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# **SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT IN CAMEROON**

## **1. Introduction**

Agriculture is the mainstay of Cameroon's economy. About 75% of the active population is involved in agricultural production, which accounts for 50% of total exports. Cameroon has great potentials. The climate, ranging from humid to semi-arid, allows growing a wide variety of crops and the loss of soil fertility is becoming a serious problem in parts of the country (Wolfgang Grehhrke. 1997)

Prior to colonization, peasant farmers used traditional methods to grow food crops for subsistence. A system of shifting agriculture was common and long fallow periods ensured ecological sustainability. With the advent of colonization, export crops such as cacao, coffee, banana and rubber were introduced. These were grown on plantations using external inputs and modern farming technology. Export crops became the focus of national agricultural production and research. The government encouraged monocropping and the use of chemical inputs, subsidizing up to 65 % to 100 % of the cost of fertilizer pesticides, respectively. With government subsidies and credit, many farmers shifted toward producing export crops and became heavily dependent on external inputs.

In, 1986, a serious economic crisis struck the country as a result of changes in the world commodity market. The value of the export products such as cacao and coffee fell drastically and remained low. The consequences were felt throughout the countryside. Subsidies were completely removed and most agricultural development projects collapsed. Poverty increased in the rural areas and thousands of people had to receive food aid. The foreign food aid programs damaged local food production. Foreign rice, for example was sold at a cost lower than the cost of producing it in Cameroon, and forced

farmers to abandon farming. Communities are now increasingly dependent on imported food and local food security has been hampered.

With the withdrawal of subsidies and the subsequent devaluation of the Franc CFA, peasant farmers can no longer afford the agricultural inputs upon which they had based their agriculture. In many areas where heavy use of external inputs was common, soils are now losing their fertility and yields are decreasing.

The prevailing land tenure system is another factor which, coupled with increase in population, is a constraint to food production, especially because it places women and poor farmers at a disadvantage. Women are the producers of food crops but according to traditional customs, cannot own land. Moreover, average farm size is less than 1 hectare for many families. The small size of these holdings makes it difficult to feed the family throughout the year.



Slash and burn farming in Rural Cameroon.

With decreasing land availability, as traditional shifting agriculture is still practiced, fallow periods have been reduced or non-existent. Thus, soil fertility in the cleared land cannot recover to optimal levels and thus slash-and-burn farming is becoming very

common and is very unsustainable. In some areas of Cameroon, this process is contributing to deforestation.

Degradation of agricultural land and watersheds, deforestation and destruction of coastal zones are proceeding at an alarming pace in Cameroon. This is despite the engagement of a number of government institutions and many non-governmental organizations (NGOs) conducting resource protection initiatives. The main problems are: lack of common framework of action and coordination of activities, unclear delineation of responsibilities between the government institutions and dissipation of the limited financial resources for environmental concerns.

Today's agricultural industry contributes significantly to environmental and resource degradation, undermining the basis of people's food security. A different approach to agricultural production is fundamentally necessary.

It is believed that government, agribusiness, farmers and consumers should reverse the current trend of chemical-dependent, industrial agriculture, and support independent public research and promote sustainable agriculture-especially to meet the needs of small scale farmers. Environmentally friendly practices are literally already on the ground but desperately lack funding and policy support.

## **2. Poverty and agriculture**

The admission of Cameroon in October 2000 into the Highly Indebted Poor Country (HIPC) initiative has boosted funding for social programmes to alleviate poverty especially in the rural areas. This is with the hope that the government will do just the right thing. Some of the funds will be directed to the education sector, which has suffered structural under-investment since the economic crisis of the early 1990s. There is chronic shortage of teachers in rural areas, lack of resources for teaching, and school buildings

are dilapidated. It is believed that an uneducated person cannot perform optimally in any agricultural enterprise and it also holds true for poor persons as well.

The UN Developmental Programme (UNDP) 2003 Report on Human Development in Cameroon said 75 percent of the country's rural population lives below the poverty line of one dollar a day .According to the report, 59 percent of Cameroonians, including those in rural areas, live in poverty.

In addition the poor climate conditions, transportation problems, storage problems and a bulk of problems related to poverty are some of the things Cameroon farmers most endure. Cameroonians have always had difficult times eking out a living from the land. Very simple methods have been employed on the small patches of land for years. Most farmers use simple manual tools and practically no fertilizers or other soil additives because of poverty.



Although 50 percent of Cameroon's population makes living from agriculture, which represents 20 percent of the gross domestic product, the sector receives eight percent of total state investment. There is this concept that agriculture in Cameroon will enable a

family survive on a “ hand-to-mouth “ basis, a situation which is not worthwhile in terms of sustainability.

## **2.1 Constraints in production, distribution and marketing**

Cameroon is often described as one of the most beautiful countries in Africa, rich in natural resources and has a diversified commodity-based economy. Food and export crops, livestock, fishing and forestry make the backbone of the economy. Agriculture employs the majority of Cameroon’s workforce and it is generally felt that developing the agricultural sector will be instrumental in overcoming economic decline and on the other hand improve the well being in the rural areas.

There are many obstacles to rapid transformation of agriculture: the intransigence of the farmers themselves, the lack of investment in rural areas, the limited access to water, the deterioration of the environment, the pressures of foreign financial institutions to accelerate economic policies and favourable conditions for agricultural exports.



A rural setup on Rural Cameroon

Cameroon at the present may be producing food to feed its population, but distribution and marketing produce is often problematic. International oil, cocoa and coffee prices-

affected by the global economic slowdown, have had considerable impact on the economy.

These constraints have also been exacerbated by poverty, lack of public investment in rural farm to market roads in rural areas, limited access to water, environmental degradation- and difficulties in competing with subsidized producers from other countries. Coupled with poor climate conditions, transport, storage problems and political corruption, all these have added to the enormous burden in food production in the country.

The UN Food and Agriculture Organization (FAO) and the African Development Bank announced in 2003 that Cameroon would become one of 86 countries to receive support from the Special Food Security Programme. This is a scheme set up by the FAO to assist countries with food deficits. It has bolstered the work being done in Cameroon by the National Programme of Agricultural Popularisation and Research (PNVRA). The PNVRA is currently trying to put in place new agricultural methods by sending engineers and other experts to rural areas to work with farmers. The fear is that this should not be a programme in the series of ones that had started and failed due to corruption and lack of government's ability to implement them well.

Another challenge in modernising agriculture in Cameroon is how to make it as natural as possible, an idea which is beginning to take hold. It is a way to create more sustainable agriculture and more equitable trade. It is a way to get a better enumeration for farm products and export crops. However, the problem is that poverty, illiteracy, lack of technical skills, ignorance and government's lack of commitment will not make the goals possible. The underdeveloped and underfertilised agriculture practiced in Cameroon needs to be modernised so that subsistence farmers are brought within the scope of both national and international markets.

## 2.2 Food security

Africa has more countries with food security problems than any other continent (FAO 1994). The FAO Committee on World Food Security, the FAO Council and the FAO Conference of 1983 defined as ultimate objective or goal:

*‘to ensure that all people at all times have both physical and economic access to the basic food they need’.* At the global level, food security has three specific aims: *‘ensuring production of adequate food supplies; maximizing stability in the flow of supplies; and securing access to available supplies on the part of those who need them’.*

In many parts of Cameroon, a limited base of high potential land excludes the option of significantly expanding the area under cultivation. This is with the assumption that an appropriate and enabling policy setting is in place. Achieving food security in Cameroon communities requires increasing the productivity and sustainability of the farming system. This involves increasing the intensification of production, diversification and system resilience.



Intensification involves using land, water and labour more efficiently, increasing the use of technologies such as Integrated Pest Management (IPM) to control pests and maintain soil fertility, intercropping, terracing and other techniques to control erosion.

Diversification involves matching farm production to the prevailing agro-ecological conditions in the area. It does not mean that all production units must be diversified, some may and probably should contain, highly specialized production units or crops that generate greater profits than typical subsistence crops.

Successful intensification and diversification will increase system resilience and the ability of households and community to manage risk and reduce their food insecurity. Resilience also implies greater stability in farm income, reduced crop and livestock loss during drought or flooding, and distributes the demand for labour more evenly throughout the growing season.

FAO has recently incorporated the three elements of its broadened concept of food security-availability, stability of supply and access-into an index of household food security. The Aggregate Household Food Security Index (AHFSI) calculates the food-gap between the nourished and the average national requirements, the instability of the annual food supply and the proportion of undernourished in the total population. The index ranges from 0 to 100, with 100 representing complete, risk-free, food security and 0, total famine. FAO categorized the food security situation an index rating below 65 as ‘critical’. Between the years 1991-93, Cameroon was categorized under “low” food security with an index between 65 and 75.

The imperative of increasing food security in Cameroon calls for important and fundamental changes in the relationships between government institutions and rural communities. Decentralisation, empowerment (i.e. control over planning and allocation of financial resources), and clear and equitable property rights are all essential components. However, the government will continue to have an important role in establishing sectorial policy for many areas, especially the energy transition. Special

consideration is needed to policies that provide incentive to invest in energy technologies and supplies that are reasonable and cost effective, even if it requires a brief period of financial support.

### **3 Aspects of agricultural unsustainability**

The rapid destruction of forests began with the national and economic crisis in the middle of the Eighties. In Cameroon, it is particularly the need of farming families for land and extensive agricultural techniques (slash-and-burn) which strengthens pressure on the tree population and on grazing and arable land. In the medium and long-term, these problems can only be solved by land use which takes location into account and is appropriate; this calls for additional activities in agro-forestry and soil conservation. (Cameroon Project. 2000).??????

Presently, most of the water catchments areas are increasingly endangered through tree-clearing, slash-and-burn, and the expansion of the area under cultivation. Cooperation between farmers and stock breeders is even slowly being established in order to solve the increasing conflicts over scanty land resources in a sustainable way.

The main occupation of the active population is agriculture. The scarcity of land-use rights leads to extreme pressure on land leading to scarce agricultural land reserves. This has forced farmers to move up into regions with steep slopes. The yields are low, seed of doubtful quality, and the lack of guidance on better systems of cultivation, exhausts the soil to an ever increasing extent. These results in cutting down the remaining trees, erosion, land conflicts, both between farmers and stock-breeders.

Deforestation and soil erosion are already serious problems in parts of the country, exacerbated by extensive commercial logging which has increased due to the desperate need for foreign currency. It is an important economic activity, yet rarely benefits the

people living in the forest zones. Illegal logging is also a major problem, although the government has recently stepped up checks but this is not practically reducing the rate of illegal logging in any way.

Sustainable agriculture and rural development has been defined by FAO as:

*“...the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development( agriculture, forestry and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable.”*

In Cameroon, these goals are not easily attainable over the short or medium-term. High population densities relative to productive capacity, landlessness, malnutrition and extreme poverty will inevitably lead to degradation of the natural resource base unless special measures are taken to improve levels of training and education, raise incomes, and promote investment. Hectares of land have been deforested and converted into agricultural land. Timber production is relatively a minor source of forest loss. However, both sources create significant losses of biological diversity which has important economic value. In some cases, changes in microclimate are also observed. Large hectares of land are considered to be affected by human-induced degradation such as wind or water erosion, or chemical or physical degradation.

### **3.1 Energy for sustainable development**

It has been estimated that about 130 million people in Sub-Saharan Africa live in areas where fuel wood consumption out places the natural regenerative capacity of the forest (United Nations 1993). This is a very true situation where Cameroon finds itself today. In addition to these and other problems related to environmental degradation, economic performance in agriculture has generally been dismal. During the period 1965-1980, agriculture in Sub-Saharan Africa grew at a rate of 1.8 per cent p.a. against a population

growth rate of 2.7 per cent (World Bank, 1993). During the 1980s agricultural growth declined further against an increasing population growth rates (1.4 per cent and 3.1 per cent respectively), compounding land degradation, food shortfalls and food insecurity. Cameroon was not an exception to this as well.

The elements of sustainability, many of which have important information and technology components, are not easily adapted to the constraints faced in Cameroon, which is starting at a low base.

To increase production in Cameroon's agriculture, will require without question breaking energy bottlenecks that currently exist at all levels. For example, at the farm level soil nutrient mining (i.e. extracting nutrients without replacing them) is directly related to energy use sustainability. Soils without sufficient nutrients to produce good crops lead farmers to search for new lands to cultivate and, often, deforestation. On the other hand, the availability of organic and mineral fertilizers present highly cost effective sources of energy and plant nutrition but often involve costs (either in labour or cash) that exceed the capacity of the farmer to use them effectively.

Similar observations can be observed in the use of pesticides and processes such as soil salinization, loss of biological diversity, desertification and water pollution.

At the national level, government policies often promote energy availability in urban areas but not rural ones. Thus due to lack of access to energy, farmers either cannot prepare and cultivate their land properly or cannot harvest, store and process their yield to maximise return. This leads them to engage in highly inefficient and unsustainable practices such as shortened fallow periods, inadequate cultivation, or excessive use of dung or fuelwood for cooking food or processing output.

## 3.2 Energy transfer

During the last five years a new context for action has emerged in the international community, which calls for an energy transition in both developing and industrialized countries.

In Cameroon, a transition to sustainable energy systems is needed to accelerate the growth of basic food production, harvesting and processing. However, breaking the current energy bottleneck must also be sustainable (viz. environmentally sound, socially acceptable and economically viable). Such a transition involves a commitment to long-term developmental goals and requires innovative policy and technological solutions.

Cameroon's energy transition would be characterized by a move from the present levels of subsistence energy usage based on human labour and fuelwood resources, to a situation where household, services and farming activities use a range of sustainable and diversified energy sources. Obvious benefits are greater resilience in the production system, higher productivity, improved efficiency and higher incomes to farmers. Environmental degradation, driven primarily by poverty, would be minimized.

The investment required to make such a transition would not be significantly different from that required for conventional approaches. However, the process of identifying needs and promoting investment in a range of technological options would be considerably different. The new energy situation would offer opportunities to reinvigorate the situation in many African countries which continue to cope with insufficient rural energy supplies. Among the problems are the following:

- Price policies rarely reflect the energy needs of rural populations;
- Energy plans and agricultural programmes are not linked;
- Energy requirements for agro-activities are seldom quantified;
- Energy policies and plans in Cameroon do not focus on the agricultural and rural sectors, except occasionally, on an aggregate basis;

Unfortunately, the energy transition in rural areas will not occur under a "business-as-usual" situation. A concerted effort is needed on the part of the many actors influencing energy supply and demand patterns. One challenge is to reduce the barriers facing rural energy development which arise from a lack of policy and programmes coordination between the rural and agricultural sectors, and the energy sector institutions.

### **3.3 The energy sector in Cameroon**

The rural sector continues to remain outside the energy supply assessment and planning efforts for industry, commerce, and transport in Cameroon. This is due, in part, to negligence by government and to the small impact rural energy has on the national energy balance. Because of their meagre energy consumption and poor data in Cameroon, the important role agriculture plays as a source of food and fibre, for foreign exchange and the relatively large percentage of GDP that is derived from the agricultural and rural sector, is ignored.

The dispersed and often non-monetized nature of rural energy also contributes to its neglect in planning and investment. The energy authority rarely has an institutional or operational presence in rural areas and only a few agriculture and rural development programmes deal explicitly with rural energy requirements. This is due, in part, to lack of technical capability. However, a change in mindset is also needed among policy makers to recognize the potential economic and social gains to be realized from increasing energy supply in rural areas. These gains will translate into improved use and management of land resources by allowing more efficient use of resources and less degrading land-use practices such as fuelwood use.

National agricultural and rural development authorities, normally without any mandate regarding energy matters, are often incapable of negotiating their energy requirements with the electricity utility company and energy authorities. Thus, a "vacuum" of responsibility and lack of guidance for energy interventions in rural areas exist in Cameroon. No institution is actually "in charge" of energy for development of the rural and agricultural sector. This leads to low allocation of resources and investment for rural development and agricultural activities vis-à-vis other sectors of the economy. Since no single institution, governmental, local or private could alone cope with

all issues involved, a political interest, coupled with effective inter-institutional cooperation and collaboration is required.

The most disturbing issues about energy (electricity) production in Cameroon are as follows:

- The electricity is generated from just one source of hydro generated power.
- Supplies are very erratic and inconsistent.
- Supply is mostly concentrated in urban cities and more or less concentrated in areas with no agricultural production of any kind.
- The bills are too expensive for the average citizen to pay at the end of the month.

Rural areas which might have been fortunate to have electricity supply probably because influential government personnel originate from this area definitely have no dream in tapping this energy source for any agricultural or other economic venture because that activity will never pay for its bills.

Promoting food security by raising agricultural productivity and sustainable production systems will inevitably involve increases in energy inputs (electricity) for water supply and management, plant nutrients, and agro-processing, to provide community lighting and drinking water, for cultivation. Thus there is the need to shift the emphasis from single issue solutions to more integrated, sustainable approaches to development.

For example, pesticides alone are not sufficient or economically cost-effective in controlling most pest problems. Strategies now exist for many crops which involve understanding the pest life cycle, economic damage thresholds and the effects of cultivation practices which can greatly reduce or even eliminate the need for regular pesticide applications. IPM is an effective way of reducing production costs and avoiding the associated risk of pollution and contamination with heavy pesticide use.

Similar evidence of the benefits from integrated approaches exists for mineral fertilizers. Integrated plant nutrition strategies that use organic materials, leguminous crop rotation, and cultivation practices to maintain the optimal balance of soil structure and plant nutrients for agriculture are more beneficial economically to farmers than solely relying on mineral fertilizers.

In both examples above, environmental protection and cost efficiency can be realized.

### 3.4 Water availability

The availability of adequate water resources for agriculture is essential for increased production. However, efficient use of this resource in Cameroon does not imply large scale, energy-intensive irrigation schemes. Small pumps have had an important beneficial effect on irrigation in some parts of the country for vegetable, rice and banana production. This is often practiced by big companies. Where surface water is available this technology represents a well distributed and energy efficient option. However, the presence of surface water does not always guarantee the existence of irrigation of crops in rural settings.



Carrying water for crop irrigation

Generally, Cameroon depends solely on rain water for crop production. This has limited agricultural activities to the rainy periods generally from April-September. All year round agricultural activities can also be carried in wetlands, swamps and along the borders of certain rivers and streams. A few farmers could sometime grow crops especially vegetables by constructing small water canals which can divert some quantity of water out of rivers and direct it into their farms. But this will also depend on the position of the farm or garden in relation to the river. Thus the slope usually counts much for such kinds of water management. Other farmers may have to transport water in buckets from river/stream to their farms and then use it to irrigate their crops. Due to the labour and time constraints involved in this process, some farmers can irrigate their crops at very wrong hours when the sun is really at its maximum and this later on has a negative effect on growth and subsequent yield of the crops.

Previous experience in Cameroon has shown that the way in which the water resource is made available, both its price and mode of delivery, will determine whether the resource is used

sustainably. Thus irrigation schemes should follow the principles established by the International Action Programme on Water and Sustainable Agricultural Development which takes into account the planning, development and management of water resources in an integrated manner.

Also important is the potential for biomass energy conversion technologies. Residues from wood and agro-industries, purposely grown biomass and municipal solid wastes may play a major role in Cameroon. Cameroon has a great potential to acquire energy from the aforementioned sources, but a weak policy base and lack of initiative by the government departments coupled with endemic corruption will not allow this to be implemented. The economic and social assessment of these options is needed to avoid disrupting employment and resource use. Local and global environmental benefits of biomass energy conversion must also be considered

Awareness of the constraints facing national and local authorities when trying to solve energy problems in rural areas is being increasingly converted into actual action. Decentralization of the decision making process and of energy production, enhanced social participation, institutional linkages, and the entry of new technologies are only some of the elements which will directly and indirectly influence a mobilization of efforts towards achieving Food Security and Sustainable Agriculture and Rural Development..

## **4. Suggested solutions and conclusion**

With an increasing population, faced with a static and never increasing land surface, threatened by global environmental degradation tendency, rural poverty and underemployment have resulted in high levels of rural exodus and widening disparities between the rich urbanized residents and their rural neighbors.

Poor farming and grazing systems, coupled with the indiscriminate felling of trees (the poor usage of natural resources), allow the accumulation of carbonic gases with drastic consequences. These challenges bring about ecological imbalances which may cause irreversible damages if not combated. There is therefore an urgent need to develop land management systems that promote conservation of the natural resource base.

On the other hand, low productivity of the land and underemployment has led to low annual incomes in the country. Despite government's heavy investments and achievements in national infrastructures, many villages remain poor and tied to a shrinking agricultural sector. In response, much needed education and training, and also the technical know-how to assist the rural communities in sustainable resource management, economic growth and self sufficiency. Villagers will be required to acquire skills and knowledge and the resources needed to launch and sustain income generating activities in their own communities.

Some of the development needs could be as follows:

- To assist in the economic and educational empowerment of resource poor and underprivileged rural families through environmentally sustainable means, thus contributing towards the attainment of sustainable development.
- To improve the quality of living by undertaking various activities in any sphere so as to help alleviate human suffering, irrespective of sex, creed, colour, race and religion.
- To generate employment opportunities especially for small and marginal farmers and landless people.

Some more specific objectives could also include to:

- Advice in sustainable agriculture, social forestry, and coastal resource management/fishing, i.e., to sensitize and educate farmers to adapt ecologically sound farming systems e.g. ‘the permanent farming system (PFS)’, and to exploit the potentials of agro-forestry in enhancing sustainable use of natural resources in agricultural water shed management and environmental protection.
- Processing and marketing in the areas of agriculture, animal husbandry and forestry (agro-marketing, food processing, micro, small and cottage enterprises) i.e. setting up small scale industries and support the formation and effective management of viable farmers/handicraft cooperatives and their self-help common initiative groups among the unemployed, underemployed, small and marginal farmers, low-income groups in the rural and urban areas as a means of earning a living as well as augment their present low income.
- To assist in establishing and operating alternative and ecologically sound in-come generating projects such as eco-tourism
- Participatory land use planning
- Bio-diversity and participatory management of protected areas
- Introduce sustainable pastoral grazing systems to increase the quantity and quality of animal products with household livestock farmers.
- Assist livestock farmers in developing appropriate techniques for all year-round on-farm feed production and farm management so as to reduce the high livestock mortality rate.
- Assistance in ensuring villagers’ land security rights and access to and control of natural resources
- To establish a coordinating and implementing body to manage and monitor the activities of these rural activities.

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