footprint of its development without slowing its growth, focusing on mitigation options with high co-benefits; strengthen the country's resilience to climate change; align its sectoral policies and strengthen its implementation mechanism and tools to facilitate the achievement of these objectives; and mobilize all relevant means to this end: financing, technology transfer and capacity building. The **Error! Reference source not found.** below present:

(i) a reference scenario in which no new public intervention mitigates Cameroon's development emissions and

(ii) a low-carbon development PCDN[4] scenario (with identical GDP and level of development) showing the impact of major sectoral mitigation actions.

This NDC scenario is conditional on support from the international community in the form of funding, capacity building and technology transfer. In the baseline scenario, GHG emissions reach 104 MtCO2-equivalent in 2035, an increase of 166% from 2010. In the NDC scenario, the increase in emissions is contained to 71 MtCO2-equivalent in 2035, an increase of 82% over 2010 (39 MtCO2-equivalent). In other words, the increase in emissions from the base year is reduced by half (32 versus 65 MtCO2-equ.).

4 NDC: Nationally Determined Contributions

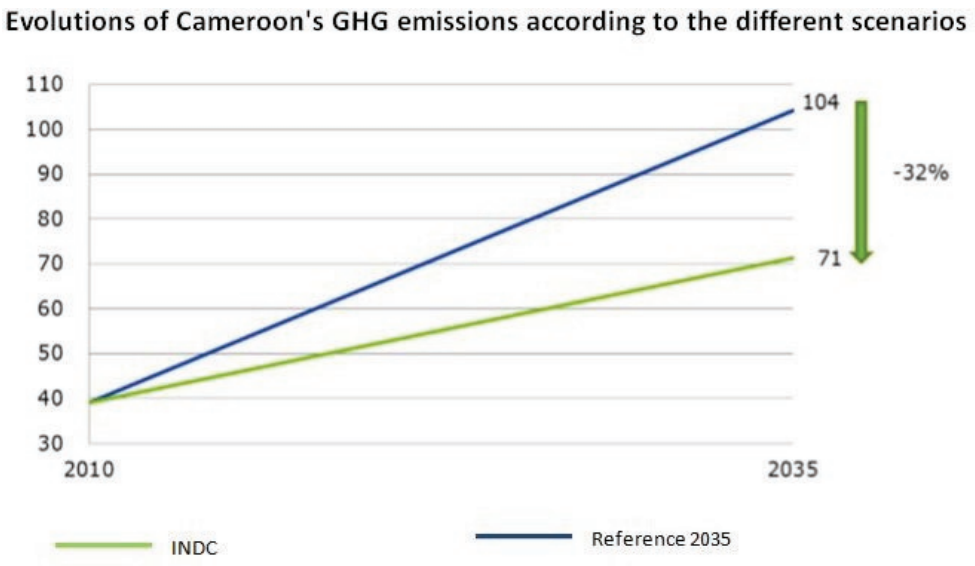


Figure 6: Evolutions of Cameroon's GHG emissions according to the different scenarios in MtCo2eq, Source: W19

Mitigation actions

Cameroon intends to implement the following Mitigation Actions, in line with its development orientations.

❖ Agriculture / Fishing / Livestock / Forestry

Major issues in the agriculture/livestock/fisheries sector:

(i) Self-sufficiency, food security, agro-industry development and

(ii) Improved productivity and competitiveness. Major issues in the forestry sector: (i) Sustainable forest management through the exploitation and enhancement of productive forests through management plans,

(iii) Contribution to economic growth and poverty alleviation through the return of a portion of tax revenues to communities, job creation, creation of communal forests in the DFP[5] and community forests in the DFnP[6]

(iv) Conservation of biodiversity through the strengthening of the national network of protected areas,

(v) Coherence of the land system through zoning plans.

KEY MESSAGE: "Agriculture has been and remains the pillar of the country's emergence ambition, but it is possible and even necessary to limit its carbon impact. Sustainable forest management will increase the carbon sink. This low-carbon growth will bring important co- benefits (economic and social development, job creation, improvement of the environment and health, etc.)."

5 DFP: permanent forest estate

6 DFnP: non permanent forest estate

❖ Energy / Waste

Key energy issues: (i) Improve access to electricity for people and industries by quadrupling generation capacity to 6GW by 2035; (ii) increase the use of renewable energy in electricity production, especially in areas with poor grid connections; and (iii) make energy efficiency a national priority. Major waste issues: improving urban sanitation, in particular by making waste a resource for energy production.

KEY MESSAGE: "Increase to 25% the share of renewable energies excluding large hydro in the electric bouquet by 2035"

The total Greenhouse Gas Emissions % Change from 1990 data was reported at 3.452 % in Dec 2012. This records an increase from the previous number of 2.903 % for Dec 2011. The total Greenhouse Gas Emissions % Change from 1990 data is updated yearly, averaging 11.559 % from Dec 1991 to 2012, with 22 observations. The data reached an all-time high of 71.196 % in 2003 and a record low of -17.071 % in 1991. The total Greenhouse Gas Emissions: % Change from 1990 data remains active status in CEIC and is reported by World Bank[7].

2.1.4 National Adaptation Plan for Climate Change (PNACC)

The national adaptation strategy for climate change proposes a common architecture for all country actors, public and private, to help them set up their own projects, based on strategic lines adopted through a broad consensus during the PNACC process.

The overall goals of the PNACC is to adapt to climate change, reducing the vulnerability of Cameroonians to the effects of climate change, increasing their resilience and improving their quality of life; and to strengthen adaptation capacity to create new opportunities to support the sustainable development of the country.

To meet this goal, the PNACC has four strategic lines:

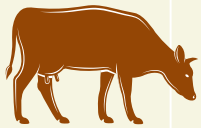
- ❖ Improve knowledge about climate change in Cameroon;
- ❖ Inform, educate and mobilize the Cameroonian population for its adaption to climate change;
- ❖ Reduce the population's vulnerability to climate change in the principal sectors and agroecological areas of the country;
- ❖ Make adaptation to climate change part of national sectorial strategies and policies.

In Cameroon, climate change is systematically streamlined into the country's sustainable development to be able, reduce vulnerability, and even transform the climate change problem into a solution and opportunity for development. Cameroonians - especially women, children and vulnerable groups of people as well as the country's economic sectors have to benefit from measures that engender greater resilience and a greater ability to adapt to climate change impacts. The following have been

7 The data is categorized under Global Database's Cameroon – Table CM. World Bank: Environment: Pollution, http://edgar.jrc.ec.europa.eu/booklet2017/countries/CMR.pdf

proposed in the PNACC document as adaptation measures for the four production sectors including crop farming, livestock production, fisheries and forestry as indicated in table 2.

Table 2: Adaptation options for four productive sectors

Sector	Adaptation objective	Adaptation lines
Crop production 	Develop climate-resilient agriculture and increase farmers' adaptive capacity	Provide farmers with weather information so that they can improve their planning of farm operations
		Improve farming systems through agricultural research and the dissemination of research findings
		Promote good climate-change adaptation practices among farmers
		Prioritize adaptation activities in the Sudano-Sahelian area, where the sector's vulnerability to climate change is greatest
Livestock production 	Reduce the vulnerability of the livestock sector to the negative effects of climate change	Provide livestock producers with information about climate change through functional livestock stations
		Evaluate and monitor feed grain supplies in pastoral areas
		Promote good climate-change adaptation practices among livestock producers
		Prioritize adaptation activities in the Sudano-Sahelian area, where the sector's vulnerability to climate change is greatest
Fishing and aquaculture 	Reduce the negative impact of climate change on the fishing sector	Inform fishermen and fish farmers about climate change and train them in good fishing and fish farming techniques
		Control the fish harvesting system in dam reservoirs to guarantee better species management and prevent shortages
		Create and promote ponds and experimental fish farming sites to adapt fishing communities and promote improvements in traditional techniques and technologies for the handling, drying and preservation of fish products
Forestry, and wildlife  	Reduce forest vulnerability and make climate change an opportunity for developing the sector	Better characterize the positive and negative effects of climate change on forests through specific scientific studies
		Establish a forest health surveillance mechanism
		Establish a forest fire surveillance mechanism
		Support and improve the implementation of REDD+ in Cameroon, extensively engaging local populations
		Develop social (well-being) indicators for forest-dwellers and regularly monitor their achievement

Source: NAPCC, 2015

The NAPCC process has shown that the problem of climate change was not taken into account in development strategies and programmes. Thus, through the measures proposed in this document, adaptation should be

integrated into existing public policies, both in national (e.g. 2035 Vision and the Growth and Employment Strategy Paper) and sectorial strategic documents. This will ensure overall consistency and reflect the cross-cutting nature of adaptation.

2.1.5 Cameroon's National Agricultural Investment Plan (PNIA 2014-2020)

The PNIA is actually the planning framework for the Rural Sector Development Strategy (SDSR). This agricultural investment plan is a strategic document aiming to capture domestic and foreign funding for rural sector development. Its overall goal is to make the rural sector a key driver of growth for the national economy, creating decent jobs and wealth to meet domestic and foreign demand and guaranteeing the food and nutrition security of populations in a context of sustainable development. It includes four priority lines of action: (i) development of production chains and improvement of food and nutrition security; (ii) modernization of rural infrastructure and improved access to financing; (iii) sustainable natural resource management and an increase in the value added to those resources; and (iv) governance and institutional development. **Priority N° 3 of the PNIA is based on the National Plan for Adaptation to Climate Change,** which designates all agro-ecological zones in Cameroon, notably the Sahelian and coastal regions, as vulnerable areas.

The rural development constraints identified by the SDSR and PNIA as follows:

The low output of family farms, due in particular to the use of traditional techniques and the ageing of the population; Limited access to financing and limited representation of microfinance institutions in rural areas; An inadequate legislative and regulatory framework, especially in the areas of territorial development, access to land, etc., which discourages private investment;

Poor rural organization and the limited capacity of organizations representing the private sector and civil society; Inadequate development of community infrastructure and the weakness of mechanisms for participatory management of the existing infrastructure; The isolation of production areas due to an adequate network of rural roads; Limited marketing and processing of agricultural products; Weak inter-professions, which are developed in only two value chains (coffee-cocoa and poultry production); The role of the State as an actor in support of rural-sector production instead of private-sector development; Failure to translate political will into development strategies, coupled with poor long-term planning capacity;

The juxtaposition of roles and poor institutional and policy coordination (lack of an institutionalized systemic dialogue at the inter-sectorial level, among projects and with NGOs and funders) and budgetary resource coordination, and even coordination among funders (and the non-alignment of certain funders);

Inadequate regulation and inadequate monitoring of compliance with existing regulations;

Lack of statistics and outcome and impact indicators for the programmes implemented under the SDSR, especially on beneficiaries and the environment; Inadequate performance monitoring and compensation (in terms of outcomes) of state and non-state services and their personnel.

The PNIA and SDSR rightly prescribe development based on the creation of favourable conditions for the development of the private sector (efficient family farms, cooperatives, large and medium-sized intensive farms, agro-industries, suppliers, etc.) so that it can serve as the driver of rural development, infrastructure and capacity building investments, accelerated decentralization and modernization of public support entities

refocused on their sovereign role as regulators of the sector and mastering the results-based programme approach so that they can report to stakeholders on achievement of the expected outcomes. These two strategic documents for rural development did not mention agro-ecology, and something needs to be done during their revision process to bring agro-ecology onboard.

The REDD+ process and the National Investment Framework (NIF)

Since 2005, Cameroon has been working with the international community to reduce GHG emissions from deforestation and forest degradation, together with conservation, sustainable forest management and improvement of forest carbon stocks (REDD+), to (i) contribute to climate protection, (ii) conserve its forest ecosystems, (iii) reduce poverty, and (iv) lay the foundations for the emergence of a future green economy and sustainable development of the country vision in 2035.

By addressing the historical and future causes of deforestation and forest degradation, the National REDD+ Strategy, completed in June 2018, presents an ambitious strategy aimed at

(i) creating a multisectorial framework for action that coordinates and influences sectorial policies and strategies,

(ii) harmonizing action programs, and,

(iii) adapting the budget of action programs to Cameroon's development priorities outside the forest sector.

Expected outcomes from the implementation of the Investment Plan

The overall transformative impact expected from the Investment Plan is emissions reduction from deforestation and forest degradation and the increase in carbon stocks as well as the development of co-benefits such as poverty reduction, improving the population's living conditions, preserving biodiversity and improving the resilience of forest ecosystems. The expected outcomes are summarized as follows:

- Forest ecosystems are sustainable managed and planted surface areas are increased,
- Optimal land use planning and land tenure,
- Mining and infrastructure sector is developed while minimizing negative effects on forest ecosystems,
- Decreased demographic pressure on forest,
- Agricultural production is improved while minimizing negative impacts on the environment,
- Wood energy is sustainable produced and demand is diminished through improved energy efficiency and substitution with clean energy,
- Better knowledge and impetus for change,
- Improved governance and inter-sectorial coordination, land use rights are secured, transparency is improved and sustainable funding is guaranteed.

To achieve these outcomes, the Investment Plan will:

- ❖ Improve governance and secure/sustain financing (by strengthening national and regional LUP and harmonizing sectorial policies/regulations),
- ❖ Ensure that land allocation plans are planned in a participatory manner in order to improve

cooperation between state's actors in the land and resource management processes,

- Improve the mechanisms which could evaluate the impact of forests conversion to other uses and projects and their consequences on local community's rights,
- Improve inter-sectorial dialogue when it comes to working in an area, especially when one of the parties has already settled there (e.g. REDD+ activities, AFR 100) to avoid overlapping and incompatible land uses;
- Support the creation of a joint decision-making mechanism involving all sectorial stakeholders to discuss and decide on various lands acquisition,
- Support sustainable forest management (in forest concessions, protected areas and plantations),
- Promoting forest certification (e.g. FSC) through incentives for tax relief,
- Improve sustainable agricultural production while minimizing impacts on forests (by improving productivity, capacity building of small-scale producers, developing agroforestry systems and agribusiness in degraded or non- degraded forest areas, etc.),
- Ensure sustainable production of fuel wood and develop other renewable energy sources,
- Ensure that the mining sector's development is compatible with the country's forest ecosystem conservation goals.
- Promotion and distribution of improved efficiency cook stoves in rural areas and extension of improved woodland management –extension of sustainably managed firewood plantations,
- Promotion of liquefied petroleum gas (LPG) adaption in urban areas,
- Enhancing the role of marginalized groups, increasing access to contraception, increasing women's awareness, increasing women's awareness, strengthening of rights of indigenous peoples.

2.1.6 National Environmental Management Plan - PNGE

Produced in 1996 and revised in 2012, the PNGE specifically seeks through a landscape or ecosystem management approach to promote a network of protected areas, representing all the major biomes of Cameroon. With advanced forms of landscape degradation especially in the far north, western highlands and central forest margins, there is acute need to protect such biomes through restoration initiatives. Thus existences of such a policy framework lay ample foundation and create necessary statutory legitimacy for restoration activities and initiatives to support biodiversity conservation in Cameroon.

2.1.7 The Forest and Environment Sector Program - FESP

The FESP renders these prior policy frameworks operational and facilitates alignment of GEF focal area initiatives to local realities. The FESP also provides institutional and policy support for funding mobilization; each according to local needs and priorities. The FESP is set up to coherently; in a sectorial manner, ensure participatory interventions to facilitate such actions as restoration and biodiversity conservation where appropriate; sustainable management of forest and wildlife resources; in a coordinated manner, such that processes can easily attract co-funding into what is termed a "basket fund"; or a common pool of financial resources, irrespective of donor.

2.1.8 The National Program to combat Desertification

On this plan is built the Northern Great Green Wall Initiative of which Cameron is an important part. In addition, the Lake Chad Basin Commission (LCBC) also builds on the expectations of this policy framework in its wide scale and mosaic restoration initiatives. This framework will support restoration and biodiversity conservation initiatives in the far northern Sudano-Sahelian project intervention sites. The Cameroon Government has also conducted numerous state-of-the-art studies on land degradation in the Sudano-sahelien and Western high-land savannah zones of the country. These results will help establish more credible baselines for this project.

2.1.9 National Bamboo Management Plan (2017-2021)

The government of Cameroon (GoC) via the Ministry of Forest and Wildlife (MINFOF), in its strategy of sustainable forest management, has decided to develop NTFP including bamboo. This strong political will to develop the bamboo sector in Cameroon has been translated by the fact that Cameroon joins the International bamboo and rattan Organization (INBAR) and subsequently, on 25th of November 2013 signed MoU with INBAR aiming developing the bamboo and rattan sector in Cameroon for poverty alleviation, environmental protection and job creation. Following the signing of this MoU, the GoC has undertaken a series of initiatives to development bamboo sector in Cameroon including capacity development, regional cooperation and resource mobilization. MINFOF has set aside funds and has conducted a bamboo resource assessment in four regions in Cameroon. In 2016, MINFOF had development a 5-year National Bamboo Management Plan (2017- 2021) that includes bamboo in all restoration projects in Cameroon, especially because of its restoration potentials: stabilizes the soil, prevent erosion, restoration of degraded agricultural land biodiversity habitat, fight against climate change and improve the livelihoods of the people etc. Bamboo valorisation project funded by GEF and implemented by MINEPDED, MINFOF and INBAR with the support of IUCN is ongoing and shall be executed till 2023.

2.2 Laws, Treaties, Conventions and Other Commitments

2.2.1 International conventions

Cameroon is a party to numerous regional and sub-regional international initiatives (conventions, agreements and treaties) in the social and environmental domains, aimed at achieving its goal of steering Cameroon toward sustainable development. Several of these initiatives have a more or less direct effect on the activities envisaged in PADFA II. While not an exhaustive list, the following can be cited in environmental domain:

- The RAMSAR Convention on Wetlands of International Importance especially as Waterfowl Habitat;
- The Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES), also known as the Washington Convention
- The Convention on Biological Diversity, Rio de Janeiro, of 1992, ratified on 29/08/1994 ;
- The United Nations Framework Convention on Climate Change and its Kyoto Protocol, Rio de Janeiro, 1992, ratified on 19/10/1994;
- The United Nations Convention to Combat Desertification, of 1994, ratified on 29/08/1994.

Cameroon has also ratified many regional and sub regional conventions on sustainable natural resource management, such as the Treaty on the Conservation and Sustainable Management of Forest Ecosystems

in Central Africa and to establish the Central African Forests Commission (COMIFAC) in 2000. The following can be cited in the social domain:

- African Charter on Human and Peoples' Rights. The oversight body (the African Commission) has recognized the "Pygmies" as an indigenous people;
- Convention on the Rights of Persons with Disabilities and Optional Protocol, signed by Cameroon on 1 October 2008;
- ILO Convention 182, Worst Forms of Child Labour Convention, adopted by Cameroon on 17 June 1999 and entering into force on 19 November 2002.

Green economy: Declaration of ECCAS Ministers on the Development and Promotion of the Green Economy in Central Africa, Brazzaville, May 16, 2012. This vision was adopted in 2012 by the ECCAS Ministers in charge of Forests, Environment, Natural Resources and Sustainable Development during the ECCAS Conference of Ministers on the Green Economy. The vision includes several programs, notably for the development of the carbon economy; reforestation; bio energy; garbage; solar energy; wind power; and hydroelectricity. At the national level, Cameroon's political will to internalize the green economy has resulted in institutional readjustment. Thus, Decree No. 2012/431 of October 1, 2012 of the President of the Republic on the organization of MINEPDED creates a sub-directorate of green economy. Among the missions assigned to it are: promoting the green economy, clean energy, clean technologies and clean management methods; the assessment of the externalities of human activities on the environment in conjunction with the administrations concerned; socio- economic assessment of environmental regulation instruments for clean development; and monitoring of the Clean Development Mechanism.

- **Malabo Declaration on Accelerated Growth and Transformation of Agriculture in Africa** for Shared Prosperity and Better Lives: Chapter VI. Commitment to improve the resilience of livelihoods and production systems to climate variability and other related risks
- **New York Declaration on Forests (NYDF):** Cameroon did not sign the Declaration in 2014, but has since agreed to become a partner of the Tropical Forest Alliance 2020 (TFA2020). In September 2019, the list of NYDF supporters expanded to include more than 200 endorsers: national governments sub national governments, multinational corporations, groups representing indigenous communities, and non- governmental organizations. However, Cameroon signed the Central Africa Forest Initiatives (CAFI) in 2016 and has since then engages in the production of the National Investment Framework for REDD+.

Figure 7: Sustainable Development Goals (SDGs) Sustainable Development Goals (SDGs) whose objectives are relevant:

Land Degradation Neutrality (LDN). Membership of the Land Degradation Neutrality Target Setting Program (PDC NDT), a partnership initiative implemented by the Secretariat and the Global Mechanism of the UNCCD with input from the following partners: France, Germany, Luxembourg , Republic of Korea, Spain, Trinidad and Tobago, Turkey, European Space Agency, Food and Agriculture Organization of the United Nations, Global Environment Facility, Global Information System on soils from ISRIC, the International Union for Conservation of Nature, the European Commission Joint Research Center, Soil Leadership Academy, the United Nations Development Program, the United Nations Environment Program and the World Resources Institute (MINEPDED letter 01896 of December 21, 2015).

AFR100 Restoration Commitment - Cameroon has pledged to restore 12 million hectares, corresponding to:

- degraded forest areas of the permanent forest estate;
- areas affected by Cameroon's emergence program (forestry, infrastructure, second generation agriculture, mining);
- mangrove ecosystems;
- Degraded areas in the northern regions of the country.

The 2016 national Pledge to the Bonn Challenge and AFR100 restoration initiatives is a most recent addition to an arsenal of policy tools promoting, legitimizing; and on which restoration activities including agro-ecology should build on. However, under the analyses of gaps, some indication will be provided regarding where some fine-tuning will be necessary in the course of formalizing agro-ecology in the Cameroon's legal and institutional framework.

a. National environmental institutions and legislation

For nearly two decades, Cameroon has made significant progress in environmental protection and sustainable natural resource management, as evidenced in its institutional, legislative and regulatory plans. Following the United Nations Conference on Environment and Development (UNCED), held in Rio in June 1992, it created a series of institutions, including:

- The National Advisory Commission on Environment and Sustainable Development (CNCEDD), in May 1994;
- The National Observatory on Climate Change (ONACC), created by Decree N° 2019/026 of 19 January 2019 on the 10th December 2009, whose mission is to collect, process and disseminate information on climate change;
- The Inter-ministerial Committee to Fight Against Droughts in the Northern Regions (CILS), created by Presidential Decree N°2019/166 of 02 April 2019.
- The National CDM Committee, by ministerial decision 0009/MINEP/CAB of 16 January 2006. The National CDM Committee is charged with implementing the Clean Development Mechanism of the Kyoto Protocol to the United Nations Framework Convention on Climate Change ;
- The Ministerial Committee on the Environment (CIE), in September 1999;
- The Ministry of Forestry and Wildlife (MINFOF) ;
- The Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED) ;
- The National Environment and Sustainable Development Fund (FNEDD), in February 2008.

b. Laws and Decrees

- Framework law N°96/006 of 12 August 96 relating to environmental management, makes provisions for pollution issues, namely environmental impact studies, protection of receiving environments, classified hazardous installations, unhealthy or inconvenient and polluting activities.
- Law No. 2001/014 of 23 July 2001 relating to the seed activity.
- Law N ° 2003/006 of April 21, 2003, establishing a safety regime in the field of modern biotechnology in Cameroon. This Act governs security and development or tuning; use including contained use, handling and cross-border movement including transit of any genetically modified organism, which may have adverse effects on human and animal health, biodiversity and the environment.

- Law No. 2003/007 of July 10, 2003 governing the activities of the fertilizer sub-sector in Cameroon, in its articles 7, 17, 20, addresses the concepts of protection of human and animal health and protection of the environment.
- Law N ° 2004/019 of July 22, 2004 setting the rules applicable to the regions. It defines the powers transferred to the regions in the sector of environmental and natural resource management, in the health and social action sector.
- Law No. 2004/018 of July 22, 2004 establishing the rules applicable to municipalities, defines among other things the powers transferred to municipalities in the health and social development sector, in the environment sector and in the management of natural resources.
- Decree No. 94/259 / PM of May 31, 1994 establishing a national consultative commission for the environment and sustainable development. This national commission as presented by Articles 1 and 2 of this decree assists the government in the development and coordination of national policy relating to the environment and sustainable development.
- Decree No. 2001/718 / PM of 03 September 2001 on the organization and functioning of the inter-ministerial committee for the environment.
- Decree No. 2005/0772 / PM of April 6, 2005 setting the conditions for the approval and control of phytosanitary products. This decree results from Law N ° 2003/003 of April 11, 2003 on phytosanitary protection. This law revises Law N ° 90-013 of August 10, 1990. This decree N ° 2005/0772 in its continuity takes into account aspects of protection of human and animal health and of the environment.
- Decree No. 2005/169 of May 26, 2005 on the creation, organization and management of the seed fund.
- Decree N ° 2005/153 of 04 May 2005 on the creation, organization and functioning of the National Council for Seeds and Plant Varieties.
- Decree N ° 2005/3090 / PM of 29 August 2005 fixing the quality and the missions of the sworn agents in charge of the control and the certification of seeds.
- Decree N ° 2005/3090 / PM of August 29, 2005 fixing the modalities of production, quality control and marketing of seeds.
- Decree No. 2012/2809 / PM of 26/09/2012 setting the conditions for sorting, collection, storage, transport, recovery, recycling, treatment and final disposal of waste.

The National Plan for Environmental Management (PNGE), amended in 2008 and further revised in 2012, is the frame of reference for environmental planning and management in Cameroon. This plan is implemented through several programmes and projects, the most important of which are the Forest and Environment Sector Programme (PSFE), created in 1999. These programmes define the policies for environmental protection and sustainable natural resource management.

2.3 Land use planning orientation law

The Law N°201/008 of 06 May 2011 lays down the basis for the general orientation for the planning and sustainable development of the Cameroonian territory. It provides the groundwork for a national system of strategic land development. This law lays down the principle of spatial planning and sustainable development and applies to all activities related to the allocation and use of land of land.

Regional planning is based on regional and local development, sustainable development and environmental protection, the establishment of the principle of subsidiary within the framework of decentralization, and the

establishment of a contractual mechanism for the joint management of space by the State and decentralized territorial communities.

In its article 2, the Law establishes the general legal framework for the planning of the national territory in a perspective of sustainable development:

- Applies to all operations relating to the occupation of space, the allocation or balanced distribution of activities, infrastructure, equipment and services on national territory;
- Defines the guiding principles of the regional planning and sustainable development policy;
- Strategic choices for the development of land use planning and sustainable development plans as well as sectorial plans;
- Affirms the geostrategic character of border areas and maritime territory;
- Articles 2 and 3 of the Law establish the orientations of the national policy of planning and sustainable development of the territory.

This policy:

- Search for a judicious, balanced and as integrated as possible distribution of people, production activities, infrastructures and equipment throughout the territory.
- A coherent and united nation, balanced development of the national territory combining social progress, economic efficiency and environmental protection.
- Tends to create favourable conditions for the development of employment and national wealth, and to reduce territorial inequalities while preserving for future generations the available resources as well as the quality and diversity of natural environments.
- It ensures equal opportunities between citizens, and reduces the differences in wealth between local authorities by equalizing their resources according to their charges and by modulating public aid.
- It aims to strengthen the attractiveness, competitiveness, complementarity and solidarity of the Regions.

The Law determines the planning and regional development instruments including:

- the national regional planning and sustainable development plan at the national level (SNADDT);
- the regional planning and sustainable development plan at the regional level (SRADDT); and
- The local land use planning and sustainable development plan at (PLADDT) level.

The general guidelines for the sustainable management of natural resources, land and agriculture in the SNADDT and the SRADDT are not as clear and precise as those contained in the DSCE. In fact, the Outline documents consist of the diagnosis, which quite simply makes an inventory, of the prospective which follows the major national orientations (DSCE and SNADDT - prospective phase). These must still be supplemented by the basic principles which must therefore specify the orientations in the various sectors including that of natural resources. However, for the moment, they have only been developed for the SNADDT and the SRADDTs in the South and East. Most of the plans are still being developed and they are following national

guidelines, but opportunities are still open within the process to influence local spatial planning and the introduction of the concept of agro-ecology especially at the community level.

With this orientation law, the Cameroonian government has set itself a political objective to improve a multi-sectorial spatial land use planning under the Land Management & Sustainable Development. Within this framework, a Common Mapping Platform initiative was launched in 2015[8], a number of partners working with MINEPAT have identified in a series of meetings and workshops between 2015 and 2016 the need for close cooperation among themselves and with MINEPAT in building a multi-partner program that will help to develop a set of agreed spatial planning methodologies, protocols for standard mapping and open and transparent spatial planning tools that better address both social and environmental concerns as a prerequisite for good governance and land management.

The aim of this multi-partner initiative is to demonstrate the benefits of transparent and inclusive spatial planning procedures at national, regional and local level. Partners include research institutions that collect data on site and compile map layers that can contribute to land use planning; non-governmental organizations that work with local communities to capture municipal land use; various government departments that collect data sets on e.g. compiling and managing land allocations (agricultural, forestry and mining concessions), roads and other infrastructure, biodiversity, forest areas, carbon stocks, etc.; government programs preparing land use and management plans for designated areas; and the private sector investing in the area.

Similarly, inadequate or approximate planning must have a negative impact on the sustainability of sector approaches. The National spatial planning for sustainable development (Schema National d'Aménagement) and the Dévéloppement Durable du Territoire- SNADDT) is in fact in the second phase of preparation. In the first phase, the entire area was structured according to resources and development potential. The second phase was completed with the preparation of an indicative national land use plan. Currently, regional land use plans are currently being prepared, followed by municipal land use plans.

The consultation with stakeholders confirms the strong interest in the creation of a common multi-actor programmatic framework for spatial planning actions. In order to achieve sustainable land management, it is necessary to cooperate with a large number of partners who are already involved in land use planning or the development of sustainable resource production.

Improved, up-to-date data layers will make it possible to take ecological, social and economic values into account in a uniform way when making decisions in spatial planning, thus enabling a transparent and open decision-making process.

[8] The Cameroon Common Mapping Platform initiative was launched in 2015, following an exchange of letters between the MINEPAT Minister and the EU Ambassador (letter of 03/02/15). The European Forest Institute (EFI) fun ded the feasibility phase under the leadership of the MINEPAT and with the support of WRI, LTS, RFUK, AJESH, Rainbow Consult and partners. The following meetings have confirmed the need for a partnership and programmatic approach:

The main national government institutions with role in Land Use Planning are presented in the Table 3.

Table 3: Institutions involved in land use planning

Institution	Mandate	Task
MINEPAT - Cartography Department Support Unit for National, Regional and Local Planning	**Coordinates the Rural Development Sector**, and LUP, Prepares guidelines (National Sector Planning, LUP Holds data relevant to Land Use Planning	Coordinate Sectoral Ministries (e.g. MINFOF, MINADER, MINEPDED, MINEPIA, MINIMIDT, MINTP, MINADT etc .)
MINDCAF - Projet d'Appui à la Modernisation du Cadastre (PAMOCA)	**MINDCAF is responsible for land tenure reform.** PAMOCA is preparing a digital cadastre for Cameroon.	Preparing a digital cadastre for Cameroon.
MINAT	Preparation, implementation and assessment of Government policy on territorial administration and civil protection	Define Administrative boundaries
MINEPDED Environmental Policy Development Department.	DDPE has mandate to prepare 'norms' for studies to define environmental and social safeguards during ESIAs (and land use planning) REDD+ process prepared a SESA for REDD+, which includes social and environmental safeguards.	Coordinate sector Ministries to agree on standard protocols for data collection on environmental and social safeguards, including during ESIA and land use planning.
MINTP Roads Planning Unit		Maintain and share up-to- date roads layer, and contribute data to accessibility maps.
INC	Prepare base maps	Provide / validate base maps for LUP.
Rural Development Sector (MINADER, MINEPDED, MINEPIA, MINFOF)	Sub-sectoral plans. Propose land allocations. Provide technical services to local producers.	Technical guidance to stakeholders

If customary rights are to be respected, it is therefore essential that local communities are involved in the zoning and micro-zoning process at all relevant levels, and in particular before future land allocations are finally decided. This will be the minimum in order to ensure the free, prior and informed consent of communities affected by development vital programmes and projects on agro-ecology as well as REDD +. Micro zoning at the council's level is envisaged for all councils in Cameroon under the support of PNDP and this could equally be the best opportunity to introduce the concept of agroecology as a sustainable agricultural development option.

Law N ° 2004/017 of 22 July 2004 on the orientation of decentralization defined the responsibilities of decentralized territorial communities. In 2018, the Ministry of Decentralization and Local Development (MINDDEVEL) was created by Presidential Decree. This decree gives MINDDEVEL and its decentralized services a clear mandate to support the local councils to develop and implement their land use plans and they could also be another avenue to anchor agro-ecology.

The new general code for decentralized local authorities was signed on December 25, 2019. This Law gives a special status to the North-West and South-West Regions which takes into account the specificities of the English-speaking education sub-system, of the Common Law and traditional chiefdom. The law includes decisive advances for the decentralization process, notably with regard to the status of local elected representatives, the functioning of local assemblies and the allocation of new and substantial financial resources to the regions.

According to article 76 (2) of this law, "municipal and regional development plans and regional land use plans are drawn up taking into account national development and land use plans. The relevant deliberation is therefore subject to the approval of the State representative". That is, the final decision remains under the control of the central government, which risks frustrating the bottom-up planning and spatial planning processes.

The juxtaposition of many instruments creates a power struggle between diverse groups (state, private sector, mayors, traditional leaders, communities and elites). This includes the various mechanisms for securing land provided for by land and forestry legislation, those for local governance provided for by the 2004 Decentralization Law, and the general code for the 2019 Decentralized collectivises and those for participatory land use planning provided for by the 2011 Law on Spatial Planning (Bassalang et al., 2020).

In reality, the power to arbitrate among these diverse stakeholders, as well as the final decision-making, still remains in the hands of the state. Further reforms are required to empower local communities in the decentralization process, and this is ongoing.

2.4 Forestry law

The choice of definition of forest used in climate change negotiations is a matter for policy makers, leading to significant variations from country to country. Different definitions of forest have different implications for the amount of historical deforestation and the relative emissions.

According to the law n ° 94/01 of January 1994 relating to the forestry, fauna and fisheries regime in Cameroon, "Are considered as forests, land with plant cover dominated by trees, shrubs and other species likely to provide non-agricultural products".

To formulate and propose a definition of forest for REDD+, Cameroon referred to the guidelines provided by the Marrakech agreements within the framework of the United Nations Framework Convention on Climate Change (UNFCCC): "The flexible values and thresholds set by the Marrakech Protocol agreements (minimum

forest area of 0.05 to 1 ha, minimum height at maturity, in situ, from 2 to 5 meters, a minimum density of forest cover (or an equivalent canopy coverage level of 10 to 30%)".

Using different definitions of forest leads to very different estimates of national and global forest cover and observed rates of forest gain and loss. To remain consistent with the guidance provided in the UNFCCC, the REDD + strategy published in June 2018 adopted the following definition: "Are considered as forests, the land covered with a plant formation based on trees or shrubs, with a minimum area of 0.5 ha comprising vegetation in which the trees and shrubs have a minimum cover of 10%, and can reach at maturity a minimum height of 3 m. The exception is mono-specific agro-industrial plantations with a purely economic vocation and which use essentially agricultural management techniques. Are still considered as forests, areas formerly forested and areas of natural disturbances that led to the reduction of their cover below 10% and which are likely to recover their past status".

These forests are being cleared at an accelerated rate for cotton production in competition with food crops intended to feed the national and sub-regional population. Although the biomass is low per hectare, the total number of hectares cleared is large and the clearing makes the landscape severely degraded and unlikely to support sustainable agricultural production in the context of climate change. It is therefore important not to reject these forests by adopting a definition only for the densely forested part of the country. All the loss of forests and the resulting environmental degradation and carbon emissions are significant. As the process continues with the elaboration of the National Investment Framework, this provides opportunity to in addition to the new concepts of climate smart agriculture introduce the concept and practice of agroecology as a means to reduce pressure on the forest, adapt to and fight climate change.

2.5 Social inclusion legislation

Cameroon's socio-economic policy, as expressed in the Growth and Employment Strategy Paper (DSCE), seeks to establish an integrated sustainable human development framework in the medium term that will gradually lead the country toward the achievement of the Sustainable Development Goals (SDG) and Vision 2035. According to the DSCE, the social sector development strategies will not only improve the living conditions of populations but create strong human capital capable of sustaining economic growth. Within this framework, social policy is geared to making investments that will benefit different social categories, with special attention to youth and women and the integration and support of other socially vulnerable groups.

The social inclusion policy centres on:

- the formulation and/or finalization of sector policies for the protection and promotion of vulnerable populations;
- the drafting and enactment of laws for the protection and promotion of these targeted groups;
- the training of specialized social workers and educators to better serve vulnerable social groups;
- capacity building in organizations representing vulnerable people;
- the creation of a national solidarity fund to provide an appropriate response to the requests for assistance from vulnerable social groups;
- the creation of a national civil service for participation in development;
- the creation of a national fund for the integration of youth;
- advocacy for the education of girls;
- the inclusion of marginalized girls;
- the production of a guide to prepare people for marriage;
- the promotion of female entrepreneurship;

- the facilitation of women's access to credit and self-employment; and
- the development and implementation of programmes to reduce poverty.

To promote gender equality, the Government plans to encourage parents and communities, especially in rural areas where traditional customs still reign, to permit girls to benefit from the same access to education as boys. The State and the community will likewise seek the equitable representation of girls in vocational training, higher education and access to employment in all sectors.

The policy to benefit youth, especially disadvantaged youth, will prioritise access to citizenship and the social and economic integration of this group. This policy and the programmes charged with its implementation seek to use socio-occupational integration to empower young people and foster their participation in national development by making them more creative, enterprising and competitive. Cameroon also has a Pygmy Peoples Development Plan (PDPP) and a Plan for Vulnerable Indigenous Peoples (PPAV), the latter of which is aimed at a general improvement in the living conditions of Pygmy peoples in terms of agriculture, health and education. More specifically, the PPAV seeks to ensure that Pygmies are not harmed by any development project and to offer them opportunities to benefit from culturally compatible social and economic advantages. This social inclusion policy and plans could be vital entry points to introduce agro-ecology programmes that benefit socially marginalised persons including women and indigenous communities.

2.6 Land law

In Cameroon, land distribution is the result of a process in which various stakeholders are involved. The process varies slightly depending on the legal status of the land. If the land is part of the national domain, there is no specified owner, and the procedure will involve consultation with local communities. If the land is in the private domain, the allocation process only concerns the State, as the owner of the land. The main actors in this process are: the Ministry of Land Affairs and State Property (MINDCAF), other sectorial ministries, and the Advisory Commission (AC). The AC is appointed by the Divisional officer and has its headquarters at the Divisional level, and is composed of local representatives of the main competent public services. It is chaired by the Sub-Divisional officer, and also includes the chief and two elders of the village of the community where the space to be allocated is located. Spatial planning is a previously neglected topic in Cameroonian politics. High population growth and increased world market demand for agricultural products are competitive forces between different types of land use. Information deficits are a major obstacle here. There is no interdisciplinary analysis of geo-spatial data, as would be particularly important for spatial planning, in order to be able to weigh up the ecological, social and economic advantages and disadvantages of different development options. So far, Cameroon has only limited experience in drawing up land use plans that reconcile different land interests in a balanced and negotiated way.

Simultaneously, the urgency and determination to promote sustainable land use and reduce deforestation has increased. Most of Cameroon's land regime is built around the law put in place during the last large land reform of 1974. The allocation of land follows rules that have been put in place at a time when the challenges of requests for lands and resources were not the same as today.

In addition, there appears to be no process in place to ensure, prior to any large-scale transfer of land for agriculture, that there is no forest, mining or oil concessions in the requested area. This gap results in numerous overlaps in the allocation of space, which are ultimately detrimental to the country's development

"The lack of a clear land use policy in the past leaves investors free to choose the locations of their activities and prevents effective control of land use by the State. As a result, plots of land intended by the population for subsistence agriculture may end up in the hands of agribusinesses, miners, etc., which poses a threat to the food security of the population and the State".

and the achievement of its emergence objectives by 2035. This is a governance gap, but also a normative gap, as the successive texts did not anticipate the importance of demand on spaces and the need for better coordination. Lands are attributed for the development of large projects, and allocations are made by concession, lease or assignment. Land allocations involve local and national public services, and site selection is usually made by the applicant, except in the case of logging concessions for which the State has a prior zoning.

These normative and governance gaps could be explained inter alia by:

- The lack of consistency in implementation of public policies in the areas with different objectives or competitors in terms of land and resource management (forestry, mining and agricultural lands in particular).
- The lack of a clear vision of the management of spaces and natural resources that deprives the competent technical services with a single, consistent repository for their action and severely limits their ability to organize the coexistence of various development activities on the national territory.
- The lack of a clear policy for land use due to the disparity of transactions which grants investors with flexibility to choose locations for their activities and prevents effective control of land allocation by the State.
- The absence of a coherent national policy for the allocation of large-scale land concessions which results in a high variety of conditions for the different transactions concluded by the State (price of the land, taxation, duration, size, etc.).
- The allocation of rights sometimes on land alone, sometimes on land and resources, which is contrary to land tenure and natural resources laws. The laws governing natural resources management provide specific procedures to grant each type of resource.

Competition and conflicts on land use has intensified, in particular foreign companies seeking large areas (> 10.000 ha) for agricultural development; the Ministry of Land Affairs and State Property (MINDCAF) has been involved in a nationwide process since 2012 to identify and reserve large areas for future investors; and national investors wishing to establish small businesses ranging from a few hectares to several thousand hectares. At the same time, the UNFCCC Paris Accord made clear commitments to address deforestation and land use change as key elements of a global strategy to mitigate climate change within safe limits. In addition, there is a rapidly growing membership in the Tropical Forestry Alliance 2020 (TFA2020) of companies that have pledged not to achieve deforestation in their supply chains. The local communities are thus involved in a saga between the state and large concessions holders like the agro-industries and the foresters. Local communities should therefore be brought onboard in the process to fight against climate change as well, and the entry point is through agro-ecology.

3 Gaps and Possible Entry Points for National Level Advocacy for the Inclusion of Agroecology in the Agricultural Policy in Cameroon

3.1 Introduction

In December 2019, the architecture of the SDSR and the PNIA were harmonized with all the sub-sectors in charge of rural development. The SDSR has partly integrated the strategic framework of NAPCC and the NDC in the drive to promote adaptation and mitigation options to climate change. Agroecology as an adaptation and mitigation option was not clearly highlighted in all of these strategic documents. The strategic objective of the SDSR is "to massively and sustainably increase agro-sylvo-pastoral and fishery production to ensure food and nutritional security and the resilience of populations, improve the incomes of actors, and contribute substantially to growth and employment, reduction of the trade balance deficit and climatic shocks" (SDSR, 2019). References have been made to climate smart agriculture, low carbon agriculture but not agroecology in a proper manner as may be desired. **The question here is what should be done to bring onboard agroecology in policy documents in Cameroon?** An analysis of existing gaps and possible depiction of possible entry points is the focus of the discussions that ensue.

3.2 Analysis of gaps

A diagnostic approach has been used by comparing various strategy papers to depict the existing gaps. Options for agroecology inclusion are not farfetched as some of the strategy papers show similitude, while some programmes and projects partially practice agroecology. Table 5 attempts an analysis of the existing gaps in various strategic documents of the rural sector development.

Table 4: Coherence between the National Development Strategy (SND), the Rural Sector Development Strategy (SDSR), PNIA, REDD +, NAPCC, and NDC strategic axes and options for agroecology inclusion.

DSCE/SND 2020-2030	SDSR 2020-2025	PNIA 2020-2025	SN-REDD+ 2020 -2025	NAPCC	NDC
Vision: The National Development Strategy is structured around four (04) main pillars, namely: -structural transformation of the economy; - development of human capital; - promotion of employment and economic integration; -governance and strategic management of the state. **Objective 3** Strengthen measures for adaptation and mitigation of the effects of climate change and environmental management to ensure economic growth and sustainable and inclusive social development.	**Vision:** Promote an agricultural policy which (i) ensures food security and self- sufficiency for households and the nation, (ii) contributes to economic growth and in particular to the growth of foreign trade and employment, (iii) increase the income of agricultural producers, (iv) improve the living conditions of rural populations, (v) ensure better use and sustainable management of natural capital, the basis of agricultural production.	**Vision:** The PNIA is based on Second Generation Agriculture, which has for general objective of generating sustainable growth in the sector, respectful of capital Environment. It aims to ensure food sovereignty and food security and nutrition of the country through a reasoned and balanced modernization of the production. Second- generation Agriculture relies on both Family Farms and on Medium and Large Farms, by strengthening their complementari ties and promoting their integration into value chains and their Connections to markets.	**Vision:** to contribute to climate stabilization by reducing GHG emissions from deforestation and forest degradation, conserving forest carbon stocks, increasing forest carbon stocks, and sustainable forests management	**Vision:** Climate change is fully integrated into the sustainable development of Cameroon, and this reduces vulnerability, and even transforms the climate change problem into a solution / development opportunity. Cameroonians thus - especially women, children and vulnerable people - and the country's economic sectors have greater resilience and a greater adaptive capacity to climate change impacts.	**Vision:** an emission reduction target with mitigation and adaptation actions in all the domains of green house gas emissions – agriculture, industry, energy, waste etc

DSCE/SND 2020-2030	SDSR 2020-2025	PNIA 2020-2025	SN-REDD+ 2020 -2025	NAPCC	NDC
SND 3.2.2 Increase in the productivity, production and competitiveness of agro-sylvo-pastoral and fishery products through the: (i) promotion of a sector-based approach structured around agro- pastoral value chains, while taking into account specificities linked to the different agro- ecological zones; (ii) support for access to inputs; (iii) promotion of the most efficient technologies; and (iv) popularization of research results	**Specific objective 1:** Increase the productivit y and production of plant, forestry, animal and fishery products in priority sectors, and structure added value chains to improve market access.	**Investment area N ° 1:** Sustainable increase in agrosylvopastoral and fishery productions, productivity of priority value chains **Action 1.1 Improve production, productivity and competitivene ss of the sectors (i)** cereals: rice- corn-sorghum, (ii) roots and tubers: cassava- potato, (iii) industrial products: cocoa-coffee- cotton-palm oil (iv) fruits and derived products: pineapple and plantain (v) niche products: cashew nut. **Activity 1.1.6** Development of standards, labels and certification of inputs, materials, equipment and agricultural products.	**1: Low carbon impact agriculture / Climate smart agriculture:** Promotion of the main agricultural sectors following technical approaches with low deforestation and forest degradation effects with the aim of increasing yields per hectare, valuing old ones plantations and degraded areas, strengthening of sectors and the place of local producers in them. **Component 2: Sustainable management of forests and restoration of landscapes:** The preservation and enhancement of ecosystems and improvement of the living conditions ofneighbouring populations.	-Large-scale promotion of field practices: water conservation and soil management techniques, and disseminatio n of new varieties adapted to high temperatures and heat stress (PACA, PIDMA); - Agricultural diversificati on to reduce the vulnerabilit y of extremely specialized systems; -Promoting intensive, integrated and stable- style breeding in the agro- forestry-pastoral areas. - Finalizations of the pastoral code by integrating climate change. This implies integrating climate hazards, risks and measures to be taken in the pastoral code. Breeders should be sensitized and trained in this code.	Reduce the carbon footprint of its development without slowing its growth, by favoring mitigation options with high co- benefits (Section 2: Mitigation); strengthen the country's resilience to climate change (Section 3: Adaptation); align its policies in the rural development sector and strengthen its system and implementati on tools to facilitate the achievement of these objectives (Section 4); and mobilize all relevant means to this end: funding, technology transfer and capacity building.

DSCE/SND 2020-2030	SDSR 2020-2025	PNIA 2020-2025	SN-REDD+ 2020 -2025	NAPCC	NDC
SND 3.2.3: **Access to production equipment and infrastructure**: (i) opening up of production basins; (ii) the development of large hydro-agricultural spaces which will be allocated as a priority to large and medium-sized farms with particular attention paid to development actions targeting priority agro-pastoral sectors in connection with the development of agro- industry	**Specific objective 2:** Improve the infrastructural environment and access to factors of production to support priority value chains and markets.	**Investment area N° 2:** Improvement of the collective infrastructural environment and access to factors of production and markets	Apply rigorous environmental and social safeguards to all projects that result in deforestation during design, site selection and operations. Improvement of standards for the establishment and development of transport and mining infrastructure; Improvement of public infrastructure (rural roads, markets) according to their impact on the forest estimated in advance. Improvement of sector-specific infrastructure (stores / dryers / oil mills etc.) Subsidy of investments in communal infrastructures of cooperatives etc.	**Objective**: To adapt to climate change and reduce Cameroon's vulnerability to climate change effects, and increase resilience and quality of life. Moreover, it aims at improving adaptive capacities and creating new opportunities to support the country's sustainable development	**Objective**: Attain a 32% reduction in GHG emissions compared to a baseline scenario for the 2035 target year and conditional on international community support in the form of funding, capacity building actions and technology transfer
Complete the land reform process; finalization and implementati on of land use planning tools	**Specific objective 2:** Improve the infrastructu ral environme nt and access to factors of production to support priority value chains and markets.	**Specific objective 2:** Improve the infrastructural environment and access to factors of production to support priority value chains and markets.	**Cross-cutting options:** Strengthening land tenure security, a gender approach and social equity.	**Sub-objective 1:**	**Agriculture sub-sector objective**: Promote green agriculture through the advancement of intensification, and sedentary agricultural policy;
Ensure (i) consistency between land development , allocation and enhancement interventions ; and (ii) taking into account agricultural, pastoral, forestry and environment al aspects in land management;	**Specific objective 3:** Improve the infrastructural environment and access to factors of production	**Investment area 3:** Strengthening the resilience of production systems, the sustainable management of natural resources and the food and nutritional security of rural populations, n the face of climate change. **Action 3.1**. Improving the sustainable management of rural areas and natural resources by the different categories of users **Activity 3.1.1** Finalization of land use plans and schemes (SNADDT of SRADDTs and PLADDTs) and soil restoration and development of soil mapping according to agro-ecological zones;	Investment options Improving land management through strengthening and promoting a national policy framework and land use planning in forest and agro-pastoral landscapes;	**Sub- objective 2:**	**Orientation in the agriculture sub-sector:** Render consistency in planning and the development of rural space for agriculture development while limiting deforestation/ degradation

DSCE/SND 2020-2030	SDSR 2020-2025	PNIA 2020-2025	SN-REDD+ 2020 -2025	NAPCC	NDC
		Activity 3.1.2 Integrated management of water resources, protection of watercourses and watersheds and establishment of consultation platforms around the management of hydrographic basins **Activity 3.1.3** Improvement of the development and use of agro-sylvo- pastoral lands (materializatio n and development of socio- economic infrastructure along the transhumance corridors, restoration of pastures, etc.)			
SND 3.7.1 Sustainable management of natural resources: Take into account the comparative advantages of each Agro-Ecological Zone in the implementation of projects and other investments in the agro- sylvo-pastoral sector; (ii) encourage the rational use of soils through responsible cultivation practices, (iii) draw up soil and pedological suitability maps for better knowledge and use of soils.	**Specific objective 3:** Sustainably manage natural resources, strengthen the resilience of vulnerable populations through measures to mitigate and adapt to the effects of climate change and to manage climate risks.	**Investment area 3:** Strengthening the resilience of production systems, the sustainable management of natural resources and the food and nutritional security of rural populations, in the face of climate change. **Action 3.3. Strengthening** and scaling up adaptation/ mitigation measures in the face of climate change and the fight against pollution and nuisances	Investment options Agricultural sector: The promotion of sustainable agricultural systems with a low effect of deforestation and forest degradation will be achieved through sedentarisation and the increase of agricultural productivity, strengthening of the value of agricultural products, improvement of incentives, legal, technical and financial frameworks related to agricultural production. Interventions will be made in large, medium and small farms and at national and sub- national levels. The objective is to increase productivity in a sustainable manner by increasing and intensifying agro-sylvo-pastoral production, the introduction of good practices, the restoration of soil fertility, the reduction of production costs. and increased income.	**Sub- objective 3:** To reduce the population's vulnerabilit y to climate change in the country's key sectors and agro- ecological zones	Intensificatio n of a agricultural production, animal and fishery respectful of the environment and allowing that do not enhance Deforestation / degradation

DSCE/SND 2020-2030	SDSR 2020-2025	PNIA 2020-2025	SN-REDD+ 2020 -2025	NAPCC	NDC
SND 3.7.2. Adaptation to climate change: ensure that concerns related to climate disturbances are taken into account in sectoral strategies and policies, both in formulation and in implementation; (ii) build the capacities of institutions responsible for climate monitoring; (iii) operationalize the system for monitoring, preventing and responding to the effects of climate change	Specific objective 3: Sustainably manage natural resources, strengthen the resilience of vulnerable population s through measures to mitigate and adapt to the effects of climate change and to manage climate risks.	**Investment area 3:** Strengthening the resilience of production systems, the sustainable management of natural resources and the food and nutritional security of rural opulations, in the face of climate change.	The promotion of Payments for Environmental Services (PES) to encourage the conservation of forests and carbon stocks in communities and village areas, as well as in family and individual farms / plots.	**Sub- objective 4.** To integrate climate change adaptation into national sectorial strategies and policies	Promotion of practices allowing to improve capacities of agricultural production and enhance the local resources

DSCE/SND 2020-2030	SDSR 2020-2025	PNIA 2020-2025	SN-REDD+ 2020 -2025	NAPCC	NDC
SND 5.1. Promotion of employment in public investment projects and in rural areas: **SND 5.1.1.** Systematize the promotion of the HIMO (High Intensity of Workforce) approach in the implementati on of public investment projects while controlling the effects such as the dropout of young people. **SND 5.1.2** Revitalizatio n of employment in rural areas: increase the growth of agricultural productivity in order to stimulate demand for non- agricultural goods and services; (iii) improve the investment climate and trade in rural areas: (iv) develop the skills of young people inrural areas and create a match between them and jobs; (v) facilitate access to land; (vi) strengthen access to financing with advantageou s conditions;	**Specific objective 4:** Improve governance , inter-sectorial coordination, actor capacities, the business climate, information and communication to increase the overall performance of the sector.	**Action 4.2.** Improvement of the business climate and strengtheningof Non-State Actors (OPA, private sector, NGOs etc.) **Activity 4.2.1** Improvement of the business climate to encourage private investment, which creates value and jobs in the rural sector	**2.5. Promotion of non-carbon benefits** Generate environmental and socio- economic benefits as well as incentivize improved governance, also called "joint benefits". Improve the situation of local communities, indigenous peoples and other vulnerable groups (women, the elderly, etc.); Regarding the socio-economic aspect, the benefits that could be generated if the interventions are implemented will improve local income and increase employment opportunities, increase the contribution of forest resources to food security and local development, etc..	Developme nt of best- practices of agriculture that can resist climate change and improve farmers' adaptability, -Improve agricultural systems through agricultural research and disseminatio n of research results -Promote best practices for adaptation to climate change among farmers *For example: (i) use of adapted seeds, (ii) rational management of water, etc.*	Valuation especially energy of community resources rural including waste
(vii) develop small and medium- sized rural enterprises; (ix) promote non- agricultural activities in rural areas.					

DSCE/SND 2020-2030	SDSR 2020-2025	PNIA 2020-2025	SN-REDD+ 2020 -2025	NAPCC	NDC
8.2. Strategy implementati on mechanism 8.2.2. Improvement of strategy management and monitoring and evaluation instruments Improvement of the institutional mechanism The management and monitoring-evaluation of the strategy will be placed under the direct authority of the Prime Minister, Head of Government and under his Presidency, a National Council for Planning and Territorial Developmen t will oversee the entire steering and monitoring system. Assessment of the strategic development framework.	8.2.Strategy implementation mechanism 8.2.2. Improvement of strategy manageme nt and monitorin g and evaluation instruments Improvement of the institutional mechanism The management and monitoring-evaluation of the strategy will be placed under the direct authority of the Prime Minister, Head of Government and under his Presidency, a National Council for Planning and Territorial Development will oversee the entire steering and monitoring system. Assessment of the strategic development framework.	**Investment area N ° 4:** Strengthening of governance and the capacities of rural sector actors to increase its overall performance **Activity 4.1.1**: Improvement of the working framework and coordination of operational programs and support of sector ministries (MINADER, MINEPIA, MINFOF, MINEPDED)	Strengthening governance through the implementation of existing laws, sector policy reforms, coherence, coordination, and the participation of all stakeholders in decision-making on land use;	-Large-scale promotion of field practices: water conservation and soil management techniques, and dissemination of new varieties adapted to high temperature s and heat stress (PACA, PIDMA); - Agricultural diversification to reduce the vulnerabilit y of extremely specialised systems	-Integrate climate change into the national planning and sector policies; -Consistency of plans and sectoral policies with objectives and mitigation actions and adaptation

3.3 Alignment of agroecology with sector strategies and programmes

During periodic review of strategy documents

The inclusion of agro-ecology into government agricultural policies and into existing/future programmes would largely depend on the level of proactivity and upfront lobby measures put in place. Many rural development strategy documents constraints elements of agroecology but this concept needs to be entirely streamlined and integrated both as a policy and practice at all levels.

Strategic documents usually have a lifespan averaging 5 – 10 years beyond which their revision becomes imperative. It's during this revision process that agroecology could be formerly introduced. Strategic documents such as the SND, PNACC, NDC, SDSR, PNIA, SN-REDD+, the rural code and the Pastoral code etc. are either under elaboration, revision or programmed for future revision. For instance, a **National Technical Working Group for Agroecology Promotion** (**NTWG-AP**) should be put in place and could play a great role to get agroecology integrated into strategy documents during their revision process:

Table 5: Policy reforms orientation to integrate agroecology

Production Sectors	Policies or regulations concerned	Orientation of reforms/programmes to integrate agroecology
Environmental management	The 2035 Vision and the DSCE	Integrate agro-ecology in Vision 2035, particularly in the section concerning challenges to development and the preservation of the environment, vision and strategy in the implementation of land use planning policies, and in the Post DSCE (SND) in the review of development policies and employment strategies.
	The National Adaptation Plan on Climate Change (NAPCC)	Integrate process agro-ecology in the revision
	The Nationally Determined Contributions (NDC)	Integrate agro-ecology in the revision process in addition to low carbon agriculture
	The National Strategy on REDD+	Integrate agro-ecology in the revision process , in addition to low carbon agriculture and climate smart agriculture
	The National Plan (NIF) Investment	Integrate agro-ecology in the revision process , in addition to low carbo agriculture and climate smart agriculture
	The National Environmental Management Plan (PNGE)	-Introduce agroecology in the 3rd version of the PNGE. -Have at least a chapter on agro-ecology in the PNGE.
	Environment Sub-sector Strategy on nature protection and sustainable development, in support of the DSCE implementation	Integrate the aspects of agroecology within the component of environmental policies and sustainable development and in the second section concerning vision and priorities and in the implementation mechanism.
	Law N° 96/12 of 05 August 1996 relating to the Framework law on environmental management	In the revision process of the law, agro-ecology should be integrated in the evaluation of the risk of climate change on agriculture and the inherent mitigation and adaptation measures, in the management of natural resources and preservation of biological diversity.

Production Sectors	Policies or regulations concerned	Orientation of reforms/programmes to integrate agroecology
Forest management	Definition of the forest and agricultural space	The definition of the forest, deforestation and forest degradation should set the basis to determine the impact of agroecology on ecosystems services and values in carbon sequestration or absorption.
	Law N°94/01 of 20th January 1994 concerning the Forest, Fauna and Fisheries regime in Cameroon and their texts of application	Integrate the aspects of agroecology within the general provisions of the law, the protection of nature and biodiversity, fishing, agar-culture and conservation of fisheries resources
	Decree N° 95/678/PM of 1tth December 1995 instituting an indicative framework of land use in the southern forest zone	Integrate the aspects of agro-ecology in the indicative land use and the attribution of arable lands in the southern forested zone
	Decision N°0108/D/MINEF/CAB of the 09th of February 1998 concerning the application of norms on all interventions within the forest milieu in Cameroon	Integrate agroecology within the guiding principles and norms of intervention in the forest milieu in Cameroon
Land and land tenure regimes	Ordinance N° 74/1 of 6th July 1974 fixing the land regime	Integrate agroecology in the organisation and management of lands and in the protection and management of soils
	Ordinance N° 74/2 of 6 July 1974 fixing the land tenure regime	Integrate agroecology in the law guiding the management of public and private state lands
	Decree N°76/166 of 27 April 1976 fixing the modalities for the management of national lands	Integrate agroecology in the modalities for the management of national lands
Water management	Law N°98/005 of 14 April 1998 fixing the water regime	Integrate in the general provisions relative to the exploitation of water sources and exploitation of mineral water sources. A compensation mechanism could be developed for farmers who practice agroecology in water catchment protection
	Decree N°95/413/PM of 20th June 1995 fixing the modalities for the application of the management of fisheries	Integrate agroecology in the organisation and management of agar culture.
Energy production and management	Law N°2011/022 of 14th December 2011 regulating the Energy sector in Cameroon	Integrate agroecology in the general provisions of the law and particularly renewable energy production emanating from agricultural waste
Agriculture, livestock and fisheries production	The Rural Sector Development Strategy (SDSR)	Integrate agroecology in the SDSR in its vision, objectives and strategic axes and make it an alternative to low carbon agriculture or climate smart agriculture
	The **Rural Code**,	Currently being formulated by the Government and this will undoubtedly provide an avenue for the integration of agroecology.
	The **Pastoral code**	Equally undergoing finalization and certainly the adaptation of this practice to climate change shall be integrated

Production Sectors	Policies or regulations concerned	Orientation of reforms/programmes to integrate agroecology
Land use planning and land use allocation	Law N° 2011/008 of 06th May 2011 providing general orientation on land use planning and sustainable development in Cameroon	Integrate agroecology in the general provisions, vision, strategy, guiding principles strategic choices and territorial planning
	Elaboration of land attribution plan	Integrate agroecology in its vision, strategy, guiding principles strategic choices and land use attribution
	Elaboration of the national and regional schemes of land use planning and sustainable Development	Integrate agroecology in the vision, strategy, guiding principles, strategic choices in the national and regional schemes of land use planning and sustainable Development in
	Decree N° 79/194 of 19th May 1979 fixing the modalities for the assignment of housing/ settlement zones	Integrate agroecology in the modalities fixing for the assignment of housing/settlement zones
	Decree N° 81/185 of 4th May 1981 regulating the conditions of land allocation for the realisation of special housing by the Mission d'aménagement et d'équipement des terrains urbains et ruraux (MAETUR)	Integrate agroecology in the allocation of zones for special housing in urban and rural areas
	Decree N° 79/PM of 10 July 1981 fixing the modalities of attribution land parcels for social housing	Integrate agroecology modalities fixing the attribution land parcels for social housing
Urbanization and industrialization	Urbanisation sub-sector strategy	-Integrate agroecology in its vision, principles, and strategic axes of urbanisation plan. **-Make agroecology a norm for sustainable cities in Cameroon**
	Law of 21st April 2004 regulating urban development in Cameroon	Integrate agroecology in the urban development law in Cameroon

3.4 Consolidation/inclusion of agroecology in existing Initiatives

The Government, through the Ministry of Agriculture and Rural Development (MINADER), has embraced the modernisation of agriculture as its key issue. This choice is expressed in the Rural Development Strategy Paper (SDSR) and numerous ongoing initiatives that could be capitalised on to introduce the practice of agroecology. The most vital dimensions for consideration and especially to foster its potential of agroecology in climate change adaptation and mitigation, strategic documents should be brought on to the loop including NAPCC, NDC, NIF, SN-REDD+, SND etc. The lobby work of the NTWG-AP could go a long way to consolidate agroecology practices that should eventually be adopted both in the policy and practical levels. Existing initiatives that could be influenced to later influence policy include amongst others:

* **Agroforestry programmes :** The International institute for Research on Agroforestry (ICRAF) has been promoting this time-tested practice through agroforestry that rely on conservation farming and fertilizer trees to improve soil health and raise and sustain crop yields. This is a good example of large-scale application of the agroecology concept. ICRAF research and development efforts have widely demonstrated the positive

role of integrated agroforestry systems in addressing some of the major agroecosystem challenges such as food and nutritional insecurity, soil degradation, desertification, and climate change. Exploiting nitrogen fixation by tropical leguminous trees, enhancing the efficiency of nutrient cycling, and benefitting from the deep-capture of nutrients are recognized as the primary bases of the soil sustainability advantages of such systems. The focus of soil-improving qualities of multipurpose trees dominates the agroforestry research agenda which generates benefits at the farm or local level. Other ecosystem services of trees that transcend from local to global levels such as climate change mitigation through carbon sequestration and biodiversity conservation have received increasing attention. The capture of atmospheric carbon dioxide in the aboveground biomass of trees and storage of carbon in their deep root systems are the premises for the perceived carbon sequestration benefits. The ability of vegetative buffer strips to reduce surface transport of agrochemical pollutants is the main premise of the water-quality issue, whereas the biodiversity conservation attributes of such systems stem from their species diversity and complexity. It has also become clear that intensified research has to go hand in hand with field application of its results in order to achieve long-term success in realizing the potential benefits for both man and the environment. Research results could eventually be used to influence policy on agroecology adoption especially when the works of lobby groups are effective.

- **The roots and tubers programme**: Several new varieties of cassava with yields of around 25-30t/ha, in contrast to local varieties with yields of less than 10t/ha, have been introduced in the country's five agroecological zones by the Roots and TubersMarket - driven Development Programme (PNDRT), with the technical collaboration of the Institute of Agricultural Research for Development (IRAD) and the International Institute of Tropical Agriculture (IITA). This programme could be made more sustainable by the introduction of agroecology.
- **The Commodity Value-Chain Development Support Project** (**PADFA**) that assists young project operators in the North-West. The Programme will provide youth with support to supplement that of PADFA;
- **The Rural Microfinance Development Support Project** (**PADMIR**) supports microfinance institutions create products tailored to the financing needs of youth, thus ensuring supplementary financing for projects operated by the beneficiaries.
- **The National Reforestation Plans sets ambitious site-specific restoration targets across the country.** Boosted by Cameroon's Bonn Challenge and AFR100 Pledge t restore 12 Million hectares of degraded landscapes by 2030, national level restoration is kicking off with the participation of 183 organizations nationwide, including 74 local councils, 36 non-governmental organizations, and business structures. The National Reforestation Program is especially a platform on which restoration interventions can and will be fine-tuned according to local needs and priorities; especially regarding the use of indigenous species more adapted to local biophysical and social conditions. This plan also seeks to promote private and community tree planting and agroforestry initiatives to support conservation through use, sustainable management of natural resources and support the livelihoods of local populations. AFR100 initiative is largely open to agroecology and what is required is just a step forward to integrate it within the framework of AFR100.
- **The Chari-Logon** (**PDRI-CL**) **Integrated Rural Development Project** that is funded by the Islamic Development Bank: Lessons here will help identify and validated capacity building and knowledge generation in integrated water management to support restoration and

sustainable land management for agricultural production.

- **The Project on the Resilience of populations to climate change** (**REPECC**) funded by UNDP will serve as foundation on which landscape level benefits, spatial analyses (sub national ROAM) and carbon accounting resulting from restoration interventions will be built. REPECC has introduced varied forms of best practices in the agro-sylvo- pastoral domain. The introduction of agroecology to such a programme shall be a great booster.
- **The Support Program on Securing the Integrated Management of Agro pastoral Resources** (**PASGIRAP funded by AFD**); serves as baseline on which lessons for promoting sustainable lands use by managing agriculture-livestock conflicts, in support of restoration and biodiversity conservation will be built. The Program on the Rehabilitation and Resilience of Socio-ecological Systems in the Lake Chad Basin "PRESIBALT funded by AFDB" will serve as a sound basis for developing indicators for linking restoration with livelihoods benefits.
- **The Project on the Development of Cattle Rearing** (**PRODEL**) funded by the Cameroon Government and the World Bank, contributes towards understanding of the relationships between livestock systems, farmer-grazer conflicts and land restoration. This project will also contribute towards developing progress indicators on strategies to control bush-fires, a major driver of land degradation in the Far North.
- **The National Participatory Development Programme** (**PNDP**)**,** financed by the World Bank, has promoted the decentralization of agricultural interventions by introducing an agricultural component in the Local Development Plans (PDC) of councils. This is an ongoing process with regular revisions of the PDC, thus PNDP could assist the councils expand the agricultural component by introducing agro- ecology.
- **The Support Project on the Improvement of Productivity of Animal Raring** (**PAPE**) **implemented by CADEPI, CNEBCAM and IUCN**; this project funded by the European Union, has specific components on natural resource management and community consultation/ participation, whose lessons on mobilization, adoption and benefits sharing are critical to monitoring for success in this project.
- **The Support Programme for Renovation and Development of Vocational Training in Agriculture, Livestock and Fisheries** (**AFOP**)**,** financed by the French Development Agency (AFD), which provides assistance to most of the agricultural training centres recognized by the State and takes specific action to train young people and place them in occupations connected with agropastoral production;
- The **Programme for the Improvement of Competitiveness of Family Agropastoral Farms** (**ACEFA**), which provides technical and economic counselling to family farms, some of which are operated by the youths.
- **The Agriculture Investment and Market Development Project** (**PIDMA**)**,** which supports the development of certain agricultural value chains, including cassava, rice and maize, in the Centre, Littoral, South, North-West and Far North regions.
- **The Young Farmers' Settlement Support Programme** (**PAIJA**)**,** funded basically by the MINADER public investment budget. This programme supports development of the farms of young people living on their own land and the settlement of young farmers on sites developed by the project.
- Initiatives supported by **the National Employment Fund, the National Civil Service**

Agency for Participation in Development (ASCNPD) and other projects targeting youth in agropastoral value chains.

3.5 Constraints to be surmounted for practical introduction of agroecology

The diagnostic analysis of the agricultural and rural sector development strategies reveals that there are major constraints to its development, which could equally be an entry point to introduce agroecology development as a solution to the identified constraints. These constraints include among others (i) the low production and productivity of farmlands, (ii) the difficulties of access to markets, (iii) the precarious conditions of life, (iv) the weak organization of actors, (v) a deteriorating natural environment, (vi) an insufficiently adapted institutional environment and (vii) insufficient funds.

a. Productivity and production constraints

While per capita production is stagnating or tending to decline, the main causes identified concern the following points:

- The small size of the farms;
- The low use of high yield techniques;
- Difficult access to land in some regions, especially for women and young people;
- The scarcity and low qualification of the workforce in rural areas;
- Poor soil quality and difficult access to efficient inputs;
- The high prevalence of plant and animal diseases;
- Poor water control;
- Poor access to credit.

b. Market access constraints

The increase in production could be driven by market demand, but here again; marketable surpluses are difficult to sell. The constraints noted for this purpose relate in particular to:

- The poor condition of the communication channels,
- Insufficient marketing infrastructure,
- low processing and storage capacity,
- lack of information on market opportunities,
- The low competitiveness of products,
- The weak managerial capacities of the actors,
- Weak organization of actors,
- The disorganization of markets.

c. The precariousness of living conditions in rural areas

This constraint manifests itself in the low incomes of producers, the dilapidated state and insufficiency of rural roads, the insufficiency and poor state of socio-economic infrastructure, and the poor quality of housing.

d. Constraints to the organization, employment and training of producers

The active participation of producers in development initiatives initiated by the State, development partners or the private sector comes up against a number of constraints, including:

- The weak management capacity of organizations;
- The inadequacy of the supervision system;
- The quantitative and qualitative insufficiency of collective rural facilities;
- The aging of producers and the rural exodus;
- The inadequacy of training;
- Inadequate training structures.

e. Constraints related to natural resource management: They concern:

- Depletion and degradation of soils;
- Strong demographic pressure;
- Weak capacity to manage space and natural resources;
- Weak water management capacity;
- Little knowledge of the potential in natural resources.

f. Constraints related to the institutional environment: They relate to:

- Insufficient and low quality statistics;
- The insufficient capacity for consultation and coordination;
- The inadequacy of taxation;
- The inadequacy of land legislation;
- The incomplete legislative and regulatory framework.

g. Insufficient funding: It manifests itself by:

- The weakness of self-financing;
- Insufficient financing structures adapted to the rural sector;
- Insufficient information on funding possibilities;
- Weak mobilization of rural savings;
- Weak involvement of local communities;
- Weak mobilization of external aid;
- Reduced private financing flows;
- Weak credit management capacity;
- Little development of rural infrastructure.

In view of these constraints, and with the aim of increasing the performance of the agriculture sub-sector, agroecology is certainly a welcomed solution. In order to achieve large-scale effects, agroecology must be developed through the meeting up of six basic conditions:

- Adoption of policies supporting small-scale farmers who are the best actors to implement agroecology practices. This includes securing access to land (land tenure policies should be revisited0) ;

- ❖ Encourage farmers to invest in agroecology, including through grants or special loans ;
- ❖ Generation and the dissemination of knowledge and specific skills on agroecology: farmers' experiments, sharing of experiences, agricultural advisory services, agricultural research, etc...
- ❖ The state and local governments should enhance the value of agroecology products, for example by supporting the creation of subsectors ;
- ❖ The promotion of agricultural biodiversity and adoption of provisions in the national Genetically Modified Organisms "GMO" control legislations.

Conclusion

Although existing programmes and policies aim at the development of a path of sustaining agricultural productivity, integrated management relies on local farming knowledge and local conditions, management of diverse on-farm resources, and incorporation of contemporary scientific understanding of biological principles in farming systems, requiring full future consideration. Progress needs to be established on the scientific management of local resources and knowledge in the most efficient manner, which offers a desirable and affordable way to restore agricultural lands that have been degraded by high-input agronomic practices and sustainably intensify production in marginal areas. Also, the need to place high emphasis on the "social capital" and value on local knowledge, which peasant farmers already possess, the introduction of agroecology would demonstrate the potential to reverse the anti-peasant biases inherent in strategies of chemical agriculture. Thus, agroecology shall help decrease rather than exacerbate the inequality and enhance ecological, social, and economic facets of sustainability. In this case agroecology in Cameroon shall ensure a balanced and quality diet while restoring the fertility of the ecosystem, by limiting the use of non-renewable resources, protecting the environment and contributing to the fight against global warming. In the context of ecological crisis which primarily affects smallholder agriculture, agroecology shall help enhance the food security of farmers through improved yields and less variable farm incomes, but also to decreased risk for human health and the environment by reducing the use of chemical inputs to the advantage of small Cameroonian farmers.

4 Proposals/ Recommendations on Possible Spaces/Platforms for Agroecology Advocacy

4.1 Introduction

According to the 2011 Bellagio Report of the Commission on Sustainable Agriculture and Climate Change, business as usual in our globally interconnected food system will not bring us food security and environmental sustainability. Several converging threats–from climate change, population growth and unsustainable use of resources–are steadily intensifying pressure on humanity and world governments to transform the way food is produced, distributed, and consumed. The aphorism attributed to Albert Einstein that "the significant problems we face today cannot be solved by the same level of thinking we were at when we created them" is quite apt in this context. We need a different look at the problems and a different design of solutions. **Agroecology** is one of them. It entails a holistic approach to agriculture, based on the application of ecology to the design and management of sustainable agro-ecosystems, and aims at linking ecology, culture, economics, and society to sustain agricultural production and healthy environments (Altieri, 1995). Several advantages accrue from such integrated approaches.

Food production and environmental sustainability challenges cannot be addressed by relatively simple solutions such as intensified agriculture using improved varieties and high amounts of chemicals that have produced substantial benefits in some parts of the world. Despite intense national and international efforts in applying such straight-forward solutions, sub-Saharan Africa and many other parts of the world lag behind in food production and other aspects of development. The Green Revolution technologies have proved to be unsuitable for Africa's infertile soils, unforgiving climate, weak infrastructure, and socio-cultural traditions. Technological solutions such as bioengineered varieties that are not locally adapted and must be purchased by cash-strapped farmers are not acceptable and their widespread introduction poses environmental risks and threats to genetic diversity of food crops and varieties.

4.2 Recommendations

In order to achieve a sustainable inclusion of agroecology in the major rural development strategy documents as well as the ameliorations of attempts to mitigate and adapt to climate change, the following recommendations have been put forward:

4.2.1 Assure involvement in the preparation and revision of policy documents

The development of the 2035 Cameroon's Socio-Economic Development Vision was followed by the adoption in 2009 of the Growth and Employment Strategy Paper (DSCE) for the period 2010 to 2020, and a set of sectorial strategies, several of which have a significant impact on the national economy, use of rural areas for agricultural, livestock production and forestry. These strategies are always subject for regular revisions and it's during these revision processes that the concept of agroecology could be smoothly introduced within these development strategies and programmes. The new National Development Strategy (SND) covering the period 2020 – 2030, has established new strategic development orientations and macro sectorial targets and indicators that can guide the adoption of agroecology practices by several development programmes that have to align with the SND. Ministerial programmes as well as programmes to be developed by development and financial partners have to all align with the SND, and this process shall certainly trigger an overall if not a total revision of national development strategies. This process of sector strategy revision shall provide a window of opportunity to introduce agroecology in the various rural sector policies and strategies as well as in the adaptation and mitigation agenda.

For this reason, it's but vital to discern the guiding principles of the SND, wherein the government intends to consolidate reforms in order to achieve the following in the agricultural sector: Structure the capacities of actors by promoting: (i) the creation, in the main production basins, of Cooperative Development Companies (SCDs) specific to specific to the agriculture sector; Build the capacities of various stakeholders in the production sector, particularly agriculture which is the backbone of the economy; Increase the productivity, production and competitiveness of agro-sylvo-pastoral products by relying on:

(i) The promotion of a sector-based approach structured around agro-sylvo-pastoral value chains, while taking into account the specificities linked to the different agro-ecological zones;

(ii) Support for access to inputs;

(iii) Promotion of the most efficient technologies; and

(iv) Popularization of research results.

Facilitate access to production equipment and infrastructure by intensifying its actions in

(v) The development of large agricultural areas and access to land;

(vi) Access to production equipment; and

(vii) Improvement of production infrastructure in rural areas.

At the same time, the SND intends to face the adverse effects of climate change by, partly in line with the NDC, NAPCC, NIF and SN-REDD+:

- ❖ Strengthening the sustainable management of natural resources (soil, flora, fauna, water);
- ❖ Developing industries, infrastructure and agriculture taking into account environmental issues;
- ❖ Developing mitigation and adaptation measures to climate change, which can strongly affect agro-sylvo-pastoral and fishery productivity.

Until know, Cameroon has been using concepts such as low carbon agriculture and climate smart agriculture without making clear allusion to agroecology. However, agroecology and the approach adopted by Cameroon to mitigate and adapt to climate change share a common vision as both promote sustainable development based on a holistic and multi-sectorial approach which takes into account the desire to improve production, enhance livelihoods, preserve the environment, reduce greenhouse gas emissions and advance socio-economic development. Of course, decisions on practicing agroecology and making it part of the land use system will depend in part on a careful analysis of the options and incentives available to protect the environment or seek alternatives to the "business as usual" scenario, on a case-by- case basis.

The implementation of agroecology practices will be done through strategies and activities aligned with the national development strategy and the sub-sector strategies under preparation. In a number of cases, it will be necessary to clarify sub-sector production goals and low-carbon development options of a buy in agroecology within the respective stakeholders working in each sub-sector and value chain. This shall certainly make the rural sector a major component in the modification, improvement and restructuring of the Cameroonian agro-economic landscape.

The integration of agroecology as an adaptation and mitigation agricultural practice in the SDSR should be the first step since all Ministries in the rural sector are concerned in its implementation. Agroecology can fit very well in the major thematic of the SDSR. Agroecological elements are presented in the SDSR to demonstrate how they contribute to the main thematic axes of the new SDSR and to other Sector Strategies in order to ensure a good understanding of the articulation of agroecology.

4.2.2 Creation of a National Working Group for Agroecology Promotion (NWG-AP)

b. Rationale for the NWG-AP

Certainly, the need to adopt the **agroecology approach** lies within the objective of increasing productivity in a sustainable manner by increasing and intensifying agro-sylvo-pastoral production, introducing good practices, restoring soil fertility, reducing production costs, recycling waste, increasing income and improving livelihoods. What Cameroon had earlier adopted as a climate mitigation agricultural practice within its National Adaptation Plan on Climate Change (NAPCC), Nationally Determined Contribution (CDN), Rural Sector Development Strategy (SDSR), REDD+ National Strategy and the National Investment Framework (NIF) is what is known as Climate Smart Agriculture and Low Carbon Agriculture. These concepts could be enriched by the novel concept of agroecology and this shall be done during the revision of these sector strategies through the support of the NWG- AP.

c. Composition of the NWG-AP

National Working Group for Agroecology Promotion (NWG-AP) could be composed of the representatives of and not limited to the following:

- Ministries in charge of the Rural Sector, social inclusion, finance and local development including:
- **President** : MINEPDED

  1st Vice President: MBOSCUDA 2nd Vice President: MINADER
- **MEMBRES** : MINDCAF ; MINEPAT ; MINFOF ; MINAS ; MINFI ; MINRESI ; MINDDEVEL ; MINAT ; MINPROFF.
- Network of Parliamentarians and Senators in charge of environmental issues (REPAR) ;
- Decentralised Territorial Collectivises (DTC) ;
- Research institutions and Universities ;
- The Civil society organisations ;
- Traditional and religious authorities ;
- The private sector (GICAM) ;
- Technical and Financial Partners ;
- The Media.

Some of these institutions already play important role in policy reforms and this just needs to be consolidated and canalised in favour of agroecology in Cameroon.

Rural sector ministries such as MINADER, MINEPIA, MINFOF and MINEPDED are involved in the rural

sector activities and reforms primarily through their missions, which are clearly defined in Decree 2011/408 of 9 December 2011 on the organization of the Government. Estimated public expenditure in the rural sector averaged just under FCFA 300 billion in the period 2015-2019, or just fewer than 60 per cent of the needs stated in the PNIA, resulting in an average Maputo ratio of 7.0 per cent for the stated period. These institutions are responsible for delivering on these policies and work together with some 120,000 grass- roots farmers' organizations that are affiliated with three apex organizations: the National Platform of Agrosylvopastoral Professional Organisations of Cameroon (PLANOPAC), the National Dialogue of Farmers' Organizations of Cameroon (CNOP-CAM) and the National Cotton Producers' Association of Cameroon (CNPCC). The key private sector actors in the rural sector are represented by the Employers' Association of Cameroon (GICAM).

Combined to these central services are decentralised territorial collectivises, the private sector, civil society, traditional and religious authorities and the media, national research centres and academic institutions, and international technical and financial partners all work together to deliver results in the land use sector and the fight against climate change. The NAPCC had proposed possibilities of synergies between actors in shared responsibilities to advance the adaptation process and this can as well apply to the introduction of agroecology as an adaptation and mitigation process. The domains of responsibility and synergy range from policy development to activity implementation.

In Cameroon, policy is defined at a higher level, particularly by the Presidency and the Prime Minister's Office. This is followed by other lower level but crosscutting ministerial departments like MINEPAT and MINFI, which are key actors because of their multi-sectorial base and recognized vocation and expertise in planning, programming and budgeting. They play a crucial role in issues involving inter-sectorial coordination since adaptation and mitigation to climate change is inherently a multi-sectorial issue.

In order for policy to occur at the higher level, major ground works are done by sector ministries and lobby groups. Agroecology would doubtlessly concern sector Ministries impacted by climate change such as agriculture, livestock, forestry, fisheries, water resource management, health, energy, and infrastructure. **MINEPDED** is the key ministry responsible for the elaboration of policies of adaptation to and mitigation of Climate Change because it is in charge of environmental issues in a multi-sectorial sense. The National Observatory on Climate Change (ONACC), created in 2009 and the Inter-ministerial Committee to Combat Droughts (CILS) created in 2019 by presidential decrees are both institutions under the tutelage of MINEPDED. ONACC has the mandate of monitoring and evaluating the socioeconomic and environmental impacts, propose prevention, mitigation and/or adaptation measures to the adverse effects and risks associated with these changes. CILS is in charge of the implementation of measures that mitigate the impact of droughts and desertification. The introduction of agroecology as a mitigation and adaptation option is a viable option for both CILS and ONACC. MINEPDED also chairs the steering committee of the national REDD+ process. According to Ordinance N°103/CAB/PM of 13th June 2012 on the establishment, organisation and functioning of the REDD+ Steering Committee (COMPIL REDD+) signed by the Prime Minister, the Steering Committee is charged with piloting the activities to reduce emissions from deforestation and degradation, and to ensure sustainable forest management and conservation, REDD+. The NAPCC process is also coordinated by MINEPDED and given the desire to integrate adaptation to climate change in existing policies; agroecology naturally becomes a welcomed option.

The **National Assembly and Senate are** responsible for enacting laws and monitoring government action. They are key players in the development of national standards. By virtue of their closeness to the central administration and their local constituency, they constitute a strong opinion relay which is able to

influence the political agenda and adoption of policy reforms. These elected representatives are organised in an association known as REPAR (Parliamentary Network for the protection of the Congo Basin Forest ecosystem). The **National Working Group for Agroecology Promotion** (**NWG-AP**) could work with the parliamentary network to introduce agroecology in potential policy reforms.

Also, **Decentralised Territorial Councils** (**DTC**) of councils do carry local reforms in the form of deliberations that could promote both adaptation and mitigation activities within their jurisdiction. This is as well a potential avenue for the introduction of agroecology within the agricultural landscape. The promotion of sustainable development activities by involving the local people in the management of their own affairs is a viable agenda of the DTC. Decentralised territorial councils are freely administered by elected councils whose mission is to promote the economic, social, health, educational, cultural and sports development of local communities. This recognised autonomy makes Cameroon a decentralised unitary state. The constitution states that the State shall ensure the supervision of decentralised territorial councils and ensure their harmonious development based on national solidarity, regional potentials and inter-regional balance. Agroecology as an adaptation and mitigation option and which improves livelihoods is a welcomed opportunity for the DTC.

Civil Society organisations such as the Platform of REDD+ and climate change (REDD+ & CC), MBOSCUDA, REPALEAC, and other networks constitute are potential lobby groups for the introduction of agroecology into policy reforms in Cameroon. They take part in the economic and social development of their regions. They interact with the different types of actors (technical cooperation, population, traditional and religious authorities, external services of the State, private sector, etc.).

Traditional and religious authorities are also identified as partners in the field of climate change. Traditional authorities are opinion leaders, and administrative auxiliaries. They often serve as a link between the administration and the people of the village, and also have the authority to render the traditional justice (especially for property and civil cases, including inheritance). As for religious leaders, they have some influence on the population. Traditional and religious authorities can help foster acceptance by local people of various adaptation policies undertaken. They retain a strong moral and spiritual influence on their citizens. The media in general are represented by the public and private press, the public television and private channels, public, private and international radio, and the internet. In the particular case of Cameroon, CRTV is a public service media, and institutional media. Its mission is to carry out Government instructions. CRTV journalists are charged with explaining and clarifying Government views. Like any media, their action is to rapidly and extensively inform most of the population on the facts and events of the country and the world.

Research institutions have a major role to play in the area of adaptation to and mitigation of climate change. They conduct research on vulnerable sectors affected by climate change such as agriculture and livestock. In terms of applied research, their mission is to develop a high level of expertise able to control, integrate and apply science and technology to the needs of the Cameroonian economy, ideally through partnerships with economic actors. They work with sectorial ministries and third parties (technical cooperation, NGOs and private sector). As part of their mission, they take into account economic and social development which constitutes two key elements of climate change adaptation and mitigation policy. The noteworthy research institutions include: Institute of Agricultural Research for Development (IRAD); the Institute of Geological and Mining Research (IRGM); The National Institute of Statistics (INS). These three public institutions have legal personality and financial autonomy. IRAD and IRGM are placed under the technical supervision of MINRESI, and INS under MINEPAT. Each institution has regional offices or operational research structures. Also, higher education institutions are supervised by the Ministry of Higher Education and are responsible for training, scientific and technical research, support to development, social and cultural promotion, and promotion of

national consciousness. There are seven universities in the country, namely: (i) the University of Buea, (ii) the University of Douala, (iii) the University of Dschang, (iv) the University of Ngaoundere, (v) the University of Yaounde I, (vi) the University of Yaoundé II (vii) the University of Maroua and (viii) the University of Bamenda. The Universities of Maroua, Buea, Yaounde I and Dschang each has a department of environmental science, geography or renewable energy, with climate or renewable energy experts involved in studies and research projects associated with our changing climate.

Other extra-national institutions provide significant technical cooperation in Cameroon such as the Research Institute for Development (IRD) and the Centre for International Cooperation in Agronomic Research (CIRAD) which are involved in agricultural research and support to the scientific community. Researchers work in all parts of Cameroon with national agricultural research centres; national universities; (agronomy, agribusiness and agricultural economics); regional organisations; agricultural industries; research centres of the Consultative Group on International Agricultural Research (CGIAR) such as CIFOR, ICRAF, IITA; bilateral and multilateral cooperation research and development services; such as the European Union, the Economic and Monetary Community of Central Africa (CEMAC); NGOs, federations, and agricultural producer groups.

International NGOs are technical partners helping to find practical solutions to socioeconomic problems. In Cameroon, targeted NGOs within the framework of the UNDP study are those that work in areas directly or indirectly related to climate change. These include: the International Union for Conservation of Nature (IUCN), the Centre for International Forestry Research (CIFOR), World Wildlife Fund for Nature (WWF), the Global Water Partnership (GWP), and the World Agroforestry Centre {ICRAF}, etc. Donors are sources of financial support for developing countries. In Cameroon, donors are present in all development sectors including climate change.

Possible roles of the NWG-AP

The NTWG-AP could be developing synergies in the domains illustrated in table 7.

Table 6: Potential roles and responsibilities of the NWG-AP

Stakeholders	Role/Responsibility	Policy and standards development	Research/Studies	Capacity Building	Programming	Implementation/ Service	Monitoring and Evaluation	Advocacy/ Communication	Coordination	Advocacy	Funding
Government central services		■		■	■	■	■	■	■	■	■
National Assembly and the Senate		■		■						■	
Decentralised Territorial Collectivises		■		■	■	■	■	■	■	■	■
Private sector				■	■	■					■
Civil society, traditional and religious authorities, media				■		■		■		■	
National research			■	■					■		
Technical and financial partners				■							■

* Strategic importance of the NWG-AP

As with many other countries in the world, Cameroon has to provide its growing population with sufficient food, fiber and other agro-sylvo-pastoral products for its own needs and for export in order to earn hard currencies and balance her trade. The success of food sufficiency depends on Cameroon's ability to produce more for its own needs and those of the export markets in the same areas. However, the drive for food self-sufficiency usually lead to overexploited lands, soil degradation, decline in crops and pastures yields or productivity, a situation that forces the clearing of new areas to the detriment of natural habitats and the environment in general. The NWG-AP could be a strategic mechanism that shall accompany the GoC in solving multiple environmental challenges as well as assuring food security.

Along with agriculture, forestry and animal husbandry, traditional actors in the rural economy, increasingly have to complement the space with other non-traditional land uses - mining, hydroelectric dams, roads and other infrastructure, and large-scale plantation agriculture to feed urban areas and export markets. Land uses compete with each other. To reconcile land use in Cameroon, all land uses have to be optimized. Existing agricultural land has to sustainably be managed in order to maintain its productivity. New agricultural land has to be selected and managed with care to ensure that it meets a series of sustainability criteria: adaptation of crops to the soil and climate, output, value chain, the carbon potential of the environment, the risk of destruction of biomass and of greenhouse gas emissions aggravating climate change.

To fight against deforestation and land degradation, all government, private sector and civil society structures and international technical and financial partners have to actively work together to find and implement viable solutions for sustainable land and natural resources management. The challenge is to increase the

productivity of existing farming systems, halt the trend of land degradation and invest in slowing deforestation and desertification.

The natural resource base (land, water and forest) is fundamental for the survival and well- being of the majority of rural populations. These resources are under intense pressure due to population growth and inappropriate agricultural management practices. Smallholder farmers, who depend on these resources, and who face the challenge of agricultural intensification, face constraints related to overgrazing and deforestation, soil erosion and declining soil fertility, water supply, livestock feed and the fuel wood crisis etc. There is therefore an interplay of factors (population growth, food insecurity, pressure on resources, environmental degradation, drop in the productivity of agro-pastoral systems, etc.) which that have to be considered in the proposition of sustainable solutions.

Ongoing or planned reforms (land planning and sustainable development, land reform, reform of the law on forestry, wildlife and fishing, the framework law on the environment and its texts application) should ultimately allow better management of agricultural land to assures sustainable production and productivity, diminish deforestation and forest degradation, reduce greenhouse gas emissions and promote more sustainable and environment friendly development, and this just reflects what agroecology could do.

The National Working Group for Agroecology Promotion (**NWG-AP**) could be an **effective strategic mechanism** of overcoming major constraints/ challenges and promoting synergy between climate change mitigation and adaptation as well as the promotion of agroecology in Cameroon. This could further be fostered through:

1. The NWG-AP overseeing and providing scientific guidance to the government on the synergies between climate change adaptation and mitigation how agroecology could be the best entry point. This is indeed fundamental, as this will go a long way to inform relevant governmental bodies about relevant scientific information that they are not aware of.
2. Encourage the promotion of private sector investment and sponsorship as well as committing funding for joint mitigation and adaptation projects from relevant ministries and international organizations. The involvement of the private sector is indeed important as they are quite keen in investment in a sector that will benefit the environment in a long run, as part of their social responsibility.
3. Promote effective and creative community awareness and enforcement programs development and integration of mass media coverage to communicate the right message on climate change adaptation and mitigation.
4. Encourage stakeholders' involvement in joint decision-making at all stages and various aspects of mitigation and adaptation projects. The merit of involving all stakeholders in climate change-related issues is that it paves the way for faster and cost-effective results.
5. Promote networks and partnerships creation and knowledge sharing with countries having initial experience in the design and implementation of integrated strategies to climate change through agroecology promotion. Implementation of these key aforementioned recommendations will help in promoting synergies between climate mitigation and adaptation.
6. Encourage capacity building for stakeholders on agroecology;
7. Promote financing of agroecology projects.

4.2.3 Capitalization of the outstanding practice in agroecology of ICRAF Cameroon

The International Centre for Research in Agroforestry (ICRAF) promotes a Participatory Domestication of Indigenous Tree Programme which has been declared an Outstanding Practice in Agroecology in 2019 by the World Future Council in collaboration with the start- up Technology for Agroecology in the Global South (TAGS).

On the occasion of International Green Week and the Global Forum for Food and Agriculture 2019, the World Future Council is hosting a panel discussion on Friday, January 18, 2019 at the Heinrich Böll Foundation in Berlin. The aim was to promote the strengthening of agroecology in politics and practice in Germany and beyond.

Fifteen outstanding practices in agroecology were presented, including Cameroon's, highlighting practices that protect the lives and livelihoods of smallholders, empower small- scale food producers, nurture sustainable food production systems, promote resilient agricultural practices that help maintain ecosystems, strengthen capacity for adaptation to climate change and progressively improve land and soil quality.

Participatory Domestication of Indigenous Trees for the Delivery of Multifunctional Agriculture by Agroforestry, the name of World Agroforestry Cameroon's outstanding practice, helped resolve food insecurity, lower extreme poverty, decrease malnutrition and social inequity through building the capacity of smallholding and subsistence farming communities in using affordable and appropriate farming practices with low-end, agroecological technologies, particularly, agroforestry.

From 1994 to 2009, 10,000 farmers were trained and over 1.6 million trees were planted to improve soil fertility and initiate an agroecological succession that raises above and below- ground biodiversity that is important for ecosystem functions. Inclusion in the Top 15 worldwide is a great honour and acknowledgement that will contribute to the momentum of agroforestry in Cameroon and other countries. Through participatory tree domestication, World Agroforestry has helped farmers gain access to high-quality planting material, increase productivity, diversify farming systems, and improve their livelihoods through high-value indigenous fruit trees.

World Agroforestry in Cameroon is a pioneer of this practice which is receiving some well- deserved recognition of the great work done over 30 years. The communities the team worked with saw the evidence, adopted the technologies and have improved their lives and the environment at the same time. Global recognition for research work remains essential if we are to continue to test new technologies. Cameroon is an example of world-class research in development getting world attention.

4.2.4 Access to funding for agroecology :

Cameroon offers tremendous investment opportunities for increasing the resilience of rural populations to meet the ambitious objectives of the NDC and NAPCC. Supplementary resources must be mobilized from climate and environment funds, especially the Green Climate Fund (GCF), the Adaptation Fund (AF) and the Global Environment Facility (GEF). Locally, partnership could be created through Private-Public-Partnership or a win-win partnership as shown in table 8 to mobilize resources in favour of agroecology.

Table 7: Creation of a win-win partnership between agroecology producers and major stakeholders

Actions	Activities	Actors	Lead driver of synergy and funding source
Identify the stakeholders involved in the partnership: (identify small producers who desire to practice agroecology;	- Creation of a mandatory platform between agroecology promoters supervised by MINADER accompanied by specialized organizations (NGOs) - Grouping of small producers in association by specialization	MINADER ONG	MINADER
Revitalize existing platforms while integrating new concepts related to social and environmental aspects by involving other actors (NGOs, Civil Society, Government, banks, etc.).	- Integration of other actors. - Revision of the conditions of the current partnership model in order to adapt it to the realities on the ground	Smallholder farmers' cooperatives, agroecology promoters	Through technical and financial support from interested partners.
Inform and sensitize stakeholders on the merits of the agroecology partnership.	Awareness and popularization campaign, information-media	MINADER, NGOs, Elites, Local administrations, Municipalities	NGOs, Donors, Municipality, Local administrations.
Identification of the financial structure	Incentives from national and foreign banks; definition of guarantees	MINADER	MINADER
Negotiation of the terms of the partnership contract involving all stakeholders.	Representatives of small producers must belong to all the groups and work together to list the key points of the partnership adopted immediately and produce a report to send to the drafting / proofreading committee of the strategy	MINADER, NGO, Agro Platform, Producer representatives	NGOs / Donors
Organization of "small holders into functional cooperatives	- Definition at national level of the different categories of small planters - Learn from the good experiences of other cooperative models from other production sectors	NGO consortium.	Through financial support from interested partners
Establish a climate of trust between stakeholders in the sector, especially smallholders on the one hand, and smallholders and government on the other.	- A good explanation of the advantages and opportunities of the win-win partnership. - Promotion of transparency and the need for information sharing.	Consortium of NGOs; MINADER;	Through financial and technical support from interested partners
Promotion of good practices in the agro- sylvo-pastoral domain and agroecology in particular	- Awareness / awareness - Training. - Capacity development. - Supervision necessary for small planters.	Consortium of NGOs.	Through financial and technical support from interested partners

Actions	Activities	Actors	Lead driver of synergy and funding source
Encourage the government of Cameroon to fully play its role in promoting good practices for sustainable production by small holders using agroecology approach	- Advocacy, - Lobbying. - Training - Experience sharing	Consortium of NGOs.	Through financial and technical support from interested partners
Monitoring and evaluation of the implementation of the agro ecology partnership.		Organizations recommended by MINADER	Included in the overall MINADER project budget.

4.2.5 Support to the agriculture sub-sector

The rural sector represents a major component in the modification and improvement of the structuring of the Cameroonian economy. Indeed, the increase in the productivity of the sector will have a positive impact on the livelihood of rural peasantry. In addition, it will not only help improve food security, but also generate additional income and jobs for the local economy. The promotion of sustainable agricultural systems with low effects of deforestation and forest degradation will be achieved through sedentarisation and increasing agricultural productivity, by improving the value of green agricultural products through marketing, by improving incentives, legal, technical and financial frameworks related to agricultural production and the promotion of agroecology.

Interventions will be carried out in large, medium and small farms as well as at national and sub national levels. The objective is to increase productivity in a sustainable manner by increasing and intensifying agro-sylvo-pastoral production, by introducing good practices, by restoring soil fertility, by reducing production costs and by increasing income.

The Cameroon's agricultural sector is characterized by a great diversity of actors operating at different scales with varying needs, challenges and capacities. While some strategies are appropriate for all actors, regardless of their size, there will also need to be specific strategies for large producers as well as for small producers, which operate at very different scales.

The rural sector economy is particularly characterized by the predominance of Small Holder Family Farming whose production capacities are limited by poor access to credit and inputs (fertilizers, improved seeds, quality veterinary services, technology, etc.), use of rudimentary and artisanal techniques, the isolation of certain production areas leading to significant post- harvest losses, as well as the aging of producers.

The main challenges remain and needs to be overcome include: (i) the structuring of inter- branch organizations; (ii) access to high productivity technologies and the popularization of agricultural research results; (iii) the foundation of producers using modern farming techniques; (iv) agricultural mechanization and the functional link with agro-industries for the marketing of products; (v) adaptation to the effects of Climate Change; (vi) competitiveness both on the national and international market; and (vii) resilience to price fluctuations.

Faced with this dynamic, the Government reaffirms its option to lead an agricultural revolution. The objective is to considerably reduce poverty in rural areas, through the increase in productivity by the intensification of agro-industrial activities and the modernization of farms driven by the demands of the agro-food industries. To do this, the Government intends to: (i) structure and strengthen the capacities of actors; (ii) increase the productivity, production and competitiveness of agricultural products (plants, forestry, animals, fisheries); and (iii) facilitate access to production equipment and infrastructure.

To achieve these objectives, special attention will be paid to certain priority sectors, part of which will be used mainly for the development of agro-industry (rice, corn, cocoa / coffee, cotton, sugar, palm oil, rubber, banana. plantain, wood, milk, cashew nut) and another to the satisfaction of the domestic market in food products (sorghum, cassava, potatoes, fish, honey). In addition, the Government intends to promote better exploitation of non-timber forest products (Section 3.2 of the SND).

"The Government's agriculture strategy since 2010 aims in the long term, the modernization of the productive apparatus, the improvement of food security, a more increased development of agro-industry and the fight against the high cost of living. To this end, the actions carried out aim to strengthen the productivity and production dynamics of this sector by emphasizing the increase in yields and the areas exploited, in particular at the level of family farms; reduction of post-harvest losses; the development of promising sectors with high potential for productivity and competitiveness; the promotion of large and small agricultural mechanization; strengthening agricultural extension and advice; developing the supply of inputs (fertilizers, seeds, etc.) and facilitating its accessibility to producers. (Section 7.1.1.1 of the SND) (Source: SND, 2019).

SDSR Action 1.1: Improvement of production, productivity and competitiveness of sectors (i) cereals: rice-corn-sorghum, (ii) roots and tubers: cassava-potato, (iii) industrial products: cocoa-coffee-cotton- palm oil (iv) fruits and derived products: pineapple and plantain (v) niche products: cashew nut.

- Channel technical and financial support as a priority to producers who do not have their own financial reserves to invest their labour and limited financial resources in improving agroecology production;
- Prioritize the allocation of land and resources to agroecology practices in order to ensure self-sufficiency in food and raw materials to meet national demand before meeting the needs of international markets;
- Prioritize the strengthening of regulations in favour of those who have the will and the necessary resources to indulge in agroecology;

National policies and programmes usually place greater emphasis on supporting medium and large-scale commercial farmers at the risk dislodging small holder farmers from their customary lands which may trigger conflicts over land tenure. Small holder farmers may be pushed out to become low-wage agricultural labour for external investors, increasing the precariousness of their already difficult livelihoods. Rather, agroecology should come into play to boost the production and productivity of the famers and secure their lands.

The introduction of agroecology shall help achieve sustainable productivity growth and increased profit margins by reducing costs for farmers investing in sustainable intensification and deforestation-free agricultural production, as proposed in Box 5.

Box 5: Agroecology as an option for small holder farmers

The promotion of agroecology in Cameroon could be easily achieved through the sedentarization of itinerant slash and burn farmers that increase agricultural productivity, strengthening the value of agricultural products, improvement of incentives, improvement of legal frameworks, technical and financial support related to agricultural production. Interventions should be made in large, medium and small farms and at national and sub national levels. The objective is to increase productivity in a sustainable manner by increasing and intensifying sustainable agro-sylvo-pastoral production, the introduction of good practices, the restoration of soil fertility, the reduction of the costs of production and increased income.

Table8: Strategic areas for agroecology inclusion

Strategic axes	**Responsible instituti ons and actors involved**
Development and participatory adoption of a political / legal / strategic / programmatic framework for the inclusion of agroecology through the promotion of specific value chains (all levels) - following the example of MINADER's national strategy for sustainable value chain	Relevant sector ministries, the private sector and stakeholder platforms
Adoption of existing international standards and / or the development, promotion and, where appropriate, legalization of recognized national standards for specific production practices respectful of the environment	Government services, private sector and stakeholder platforms.
(SDSR 2.3) Design financing "packages" that will include a handful of key supply chains, incentives and technical support to encourage farmers in the supply chain to organize themselves, and adopt production standards agreements that that promote agroecology; These financial packages (affordable loans, insurance against climate risks) will target producers who have to bear a negative cash flow to implement "best practice" scenario (at all scales).	Private sector traders, commercial banks and microfinance institutions targeting the rural sector, REDD+ investors, research institutes;
Ensuring high-level monitoring / control of farmers' compliance to best practices in agroecology	Buyers of agricultural products
Provision of advice on good agroecological and agroforestry best practices that improve sustainable yields / reduce negative impact on the environment	Research institutes (IRAD); extension agents (MINADER, MINEPIA, local NGOs, private suppliers)
Development, promotion and distribution of improved seedling varieties (all scales, with subsidy for small and medium scales)	MINADER, IRAD, private sector, cooperatives and PTF

4.2.6 Promotion of agroecology to reduce the fragility of the agriculture sector in Cameroon

The agricultural sector is very fragile in Cameroon fragility due to aberrant climatic and socio-economic adversities. Such adversities have the following effects on the agriculture sector:

(i) lower productivity and competitiveness of agricultural value chains due to the loss of productive capital and limited access to the factors of production (high cost of agricultural supplies and equipment, poor water management, etc.) and the market;

(ii) fluctuations in the income of actors in agricultural value chains, caused by fluctuations in raw material prices, and greater vulnerability of these groups to poverty;

(iii) lower yields and agricultural output due to the effects of climate change (floods, droughts and pressure from crop diseases and pests);

(iv) Environmental degradation (destruction of biodiversity, loss of soil fertility, water shortages and pollution), creating fragility in the country's ecosystems from growing deforestation and poor natural resource management.

(v) the exodus of rural youth to cities and, increasingly, to Europe and the Americas, creating a shortage of farm labour; this exodus is due in part to the lack of opportunities for regenerative employment and the limited modernization of farm operations. Agroecology could be a gateway.

4.2.7 Agroecology inclusion through the targeting strategy

a. Geographic targeting: As a policy framework, agroecology should be introduced in regions that suffer most from the impact of climate change. The programme known as Resilience of the Population in the face of Climate Change « REPECC » funded by UNDP also used this strategy to focus its attention in the most fragile sudano-sahelian agro- ecological zone. From 2012 to 2019, the programme promoted best agro-sylvo-pastoral practices in the region. Agroecology could also be introduced in like manner in the regions of the Far North, North, and Northwest, where the majority of the poor rural people live and suffer from the impact of climate change. Other regions can be subsequently targeted based on a priority basis, along with the Centre, Littoral, West, and South regions, which have the highest proportion of youth and enormous potential for their socio-economic integration in key value chains.

b. Target groups for agro-ecology inclusion : The target groups could be : (i) smallholder farmers organized in cooperatives, (ii) cooperatives operating upstream and downstream in the value chains (seed producers, processors), (iii) small and micro service enterprises operating upstream and downstream in the value chains (processors, vendors, suppliers and agricultural service providers). Agroecology should then be oriented to contribute to the emergence and strengthening of: (i) cooperatives (ii) small agribusinesses investing in the provision of agricultural inputs and services and the processing and marketing of agricultural products. The agroecology priority targets are women and youth.

c. Gender targeting for agroecology: This could involve poor vulnerable and disadvantaged rural households involved in Agriculture. Agroecology offers economic and environmental benefits to vulnerable groups such as women, youth, indigenous peoples and people with disabilities. The target groups should be identified in a participatory manner with the help of a National Technical

Working Group for Agroecology Promotion (NTWG-AP) in Cameroon. The method of gender-sensitive poverty and livelihood analysis will be applied to promote agroecology. Targeting the poorest populations will be achieved through the combination of different mechanisms (direct targeting of poor households). For women, beyond economic empowerment, agroecology increase their voices at various levels and ensure a more balance workload and sharing of benefits.

d. Promotion of access to land for women and youths: Agroecology can only be sustainable when rural communities and particularly women are able to obtain and secure land. This is because obtaining a land title is a very long process that can only be done after 5 years of operation on a farmland. Land conveyance certificates / customary rights, relinquishing certificates, enable young promoters to have access to land before starting their incubation. This could begin with a Land Charter is signed by the Sub-Divisional Officer (Government), the village chief, the landowner, the beneficiary, 2 witnesses of the landowner. The parents and the community are therefore involved in the provision of land, as their contribution in the setting up of youths and women. On the basis of the land charter and a business plan, a conveyance certificate which stands as a legal document could be issued to the youths and women by regional land tenure services.

e. Agroecology and people with disability: Agroecology could be the best approach to help empower the disable. The disable can fit in along the value chain and wherever possible. According to the UN, 70 per cent of people living with a disability are in developing countries, and 20 per cent of people living in poverty have a disability. Though precise figures are not available at the national level, it is believed that people with disabilities make up a significant percentage of the rural population in Cameroon and are affected by the same factors that cause poverty. The agroecology targeting strategy will therefore be disability- inclusive, with the objective of supporting disabled people's grassroots activities to exercise their human rights.

f. Encouraging and strengthening the Indigenous Peoples (IPs) engagement in agroecology at the country level can be enhanced through: i) the development of an indigenous people agroecology plan ii) the financing of at least two IP agroecology projects. Empowerment of indigenous peoples' communities with special attention to women and youth could be done through agroecology initiatives.

4.2.8 Action plan

N°	Action	Accompanying activities
1	Make a diagnosis on the current situation of agro-ecological practices and initiatives in Cameroon (strengths, weaknesses, threats and opportunities)	Conduct literature review;
		Organize field trips to visit the sites already involved in agroecology (CHASAADD, PAFGIRAP, Support program for Safety and Management of Agropastoral Resources;
		Conduct a public poll (questionnaires) ;
		Document the techniques used, existing natural fertilizers and insecticides on the ground etc,
2	Awareness creation	Vulgarization of research results on agroecology.
		Sensitization of all stakeholders (Technical ministries, traditional leaders, educational and learning institutions and population on agroecology);
		Media communication ;
3	Inclusion of agroecology in national policies	Conceive a lobby and advocacy document for the government that will guide them to review existing policies and adopt adequate policies that give room for agroecological practices;
		Lobby technical and financial partners to lay emphasis on agroecology in their agricultural development support for Cameroon;
		Lobby the Government to create an Agroecological Fund.
4	Training and capacity building of target groups	Identification of target groups and Creation of new demonstration sites of agroecology;
		Identify, collaborate and partner with existing agroecological centers and projects 'PAFGIRAP (programme d'Appui à la Sécurite et a la Gestion des Ressources Agropastorales) and CHASAADD;
		Develop training modules;
		Onsite training of target groups on agroecology;
		Follow up on activities of target groups;
		Experience sharing through exchange visits between farmers;
5	Promotion of agro-ecology 'LABEL'	Organize target groups into co-operatives;
		Develop a communication and advertising campaign around organic products;
		Look for outlets for products through their placement in supermarkets;
6	Fund raising	Create a data base for funders of agroecology related activities;
		Put in place a project commission/Committee in charge of drafting and submitting project proposals to financial and technical partners;
		Institute internal fundraising mechanisms in ministries in charge of rural sector development;
		Organizing of agricultural show activities to showcase agroecological produce and also raise funds from auction sales.

4.2.9 Conclusions

Since Cameroon, like most developing countries, is heavily dependent on agriculture, the effects of global warming and climate change on the agricultural sector are likely to threaten both the well-being of the population and the economic development of the country. This is particularly important for the country to develop prudent agricultural policies. Agricultural policy must play an important role in influencing the capacity of Cameroon's agricultural sector to successfully adapt to climate change. There exists a significant potential for climate change to affect agricultural and animal production, water balances, inputs and other components of agricultural systems. The introduction of agroecology in policy documents shall certainly be an effective means to combat these environmental threats and assure sustainable livelihood for small holder farmers.

Meanwhile, the adoption of agroecology could go a long way to mitigate the natural adversities of enormous biophysical effects, of which human responses still remain complex and uncertain. Knowing that crop and livestock yields are directly affected by changes in climatic parameters such as temperature and precipitation, the frequency and severity of extreme events such as droughts, floods and windstorms, small holder farmers can wade out these effects through agroecology. Cameroon as a country is faced with difficult socio-economic conditions, a poorly operational policy and institutional framework, inadequate infrastructure, inadequate research, training and credit facilities which make farmers more vulnerable, lessening their ability to adapt to climate variations and changes. Necessary adjustments such as changing crop types to suit the evolving environmental conditions, introduction of irrigation, or changing farm management methods are too costly for many farmers to make. A cheaper way must be sought.

The analyses presented in this document highlight efforts made by the Government of Cameroon and other relevant institutions to promote synergies between climate change mitigation and adaptation. The results revealed that although policies, laws, strategies and institutional arrangements relevant for promoting an integrated approach to climate change are insufficient in Cameroon, some promising projects and activities that harness great potential for synergies exist. Furthermore, results also showed that interaction between the government ministries and NGOs has to be enhanced. Inadequate financial resources or funding is the major challenge for stakeholders who are and would continue to face as a result of non-adoption of agroecology approach to climate change. However, there may be equally other challenges that may impede the adoption of agroecology approach to climate change including inadequate coordination, insufficient sensitization and capacity building, ineffective implementation, inadequate compliance, lack of proper transparency and inadequate public participation.

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Alliance for Food Sovereignty in Africa (AFSA) is running a continental campaign on Agroecology for Climate Action in 12 African countries (Cote d'Ivoire, Cameroon, Ghana, Ethiopia, Kenya, Senegal, South Africa, Nigeria, Togo, Uganda, Zambia and Zimbabwe). The overall goal of the campaign is to ensure that "Agroecology recognized in national, regional and international policy spaces and frameworks as a strategy for climate change adaptation and mitigation in Africa." At national level, the objective of the campaign is to influence national climate policy frameworks, plans and strategies to reflect agroecology as an adaptation and mitigation measure for climate change. As part of the campaign strategy, members in the 12 countries have agreed on studying the national policy environment for purposes of identifying entry points for inclusion of Agroecology into these policy and strategy documents.

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