STUDY TO DETERMINE THE DECENT INCOME OF A REFERENCE FAMILY OF COTTON PRODUCERS IN CAMEROON IN COMPARISON WITH THEIR REAL INCOMES BASED ON THE ANKER METHOD

REPORT

APRIL 2025

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List of acronyms

AEEA	Adult Energy Equivalent Allowance
APD	Agricultural Production Department
APE	Parents / Teachers' Association
BFE	Basic Financial Education
BOD	Board of Directors
BUETEC	Bue tec Broderie Sarl
Cal	Calorie
CAMWATER	Cameroon Water Utilities Corporation
CICAM	Industrial Cotton Company of Cameroon
COFIL	Cameroon Hydrophilic Cotton
CS/HC	Health Center
ECAM	Cameroon Household Survey
ECAM5	Fifth Cameroon Household Survey
EC-ECAM	Supplementary Survey to the Cameroon Household Survey
ENEO	Energy of Cameroon
ENSAN	National Higher School of Arts and Crafts
EU Dollars	United States Dollar
FAFINSA	African Spinning Mill for Natural, Synthetic and Artificial Fibres
FAO	Food and Agriculture Organisation of the United Nations
FBS	Farmer Business School
FCFA	CFA Franc (Communauté Financière en Afrique)
FGD	Focus Group Discussion
FN	Far North
FO/OF	Organic femure
GAP	Good Agricultural Practices
GESP	Growth and Employment Strategy Paper
GGM/MGG	Mutual Guarantee Groups
Ha	Hectare
ICT	Information and Communication Technologies
IFORD	Institute for Demographic Training and Research
IGA	Income Generating Activity
ILO	International Labour Organisation
IRESCO	Institute for Research, Socio-economic Development and Communication
Kcal	Kilocalorie
Km	Kilometer
LOIC	Control after individual observation of caterpillars
LPD	Predefined fight
MARI	Margin after repayment of credit
MINEDUB	Ministry of Basic Education
MOH	Ministry of Health
MUFID	Mutual Finance for Development
NCCP	National Confederation of Cameroon Cotton Producers
NFNH	Non Food Non Housing
NGO	Non-Governmental Organisation
NIS	National Institute of Statistics
PA	Producers Associations

PPA	Point of Purchase Manager
PPP	Purchasing Power Parity
RC	Regional Coordinator
RPC	Regional Professionnalisation Coordinator
SCOOPS-PC	Simplified Cooperative Society of Producers
SDCC	Sodecoton
SDGs	Sustainable Development Goals
SINCATEX	Cameroon Industrial Textile Company
SITRACO	Local cotton processing company for the manufacture of medical consumables
SMIG	Guaranteed Interprofessional Minimum Wage
SOCAFTEC	African Society for the Confection and Production of Textiles
SODECOTON	Société de Développement du Coton (cotton development company)
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO-BREDA	UNESCO Dakar Regional Office
UN-Habitat	United Nations Settlements Programme
US$ / USD	US Dollar or United States Dollar
VC	Value Chain
WFP	World Food Program
WHO	World Health Organisation
ZC	Zonal Chief

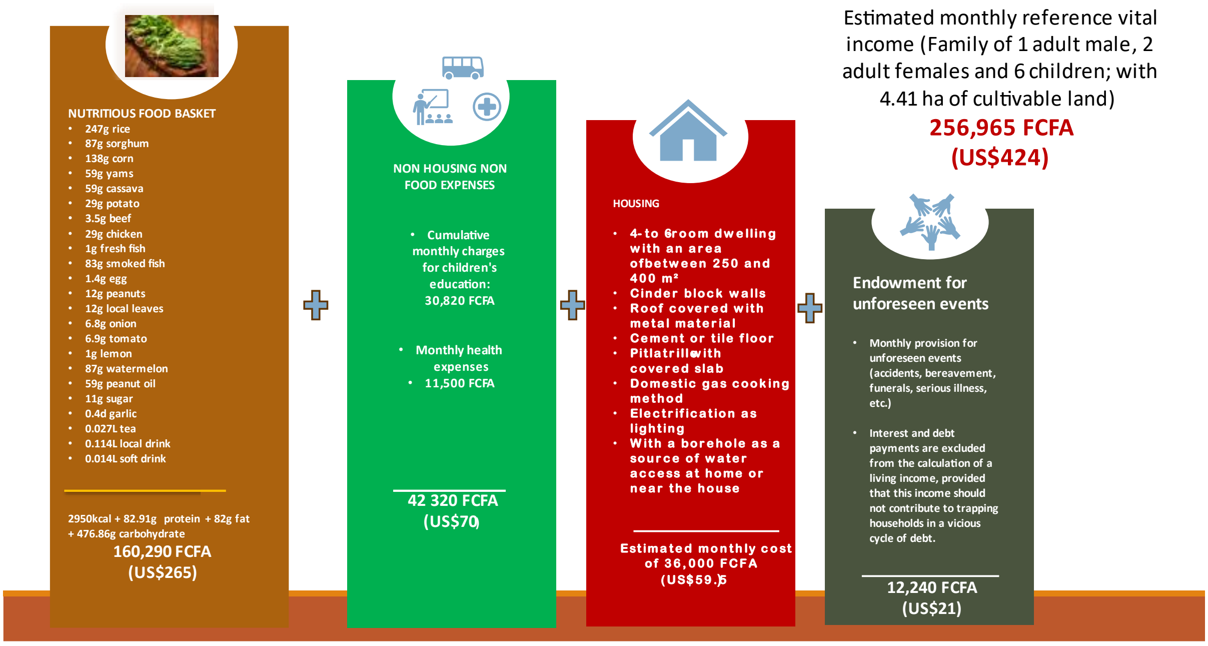
I- Executive summary

This report presents the reference decent income for cotton producers in the production regions of North and Far North Cameroon. This study received financial and logistical support from AFRILAND First Bank and SODECOTON. It aims to estimate, on the basis of a rigorous and robust scientific approach, a credible decent income in the main cotton-producing regions, and to enable the end-users (SODECOTON and AFRILAND BANK in particular) of these results to set up strategies aimed at helping cotton producers to have the means to lead a basic but decent life by generating substantial income through their agro-sylvo-pastoral activities

To estimate the reference decent income, we used primary and secondary data. Primary data were collected from two sources: firstly, a quantitative survey of 984 cotton-producing households in all 10 of SODECOTON's production regions; then a qualitative survey involving 24 inclusive focus groups (men, women, young people) and informal meetings with a number of resource persons and key informants in the sector. The aim was to gather information on the cost of nutritious food and housing, and to crosscheck secondary data on education, health and transport expenditure by cotton-growing households for triangulation purposes.

The cost of food was calculated based on a nutritious diet at competitive cost (low cost), respecting international standards (FAO and WHO) and consistent with local food preferences. The model diet includes food products that are locally available, affordable and commonly consumed by households. Housing costs were estimated by adding together the cost of the equivalent rental value of a basic acceptable dwelling, the costs of utilities (water, lighting and cooking fuel) and maintenance. As these regions are generally exposed to extreme climatic hazards such as floods and bush fires, a regular provision is made each year by way of depreciation costs to cover repairs and routine maintenance in the event of a disaster (the sums required cannot be raised all at once), despite any additional support that may come from the public or local authorities

The reference decent income estimated for rural communities in the cotton-growing areas of North and Far North Cameroon for the study period is 256,965 FCFA (US$424) per month, which represents the net income required for a basic but decent standard of living for a typical family of three adults (one man and two women) and six children. The figure below summarizes the calculation of baseline estimates of the reference decent income including 160,290 FCFA (US$265) for food, 36,000 FCFA (US$59.5) for housing, 42,320 FCFA (US$70) for non-food and housing related expenses (health, education, clothing, transport, communications, furniture and other household expenses). It also includes an additional 12,240 FCFA (US$21) to enable the household to cope with unforeseen or occasional events (weddings, funerals, serious illnesses, etc.).



The study also shows that, overall, households in the cotton-growing zone generate around 88% of their income from the sale of cotton (44%), cereals (16%) and pulses (28%). Typical households, which are very small cotton producers, have an average of 2.16 ha of arable land (of which 0.46 ha is allocated to cotton growing) and have a fairly diversified income structure, with only 39% coming from cotton compared with 55% from the sale of other agro-pastoral products (cereals (17%), pulses (23%) and small livestock (15%)). They have an average of one head of cattle and use an average of one (01) labourer per crop year. This structure can also be observed among small cotton producers, who have an average of 4.4 ha of farmland, of which 1.5 ha is devoted to cotton growing. However, they have an average of two head of cattle and use an average of three (03) workers for their farming activities.

Only medium-sized and emerging producers generate more than 50% of their income from growing and selling cotton alone. The sale of cereals and pulses also plays a major role in their income structures, contributing 20% and 22%, then 15% and 17% respectively. They have an average of four (04) and six (06) head of cattle respectively, and land holdings of 9.36 ha (including 4.12 ha for cotton) and 15.55 ha (including 7.53 ha for cotton) respectively. To boost their farming activities, they also employ an average of four (04) and five (05) seasonal workers per season. Most of these workers are used mainly for harvesting activities.

The reference decent income estimated in Cameroon's cotton-growing zone as part of this study exceeds all the other control indicators. It is nearly double the national poverty line and the World Bank poverty line for lower middle-income countries (US$3.20 PPP[1]). Around four times the national extreme poverty line and double the international extreme poverty line defined by the World Bank (US$2.15 PPP) and the national minimum wage. These results indicate that even with an income level corresponding to the national poverty line, the populations of the cotton-growing zone would be unable to live decently, certainly because of the high level of precariousness and vulnerability of most of the communities from this zone. The local economy is therefore largely dependent on agro-sylvo- pastoral activities, which are in turn highly exposed to climatic risks.

Analysis of the gaps between observed incomes and decent incomes shows that, relative to the adjusted benchmark of US$424.5 per month, taken together, typical households earn 45.72% of the

[1] Purshasing Power Parity

adjusted benchmark, while the households from which the emerging producers come earn 4.5% more than the income level required for this category. The small and medium-sized producers generate 24.85% and 58.69% respectively of the estimated decent income for their respective groups (see figure below).

The study points out that reducing the gap between real income and a decent income is not the responsibility of a single player. It is a matter of putting in place and making operational a strategy aimed at promoting social inclusion and strengthening the resilience capacities of the main players in the cotton sector in a sustained and sustainable way. With this in mind, all stakeholders, including producers, should work together to put the strategy into operation.

This strategy should consist of identifying all the potential sources for improving the performance of the cotton sector and related agricultural sectors that can contribute to improving the standard of living and quality of life of stakeholders. The strategy should be built around seven main pillars:

1) Capacity building for cotton growers ;
2) Improving productivity;
3) Facilitating access to banking services and financial products;
4) Promotion agro-ecology;
5) Vertical and horizontal diversification of farms ;
6) Setting up shared-cost infrastructure and basic social services in cooperatives, and ;
7) Monitoring and evaluation of the actions implemented.

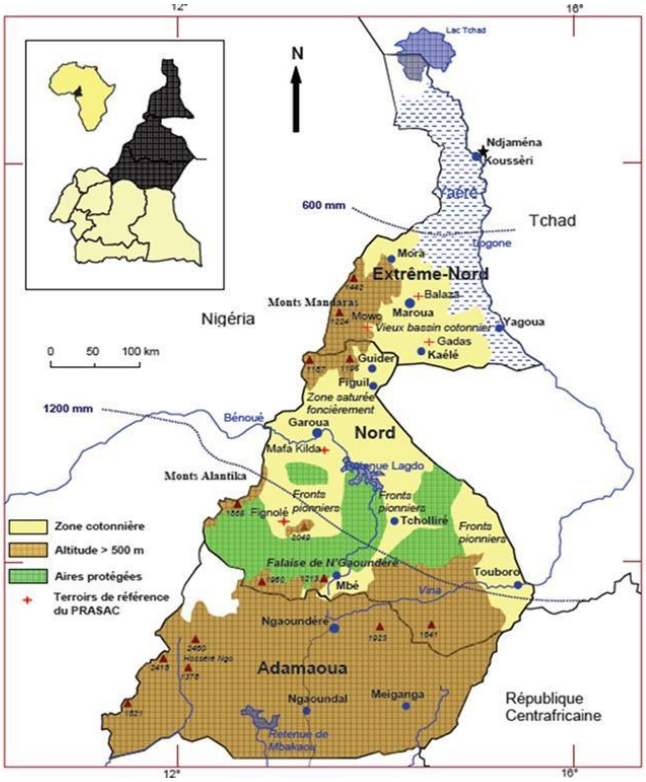
II- Background and justification

Cameroon is a country with a varied climate and vast farmland suitable for agricultural production. Among the main crops, cotton, grown mainly in the northern part of the country and particularly in the North and Far North regions, plays a key role, both for the national economy and for the livelihood of thousands of farmers.

Cotton makes a significant contribution to the country's exports, generating foreign exchange earnings that are vital to the national economy. According to statistics from Cameroon's Ministry of Economy, cotton accounts for around 15% of the country's agricultural export earnings.

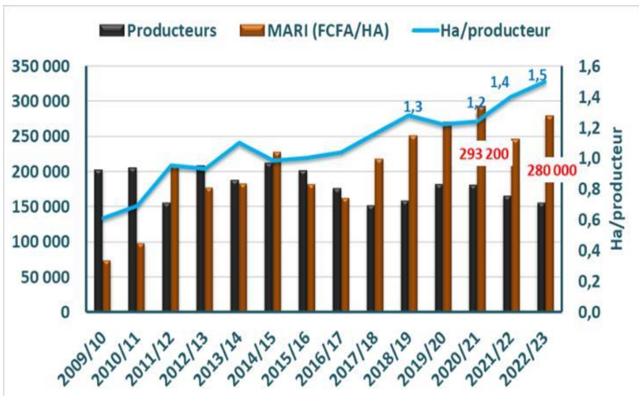
The cotton sector in Cameroon is an integrated sector thanks to the leading role played by SODECOTON and its partners in structuring it. SODECOTON, the agro-industrial flagship of the northern regions, is involved in several aspects of the value chain. The company offers technical support services to producers, supplying agricultural inputs such as improved seeds, fertilizers and pesticides. It also collects and industrially processes the seeds (crushing them to produce refined oil and industrial livestock feed), and markets the fiber.

Figure 1: Cotton-growing zones in Cameroon (Source PRASAC



The National Confederation of Cotton Producers of Cameroon (NCCPC) is another key organization representing the interests of cotton growers. It plays an essential role in negotiating prices and working conditions for farmers. The cotton industry also plays a crucial role in job creation. Between 150,000 and 200,000 farmers, (20% of whom are women) and their families depend directly on this crop for their livelihood. By way of illustration, SODECOTON distributes more than 70 billion CFA francs annually to producers for the purchase of seed cotton as Margin after Repayment of Input Credit (MARI). In addition, the cotton sector creates jobs in related activities, such as transport, processing and marketing, thus contributing to the development of the local economy of around 2,000,000 people directly and indirectly involved in the cotton business in rural areas.

Figure 2: Change in number of producers, MARI, area per producer (SODECOTON data, 2024)



However, like all traditional cash crop sectors, the cotton sector in Cameroon faces a number of challenges. Fluctuations in world cotton prices represent a significant risk for local producers, who may see their incomes fall due to uncontrollable external factors. In addition, climate change and pest attacks are constant threats to cotton production.

The strategy for the sustainable development of the cotton sector in Cameroon, which is part of the SDSR and SND30, aims to produce 600,000 tons of seed cotton by 2029. Implementing such a strategy requires the definition of coherent, resilient and inclusive action plans that prioritize socio-economic and environmental sustainability.

Since cotton growers in Cameroon represent a large proportion of the rural population, their economic well-being is directly linked to the performance of the cotton sector. A strategy aimed at the sustainable development of the cotton sector in Cameroon requires the socio-economic well-being of cotton growers to be taken into account. This can be done by assessing the income generated by cotton growing and its distribution within farming families on the one hand and, on the other, by identifying the gaps between the decent quality of life and the real quality of life of cotton growers. The living conditions of cotton growers are often precarious. Unstable and inadequate incomes can lead to difficulties in accessing basic services such as health, education and quality food.

According to NIS reports published in 2020[2], poverty levels in the Far North and North regions stood at 74.3% and 67.9% respectively in 2014. Over the period from 2001 to 2014, the poverty rate in these regions increased by 18 points, marked by a worsening of consumption inequalities within their respective populations.

The adoption of the 2030 Agenda of Sustainable Development Goals (SDGs) by the member countries of the United Nations since 2015 proposes the way forward to achieve a better and more sustainable future for all. It sets out responses to the challenges facing humanity, particularly those related to poverty, inequality, climate change, environmental degradation, and violence in all its forms, conflict, threats to peace and justice, and good governance. These SDGs are interconnected and targets have been set for 2030.

In view of improving the living conditions of its people, Cameroon has always aligned itself with international agendas through its medium- and long-term policy and planning framework documents, Vision 2035 and its first phase, the DSCE.

The production of this report as part of this study is part of the commissioners' desire to make reliable data on the diet of producers, their families and their living conditions and environment available to the various development players, particularly those involved in the cotton value chain. The study should also shed light on the needs or aspirations of cotton producers to improve their living and working conditions, so as to enable end users (SODECOTON, AFRILND, etc.) to refine the preparation and implementation of their strategic development plans.

2.1. Main objective of the study

The main aim of this study was to determine the "decent living" income (or "reference value for a living wage") of cotton-growing households in Cameroon, in order to improve their standard of living.

2.2. Specific objectives

Specifically, these included:

[2] INS. Enquête Complémentaire à la quatrième Enquête Camerounaise Auprès des Ménages (EC-ECAM 4). Monographs of the Far North and North regions. Edition 2020.

- Describe the main local players in the sector (including the average size of households) and how their activities are financed;
- Establish a database of players in the sector, including their telephone contacts wherever possible;
- Present the process of financing the activities of players already on the ground (producers, collectors, etc.) in other words, answer the question: how do players on the ground finance themselves?
- Determine the average income (disaggregated by farm area) of a family farm (retrospectively if possible over the last 3 or 4 decades (1980, 1990, 2000, 2010) and then over the last 03 or 04 years);
- Determine the overall income (including all other income not linked to cotton production, as well as income generated by spouses) of cotton growers;
- Determine the standard cost of living for an average cotton-growing family in Cameroon;
- Comparing the standard cost of living with the real income of farm households;
- In order of priority, list the five areas in which cotton growers would like to see an improvement in their living and working conditions;
- Define strategies to reduce the gap;
- If possible, identify indicators for monitoring the implementation of these strategies to reduce this gap.

To achieve these objectives, the following methodology has been adopted:

III- Methodological framework

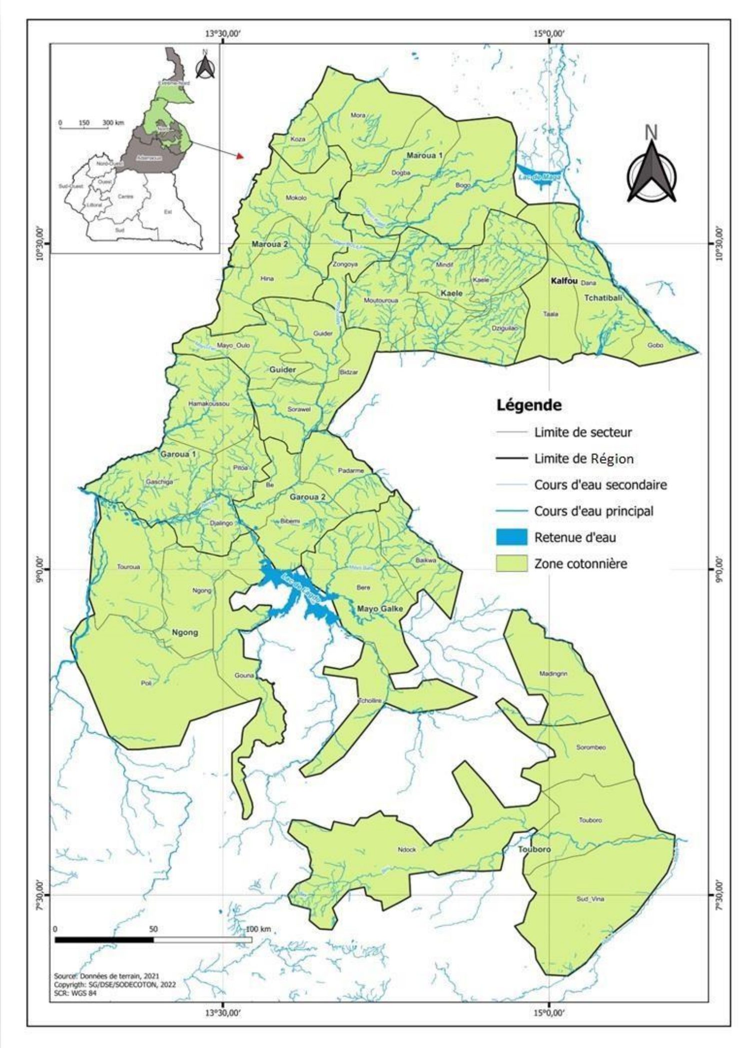
Methodology for data collection in targeted localities in the cotton production zone

Organization of cotton production

The operational organization of the cotton-growing zone is divided into several strata. At the base are the 1,700 cooperatives involved in seed cotton production. These co-operatives need to be well organized spatially if they are to produce a large and growing crop.

Cooperatives are grouped together to form what is known as a "production zone". A production zone is made up of an average of 8 to 10 cooperatives located less than 100 km apart. There are 240 zones in the cotton-growing zone, each headed by a Zonal Chief (ZC). Beyond the zones are the sectors, made up of an average of 04 to 07 zones. A Sector Manager heads each sector. According to this grouping, there are 38 sectors throughout the cotton-growing zone. At the level of the upper stratum, the 38 sectors are divided into 10 seed cotton production regions, whose activities are supervised by a Head of Region (HR). The average observed per region is between 03 and 04 sectors. It should be noted that this spatial structuring is a function of the level of production, from the cooperatives to the zones, which may be subdivided again as production increases. This dynamic also applies to sectors and regions.

Figure 3: Organization of cotton production (SODECOTON)



As the target population consists of producers who generate the majority of their income from cotton activities in each production region, the localities/cooperatives and producers to be interviewed were selected at random using SODECOTON's producer database as the sampling frame. The breakdown of the number of producers interviewed by production region is summarized in the table below.

Table 1: Breakdown of the number of cotton growers interviewed by production region

Production region	Women	Men	Total
GAROUA 1	22	84	106
GAROUA 2	13	39	52
KAELE	19	73	92
MAROUA 1	18	56	74
MAROUA 2	40	130	170
MAYO GALKE	26	114	140
NGONG	23	84	107
TCHATIBALI	14	60	74
TOUBORO	24	92	116
GUIDE	13	40	53
Total	212	772	984

Primary data was collected in order to gather information on household and farm characteristics, food and housing quality and related costs, and to crosscheck secondary data on education, health and transport expenditure for cotton-growing households in the various localities. In addition to individual interviews, this information was supplemented by discussions in 24 focus group discussions (FGDs) and with the help of key informants or resource persons.

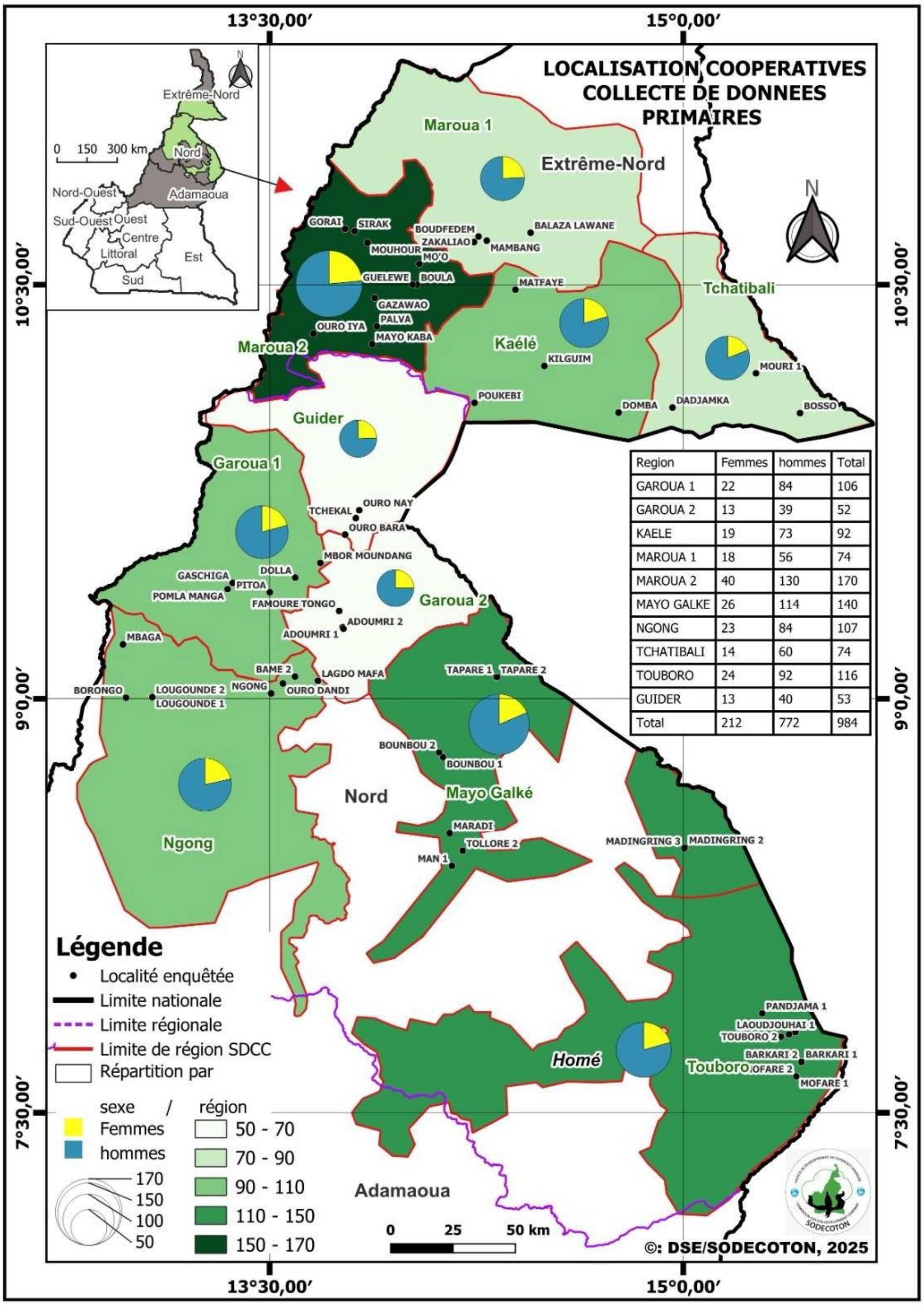
Food prices were mainly collected on the village market with the support and guidance of group discussions. Farmers specifically stated that they bought food at local markets, in most cases because of the distance of the intermediate towns from their homes and the poor state of the roads, which sometimes made transport costs prohibitive. The target localities were in fact large villages with daily or periodic markets that were fairly well supplied with foodstuffs. However, the prices of some foodstuffs were collected in towns that were close to and easily accessible from the selected localities.

Table 2: Types of data collected per site

Type of data	Level of collection		
	Village/cooperatives	Intermediate towns	Conurbations
Quantitative survey of producers	☒	☐	☐
Group discussions (FGD)	☒	☐	☐
Food prices	☒	☒	☐
Accommodation costs	☒	☐	☐
Healthcare costs	☒	☒	☒
Education costs	☒	☒	☒
Transport costs	☒	☐	☐

In addition, some data was collected in the major towns near these localities. Households whose main source of income is cotton growing use the local health services and primary and secondary schools for their children's health problems and schooling needs respectively.

Figure 4: Primary data collection locations



Region	Femmes	hommes	Total
GAROUA 1	22	84	106
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KAELE	19	73	92
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NGONG	23	84	107
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TOUBORO	24	92	116
GUIDER	13	40	53
Total	212	772	984

Of the 1,000 households sampled, 984 were actually interviewed and almost all the qualitative information sought was collected.

IV- Characteristics of households surveyed

In most of the localities that took part in this study, the households concerned feel that their living conditions do not allow them to consider that they lead an acceptable standard of living insofar as, even if some of the amenities they enjoy are acceptable, the fact remains that they remain in a precarious situation. By way of illustration, although the hardship of accessing water has been significantly reduced thanks to shorter distances from the place of residence to the water supply point for drinking or use, children and parents feel obliged to travel an average of around one (01) km to reach a school, resulting in additional transport costs. As for health centers, some communities that do not have one are forced to travel an average of 5 km to neighboring communities or localities to receive treatment for illnesses. This only adds to the costs involved.

While it is true that the use of solar energy is a commendable alternative to the inaccessibility of the electrical energy distributed by ENEO, this commodity remains very inaccessible to all producers and therefore to all households. To date, only the GAROUA 1 region has around 31% of households with access to solar energy.

Despite numerous rural electrification programs, the use of electricity is still very low in the communities concerned: only the GAROUA 1, MGONG and GUIDER production regions have more than 30% of households with access to electricity. All these communities are unanimous in their view that these facilities, if easily accessible, would help to improve their living conditions and environment

The use of latrines to satisfy certain physiological needs is traditional, but the quality of latrines can vary from one household or community to another. Depending on the means available to each household, the form and durability of these latrines vary. In some cases, they are latrines without slabs and uncovered, which can collapse in the slightest severe climatic event, as some respondents mentioned, putting the members of the households that use them at risk. Others, on the other hand, are latrines with covered and ventilated slabs, which guarantee a certain durability and safety for their users. What these two types of latrines have in common is that they do not have flush toilets. In short, the populations concerned are aware of the fact that latrines with slabs and covered give a certain decency and security to the household. Since the main source of fuel for cooking is firewood, most households have a kitchen, usually located on the bedroom side of the main house. Some of these descriptive statistics are presented in Table 3.

As far as the supply of water for use and drinking is concerned, households in the regions surveyed generally use well and/or river water, which is highly unsuitable for consumption, for their usual needs (washing, washing up, cooking, etc.). Only water from improved sources, such as boreholes for the most part, is used for drinking, except in situations where access to water for normal needs is very scarce, as is the case for households in the TCHATIBALI and GAROUA 2 regions to a lesser extent. In addition, some households in communities where drinking water is not supplied from an improved source are content to make water from unimproved sources (wells, rivers) drinkable, sometimes using appropriate purification processes to avoid exposure to the risks of water-borne diseases.

Table 3: Some descriptive statistics on household characteristics in the study area

	GAROUA 1	GAROUA 2	KAELE	MAROUA 1	MAROUA 2	MAYO GALKE	NGONG	TCHATIBALI	TOUBORO	GUIDE	TOGETHER
Average distance from to water-drilling point (**metres**)	169	584	543	390	677	440	284	381	496	582	**459**
Average distance from to school (metres)	809	924	1081	1391	1248	1657	894	1134	2015	943	**1264**
Average distance from to health centre health centre (**metres**)	1832	3004	2791	2264	4765	3011	1836	3203	6225	4542	**3458**
Use of latrines (%)	92.5	92.3	82.5	56.5	97.6	78.6	99	27.7	92.1	78.4	**82.8**
Use of solar panel (%)	31.1	2	18.7	12.3	9.5	14.3	6.5	12.2	24.6	2	**14.5**
Access to electricity (ENEO) (%)	36.8	25	8.8	19.2	8.9	15.7	42.1	0	12.3	50	**20**
Access to water (water for use) (%)	84	33	41	50	39	51	64	5	62	95	**52**
Drinking water supply (%)	58.1	75.2	100	94.5	88.6	55.2	38.1	93.2	75.2	4	**70**
of households with a cooking area outside the main hut in the compound (%)	100	100	100	100	100	99.3	100	100	100	100	**99.9**

V- Local players in the cotton value chain (VC) in Cameroon

The cotton value chain in Cameroon is made up of six major players[3] : Société de Développement du Coton (SODECOTON), National Confederation of Cotton producers of Cameroon (CNPC-C), Producers' Associations (PA), Industrial Textile Processors, Cotton Hydrophile du Cameroun (COFIL) and artisanal textile processors.

5.1. SODECOTON

SODECOTON is a highly vertically integrated semi-public company in which the State of Cameroon is the majority shareholder with 59% of the shares. SODECOTON's main role is to buy seed cotton from producers, gin it and then crush the seeds produced by the ginning process. SODECOTON is also involved in supplying inputs to growers on credit, marketing seed cotton, ginning and selling fiber and seeds, mainly for export. It also crushes the seeds to produce refined oil, oilcake and other animal feed in three different forms. SDCC has nine ginning plants and two crushing plants.

In addition to its central role in cotton growing, SODECOTON also promotes the production of food crops by providing fertilizers, technical advice and training in soil restoration techniques, among other things.

It has a fleet of multi-container trucks specifically dedicated to transporting crops, in particular seed cotton, and a fleet for transporting various other items, including cotton fiber. It also makes partial use of private haulers and CAMRAIL's rail services to transport its products and supplies of inputs.

It is also important to mention that SODECOTON plays a key role in the maintenance of rural tracks as part of its collection activities.

5.2. CNPC-C

The structure of the CNPC-C is modelled on that of the SDCC (SODECOTON), with its 9 federations and 48 unions corresponding to the 9 regions and 48 sectors of the SDCC, supervising the 2,000 or so APs listed, of which 1,545 are "active" in the management of input credit and the marketing of seed cotton. An executive director (provided by the SDCC) carries out the day-to-day running of the CNPC-C in accordance with the decisions of the 12-member board of directors (9 federation presidents, 2 representatives elected by the producers and one SDCC representative). CNPC-C's role is to supply inputs to member cooperatives.

5.3. Producer associations (PA)

A PA has an average of 100 members, i.e. cotton producers grouped into Mutual Guarantee Groups (GGMs) made up of 5 to 10 farmers. A PA has a management committee and a larger board of directors

[3] Fok, M., Meier, M., Nicolay, G., Balarabe, O., Calaque, R., 2019. Cotton value Chain Analysis in Cameroon. Report for the European Union, DG-DEVCO. Value Chain Analysis for Development Project (VCA4D CTR 2016/375-804), 122 p + annexes.

made up of the management committee and the heads of each GGM. Young people and women are involved in the running of the PAs, but largely in the Far North region. The PAs contribute to the distribution/management of inputs and equipment on credit and the marketing of seed cotton. The PAs are subject to a professionalization process carried out jointly by the CNPC-C and the SDCC. This process is governed by a tripartite agreement that is renewed or updated every three years. This agreement is known as the "GP/CNPC-Cameroon/SODECOTON three-year partnership agreement". The three-year tripartite agreement covers technical support for cotton production and food crops, the professionalization of PAs, the supply of inputs and equipment on credit, and the marketing of seed cotton.

5.4. Stakeholders in industrial textile processing

The landscape of players involved in industrial textile processing, at least partly based on local cotton, has shrunk considerably in recent years, particularly since 2015. A World Bank study in 2015 reported two players in spinning (CICAM and FAFINSA), three players in weaving (CICAM, SYNCATEX and SOCAFTEC), two players in knitting (BUETEC and FAFINSA), four players in finishing (CICAM, COFIL, BUETEC and SITRACO) and four players in garment making (CICAM, FAFINSA, BUETEC and Garment Makers). In 2019, CICAM was the only player in spinning and weaving, and BUETEC was the only player in knitting, albeit using imported yarn. The Cotonnière industrielle du Cameroun (CICAM) has become the only organization that industrially processes the cotton fiber produced in the country, with the volume of fiber consumed fluctuating between 1,000 and 2,000 tons (8.22%). The company has two production sites. The Garoua site, with its very spacious factory capable of accommodating new production equipment, is dedicated to spinning and weaving. Semi-finished products (raw textiles) are then sent to the Douala site, which has a dyeing and printing unit, as well as a terry cloth production unit. The CICAM group owns the Laking Textile brands and the Newco distribution chain for the sale of its products.

5.5. COFIL

Coton hydrophile du Cameroun (COFIL) was set up in 2007 to be the only company in the sub-region to process waste from ginning and spinning mills, from which it produces hydrophilic cotton. The company was set up with two units, one in Garoua and the other in Douala. At the Garoua unit, the aim was to process the linter produced as a by-product in the SDCC ginning plants and the fiber cleaning and carding waste prior to spinning at the CICAM spinning plant. The resulting product, after several stages of cleaning and blending, is then sent to the Douala unit for export or to produce hydrophilic cotton (cotton is naturally water-repellent) and associated personal hygiene products (such as make-up remover discs).

5.6. Stakeholders in small-scale textile processing

The key players in traditional textile production are spinners, weavers and embroiderers. The work of the spinners is carried out mainly by elderly men and women. Tailors, who sometimes also do embroidery, buy strips of fabric and assemble them by hand before embroidering more or less complex designs. Some specialize in embroidery and may use thread dyed a greenish-black color using natural dyes obtained from certain plants.

VI- Financing mechanism for cotton cooperatives and producers

Funding for simplified cooperatives and cotton producers in Cameroon is mainly provided by SODECOTON in partnership with the cooperatives in question. This financing is of several types and varies according to the type of actor:

6.1. Simplified cooperatives

6.1.1. Remuneration for services provided by simplified cooperatives.

Under the terms of the contract between SODECOTON and the cooperatives, the latter are paid CFAF 5,500 per ton of seed cotton produced. In return, the cooperatives must undertake to carry out certain tasks relating to cotton production and the management of campaign credit. This money is used to pay the cooperative's technical agents and sometimes for the running of the cooperative.
SODECOTON also pays the cooperatives premiums linked to marketing (variable premiums and fixed premiums), always taking into account the contractual clauses. This money is used to pay the purchasing teams, the heads of the guarantee circles and the CPA. Sometimes the money is used to run the cooperative.

6.1.2. Transfer of weighbridge surpluses

The surplus weight generated by the collection of seed cotton from each producer member of a cooperative is accumulated, valued and paid into the account of the cooperative concerned. This money is used to finance the running of the cooperatives and to make various socio-economic investments in the communities (building schools, health centers, boreholes, etc.).

6.1.3. Shared-cost financing by NGOs and other projects

Some projects or NGOs require cooperatives to make personal contributions in order to carry out activities that benefit them. As a result, a cooperative often makes a financial contribution of up to 30% to a project in its area of operation (building a school, health center, borehole, cashew tree plantation, etc.).

6.2. Individual producers

6.2.1. Campaign credit financing

Each year, SODECOTON and CNPC-C pre-finance the campaign credit for agricultural inputs and equipment for cotton and food crop production. The credit granted to producers through their cooperatives is repaid when the seed cotton is marketed.

6.2.2. Support and advice for producers

Free advisory support is provided to cotton growers by SODECOTON and CNPC-C in a number of areas: advice on technical production methods for cotton and food crops, farm input management, farm and cooperative management, agricultural entrepreneurship, financial education, agro-ecology, etc.

6.2.3. Advances for cereal storage

CNPC-C provides financing for the creation of cereal banks at cooperative level to ensure food security and consolidate producers' income. This is achieved by pre-financing this activity through the provision of substantial funds.

In short, financing for cotton growers in Cameroon is based on a mixed system involving SODECOTON, CNPC-C and projects or NGOs.

VII- The relationship between cotton growers, MUFIDs and SODECOTON

The relationship between cotton growers and MUFIDs is crucial to the development of the cotton sector, particularly in areas where there is a strong presence of Emerging Producers. It can be a source of opportunities but also of major challenges.

7.1. The Challenges of the MUFID/Cotton Grower Relationship

- Access to finance for cotton growers

Cotton production requires significant investment in inputs (seeds, fertilizers, pesticides), labour (soil preparation, sowing, maintenance and harvesting of seed cotton) and equipment (farm machinery, irrigation).
Cotton growers often have difficulty accessing traditional bank loans due to their lack of collateral, the remoteness of bank branches, the complexity of procedures and the risks associated with farming activities.

- **Role of MUFIDs in the cotton-growing zone**

MUFIDs are specifically designed to meet the needs of the cotton growers who own them. These MUFIDs offer small loans, adapted interest rates and flexible repayment terms.

By facilitating access to credit, MUFIDs help to improve agricultural productivity, increase producers' incomes, diversify economic activities and reduce the precariousness of cotton producers (food security, income-generating activities).

- **Huge challenges ahead**

Cotton growers may be tempted to take on excessive debt to increase their production, which can leave them vulnerable in the event of poor harvests or price fluctuations. Hence the intervention of the DPA SODECOTON through the agreement between MUFID Union to ensure traceability and good monitoring of cotton producers by the Heads of the Purchasing Point (CDR) and the Regional Professionalization Managers (RRP).

Climatic hazards (drought, floods, disease) can jeopardize harvests and make it difficult to repay loans. This is the reason why SODECOTON is involved in training cotton growers in agro-ecological practices and GAP (Good Agricultural Practices).

Cotton growers often have limited training and insufficient skills in financial management, which can lead them to make unwise or irrational decisions. SODECOTON therefore provides training in FBS (Farmer Business School) and BFE (Basic Financial Education).

7.2. The MUFID-Union and SODECOTON Agreement

To facilitate relations between cotton producers, SODECOTON and MUFID Union have signed an agreement. Under this agreement, SODECOTON representatives sit on the MUFID Board and on the credit committee in an advisory capacity. It is important to remember that their members, i.e. cotton growers and other members (farmers, market gardeners, traders) in a given locality own the MUFIDs in the cotton-growing zone. The Convention was set up to :

- ✓ Facilitate payment to Emerging Producers by means of transfers to MUFIDs;
- ✓ Payment to small producers through cooperative accounts opened with MUFIDs;
- ✓ Payment of producers via NTIC (Electronic Money).

MUFID Union has developed financial products tailored to cotton growers and their cooperatives:

- **Harvest loan:** This seasonal loan is specifically designed to finance the needs of cotton production during the harvest period, with repayment terms adapted to the crop cycle.

- **Cereal storage credit:** the cereal storage credit is intended for cotton producers' cooperatives that are developing the "warrantee" of maize and sorghum in order to combat food insecurity.

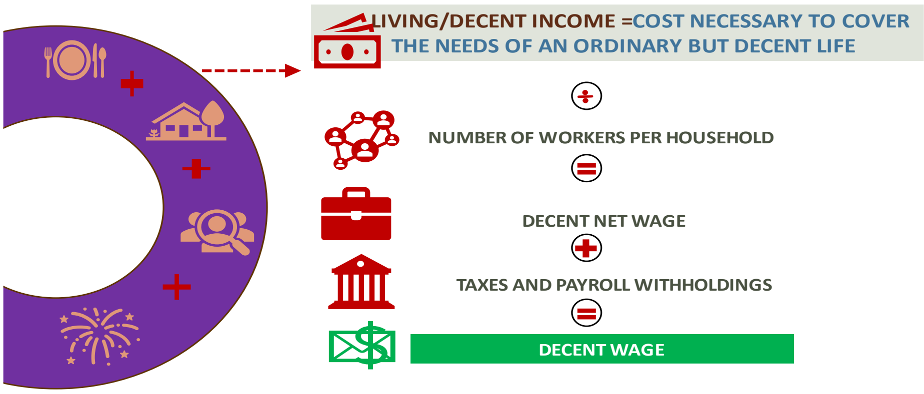
SODECOTON provides a non-financial service under the agreement by supporting cotton growers and sharing reliable information with the MUFID Union in order to:

- ✓ Reduce transaction costs associated with loans (application fees, commissions, travel) for cotton growers;
- ✓ Ensure clear traceability of producers' behavior and their debt capacity;
- ✓ Rigorously assess producers' credit risk before granting a loan, taking into account their credit history, repayment capacity and external factors (climate, prices, market);
- ✓ Helping producers' cooperatives to structure themselves, draw up strategic and operational plans and Income Generating Activities and set up control systems;
- ✓ Train producers on FBS, BPA, EFB and provide regular advisory support to minimize credit risks;
- ✓ Helping cotton growers to manage their debts responsibly, avoiding over-indebtedness and proposing appropriate repayment plans;
- ✓ Train the leaders of producer cooperatives in management, accounting, group sales/purchasing and commercial negotiation;
- ✓ Organize regular consultations to identify problems and opportunities, develop joint solutions and monitor and evaluate them;

In summary, the relationship between cotton growers and MUFIDs is essential for the development of the cotton sector and the improvement of cotton growers' living conditions. To ensure that this relationship is mutually beneficial, SODECOTON is involved in designing financial products tailored to cotton producers, providing support and training for producers, building the capacity of cotton cooperatives and producers, helping to manage the risks associated with loans and promoting collaboration between stakeholders.

VIII- Concepts and definition of decent income

The concept of a decent income is based on the idea that families should not only earn just enough money for survival or subsistence (i.e. poverty reduction), but that they should be able to afford a decent standard of living and participate in social and cultural life. Thus, "A subsistence income is the net annual income that a family in a given locality needs to ensure a decent standard of living for all its members. The elements of a decent standard of living include: food, water, shelter, education, health care, transport, clothing and other basic needs, including protection against unforeseen events."



The reference methodology proposed by **Anker**[4], which can be adapted to take account of specific national circumstances, defines a general framework for assessing the needs of producers and their families through a multidimensional approach designed to estimate the cost of living, by assessing each of the following four dimensions separately:

I. *The cost of food* - A low-cost food that guarantees an adequate intake of calories, proteins, fats and carbohydrates, and whose composition is appropriate for the target population. This cost is measured using a normative approach based on the calorie and nutritional requirements defined by the World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO).

II. *The cost of housing* - Basic but decent housing of an acceptable standard. In accordance with the recommendations of the United Nations Human Settlements Program (UN-Habitat), this cost is measured using a normative approach based on the characteristics of suitable housing according to national and international standards, such as living area, durability of housing, facilities and access to water.

III. *The cost of health and education* - Expenditure on basic health and education is a separate category. Unlike food and housing needs, the cost of health and education needs is estimated using a relative approach based on the distribution of national or family expenditure on health and education.

IV. *The cost of other essential goods and services* - All other expenditure items (such as clothing or transport) are grouped together in a single expenditure category and their cost is estimated, like

[4] The Anker Methodology for Estimating a Living Wage - Global Living Wage Coalition. Accessed 21 March 2025

health and education needs, using a relative approach based on the distribution of family expenditure on other essential goods and services.

Net annual family income is the total amount of income earned by family members in a year - including cash and non-cash income (for example, food produced by family members for their own consumption) - minus the costs associated with the income generated. Figure 5 illustrates the four factors that contribute to a decent life as defined globally, with some adjustments for local conditions. The cost of living is estimated by adding together separate estimates for: (i) a low-cost nutritious diet; (ii) decent and healthy basic housing; (iii) all other basic needs, including education for children up to secondary school, decent health care, transport, clothing, furniture, recreation, personal care, etc.; and (iv) the cost of food.

The costs of food and shelter are estimated individually based on standards and primary data, while the costs of all other basic needs are estimated as a lump sum using secondary data, as it would be difficult, time-consuming and expensive to agree a standard and cost each area separately. However, crosschecks are made to ensure that a sufficient amount is allowed for adequate access to healthcare and education for children up to secondary school. A small margin above this total cost of a basic but decent lifestyle is then added to cover unforeseen events such as accidents, or special occasions such as weddings and funerals, to ensure that routine unforeseen events do not easily push families into poverty.

IX- Cost of a basic but decent life in the cotton-growing regions of Cameroon

9.1. Power supply

9.1.1. Situational analyses

Because of their agro-ecological environment, the cotton-growing areas are marked by palpable levels of poverty, food insecurity and low dietary diversity due to the gradual reduction in rainfall and prolonged dry seasons. The three northern regions are the poorest in Cameroon, with a North-South gradient. In particular, the "poverty" and "undernourishment" indicators for these regions are the worst in the country, and the literacy rate is the lowest. The cotton-growing region is facing increasing insecurity and conflict in various forms: Boko Haram raids, kidnappings for ransom, and conflicts with transhumant herders. (Fok et al, 2019)[5] . According to the report 'Filling the Nutrient Gap' (WFP 2017)[6] , the Far North and North regions are among those that cannot afford a diet that meets their nutritional needs, with the Far North being the worst affected, with 70% of the population unable to meet their nutritional needs. In all the regions covered by ENSAN 2019 (Adamawa, East, Far North, Adamawa (22.1%) and West (20.5%), are the most affected by food insecurity. (ENSAN 2020)[7] . The lack of regular rainfall, political insecurity and low dietary diversity, combined with extreme poverty, are some of the reasons for this food insecurity. It is estimated that 32.4% of Cameroonian households have a poorly diversified diet.

The diet of the North and Far North regions, where the study took place, is Sudano-Sahelian (Tounsi, 2021)[8] with a high consumption of cereals and vegetables. A prolonged period of habitual drought has led the population of these regions to adopt practices of preserving vegetables by drying, thus ensuring the availability of leafy vegetables throughout the year. Overall, except in sub-urban areas, consumption of tubers, roots and starchy fruits is insignificant. The sources of protein in the diet are more vegetable than animal and milk and dairy products are produced more for commercial purposes than for consumption. Pulses such as groundnuts and white beans (cowpeas) are grown locally, and groundnuts are used to produce cooking oil and as a source of protein. As for fruit, most of which is imported, the high cost means that it is eaten sporadically.

Procedure used to estimate the cost of nutritious food

The cost of a nutritious diet was estimated in several stages:
*As a first step***,** we began by determining the calorie requirements that need to be met, according to the recommendations made by the FAO and WHO (2012)[9] . It should be noted here that these needs might vary depending on the households and communities concerned. To achieve this, a normative approach was adopted, based on a required calorie consumption of 2,950 kcal per day for an adult male (AEEA-Adult Equivalent Energy Intake).[10]

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[5] Michel Fok, Gian Nicolay, Mathias Meier, Oumarou Balarabe, Roman Calaque (2019): Cotton value chain analysis in Cameroon.
[6] WFP 2021, Filling the Nutrient Gap.
[7] National Food Security and Nutrition Survey Republic of Cameroon, 2020
[8] Tounsi Gilles, 2021. The different agro ecological zones of Cameroon.

The second stage involved estimating the daily calorie consumption of each household by multiplying the quantity of the various food products consumed by the corresponding calorie data, according to the information contained in the table on the composition of foods to be used in Africa, drawn up by the FAO.

In a *third stage*, the reference food basket was adjusted to ensure that it met the needs for other nutrients, including proteins, carbohydrates and fats

Finally, and following the approach of Anker and Anker (2017)[11] , the cost of the reference food basket for a family of reference size was estimated. To this end, the adjusted quantities and price information obtained from the survey were used to estimate the daily and then monthly cost of the reference food basket per adult equivalent at the level of each cotton production region.

Results of the qualitative survey

The results of the qualitative survey carried out through discussions in 24 groups (FG) show sub-optimal food consumption, with most communities unable to have more than two meals a day, very low consumption of animal proteins and dietary diversification that only takes place on market day for some villages or during ceremonies for others. Farming on land that is sometimes very uneven and impoverished leads to very high consumption of cereals (in all forms) to the detriment of vegetables, animal proteins and fruit. The low consumption of starchy foods is due not only to the unavailability of these foods but also to their high cost.

9.1.2. Decent food

In line with WHO/FAO recommendations and the principles proposed by Anker and Anker (2017), our reference food basket for all the sites surveyed is based on locally available and competitively priced (low-cost) foods, grouped into 11 food groups. This basket is intended to be nutritious, enabling farmers to have a healthy, balanced and varied diet. The adjusted reference basket provides 2950 cal, of which: 11.24% protein; 25.03% fat and 64.66% carbohydrates. This corresponds to the socio-economic level of Cameroon, especially in the far north, where the majority of the population remains poor. Our reference food basket made up of

- A large supply of cereals such as rice, sorghum and locally grown maize. There is also an abundance of millet in the localities, which can be eaten instead of sorghum. It is generally eaten daily, either in the form of porridge or in balls.
- Tubers such as manioc, yam and potato are included in small portions for consumption at one or two meals a week.
- A low consumption of animal proteins including dried fish, fresh fish, beef and chicken 2 to 3 times a week was added, and eggs consumed in very small quantities were added once or twice a week to supplement the protein. To supplement protein requirements, vegetable proteins such as peanuts were added in moderate quantities to most sauces 4 to 5 days a week.

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[9] Food and Agriculture Organization (2012). West African Food Composition Table: http://www.fao.org/documents/card/en/c/238ce5e9-acd5-5cb2-8442-6498506aee1c/.

[10] ILO, 2021, Methodology for estimating the needs of workers and their families. First Edition, ILO Geneva.

[11] Anker, R and Anker, M (2017). Living wages around the world: Manual for measurement. Edward Elgar Publishing Limited, UK.

- An abundance of local leafy vegetables in the dry season or fresh in the rainy season explains their inclusion in the food basket 5 to 7 days a week, alternating with other vegetables such as carrots, onions and tomatoes used in the preparation of meals or simply eaten raw. They are eaten once or twice a week.
- Low consumption of fruit, 1 or 2 times a week, due to its scarcity and high cost.
- Consumption of milk and dairy products is low, and alternatives such as the widely consumed dark green vegetables have been considered to replace them.
- Locally produced peanut oil is affordable and has therefore been added to our reference basket for everyday consumption in small quantities.

Sugar, salt and other condiments have been added, with a slight margin for other drinks and the popular local beer.

9.1.3. Cost of the reference basket

To estimate the cost of our reference basket, food prices were collected in the local markets where households make their purchases, to get a real idea of their expenditure. These data were cross-checked with the estimates proposed during the focus group discussions, and it emerged that most producer households produce a large part of their food consumption themselves, but buy tubers, vegetables, sources of animal protein, fruit and condiments on the local market. They buy cereals only when their family reserves run out. Small-scale producers get their supplies from the nearest markets. The estimated cost of our reference food basket is based on these prices.

Food prices are not given by weight, but by the unit sold, either by the number of tubers, tomatoes or carrots, or by the kilogram as in the case of cereals, beef or fish, or by the head as in the case of fresh vegetables, or by the average bowl as in the case of pulses, legumes or cereals sold in detail. Oil is sold in liters or small measures and condiments in small packets[12] . Beverages are sold in local measures or in bottles.

[12] NB: The conversion of these products into weight was carried out by the research team, as described below.

Table 4: Reference food basket and average cost of food per adult equivalent per day (ALL)

Food group	Quantities consumed per person per day (adjusted for 2950cal) (kg)	Calories consumed per day (adjusted) (kcal)	Protein consumed per day (adjusted) (g)	Fats and oils consumed per day (adjusted) (g)	Carbohydrates consumed per day (adjusted) (g)	Daily cost (FCFA)
Cereals						
Rice	0.2477	899.4085	18.4100	0.2630	210.1370	123.8331
Sorghum	0.0869	297.9276	9.0454	2.6767	68.6712	47.7856
Maize	0.1387	489.5864	15.1200	7.0560	123.8688	52.0099
Roots and tubers						
Yam	0.0594	72.2979	1.1989	0.0631	16.7215	29.7199
Cassava	0.0594	90.9430	0.7572	0.1262	22.5267	26.7479
Potato	0.0297	34.1779	0.474	0.0632	9.0060	5.9440
Meat, fish and poultry						
Beef	0.0035	4.2701	0.8029	0.1591	0.0000	200.9170
Chicken	0.0297	39.8247	6.4464	1.8644	0.0000	29.7199
Fresh carp	0.0198	235.6987	3.6120	1.1760	0.0000	19.8133
Dried fish	0.0832	85.6188	21.4887	4.3150	0.0000	62.4119
Egg						
Egg	0.0014	1.8212	0.0189	0.0143	0.0011	2.1014
Pulses						
Peanut	0.0120	67.9799	2.4458	5.1794	2.4338	4.1963
Vegetables, leaves						
Local leaves	0.0124	34.5825	0.0210	0.0013	0.0510	9.2643
Other pulses						
Onion	0.0068	2.5292	0.1314	0.0073	0.5037	5.1267
Tomato	0.0069	1.5243	0.0740	0.0296	0.2442	5.1980
Fruit						
Lemon	0.0010	3.1329	0.0100	0.0040	0.0850	1.9635
Watermelon	0.0870	1.9054	1.9383	0.0923	5.077	47.8283
Oils and fats						
Peanut oil	0.0589	530.5008	0.0000	58.9445	0.0000	58.9445
Sugar						
Sugar	0.0107	4.2776	0.0000	0.0000	11.3600	8.5620
Condiments						
Garlic	0.0004	1.1224	0.0520	0.0040	0.0880	0.3609
Drinks						
The	0.0265	0.0000	0.0265	0.0000	0.0046	18.5222
Bilbili	0.1136	42.9450	0.8442	0.0000	3.9798	68.1475
Other gas drinks	0.0198	7.9253	0.0000	0.0000	2.1000	11.8880
Total	**1.1154**	**2950.0000**	**82.9176**	**82.0394**	**476.8589**	**841.0061**

The research team used a food scale graduated up to 50kg to weigh these foods and derive the price per kg. For greater accuracy, each food item was weighed at three different vendors and the average weight and price recorded. Once the weights and prices from the various markets had been collected, an estimated price was set for each foodstuff. The following table shows the prices of the various foods included in our reference basket.

Table 5: Monthly cost of food requirements for different household sizes and number of adult equivalents

Regions	Monthly cost of food basket per day for an adult man (FCFA)	Average number of equivalent adult males per household[13]	Monthly cost of food basket by household size (FCFA)	Monthly cost of food basket by household size (US$)
GAROUA1	27,196	5.43	147,676	243.94
GAROUA2	31,732	5.43	172,305	284.63
KAELE	28,907	5.43	156,963	259.29
MAROUA1	30,827	5.43	167,389	276.51
MAROUA2	23,658	5.43	128,466	212.21
MAYO GALKE	27,209	5.43	147,746	244.06
NGONG	24,629	5.43	133,733	220.91
TCHATIBALI	35,288	5.43	191,612	316.52
TOUBORO	19,394	5.43	105,310	173.96
GUIDE	34,869	5.43	189,339	312.77
TOGETHER	**25,230**	5.43	**137,000**	**226.31**

Overall, the average cost of a decent diet for a reference household (5.43 people in adult equivalent) is 137,000 FCFA per month.

9.2 Housing

As in the case of nutritious food, the estimation of the cost of housing also follows a normative approach, which consists of estimating the cost of rent and service charges for a dwelling offering a basic but decent standard of living in the cotton-growing area of Cameroon.

In order to better define the notion of decent housing within communities, sections devoted to housing have been introduced into our quantitative and qualitative surveys, and they contain an important set of indicators on the quality of housing. The data collected through these surveys makes it possible to gather information on the four components of housing quality and thus to assess the level of decency of housing. These are: the number of huts in the compound/area occupied is used to assess the living space; the construction materials of the walls, roof and floor are used to assess the durability of the dwelling; the type of toilet, lighting and cooking facilities is used to assess the facilities/amenities; and the type of water source is used to assess access to water.

Once the data had been analyzed, a scoring system was used to assign a mark of between 1 and 5 (ranging from the poorest to the best quality) to each of these indicators (see table below).

The third stage of our analysis involved determining the minimum housing quality score corresponding to decent housing for cotton growers and their families.

[13] Reference household of 08 people (1 adult man, 02 adult women and 05 children)

Table 6: Rating system for different housing components

Coding system (notation)	Housing dimensions							
	Living area	Durability			Facilities			Water
	Number of spaces in the plot	Wall construction materials	Roof construction materials	Floor construction materials	Toilets	Cooking methods	Home lighting method	Source
1	1	Natural origin (clay)	Natural origin (soil)	ND	No installation	Energy wood	Candle	No installation[14]
2	2	Earth blocks	Natural origin (straw)	Natural origin (bare earth)	Pit latrine without slab	stove	Torch	Unprotected water source [15]
3	] 3 ; 4]	Terracotta blocks	Metal materials (corrugated sheets)	Plain cement	Pit latrine with uncovered slab	Coal	Paraffin lamp	Drilling near the house
4	[4 ; 5]	Semi-hard (earth blocks and cement)	Metallic materials (back sheets)	Cement with colour	Pit latrine with covered slab	Gas	Solar panel	Drilling in the house
5	[4 ; 5 ; 6]	Breeze blocks	Tiles	Tiles	Modern flush toilet	Biogas	ENEO (public electrification)	Running water in the house (CAMWATER)

In the case of our study area, as explained below, the minimum requirements for decent housing correspond to a score of between 3 and 4 for each of the housing components, which corresponds to an average total score of 11.

Once the study data had been analyzed, a scoring system was used to assign a mark of between 1 and 5 (from the poorest to the best quality) to each of these indicators (see table 7 below).

In terms of living space, the research team followed the recommendations made by UN-Habitat (2014),[16] according to which the occupancy rate per room should not exceed 3 people within the dwelling. This corresponds to dwellings with between 2 and 3 people per room (score of 3). Housing architecture varies according to the communities in the survey area. In most cases, concessions often have a main house and several small buckaroo-style dwellings. However, it is also possible to find a type of agglomeration-style construction consisting of different rooms in the same flat. For a reference family of eight people, a concession with at least three rooms or living structures is considered acceptable.

As the cotton-growing area is regularly exposed to extreme climatic hazards and risks, the type of materials used to build the dwelling are also assessed in terms of their durability. According to UN-Habitat (2014), a dwelling must have a permanent and adequate structure to protect household members against extreme weather conditions, such as rain, heat, cold and humidity. The permanent nature of the structure is assessed from the point of view of the materials used for the construction of the walls, roof and floor (UN-Habitat, 2014). For our cotton-growing regions, the minimum quality of materials to guarantee decent housing corresponds to a score of four or five (walls in semi-hard or bricks, roof in metal materials and floor in cement).

[14] Rain, mayo/river, surface water
[15] Unimproved well
[16] UN-Habitat 2014. "*A Practical Guide to Designing, Planning, and Executing Citywide Slum Upgrading Programmes*".

As far as amenities are concerned, a household should have access to good quality sanitary facilities that meet minimum standards of safety and non-exposure to fecal peril, in the form of a private toilet or a public toilet shared between a reasonable number of people, which is hygienic in that it prevents human contact with fecal peril. Consequently, a pit latrine with slab, with a rating of three or four depending on the case, constitutes the minimum threshold required for decent housing. This is in line with the minimum threshold set by UN-Habitat (2014), according to which quality sanitation facilities include, inter alia, flush toilets or latrines connected to a mains sewer, septic tank or pit; ventilated pit latrines; pit latrines with slab or platform completely covering the pit; as well as dry toilets. A traditional kitchen is the minimum acceptable standard for decent housing (rating of three or four). Conventional lighting for acceptable housing (score of four).

Finally, in terms of access to water, the minimum threshold for decent housing is for households to have at least one standpipe or borehole outside the dwelling (score of three). This is in line with the threshold set by Anker and Anker (2017), according to which access to drinking water must be available within the dwelling or nearby. In addition, UN-Habitat (2014) also considers that households should have access to a quality water supply, with at least one public standpipe or borehole available.

Table 7: Characteristics of decent housing in the different zones

Region	Final score	Average cost of accommodation per adult equivalent (FCFA)	Housing dimensions							
			Number of rooms/boxes in the plot	Durability			Facilities			Water
				Wall construction materials	Roof construction materials	Floor construction materials	Toilets	Cooking methods	Home lighting method	Source
GAROUA 1	12	40 000	[4 ;6]	Breeze blocks	Corrugated sheets	Tiles	Pit latrine with covered slab	Gas	ENEO	Drilling
GAROUA 2	11	18 000	[3 ;6]	Breeze blocks	Corrugated sheets	Plain cement	Pit latrine with slab	Wood energy	ENEO	Drilling
KAELE	10	40 000	[3 ;6]	Semi-hard	Corrugated sheets	Plain cement	Pit latrine with slab	Wood energy	Solar panel	Drilling
MAROUA 1	11	23 000	[3 ;6]	Breeze blocks	Corrugated sheets	Plain cement	Pit latrine with slab	Wood energy	ENEO	Drilling
MAROUA 2	11	20 000	[3 ;6]	Breeze blocks	Sheet metal back	Plain cement	Pit latrine with slab	Energy wood	Solar panel	Drilling
MAYO GALKE	11	43 000	[3 ;6]	Semi-hard	Corrugated sheets	Plain cement	Pit latrine with slab	Energy wood	ENEO	Drilling
NGONG	11	29 000	[3 ;6]	Breeze blocks	Corrugated sheets	Plain cement	Pit latrine with slab	Energy wood	ENEO	Drilling
TCHATIBALI	11	35 000	[3;5]	Breeze blocks	Corrugated sheets	Plain cement	Pit latrine	Coal	ENEO	Drilling
TOUBORO	11	30 000	[4 ;6]	Breeze blocks	Sheet metal back	Plain cement	Pit latrine	Coal	ENEO	Drilling
GUIDE	11	20 000	[3 ;6]	Breeze blocks	Corrugated sheets	Bare earth	Pit latrine	Coal	ENEO	Drilling
Package	**11**	**36 000**	**[4;6]**	**Breeze blocks**	**Corrugated sheets**	**Cement or Tiles**	**Pit latrine**	**Gas**	**ENEO**	**Drilling**

Finally, having identified the minimum score for housing quality that corresponds to decent housing, i.e. a score of 11 for our study area, the cost of housing corresponding to this score is estimated based on data collected from the communities concerned.

It should be noted that, for an identical score, different combinations of housing characteristics are possible by production region. The housing costs for a score of 11 for housing quality, which corresponds to decent housing, are presented in the table above. As can be seen, these costs vary from one production region to another, giving an average of 36,000 FCFA/household/month for the region as a whole.

The costs of decent housing have been estimated by adding together the cost of the equivalent rental value of a basic acceptable dwelling, the costs of utilities (water, lighting and cooking fuel) and maintenance. As these regions are generally exposed to extreme climatic risks such as floods and bush fires, a regular annual provision is made by way of depreciation to cover repairs and routine maintenance in the event of a disaster (the amounts to be mobilized cannot be raised all at once), despite any additional support that may come from the public authorities or local authorities.

9.3. Expenditure not related to food and accommodation

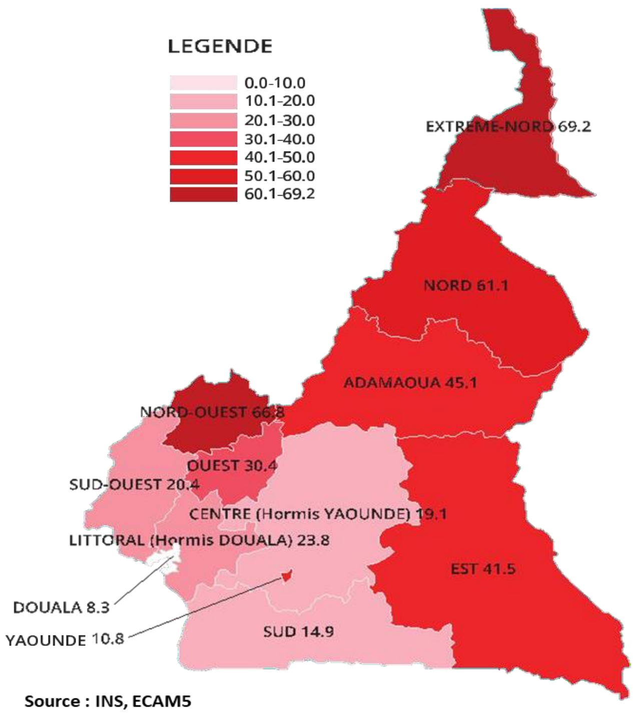
9.3.1. Education and health

Household spending patterns on health and education, as well as on other essential goods and services, and therefore the level of spending on them, vary according to income. It is common to find that, excluding food and housing, the share of expenditure generally increases as levels of income and development rise. For some countries south of the Sahara for which data on household spending is available, it can be observed that low-income households tend to spend more on food and, as a result, spend less on other basic needs, particularly health and education

According to studies by the NIS National institute of Statistics) published in 2024[17] , in 2022 around four out of ten people will be poor (37.7%). Out of an estimated population of 26.7 million in 2022, 10.1 million people will be living on less than 296,691 CFA francs a year, or 24,724 CFA francs a month.

The highest poverty rates were recorded in the Far North and North survey regions, the cotton production zone, with rates of 69.2% and 61.1% respectively. These disparities are also more marked in rural than in urban areas. The poverty line is the level of the well-being indicator below which it is impossible to afford the minimum consumption basket, i.e. to obtain a nutritionally adequate diet and satisfy basic non-food needs.

Figure 6. : Taux de pauvreté par région 2022



Source : INS, ECAM5

[17] INS : ECAM5-Cinquieme Enquête Camerounaise auprès des Ménages, Principaux indicateurs. March 2024

Estimating costs not related to housing and food requires defining the income distribution that best represents the spending habits of cotton growers who would earn a decent income.

Non-food and non-housing costs (NFNH) for cotton-growing areas were estimated in three stages. In step 1, NFNH were estimated based on household expenditure patterns for the study areas using secondary data obtained from the literature. Step 2 removes expenditure that is unnecessary for a decent income and reclassifies household expenditure to conform to **Anker**'s methodology. Finally, in step 3, expenditure on health and education is assessed more carefully to ensure that sufficient resources are available to cover these legal and basic human needs.

One of the key aspects of a family's education and health needs is their determining role in the creation and amplification of inequalities within societies. The issue of growing inequalities has become a major problem within our communities and is increasingly attracting the attention of political leaders and international organizations. In this context, labor markets have been identified as one of the main elements shaping these inequalities. If children from the most disadvantaged households in general and rural households in particular do not have access to quality education and are not in good health, they will be unable to enter the labor market with a level of productivity that would enable them to access better jobs and higher incomes.

Cost of education

When it comes to education, the higher the household contribution, the less likely parents are to send their children to school. The issue of household funding for education is important as long as universalization and even the achievement of the goals of the MDG4[18] presuppose that the poorest people also have access to education. Despite the announcement that primary education will be free of charge, certain costs associated with schooling are still borne by families in Cameroon

- Direct expenditure consists of: i) school materials and supplies (school books, exercise books, other materials and supplies); ii) school fees (school fees, APE contribution, administration fees, rental or boarding fees).
- Related expenses (uniforms, transport costs, canteen costs, special meals, etc.).

The volume of resources that a household devotes to its children's education generally increases with the number of young people attending school. As this number varies from one household to another, the scale of the investment made by households in their children's education cannot be assessed solely in terms of the overall volume of expenditure on education. Between two households that devote a comparable volume of resources to their children's education, it would seem logical to assume that the household with the most children at school will have invested the least per child. It is therefore desirable to take account of differences in the number of young people attending school. It is therefore important to understand the average level of education expenditure per pupil (or unit expenditure) , which reflects the average intensity of investment per child for their schooling.

A study published by UNESCO in 2012[19] shows that the poorest 20% of households spend an average of 4.7% of their income on education. Analyzing ECAM2 data at the same time, households spend an average of USD 70 (**FCFA 46,410.9**) per child to complete primary education, USD 378 (**FCFA 227,835**) on secondary cycle 1 and USD 542 (**326 684 FCFA**) on secondary cycle 2.

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[18] MDG4**:** Ensure equal access to quality education for all and promote lifelong learning opportunities.

[19] Household expenditure on education. An analytical and comparative perspective for 15 African countries. Working paper, Pole of sector analysis in education of UNESCO-BREDA (Pole of Dakar). March 2012.

In Cameroon, the complete primary cycle covers six years, secondary cycle 1 four years and secondary cycle 2 three years, for a total of 13 years in rural areas. On this basis, a household that would guarantee a complete education for a child from primary to secondary 2 would invest a total of USD 990 or 600,930 CFA francs, or an average of 46,225 CFA francs/year or 5,136 CFA francs/month, or 214 CFA francs/day.

These figures corroborate those of Ministry of Basic Education[20] , which states in its latest report that 70% of Cameroonian households declare paying an average of between 1,000 and 5,000 CFA francs per child for schooling. This may be ambitious if we assume that a child who completes primary and secondary cycle 1 has had an acceptable education, but if we take into account the repetition rate, the number of years of acceptable schooling used in this study is reasonable.

Furthermore, for the Far North and North regions, the average amount paid to the school varies between 2,225 and 2,347 FCFA respectively, i.e. 10 and 11 FCFA/day. If we add to these amounts a daily transport cost of 200 FCFA per child, we will have a daily expenditure for education of 210 and 211 FCFA respectively

Based on the analysis of secondary data and literature reviews, we can summarize our information on the average cost of education for a reference family in the table below.

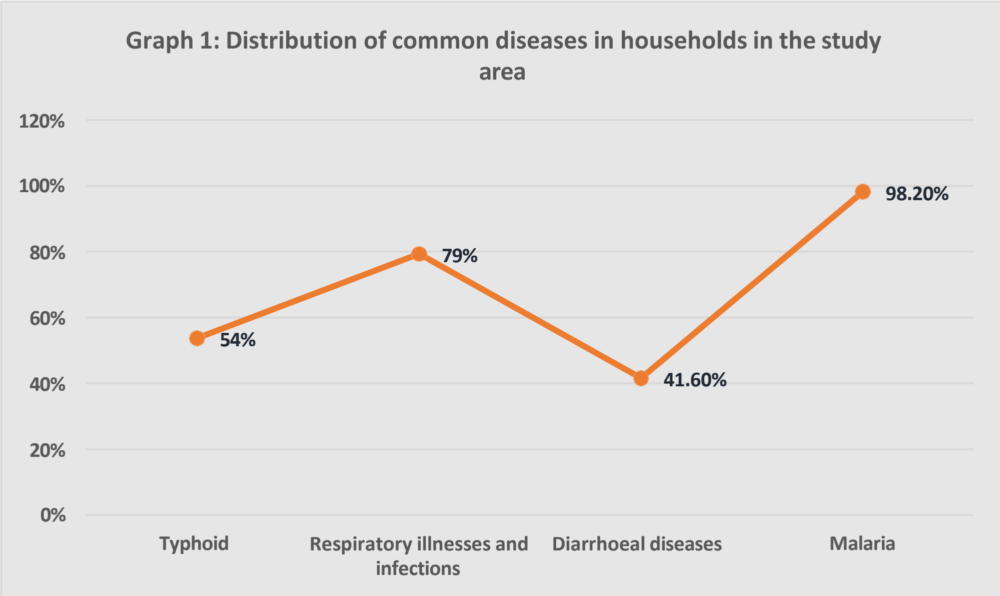
Table 8: Estimated cost of education based on secondary data

Elements	Cycl			Total
	Primary	Secondary 1	Secondary 2	
Average annual cost of school expenditure per pupil (FCFA) and per cycle	7 735	56 958.75	108 895	
Number of years per cycle	6	4	3	
Average total cost of schooling per pupil (FCFA)	46 410.9	227 835	326 684	600 930
Average annual cost of schooling per pupil (FCFA)				46 225
Average monthly cost of schooling per child (FCFA)				5 136
Average monthly cost of schooling for a reference family of 05 children (FCFA)				**25 680**

[20] Ministry of Basic Education (MINEDUB), 2020. Rapport d'analyse des données du recensement scolaire 2019-2020 du Ministère de l'Education de Base. Yaoundé, Cameroon.

Health costs

According to the latest report on Cameroon's health accounts, households are the main funders of current health expenditure. This trend has remained almost constant since 2012, when data from the health accounts for 2018-2019 showed that households were already contributing 70% of current health expenditure .[21]



Analysis of the quantitative survey data shows that the diseases to which households are often exposed throughout the year mainly concern cases of typhoid, respiratory diseases and infections, diarrhoeal diseases, malaria and other diseases such as tuberculosis.

Analyses of the 2018-2019 health accounts for Cameroon also show that households make a significant contribution (60.5% and 53% on average) to current health expenditure for the treatment of some of these diseases, as shown in the table below.

Table 9: Households' contribution to current expenditure related to the various diseases in % of total

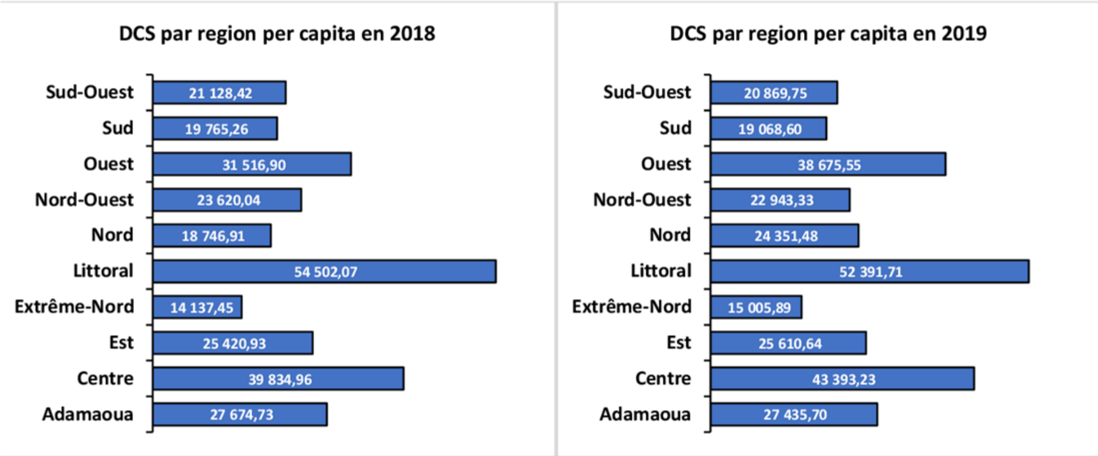
Pathologies	2018	2019
Malaria	75	71
Diarrhoeal diseases	64	56
Diseases linked to deficiencies	67	48
Reproductive health	36	37
Average contribution	60.5	53

Sources: MINSANTE-CS database 2018-2019.

Furthermore, an analysis of current healthcare expenditure in 2018 and 2019 by region shows that the North and Far North regions are in third place, with 7% in 2018 and 8% in 2019 for the former, and 9% in 2018 and 9% in 2019 for the latter. For these two regions, this represents more than 15% of current health expenditure over the two years, i.e. 16% in 2018 and 17% in 2019.

[21] Ministry of Public Health. Rapport des comptes de la santé du Cameroun. December 2022.

Figure 7 : Dépenses courantes de sante per capita par région en 2018-2019



Source : MINSANTE-Base de données CS 2018-2019

However, if we refer to the distribution of current health expenditure per capita (see Figure 7), the contribution of households in Far North region is 14,137.45 FCFA in 2018 and 15,005.89 FCFA in 2019, and the North region 18,746.91 FCFA in 2018 and 24,351.48 FCFA in 2019.

Assuming that the average household contribution to current health expenditure is 56.75% in 2018 and 53% in 2019, we can estimate that the average household contribution in these two regions will be between **CFAF 8,515** and **CFAF 13,820** per individual in 2019.

In a recent study published in 2024 (ECAM5), analyses showed that food accounts for just over a third of total household consumption. The proportion of consumption devoted to food is higher in rural areas (45.3%) than in urban areas (31.8%). In addition, just over half of total consumption is devoted to food in the Far North (50.5%)

Assuming that the daily cost of the reference food basket guaranteeing a decent diet in our study area, which amounts to **840 FCFA**, represents 45.3% of consumption expenditure, this means that annual consumption expenditure in our study area amounts to **365 150 FCFA**

The report analyzing ECAM3 data[22] shows that health expenditure in rural areas represented 4.2% of household consumption expenditure, compared with 4.0% in urban areas. Applying this proportion to our average annual cost of consumption expenditure, we can see that households spend an average of **15,340 FCFA** per individual per year on health needs. This amount does not deviate greatly from the values estimated using health accounts when we take into account the level of vulnerability of rural populations in these regions and their exposure to various health and climatic risks.

Based on the above information, we will use the sum of **15,340 FCFA** per individual per year for our reference household as the amount of annual health expenditure.

Table 10: Summary of average monthly costs not related to food and housing for a reference family

	Monthly cost (FCFA)	Family size/number of children at school	Total cost (FCFA)

[22] Zacharie NGUENG. Social inequalities in health expenditure in Cameroon. IFORD, November 2010.

Average monthly cost per child attending school	5 136	5	25 680
Average monthly health expenditure per household member	1 278	8	10 227
Average monthly expenditure on expenses not related to food and housing			**35 907**

9.3.2. Creation of an endowment for fortunate, unfortunate and unforeseen events

This provision is very important in our communities, whether urban or rural, as unforeseen events such as serious illness, an accident or the death of a family member can quickly plunge people living on a basic income into poverty and debt that is difficult to absorb.

This provision also helps in many cases to cover certain discretionary expenses such as offerings/contributions or transfers to other family members and participation in certain happy or unhappy family or community events, as is customary in Cameroon. This provision is estimated in terms of a lump-sum allowance equivalent to 5% of total household expenditure.

Table 11: Provision for unforeseen events

#	Cost centre	Amount in FCFA	US$ equivalent
1	Monthly feed cost	137 000	226.3
2	Monthly cost of accommodation	36 000	59.5
3	Monthly cost of expenses not related to food and accommodation	35 907	62.6
4	**Estimate of the cost of the allowance for unforeseen and other events (flat-rate provision of 5% on other expenses)**	**10 445**	**17.3**
5	**Total**	**219 352**	**366**

X- Estimation of an income level corresponding to the needs of cotton-growing households

10.1. Estimation of the total cost of the needs of cotton-growing households

In this first stage, we simply add up the previously estimated needs for the four expenditure items: food, housing, health and education, and other essential goods and services. These estimates correspond to the needs of one member of the household and a representative-sized household in the region. Although the estimates for health and education are based on the needs of an individual, without the use of any equivalence scale, unlike the estimates for other expenditure items, all of these estimates can be added together to assess the overall needs of a household member. In addition, as previously explained in each of the different sections relating to the estimates of the different categories of need, the estimates for a reference size household as a whole are obtained by multiplying the cost corresponding to a member of the household by the coefficients of the corresponding equivalence scale, or by the number of people in the household in the case of expenditure on health and education. From there, the sum of all these estimates for a household makes it possible to evaluate the overall cost of living for a household of reference size.

According to INS data[23] , the average size of households in the Far North region (EN) is estimated at 6 people, with little variation between departments. However, the departments of Mayo-Kani and Mayo-Sava have the highest average number of people living in a household (around 7). In the Northern Region, the average household is made up of around 7 people, with slight variations in the department of Mayo-Rey, where there are on average more than 7 people living in a household.
For the purposes of this study in the cotton-growing zone, the average size of a reference household is estimated at 8 people, including 3 adults and 5 children, corresponding to 5.43 adult equivalents according to the AEEA equivalence scale coefficient.

Table 12: Monthly cost of each expenditure item for a family of 8 (5.43 adult equivalent) in CFA francs, for the cotton-growing zone as a whole, and by cotton-growing zone.

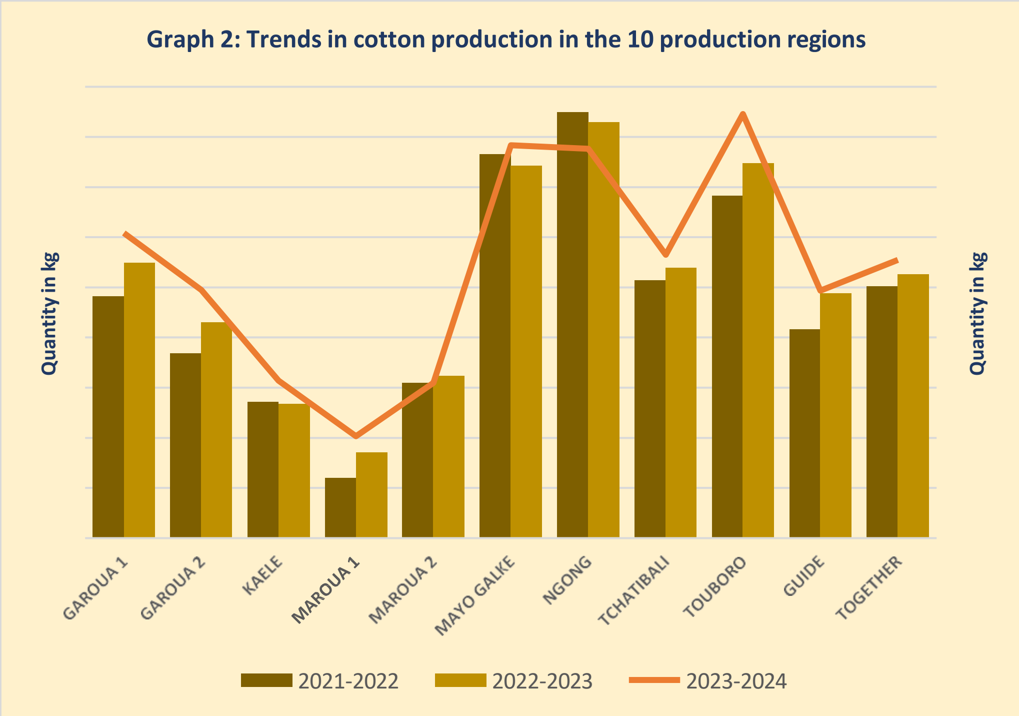
Cost centres	GAROUA1	GAROUA2	KAELE	MAROUA1	MAROUA2	MAYO GALKE	NGONG	TCHATIBALI	TOUBORO	GUIDE	TOGETHER
Power supply	147,676	172,305	156,963	167,389	128,466	147,746	133,733	191,612	105,310	189,339	137,000
Housing	40,000	18,000	40,000	23,000	20,000	43,000	29,000	35,000	30,000	20,000	36,000
Education	25,680	25,680	25,680	25,680	25,680	25,680	25,680	25,680	25,680	25,680	25,680
Health	10,227	10,227	10,227	10,227	10,227	10,227	10,227	10,227	10,227	10,227	10,227
Other expenses	10,445	10,445	10,445	10,445	10,445	10,445	10,445	10,445	10,445	10,445	10,445
Total cost	**234,**	**236,**	**243,315**	**236,**	**194,**	**237,**	**209,085**	**272,**	**181,**	**255,690**	**219,**

The table above illustrates this stage, both overall and by cotton-growing region. According to this table, the sum total of the estimated cost of basic needs for a household of reference size of 8 people, in terms of food, housing, health and education and other essential needs, amounts to 219,350 FCFA per month, at the level of the entire cotton-growing zone.
As we can see, estimates vary from one production region to another, reaching their highest level in the TCHATIBALI region and their lowest in the TOUBORO region.

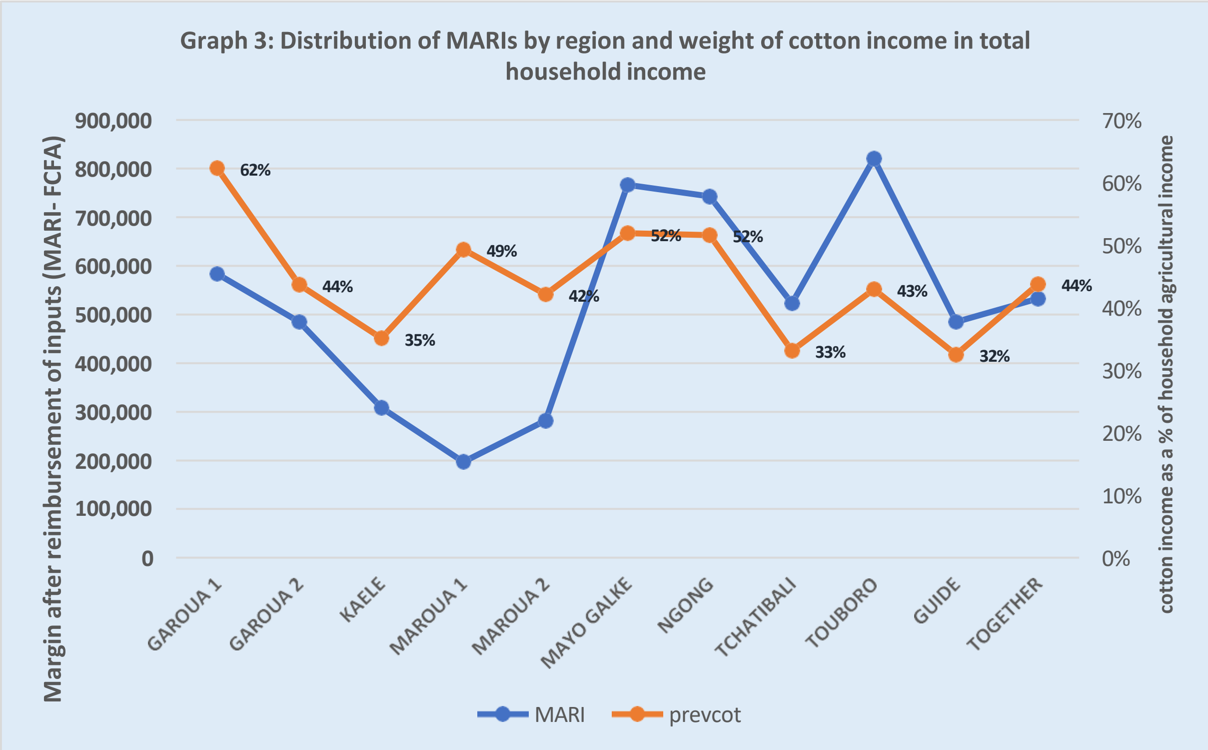
[23] Enquête Complémentaire à la quatrième Enquête Camerounaise Auprès des Ménages (EC-ECAM 4)-Monographies des Régions du Nord et de l'Extrême Nord. 2020 Edition.

10.2. Estimate of the amount of income needed to cover the total cost of the needs of the cotton grower and his household

Producers in the various cotton-growing regions generate their income from several sources, the main one being cotton production. Other alternative and no less negligible sources are linked to other agro-pastoral activities, namely the production of commercial food crops (onions, garlic, maize, peanuts and tomatoes, among others) and livestock farming. Income from cotton growing is an essential component of household income.



As shown in the graph below, the share of cotton income in total household income (Prevcot) varies between 32% and 62%, with the highest proportions in the GAROUA1, MAYO GALKE and NGONG production regions, at 62% and 52% respectively. The smallest but no less negligible contributions are seen in the GUIDER and TCHATIBALI production regions, with rates ranging from 32% to 33%.



These different sources of income from the various active members of the household therefore form the basis for estimating the level of income needed to cover the total cost of the basic needs of the cotton grower and his family.

The difference is quite perceptible when margins are analyzed by farm size. The analyses show that producers who own medium-sized and large areas generate high margins compared with the smallest and smallest cotton producers. To better target producers, we estimated the decent income and the gap by taking into account the size of the farm. The reference decent income for very small producers [less than 1ha] was adjusted to that for small producers: [1ha-3ha]. That of medium- sized producers: [3ha-5ha] to that of large or emerging producers (more than 5ha).

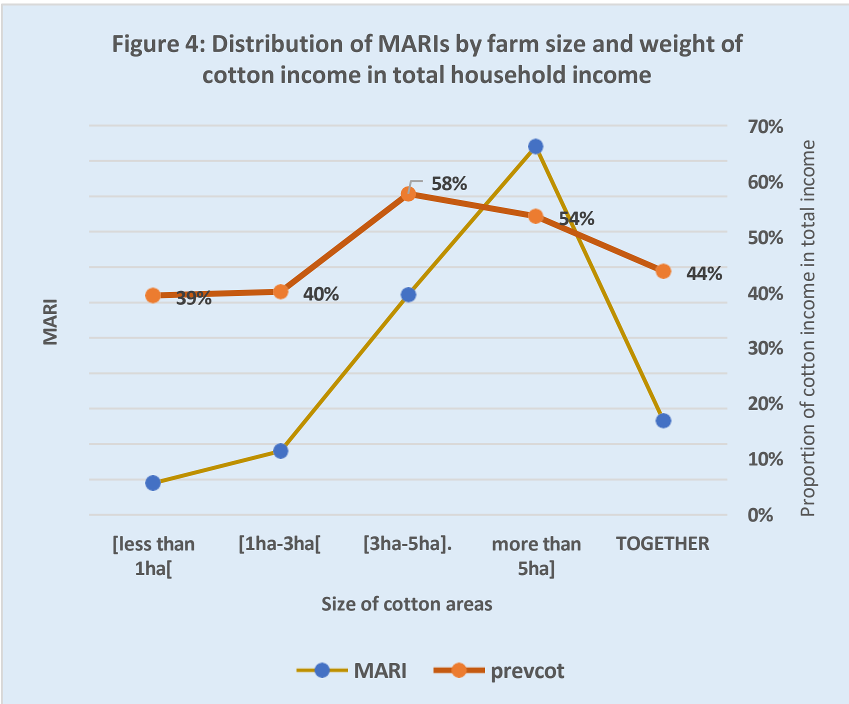


Table 13: Sources of income by type of producer

	Source of income (US$/year)*						
	Cotton	**Cereals**	**Pulses**	**Other food crops**	**Poultry**	**Small breeding**	**Total**
Very small farm	452.53	98.80	261.92	17.05	44.84	172.43	**1,147.57**
Smallholdings	740.34	179.50	667.93	50.53	44.62	162.08	**1,844.99**
Average farm	1,956.27	676.64	493.13	59.62	47.38	156.74	**3,389.78**
Emerging producer	3,674.32	1,538.70	1,162.30	215.42	60.33	191.22	**6,842.28**
TOGETHER	**1,019.37**	**377.93**	**663.04**	**55.98**	**46.30**	**166.40**	**2,329.02**

* US$1=605.36652 XAF conversion rate

Analysis shows that all households in the cotton-growing zone generate around 88% of their income from the sale of cotton (44%), cereals (16%) and pulses (28%). Very small cotton-growing households with an arable area of around 2.16 ha, of which 0.46 ha is devoted to cotton, have a fairly diversified income structure, with 55% of their income coming from the sale of cereals (17%), pulses (23%) and small livestock (15%), compared with 39% from cotton. This structure is also observed among small cotton growers, who have an average of 4.4 ha of farmland, of which 1.5 ha is devoted to cotton growing.
Only medium-sized and emerging producers generate more than 50% of their income from cotton. The sale of cereals and pulses also plays a major role, contributing 20% and 22%, then 15% and 17% respectively.

Insofar as cotton growers classified as medium, medium and emerging producers have a number of children greater than the size of the reference household (+2 children on average corresponding to 1.75 adult equivalents according to the coefficient of the AEEA equivalence scale), the following adjustments are made:

- The cost of nutritious food is adjusted by 32.228% (1.75/5.43) to guarantee the required level of calories that takes into account the new household size for the third group and 49.54% (2.69/5.43) for the fourth group of producers.
- The costs associated with decent housing should also be adjusted to take account of additional needs in terms of amenities induced by the size of the household.
- Expenditure on education and health will take account of household size for these categories of producer.
- Other costs will always be calculated as a proportion of the costs listed above.

Based on the estimates made earlier concerning the cost of basic needs in terms of food, housing, health and education, and other basic goods, we are then able to estimate the cost of basic needs for the different groups of cotton-growing households in our study area. The table below shows that the amount needed to meet the needs of a farmer and his household with a very small cotton holding (less than 1 ha) is estimated at 219,350 FCFA; this amount rises to 256,964 FCFA for a small farmer with between [1ha-3ha] of cotton. It is estimated at 291,360 FCFA for an average cotton grower with between [3ha-5ha] and 329,540 FCFA for an emerging grower, i.e. with more than 5ha of cotton. For the study area as a whole, this amount is estimated at 219 350 FCFA/month.

Table 14: Summary of estimates of reference decent income and adjusted decent income for comparison with data on observed incomes of cotton-growing households (cost per month).

	[Less than 1ha [3 adults and 5 children		[1ha-3ha [3 adults and 6 children		[3ha-5ha] 3 adults and 7 children		over 5ha] 3 adults and 8 children		ENSEMBLE 3 adults and 5 children	
	Cost (FCFA)	**US$**	**Cost (FCFA)**	**US$**	**Cost (FCFA)**	**US$**	**Cost (FCFA)**	**US$**	**Cost (FCFA)**	**US$**
Nutritious food	137,000	226.31	160,290	264.78	181,152.21	299.24	204,869.64	338.42	137,000	226.31
Housing	36,000	59.47	42,120	69.58	47,602.08	78.63	53,834.25	88.93	36,000	59.47
Education	25,680	42.42	30,816	50.90	35,952.00	59.39	41,088.00	67.87	25,680	42.42
Health	10,227	16.89	11,502	19.00	12,780.00	21.11	14,058.00	23.22	10,227	16.89
Other	10,445	17.25	12,236	20.21	13,874.31	22.92	15,692.49	25.92	10,445	17.25
Total cost	**219,352**	**362.35**	**256,964**	**424.48**	**291,360.61**	**481.30**	**329,542.38**	**544.37**	**219,352**	**362.35**

10.3 Estimating the gap between decent income and observed household income

After estimating the overall needs of producers and their households, an analysis of the gap between the reference subsistence income and the observed household income is carried out according to the different scenarios or categories of producer. The information required to estimate the level of annual household income was as follows:

- Areas under cotton cultivation.
- Areas under cultivation for other agricultural products (cash and food crops).
- Quantity of cotton harvested.
- Expenses related to cotton production (inputs, labour and other expenses)
- Turnover from cotton sales
- Net income from the sale of cotton (calculated based on data collected).
- Quantities produced and costs relating to the production of other agricultural products.
- Sales by product (calculated based on data collected).
- Net farm income (calculated based on data collected).
- Information on the production and marketing of livestock products (cattle, sheep, goats, horses, poultry).
- Sales from the marketing of livestock products (calculated)
- Net farm income and net household income (calculated).

The table below summarizes these estimates, taking into account the different production scenarios.

The study shows that, on average, typical households with very small cotton holdings earn 693,690 CFA francs ($1,148) per year or 57,890 CFA francs ($96) per month. Households with small areas under cotton earn 1,116,895 CFA francs ($1,845) a year or 93,075 CFA francs ($154) a month. Households with medium-sized areas of cotton earn 2,052,060 CFA francs ($3,390) a year or 171,005 CFA francs ($283) a month. Emerging producers earn 4,142,010 CFA francs ($6,842) a year or 345,170 CFA francs ($570) a month. Taken together, cotton producers earn an average of 1,409,910 CFA francs ($2,329) a year or 117,490 CFA francs ($194) a month.

Given that producers classified as smallholders (in other words those with a cotton holding of between (1ha-3ha), represent around 48.5% of the sample compared with 32%, 13% and 7% for those in groups 1, 3 and 4 respectively, the reference level of income required to meet the needs of a producer and his household for the whole of the cotton-growing zone is that corresponding to this group of producers. That is, 256,965 FCFA/month (US$424.5).

Table 15: Estimated average incomes observed in different groups of cotton growers and difference between observed average incomes and estimated and adjusted decent income

	[Less than 1ha		[1ha-3ha [		[3ha-5ha].		more than 5ha]		TOGETHER	
	Amount (FCFA)	US$	Amount (FCFA)	US$	Amount (FCFA)	US$	Amount (FCFA)	US$	Amount (FCFA)	US$
HUSBAND (household/year)	273,945	452.53	448,175	740.33	1, 184,	1,956.27	2, 224,	3,674.32	617,090	1,019.37
Share of cotton in total net household income	39%		40%		58%		54%		44%	
Net annual household income	694,700	1,148	1, 116,895	1,845	2, 052,060	3,390	4, 142,090	6,842	1, 409,910	2,329
Net monthly household income	57,890	95.63	93,075	153.75	171,005	282.48	345,175	570.19	117,490	194.08
Estimated and adjusted decent income level	219,350	362.35	256,965	424.48	291,360	481.30	329,540	544.37	256,965	424.48
Gap between average household income and subsistence income	162,460	266.87	163,890	270.73	120,355	198.82	-15,635	-25.82	139,475	230.4
Proportion of average household income in relation to decent income	24.84%		36.22%		58.69%		104.74%		45.72%	

Relative to the adjusted benchmark of US$424.5 per month, taken together, typical households earn 45.72% of the adjusted benchmark, while the households from which emerging producers are drawn earn 4.5% more than the income level required for this category. Figure 5 and table 16 below show the differences between average annual incomes and adjusted benchmarks (converted to annual values) for the different household types.

Figure 5: Average household income from cotton growing and other agro-pastoral activities and the difference between observed income and estimated decent income (US$/year)

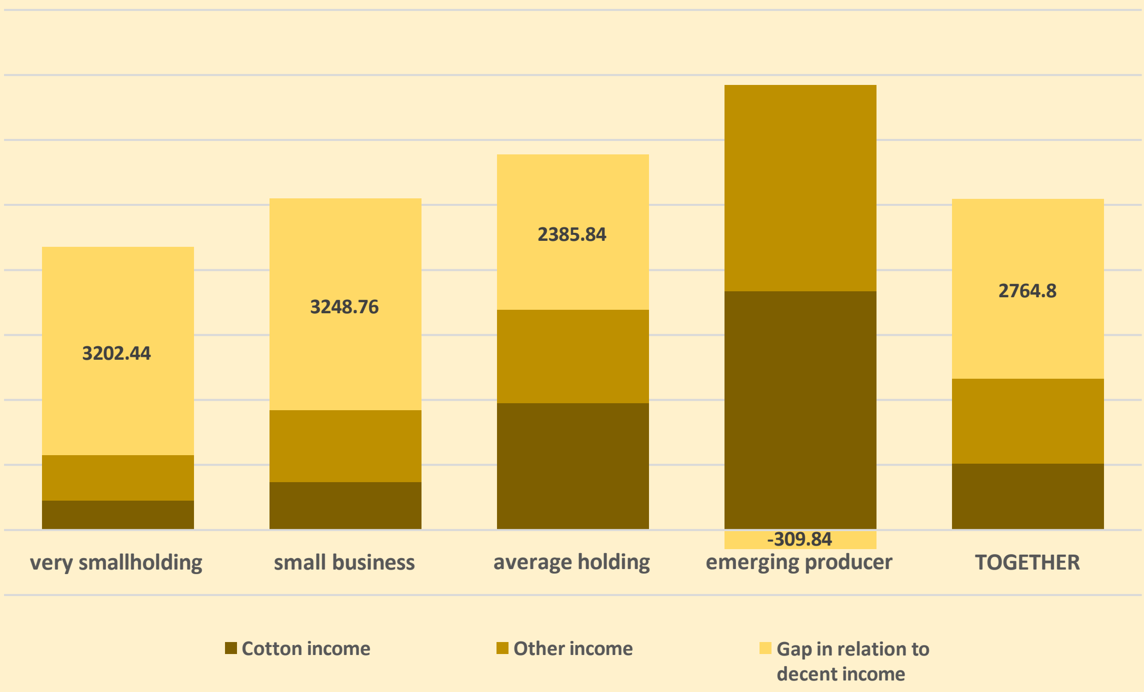


Table 16: Summary of monthly gap distribution by type of producer

	N	Cotton area (ha)	Area of other crops (ha)	Cotton yield (kg/ha)	Cotton income US$/month)	Other income (US$/month)	Gap in relation to decent income (US$/month)
Very small farm	312	0.46	1.7	1156.10	37.71	57.92	266.87
Smallholdings	477	1.45	2.96	1163.70	61.69	92.05	270.73
Average farm	130	4.12	5.24	1247.89	163.02	119.46	198.82
Emerging producer	65	7.53	8.02	1308.73	306.19	264.00	-25.82
TOGETHER	984	1.89	3.22	1182.43	84.95	109.14	230.4

XI- Decent income trend

In order to contextualize our reference level of decent income in the cotton-producing regions at the level of rural communities in Cameroon, we compare them by highlighting other poverty indicators in the country, using data collected at national and international level to establish a scale of comparability as shown in graph 6 below.

11.1. The guaranteed minimum wage (SMIG)

For some years now, the Guaranteed Inter professional Minimum Wage (SMIG) has been 36,270 FCFA per worker per month. In other words, in the case of our reference family of three adult worker equivalents, this SMIG would correspond to 108,810 FCFA (US$180)

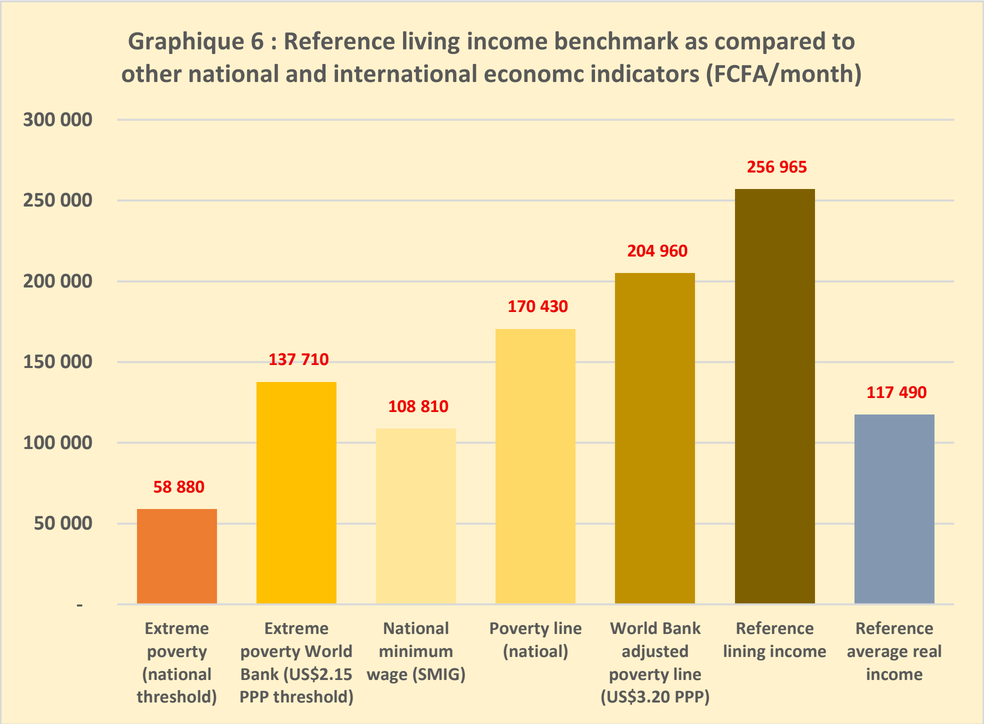
11.2. The national poverty line

According to the latest INS report on ECAM5, out of a population estimated at 26.7 million in 2022, around 10.1 million people live on less than CFAF 813 per day or CFAF 24,724 per month. Applying this amount to our reference family, this threshold would be equivalent to 134,250 FCFA (US$221.77).
The depth of poverty (also known as the poverty gap) is the average distance between per capita consumption and the poverty line. This distance is zero for the non-poor. This indicator is used to calculate the amount of income that would have to be transferred to a poor person to lift them out of poverty. In 2022, the depth of poverty is estimated at 13.0%, reflecting a consumption deficit of the poor of 13% in relation to the poverty line. This corresponds to an intensity of 34.5%. In other words, to lift the poor out of poverty, they need an average of 281 FCFA per poor person per day, or 102,504 FCFA per poor person per year, or 8,542 FCFA per month. An individual living on less than this amount is therefore in a situation of extreme poverty. For our reference household, the level of extreme poverty would be 46,380 FCFA (US$77) in 2022. Adjusted for inflation, these thresholds return to 170,430 (US$282) and 58,880 (US$97) respectively.

11.3 World Bank poverty line

Since autumn 2022, the World Bank has used US$2.15 (2017 PPP) per person/day as the extreme poverty line or the international poverty line and US$3.20 (2017 PPP) as the poverty line for lower-middle income countries like Cameroon. The World Bank Purchasing Power Parity (PPP) is based on 2017 prices. Using the PPP conversion factor and after adjusting for inflation, for our reference household of 5.43 adult equivalents we will have the international poverty line of 137,710 FCFA (US$227) and 204,960 FCFA (US$239).

As shown in graph 6, our reference decent income estimated in the cotton-growing zone of Cameroon as part of this study is higher than all the other control indicators. It is nearly double the national poverty line and the World Bank poverty line for lower middle-income countries. Around four times the national extreme poverty line and double the international extreme poverty line defined by the World Bank and the national minimum wage. These results indicate that even with an income level corresponding to the national poverty line, the populations of the cotton-growing zone would be unable to live decently, certainly because of the high level of precariousness and vulnerability of most of the communities in this zone, whose local economy is largely dependent on agro-sylvo pastoral activities, which are in turn highly exposed to climatic risks.



A strategy to promote social inclusion and build resilience in a sustained and sustainable way needs to be put in place and operationalized.

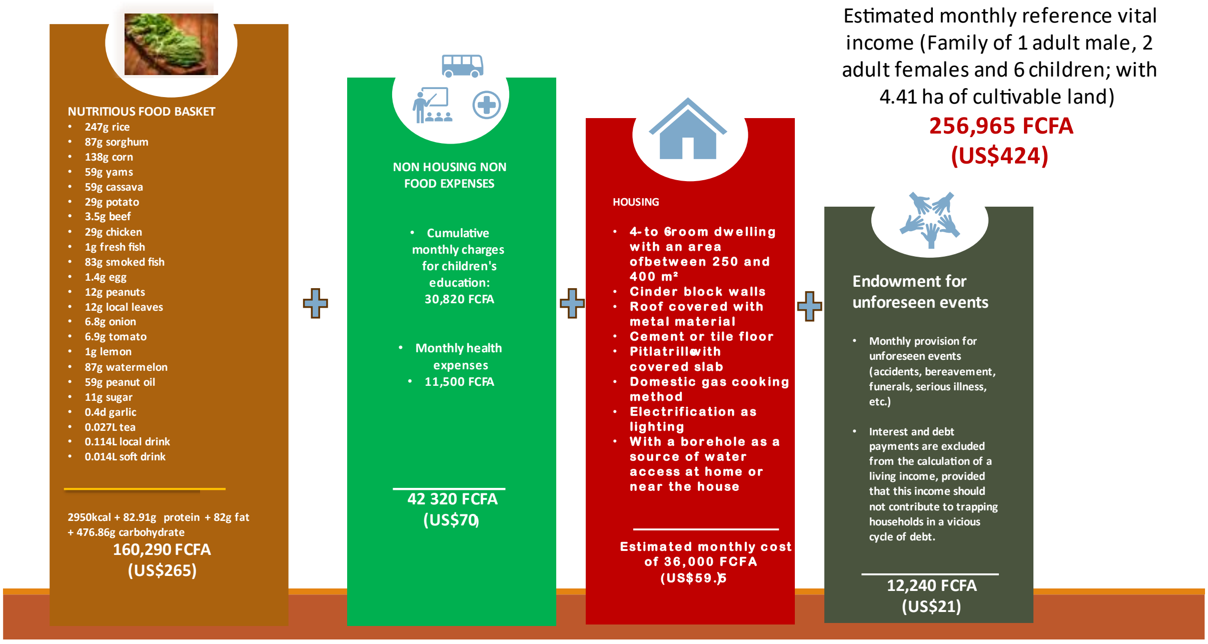
XII- Conclusions and operational recommendations

The notion of a decent life, although universal, must take into account local specificities with socio-economic and cultural factors that play a very large role in significantly impacting their daily lives. Our study indicates that cotton producers in the 10 production regions of the North and Far North have essentially agricultural sources of income generated mainly through the cultivation of cotton, cereals, vegetables and the practice of small livestock.

Overall, households in this cotton-growing area generate approximately 88% of their income from the sale of cotton (44%), cereals (16%), and vegetables (28%). Very small cotton producers with an arable land area of approximately 2.16 hectares, including 0.46 hectares dedicated to cotton cultivation, have a fairly diversified income structure, with 55% of their income coming from the sale of cereals (17%), vegetables (23%), and small livestock (15%), compared to 39% for cotton. This structure is also observed among small cotton producers, who have an average agricultural land holding of 4.4 hectares, including 1.5 hectares dedicated to cotton cultivation.
Only medium-sized and emerging producers generate more than 50% of their income from cotton cultivation. The sale of cereals and vegetables also plays a major role with a contribution of 20 and 22% then 15 and 17% respectively.

Our living income for the rural cotton-growing regions of North and Far North Cameroon for the study period is 256,965 CFA francs (US$424) per month, which represents the net income required for a basic but decent standard of living for a typical family of three adults (one man and two women) and six children. Figure 8 summarizes the calculation of the baseline estimates of living income, which include 160,290 CFA francs (US$265) for food, 36,000 CFA francs (US$59.5) for housing, 42,320 CFA francs (US$70) for non-food, non-housing expenses (health, education, clothing, transport, communications, furniture, and other household expenses), and an additional 12,240 CFA francs (US$21) to enable the family to cope with unforeseen or occasional events (marriages, funerals, illnesses, etc.).

Figure 8 : Cost of living standard and decent income



Our decent reference income in rural communities in Cameroon's cotton-growing zone is beyond all other benchmark indicators. These results clearly indicate that even with an income level corresponding to the national poverty line, the populations of the cotton-growing zone would be unable to live decently, certainly because of the high level of precariousness and vulnerability of most communities in this zone, whose local economy is largely dependent on agro-forestry-pastoral activities, which are in turn greatly exposed to climate risks.

It was not surprising to see the significant gap between actual income and estimated decent income, given that small-scale cotton farmers currently do not apparently earn enough to provide themselves with an acceptable level of decency in their living conditions. Most of the cotton farmers we visited during the study and interviewed during the FGD live with their families in houses that they themselves describe as not very comfortable, with toilets and other household amenities in very poor conditions. It is difficult to meet their family's basic food needs, especially during lean periods.

Figure 9: Summary of the monthly distribution of the gap by producer typology

Similarly, although public education is theoretically free, households spend a considerable portion of their income on their children's education. Health is a major concern for most of them as they lack medical insurance and primary healthcare coverage. Many cotton-farming families supplement their income from cotton farming with other economic activities, including growing and selling other cash crops and engaging in small-scale income-generating activities.

In this context, reducing the gap between real income and decent income (which is reflected at several categorical levels of cotton producers—see Figure 9) is not the responsibility of a single actor. It will require developing and operationalizing a strategy aimed at promoting social inclusion and building resilience capacities in a sustained and sustainable manner among the main stakeholders in the cotton sector. With this in mind, all actors, including producers, should work together to operationalize such a strategy.

This strategy should involve identifying all potential sources of performance improvement in the cotton sector and related agricultural sectors that could contribute to improving the standard of living and quality of life of stakeholders, particularly cotton producers.

Based on the above, the following recommendations can be made.

Operational recommendations

Table 17 presents a summary of the findings and recommendations.

Tableau 17 : Constats et recommandations

#	Findings	Recommendations	Process	Responsibles	Dead line
1	The study shows that producers qualified as emerging (those who have at least 5 ha of cotton farm) have a real income level higher than the decent income	The implementation of the sustainable development strategy for the cotton sector in Cameroon, which aims to produce 600,000 tons of seed cotton by 2029, requires the definition of coherent, resilient and inclusive action plans that prioritize socio-economic and environmental sustainability. Through this study, it is recommended to develop and propose models for intensification of cotton production with a view to promoting a new generation of cotton producers with economically profitable farms.	❶ These farms will thrive based on the planned production modernization strategies through mechanization, optimal use of fertilizers, and other high-productivity production factors. ❶ This can also be achieved by fostering the emergence of a new generation of innovative young cotton producers through the establishment and operationalization of programs to integrate and professionalize young people in cotton farming. ❶ des activités interprofessionnelles. ❶ Facilitating access to banking services and financial products. ❶ Implementing an action plan for the creation of MUFIDs at the level of cotton producer unions in the cotton-growing region. ❶ Developing appropriate financial products within existing MUFIDs. ❶ Establishing a framework for consultation between industry stakeholders on interprofessional activities.	SODECOTON/CNPC-C/FINANCIAL PARTNERS	Continue
2	Producers in most cotton-growing regions generate their income primarily from agro-pastoral activities, with a major contribution coming from the sale of certain marketable food crops (cereals and legumes) and small-scale livestock farming. This diversification of income sources helps reduce the risks associated with agro-pastoral activities.	The establishment and operationalization of a strategy aimed at promoting social inclusion and strengthening the resilience of producers in cotton-growing communities is necessary. This resilience should, on the one hand, promote agricultural systems that allow them not only to achieve optimal yields, but also to be able to store and sell them under optimal conditions.	❶ Training producers on Good Agricultural Practices will help promote yield optimization, sustainability, and ecosystem resilience. ❶ Supporting producers in the acquisition of food fertilizers by strengthening PPP funds for cotton producers. Facilitating input acquisition will also be achieved through simplified cooperatives, microfinance structures, and emerging producers. ❶ Due to constraints on product flow and harvest storage on local markets during harvest periods, producers are sometimes	SODECOTON/CNPC-C/FINANCIAL PARTNERS	Continue

			forced to sell off their production without really profiting from the production. Strengthening warehouse receipts or village grain storage methods would allow producers to store their product after harvest and benefit from a better purchase price when the market offers the best opportunities. This practice, already operational within certain cooperatives, must be developed and popularized among all cotton-growing area cooperatives. ❶ Strengthening the funds allocated to training on agroecological techniques (FO, biochar/bocachi, anti-erosion development, SCV, etc.) through subsidies from financial partners. This will help mitigate the climatic hazards to which producers in the cotton-growing area are highly exposed.		
3	The diet of rural communities is not very diverse despite the area's strong potential for nutrient-rich products. Some products with high nutritional value are generally commercialized and local consumption by the households that produce them is very marginal, certainly due to the financial pressure that some households often face.	❶ Implementing nutrition education training sessions for women to ensure optimal nutrition based on local foods and using effective food preservation techniques would help increase and ensure the quality of food consumed by the household. ❶ Women also play a central role in the household economy, and it was clearly mentioned during our field visits that when they are entrusted with the management of household funds, the budget is generally managed and rigorously balanced. Targeted programs aimed at diversifying women's IGAs are necessary.	❶ Supporting women's groups in the creation of Income Generating Activities (IGAs) by promoting women's cooperatives for market gardening, small livestock, among others. The study showed that small livestock farming, in addition to the cultivation of cereals and legumes, contributed significantly to the household economy, at least for very small and small producers. One of the income-generating activities to be developed would be to promote small livestock development programs for women. Training in FBS, BFE, and GAP in cotton producer cooperatives. Specific nutrition modules can be developed within this framework. ❶ Some plot preparation activities are often very labor-intensive; smallholder farmers, sometimes experiencing labor shortages, could seize these high-demand	SODECOTON/CNPC-C/FINANCIAL PARTNERS	Continue

			opportunities through "cash for work" activities to earn money and secure certain investments, such as small livestock farming, through self-financing. This would prevent them from entering a vicious cycle of debt, which is undesirable in the pursuit of a decent living.		
4	Access to economic infrastructure (water, electricity, roads and bridges, etc.) constitutes a major constraint and a shock likely to push households increasingly below a threshold that does not allow them to take proper care of themselves and live in a self-perpetuating situation of precariousness.	As recommendations, it is important to emphasize the acceleration of the implementation of the SND30. The acceleration of the delivery and commissioning of economic infrastructure projects (water, electricity, roads and bridges, etc.), as well as the implementation of targeted projects and programs to strengthen the resilience of populations, should be encouraged.	Since these infrastructures are crucial for supporting economic and social development, as well as facilitating access to markets and improving the living conditions of local populations, decentralized local authorities, together with their communities, will need to interact with central authorities to facilitate the construction of these infrastructures. However, cost-sharing financing from technical and financial partners (TFPs) for cotton producers is welcome, as simplified cotton cooperatives contribute enormously to the construction of social infrastructure (schools, health centers, boreholes, and stores, etc.) for the benefit of communities.	SODECOTON/CNPC-C/FINANCIAL PARTNERS	Continue

Strategy to be implemented to resolve the gap observed between real income and decent income on cotton producer farms

The study on the living income of cotton producers in Cameroon showed that there is a gap between producers' actual income and the income normally desired for a decent life. To reduce this gap, the sector, as a technical and financial support body, must implement an effective and structured strategy to address this situation. This strategy can be organized into the areas of intervention as summarized in the table below.

Table 18: Intervention strategy

Activities	Actions to take	Period from 2025 to 2029 (5 years)												Specific objectives	SMART Indicators	Deliverables
		I	F	M	HAS	M	I	I	HAS	S	O	N	D			
Structuring and organization of women's cooperatives	Raising awareness among women cotton producers (at least 25 women per cooperative, i.e. 750 women per year and ultimately around 3,750 women reached over 5 years)													Organize 150 women's cooperatives by 2029, i.e. 30 cooperatives per year (25 women per cooperative, i.e. 750 women per year, and ultimately 3,750 women affected over 5 years)	Number of women made aware	Field report
	Formalization of women's groups (holding of GCAs, legalization, registration with the IUN, establishment of bodies, office, stamp, identification plate, member registers)														Number of formalized women's groups	Field report
	Setting up income-generating micro-projects (Identification of viable projects, Market study, Preparation of project documents, Legal and administrative set-up, Search for financing, Planning and launch, Implementation and monitoring, Marketing and commercialization)														Number of micro-projects set up and operational	Project document
	Training, monitoring and support														Number of training courses completed	Training report
															Number of women trained	
Training of producers in FBS/BPA and BFE/PM (15,000 producers per year or 75,000 producers over 5 years)	Organization of Simplified Cooperative Societies awareness meetings on the benefits of training on Farmer Business Schools (FBS) and on Basic Financial Education (BFE)/PM													Save the list of volunteers.	Number of SCOOPS-PC Awareness	Minutes and attendance lists
															Number of registrants	
														Plan training sessions	Number of sessions planned	Session Schedule
	Organization of trainings and capacty bulding of basic trainers													Ensure that basic trainers are up to scratch.	Number of participants per session	Minutes and attendance list
	Acquisition of educational training materials													Ensure delivery of training materials	Number of training notebooks	Purchase order

															Number of posters	Delivery note
	Organization of training document implementations													Ensure that teaching materials are available (training notebook, posters, etc.)	List of equipment installed and unloading of equipment.	Shipping and receiving slips for materials.
	Implementation of training courses													cotton producers' theoretical and practical knowledge of agricultural entrepreneurship and financial management tools.	Number of sales carried out	Session report and attendance list, images
															Number of participants per session	
	Organization of monitoring of training progress													Ensure that the training program and teaching methods are running smoothly.	Number of sales carried out	Monitoring reports
															Number of participants per session	
	Organization of post-training monitoring of newly trained people													Ensure that learning is properly implemented and fill any gaps observed.	Number of newborns followed	Monitoring reports
Improving productivity	Training on good agricultural practices													Train 22,500 producers per year in good agricultural practices	Number of producers trained	Training report
	Support for producers in the acquisition of food fertilizers													Increase of the current envelope from 240 million to 1 billion	Number of producers who have benefited from support	Activity report
Creation of MUFIDs at the level of cotton producers' unions in the cotton-growing area (6 MUFIDs per year, i.e. 30 MUFIDs over 5 years with 3,000 members per MUFID after two years, i.e. a total of 90,000 members in the long term)	Raising awareness among cotton producers													Establish 30 MUFIDs by 2029 at a rate of 6 MUFIDs/year)	Number of producers sensitized	Activity report
	Support for producers in mobilizing equity (Regular contributions, Shares, Collective savings, Resale of products/services, Working capital)														Number of producers having contributed/amou nt mobilized	Activity report
	Structuring and formalization of MUFIDs														Number of structured MUFIDs	Activity report
	Implementation of appropriate infrastructure and equipment														Number of infrastructures equipped	Activity report
	Establishment of MUFID technical staff														of operational personnel	Activity report
Development of	"Harvest credit"														Number of	Activity report

adapted financial products in existing MUFIDs															producers who have benefited from agricultural credit	
	Warrant credit for commodities														Number of producers who have benefited from the warrantage credit	Activity report
	School credit														Number of producers who have benefited from school credit	Activity report
Production and use of organic manure	Training of producers on OM production													Improving productivity	Number of producers trained in FO production	Activity report
	Cart subsidy (1000 beneficiaries per year or 5000 producers over 5 years)															
	OM kits (wheelbarrow, shovels, forks, rakes, boots, gloves) 1000 producers per year or 5000 producers over 5 years														Number of materials subsidized	Activity report
Promotion of agroecological techniques	Training of cooperative relay agents on agroecology (700 agents/year or 35,000 agents over 5 years)														Number of agents relay trained	Activity report
	Planting useful trees in cultivated plots (1,000,000 trees over 5 years)														Number of trees planted	Activity report
Diversification of production	Training and retraining of zootechnicians in the cattle fattening and dairy production sector													Improving cotton producers' incomes	Number of zootechnicians trained/retrained	Activity report
	Training of 5,000 producers at a rate of 1,000 producers/year in beef fattening and dairy production														Number of producers trained in beef fattening and dairy production	Activity report
	Development of village poultry farming (increase in working capital of chicks by 50 million)														Number of chicks injected	Activity report
Implementation of basic social infrastructure at shared cost in cooperatives	Construction of schools with 10 buildings of 02 equipped classrooms + latrine per year, i.e. 50 buildings (14 million/building producer contribution 30%),													Improving access to education in rural areas of the cotton-growing region	Number of buildings built	Activity report
	Construction of storage warehouses 05 storage warehouses (10 million/warehouse producer contribution 30%) per year, i.e. 25 warehouses over 05 years													Reduction of early sale of cereals and improvement of food security in cotton-growing areas	Number of stores built	Activity report
	Construction of health centers 10 health centers (14 million/health center producer contribution 30%) per year or 50 over 5 years)													Facilitating access to the health center	Number of health huts built	Activity report

	Construction of 05 modern boreholes equipped with solar energy and a water supply system/year at 10 million/borehole with producers' contribution at 30%, i.e. 25 boreholes over 05 years													Improving access to drinking water	Number of modern boreholes constructed	Activity report
Popularization of energy renewable	Subsidy for the acquisition of 5,000 solar kits (solar panel, battery, lamps and radio 25,000 francs per kit) at a rate of 1,000 per year													Facilitating access to lighting in rural areas in cotton-growing areas	Number of subsidized solar kits	Activity report
	Training on biogas production and use techniques, 500 emerging producers per year, i.e. 2,500 producers over 5 years)													Improving the way food is cooked	Number of producers trained	Activity report
Monitoring and evaluation of actions implemented	acquisition of analysis software, data collection equipment													Monitoring and evaluation of actions carried out on the ground	Number of software and collection hardware acquired	Monitoring and evaluation report
	Training of field agents														Number of agents trained	
	Monitoring and data collection														Number of data collected	
	Strategy evaluation														Number of activities assessed	

Costing of the strategy

The estimated cost of this strategy for the implementation period (2025-2029) is 10,815,610,900 FCFA (16,490,983 Euro). This amount is expected to be raised through the contribution of CNPC-C at 16%; SODECOTON 13%; producers 16% and Technical and Financial Partners (TFP) 55%.

Table 19: Summary of estimated costs of the strategy

Montant (FCFA)		CFA francs	Euro	%
Estimated costs of the strategy (2025-2029)		**10 815 610 900**	**16 490 983**	
CONTRIBUTION BY ACTOR				
CNPC-C contribution		1 746 975 000	2 663 681	16%
SODECOTON contribution		1 387 120 900	2 114 997	13%
Producer contribution		1 686 000 000	2 570 710	16%
TFP contribution		5 995 515 000	9 141 595	55%

For more details, see the attached file.

Costing
strategie_05052025.x

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Annexes

Tableau : Panier alimentaire de référence et coût moyen des aliments par équivalent adulte pour un jour (GAROUA1)

Groupe d'aliment	Quantités consommées individu par jour (ajustées pour 2950cal) (kg)	Calories consommées par jour (ajustées) (kcal)	Protéines consommées par jour (ajustées) (g)	Matières grasses consommées par jour (ajustées) (g)	Glucides consommées par jour (ajustées) (g)	Coût journalier (FCFA)
Céréales						
Riz	0.1755	637.0528	5.2647	13.7051	140.2200	87.7445
Sorgho	0.0925	318.0723	9.7086	6.8428	58.3675	50.8546
Maïs	0.2983	1053.1100	26.8498	22.6558	191.8069	111.8743
Racines et tubercules						
Igname	0.0702	89.8504	1.3337	1.9330	18.6030	35.0978
Manioc	0.0526	80.5495	0.6318	1.7329	18.7256	23.6910
Patate	0.0702	80.7250	1.0529	1.7367	17.7606	14.0391
Viande, poisson et volaille						
Viande de bœuf	0.0351	44.2232	7.6162	0.9514	0.0000	70.1956
Poulet	0.0439	58.7888	8.9499	1.2647	0.0000	43.8723
Carpe fraiche	0.0526	56.8585	9.4764	1.2232	0.0000	52.6467
Poisson séché	0.0702	75.8113	12.6352	1.6309	0.0000	52.6467
Œuf						
Œuf	0.0056	7.2745	0.7051	0.1565	0.0392	8.3937
Légumineuses						
Arachide	0.0001	0.5670	0.0113	0.0432	0.0204	0.0193
Légumes, feuilles						
Feuilles locales	0.0161	4.4981	0.2570	0.0968	0.0628	12.0485
Autres légumineuses						
Oignon	0.0121	4.4802	0.1332	0.0964	0.8349	9.0816
Tomate	0.0143	3.1512	0.1432	0.0678	0.5577	10.7426
Fruits						
Citron	0.0027	1.4952	0.0267	0.0322	0.2376	5.3402
Pastèque	0.0660	36.9706	0.6602	0.7954	3.6300	36.3104
Huiles et graisses						
Huile d'arachide	0.0221	199.0046	0.0000	22.1000	0	22.1116
Sucre						
Sucre	0.0219	87.7114	0.0000	1.8870	22.1000	17.5423
Condiments						
Ail	0.0024	7.4606	0.2087	0.1605	0.7248	2.3989
Boissons						
The	0.0765	0.0000	0.0765	0.0000	0.0000	53.5407
Bilbili	0.2404	74.5199	1.2019	1.6032	13.7028	144.2321
Autre boisson gaz	0.0702	28.0783	0.0000	0.6041	7.0000	42.1174
Total	**1.5115**	**2950.2536**	**86.9431**	**81.3194**	**494.3938**	**906.5421**

Tableau : Panier alimentaire de référence et coût moyen des aliments par équivalent adulte pour un jour (MAROUA2)

Groupe d'aliment	Quantités consommées individu par jour (ajustées pour 2950cal) (kg)	Calories consommées par jour (ajustées) (kcal)	Protéines consommées par jour (ajustées) (g)	Matières grasses consommées par jour (ajustées) (g)	Glucides consommées par jour (ajustées) (g)	Coût journalier (FCFA)
Céréales						
Riz	0.2162	798.6000	15.7000	11.1200	140.3344	108.0930
Sorgho	0.1228	422.5454	11.6000	5.8000	81.3359	67.5581
Maïs	0.1130	398.9124	10.1706	5.0040	71.5016	42.3774
Racines et tubercules						
Igname	0.1209	154.7106	1.4832	0.3708	32.7500	60.4338
Manioc	0.1209	184.9275	1.4504	3.9784	87.9676	54.3904
Patate	0.0281	32.2875	0.4211	0.0494	5.0141	5.6152
Viande, poisson et volaille						
Viande de bœuf	0.0351	44.2199	7.6156	1.3287	0.0000	70.1903
Poulet	0.0281	37.6220	5.7275	1.4573	0.0000	28.0761
Carpe fraiche	0.0140	15.1611	2.5268	0.3262	0.0000	14.0381
Poisson séché	0.1104	158.9760	27.4896	5.5200	0.0000	82.8000
Œuf						
Œuf	0.0022	2.9199	0.2830	0.0628	0.0154	3.3691
Légumineuses						
Arachide	0.0001	0.6368	0.0229	0.0137	0.0203	0.0393
Légumes, feuilles						
Feuilles locales	0.0137	3.8416	0.2195	0.0826	5.3430	10.2901
Autres légumineuses						
Tomate	0.0082	1.8005	0.0818	0.0387	0.5658	6.1381
Oignon	0.0081	2.9866	0.0888	0.0643	0.3159	6.0539
Fruits						
Citron	0.0016	0.9136	0.0163	0.0197	8.0400	3.2629
Pastèque	0.1232	69.0066	1.2323	1.4846	6.7760	67.7743
Huiles et graisses						
Huile d'arachide	0.0585	526.2165	0.0000	58.8500	0.0000	58.4685
Sucre						
Sucre	0.0137	54.7154	0.0000	1.1771	13.7000	10.9431
Condiments						
Ail	0.0004	1.1120	0.0311	0.0239	0.1208	0.3576
Boissons						
The	0.0227	0.0000	0.0227	0.0000	0.0000	15.9105
Bilbili	0.1207	37.4255	0.6036	0.8051	6.8799	72.4364
Autre boisson gaz	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.2826**	**2949.5373**	**86.7871**	**97.5773**	**460.6807**	**788.6162**

Tableau : Panier alimentaire de référence et coût moyen des aliments par équivalent adulte pour un jour (MAYO GALKE)

Groupe d'aliment	Quantités consommées individu par jour (ajustées pour 2950cal) (kg)	Calories consommées par jour (ajustées) (kcal)	Protéines consommées par jour (ajustées) (g)	Matières grasses consommées par jour (ajustées) (g)	Glucides consommées par jour (ajustées) (g)	Coût journalier (FCFA)
Céréales						
Riz	0.2750	998.2500	13.5030	9.6300	154.7100	137.5230
Sorgho	0.1826	628.1440	19.1762	2.7324	115.2206	100.4468
Maïs	0.0660	233.0190	5.9410	5.0130	42.4380	24.7541
Racines et tubercules						
Igname	0.0157	20.1177	0.2986	0.4328	4.1605	7.8585
Manioc	0.0786	120.2344	0.9430	2.5866	27.9816	35.3631
Patate	0.0472	54.2234	0.7073	1.1665	11.9416	9.4301
Viande, poisson et volaille						
Viande de bœuf	0.0314	39.6066	6.8211	0.8521	0.0000	62.8677
Poulet	0.0220	29.4849	4.4888	0.6343	0.0000	22.0037
Carpe fraiche	0.0341	36.8342	6.1390	0.7924	0.0000	34.1057
Poisson séché	0.1815	196.0528	32.6755	4.2177	0.0000	136.1478
Œuf						
Œuf	0.0010	1.3646	0.1323	0.0294	0.0700	1.5745
Légumineuses						
Arachide	0.0003	1.5595	0.0561	0.0336	0.0609	0.0963
Légumes, feuilles						
Feuilles locales	0.0208	5.8247	0.3328	0.1253	0.8112	15.6018
Autres légumineuses						
Oignon	0.0108	4.0125	0.1193	0.0863	0.7452	8.1335
Tomate	0.0018	0.4032	0.0183	0.0087	0.0702	1.3744
Fruits						
Citron	0.0008	0.4219	0.0075	0.0091	0.0704	1.5067
Pastèque	0.0591	12.9800	0.5913	0.2792	3.2500	32.5199
Huiles et graisses						
Huile d'arachide	0.0495	445.5746	0.0000	49.5000	0.0000	49.5083
Sucre						
Sucre	0.0074	29.7050	0.0000	0.6391	7.4000	5.9410
Condiments						
Ail	0.0004	1.2534	0.0351	0.0270	0.1208	0.4030
Boissons						
The	0.0699	0.0000	0.0699	0.0000	0.0000	48.9582
Bilbili	0.2533	78.5301	1.2666	1.6894	14.4380	151.9938
Autre boisson gaz	0.0314	12.5735	0.0000	0.2705	31.4000	18.8603
Total	**1.4409**	**2950.1700**	**93.3227**	**80.7554**	**414.8890**	**906.9722**

Tableau : Panier alimentaire de référence et coût moyen des aliments par équivalent adulte pour un jour (NGONG)

Groupe d'aliment	Quantités consommées individu par jour (ajustées pour 2950cal) (kg)	Calories consommées par jour (ajustées) (kcal)	Protéines consommées par jour (ajustées) (g)	Matières grasses consommées par jour (ajustées) (g)	Glucides consommées par jour (ajustées) (g)	Coût journalier (FCFA)
Céréales						
Riz	0.1647	596.4410	11.9630	0.8550	136.629	82.3554
Sorgho	0.0918	315.7052	9.3400	.4.4765	70.9	50.4761
Maïs	0.2668	941.9153	24.0148	15.7332	171.55	100.0618
Racines et tubercules						
Igname	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
Manioc	0.0784	120.0036	0.9768	0.1628	29.0598	35.2952
Patate	0.0314	36.0795	0.4706	0.0652	9.291	6.2747
Viande, poisson et volaille						
Viande de bœuf	0.0314	39.5306	7.0742	1.4018	0.000	62.7470
Poulet	0.0157	21.0202	3.2001	0.9617	0.000	15.6867
Carpe fraiche	0.1021	110.2904	18.3817	2.3727	0.000	102.1207
Poisson séché	0.1318	142.3101	23.7184	3.0616	0.000	98.8265
Œuf						
Œuf	0.0005	0.6099	0.0630	0.0475	0.0035	0.7037
Légumineuses						
Arachide	0.0001	0.5670	0.0204	0.0043	0.0203	0.0329
Légumes, feuilles						
Feuilles locales	0.0258	7.2168	0.0429	0.0027	0.10452	19.3308
Autres légumineuses						
Oignon	0.0072	2.6699	0.1350	0.0075	0.5175	5.4119
Tomate	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fruits						
Citron	0.0003	0.0960	0.0030	0.0012	0.0264	0.6671
Pastèque	0.0787	17.9740	1.7325	0.0825	4.5375	43.2766
Huiles et graisses						
Huile d'arachide	0.0527	474.3671	0.0000	56.4400	0.000	39.5306
Sucre						
Sucre	0.0146	58.4661	0.0000	1.2578	15.3	11.6932
Condiments						
Ail	0.0002	1.2660	0.104	0.0080	0.5	0.1532
Boissons						
The	0.0413	0.0000	0.0413	0.0000	0.0000	28.8783
Bilbili	0.1643	50.9468	1.2061	0.0000	9.82	98.6066
Autre boisson gaz	0.0314	12.5494	0.0000	0.0000	32.9	18.8241
Total	**1.3311**	**2950.0249**	**102.4878**	**82.4655**	**481.15952**	**820.9532**

Tableau : Panier alimentaire de référence et coût moyen des aliments par équivalent adulte pour un jour (TOUBORO)

Groupe d'aliment	Quantités consommées individu par jour (ajustées pour 2950cal) (kg)	Calories consommées par jour (ajustées) (kcal)	Protéines consommées par jour (ajustées) (g)	Matières grasses consommées par jour (ajustées) (g)	Glucides consommées par jour (ajustées) (g)	Coût journalier (FCFA)
Céréales						
Riz	0.1390	504.4820	11.7040	0.0836	133.59	69.4849
Sorgho	0.0138	47.3935	26.2150	0.4814	1.2350	7.5774
Maïs	0.2224	784.9012	20.0116	16.8858	196.8800	83.3819
Racines et tubercules						
Igname	0.0417	53.3644	0.7921	0.0502	13.3030	20.8455
Manioc	0.0417	63.7871	0.6020	0.1004	18.3230	18.7609
Patate	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Viande, poisson et volaille						
Viande de bœuf	0.0258	32.5460	21.586	2.9618	0.0000	51.6603
Poulet	0.0417	55.8658	8.5068	2.4603	0.0000	41.6909
Carpe fraiche	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Poisson séché	0.0486	52.5306	8.2650	2.4000	0.0000	36.4796
Œuf						
Œuf	0.0012	1.6119	0.1512	1.1400	0.0840	1.8599
Légumineuses						
Arachide	0.0001	1.1340	0.0408	0.0864	0.0406	0.0238
Légumes, feuilles						
Feuilles locales	0.0347	9.7078	0.5547	0.0417	1.6263	26.0029
Autres légumineuses						
Oignon	0.0080	2.9566	0.0173	0.0010	0.0662	5.9931
Tomate	0.0081	1.7824	0.0090	0.0018	0.0297	6.0765
Fruits						
Citron	0.0024	1.3641	0.0244	0.0012	0.0255	4.8718
Pastèque	0.0523	13.8380	1.3209	0.0629	3.4595	28.7542
Huiles et graisses						
Huile d'arachide	0.1298	1168.0619	0.0000	83.6000	0.0000	129.7847
Sucre						
Sucre	0.0263	105.2336	0.0000	0.0000	12.6800	21.0467
Condiments						
Ail	0.0010	0.8229	0.0676	0.0052	0.3250	1.0423
Boissons						
The	0.0473	0.0000	0.0473	0.0000	0.0000	33.1251
Bilbili	0.0840	43.5461	0.7077	0.0000	5.2470	50.3885
Autre boisson gaz	0.0127	5.0960	0.0000	0.1096	1.2700	7.6200
Total	**0.9826**	**2950.0259**	**100.6235**	**110.4733**	**388.19**	**646.4709**

Illustration d'un Logement non décent à Pitoa

Illustration d'un Logement décent à Pitoa

Illustration d'un Logement décent à DOUKALONGO

Illustration d'un logement non décent à SALACK

Illustration d'un logement non décent à SALACK

Illustration d'un logement décent à ZONGOYA

Illustration d'un Logement non décent à DOUKALONGO

Illustration d'un logement décent à LAOUDJOUHAI

Illustration d'un logement décente à MAMBANG

Illustration des latrines non décentes

Illustration des latrines décentes

Illustration d'une source d'eau non améliorée
(puit du village de MBOLTA)

Illustration d'une source d'eau améliorée
(forage a Pitoa)