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CULTURE AND SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES IN AFRICA

Basic Research Report on the present state of knowledge

By

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BRIEF DESCRIPTION OF THE STUDY

When one takes a look at the development of African peoples, one realizes rather sadly that their development is lagging behind in spite of the efforts made over the decades. One of the fundamental causes of this situation is that the cultural aspects of the black continent were not taken into account in the development process. This was reflected in the natural resource context by an accelerated degradation, while African culture has many factors that could contribute to the preservation of these resources.

Within the framework of the training programme on the cultural approach to development in Africa, the African Centre for Applied Forestry and Development Research conducted a research on the theme “Culture and Sustainable Management of Natural Resources”. At the end of this study, three basic points stood out:

- Africa Culture has within it, some positive factors but many more negative factors, in relation to natural resource management;
- A cultural adjustment may be envisaged with a view to promoting sustainable development;
- The strategy of intervention will consist in training and educating mass education trainers who will teach much more by example.

All this could change generally, the behaviour of individuals and institutions with a view to a sustainable management of natural resources which constitute the basis of life and the structure of development of all times. Consequently, it is not too late to cherish hopes and look up to the future with optimism in spite of the blunders committed hitherto by Africa within the framework of its development.
SUMMARY OF THE STUDY

At the dawn of the 21st Century, Africa’s record in the area of development does not look encouraging. In recent decades, although the Gross Domestic Product and Human Development Index have sometimes shown a significant progression in many African countries, the damage on natural resources on the other hand, has at the same time been very serious and constitutes a real potential threat to life if effective measures are not taken to deal with it in time. Indeed, as a result of colonial penetration, Africans have embarked body and soul on this imported dynamic of the West and christened it “development” of which the blind and naïve adaptation to the African context has only led to a drift.

One of the suitable ways of attempting to get African peoples out of this situation is the return to the reappraisal of their ancient civilization, so as to draw from other continents only what is really enriching. For this reason, the African Itinerant College for Culture and Development has embarked on the creation of a training programme on the cultural approach to development in Africa. The African Centre for Applied Forestry Research and Development, a non-governmental organization for research and action to protect the environment and stimulate sustainable development, has been mandated to prepare the basic research report on the state of current knowledge, with a view to contributing to the international conference on the cultural approach to development in Africa.

To conduct this study, we undertook the preliminary preparation of a plan of work followed by desk and operational research within some specialized departments and structures (Culture, UNESCO, NGO, Consultancy firms). We organized some meetings with some strategic resource persons with whom we held some semi-structured interviews. These resource persons were drawn from structures such as environment and forests – culture – agriculture – animal husbandry – national education – higher education – urbanism and housing – social affairs and status of women – mines, water and energy – private enterprises – representatives of peasant organizations – parliamentarians – traditional communities and chieftainry. Some research work was also conducted on Internet. After analysis and drafting, the report was submitted to 2 of our colleagues for their perusal.
The document has 4 major parts. The first part makes it possible for us to give a content to the concepts of culture, natural resources, sustainable management and development. The second presents a historical review of natural resource management in relation to African culture. The third for its part, gives a current diagnosis of the influence (positive and negative) of culture on natural resource management. Finally, the fourth part reviews the aspects of cultural adjustment for an improved management of natural resources and proposes a strategy of intervention in African communities.

After the clarification of key concepts, the historical insight into natural resource management in relation to culture reveals to us that Africa, the cradle of mankind, was naturally endowed with a great wealth of natural resources. As time went by some factors “pushed” this wealth to exhaustion. Among these factors featured prominently colonial penetration, the unbridled race towards a form of development which failed to take into account the preservation of natural resources, customs and traditions of local communities, the inexistence of practical directives and inter-professional links between those who study culture and those who decide and manage development policies. Today, we realize with the greatest sorrow that all these factors were the source of numerous constraints on the management of natural resources which constitute in reality the very basis of life and the source of sustainable development in Africa.

The present diagnosis of the influence of culture on the sustainable management of natural resources in Africa shows us that certain cultural factors promote the conservation of natural resources while others have a negative effect on these resources. Among these factors of positive effect are: the sacred woods which may be sacred forests, aquiferous formations, watercourses and ponds, coastal areas including the coastline, estuaries and mountain ranges – land occupation systems (quickset hedges or groves) – some eating habits which forbid the consumption of the flesh of certain wild animal species at certain periods of life – belief in totems (Lions, panther, elephant, buffalo, reptiles, birds) which forbids the slaughtering of these animals at certain places.

Among the cultural factors that have a negative effect on the sustainable management of natural resources are the following:

- The poor perception of one’s locality which means that in the absence of a culture of collective good, the people consider only the limits of their groups (clans) forgetting the
concept of national territory on which the strategy of conservation (national parks, forest reserves) are based;

- The modes of housing which make wanton use of bamboos and wood thus threatening in particular raffia and other woody species;
- The difficulty of translating into practice which reflects the fact that peasants have difficulty in adopting new techniques because they always persist in doing things the way their parents did;
- Some eating habits which compel some people to show preference for game or certain floristic species (fruits, medicinal) without developing arboriculture or forestry;
- Decoration and prestige which lead to the poaching of some animal species in order to win some trophies. This is the case with the skins of the panther, the boa, the horns of the buffalo, the tusks of the elephant and the feathers of certain birds, etc;
- The culture of State together with its land and forestry legislation which does not promote the conservation of natural resources by the people;
- Armed conflicts perpetrated from all parts of the African continent which are not likely to preserve the natural resources of the land;
- Social factors such as witchcraft, jealousy, vampirism, spite, self-centredness, traditional autopsy, etc.; which decimate Africans while man should be considered as the principal resource to be protected.

As the way forward, we wish to define the aspects of cultural adjustment with a view to an improved management of natural resources. Some of these aspects relate to the promotion of existing activities while others are innovative. On the whole, the following may be retained:

- The promotion of sacred forests;
- The control of species sampling and the harvest period;
- The promotion of groves as a land occupation system;
- The reform of land and forest legislation as a factor of natural resource conservation;
- Tree cultivation as a factor of sustainable forest management;
- The promotion of medicinal plants cultivation as well as the cultivation of spicy plants and woody species used in the cottage industry;
- The promotion of game husbandry;
- The promotion of contour crop cultivation along hill slopes;
• The orientation of the training programmes for rural development officials towards a more practical approach;
• The promotion of peace and social stability throughout the African continent.

The intervention strategy recommended for the establishment of a training programme involves the following stages:

• A definition of target groups and an identification of pilot zones for the programme;
• A preparation of training topics by experts authorized by AICCD;
• An identification of facilitating structures;
• An information and sensitization campaign of these facilitating structures;
• An operational programming;
• Training properly speaking;
• Operationalization of trainers having received the training;
• Follow-up and coordination.

The expected results of the intervention are as follows:

• Change in behaviour on the part of the populations and institutions on the manner of managing natural resources, particularly through an improvement of positive practices and a rejection of negative practices;
• Decline in the rate of natural resource exhaustion;
• Renewal of certain natural resources;
• Gradual reconstitution of natural resources with a view to a viable and sustained socio-ecological balance.

All these constitute genuine prerequisites for a sustained development of Africa.

The indicators for measuring the impact of the programme are inter alia:

• The number of new officials who have settled down and are putting into actual practice the new methods of natural resource management;
• The state of deterioration of natural resources before and after the programme;
• The number of persons involved in game raising;
• The tonnage or herd of game, fruit, spicy and medicinal species production;
• The number of trees planted;
• The reduction in the number of houses made of bamboo, poles and planks;
• The number of armed conflicts on the continent before and after the programme.

Finally, it was recommended that the follow-up to this programme be handled by AICCD with the support of structures already engaged in the programme and many others that could be subsequently identified.

In conclusion, it was strongly recommended that this programme be set up, the effects of which could lead to an adjustment of development indicators for Africa. From this point of view, it is not erroneous to cherish hopes and look up to the future with optimism in spite of the blunders committed hitherto within the framework of African development.
INTRODUCTION

At the dawn of the 21st Century, Africa’s record with respect to development does not look encouraging. In the last few decades, although the Gross Domestic Product and Human Development Index have sometimes shown a significant progression in many African countries, the damage caused on the other hand, to natural resources at the same time have been very serious and constitute a real and potential threat to life if some effective steps are not taken to deal with it in time.

Indeed, as a result colonial penetration and the consequences stemming therefrom, Africa embarked totally on an imported dynamic of the West and christened it “development”. Certainly, the concept of development in itself was not bad, but it is the blind and naïve adaptation to our African context which posed problems. This is indeed the starting point of all our woes. Everything happened as if Africa wanted to walk faster while keeping its eyes closed, the eyes which were supposed to enable it see, and this naturally led only to a drift.

One of the fundamental ways of attempting to get African peoples out of this slippage could be the return to the roots or the reappraisal of their ancient civilizations. This involves taking a step backwards to investigate the past, delving into our cultural wealth and making a fresh start by drawing massively on our authentic roots in order to identify and promote the factors that may contribute to the conservation of natural resources. However, it is not merely a question of completely rejecting everything coming from elsewhere, but drawing from it only what is enriching.

Conscious of this overriding necessity, the African Itinerant College for Culture and Development (AICCD) has embarked on the creation of a training programme on the cultural approach to development in Africa. The implementation of this programme requires, as a matter of priority, the establishment of realistic operational partnership and collaboration aimed at clearly publicizing the objectives of the programme throughout the African community.

The African Centre for Applied Forestry and Development Research (CARFAD), a Cameroon based non-governmental organization for research and action geared toward the protection of the environment and sustainable development, was authorized to prepare the basic research report concerning the state of current knowledge on culture and sustainable management of natural resources in Africa.
To conduct this study, we prepared a plan of work followed by desk and operational research within some specialized services (UNESCO, Ministry of Culture, NGO, Consultancy Firms...). We organized meetings with some strategic resource persons with whom we held some Semi-Structured Interviews (E.S.S). These resource persons were drawn from such varied sectors as environment and forests – culture – agriculture – animal husbandry – national education – urbanism and housing – higher education – social affairs and status of women – mines, farmers’ groups – traditional communities and chieftainry. We also conducted some research on Internet. After analysis of the data collected, we undertook the drafting of the report which was subsequently submitted to our two colleagues for their perusal.

This report comprises four basic parts. The first deals with terminological appraisal. In this part, content is given to some key concepts to make the reading and understanding of the document smoother. The second gives a historical insight into the management of natural resources in relation to culture. The third for its part, deals with the current diagnosis of the influence of culture on the management of natural resources (positive and negative factors). Finally, the fourth part focuses on future prospects and proposes a strategy of intervention. It goes over the aspects of cultural adjustment for an improved management of natural resources. The report ends with a brief conclusion which not only emphasizes the essentials of the analyses, but also calls attention to our point of view regarding the urgent need for a cultural adjustment.

1. TERMINOLOGICAL APPRAISAL: CONCEPTS OF CULTURE, NATURAL RESOURCES, SUSTAINABLE MANAGEMENT AND DEVELOPMENT

From the outset, it seems necessary, for the start of this work, to give a content to the four key concepts which are: culture, natural resources, sustainable management and development.

By culture is meant a set of knowledge acquired, modes of life, ways of thinking and the achievements which characterize a people. It is in these terms that Leopold Sedar Senghor defines the moving spirit of civilization. In 1994, UNESCO defined culture as being the set of distinctive, spiritual and material, intellectual and affective traits that characterize a society or a social group. It encompasses aside from the arts and letters, the modes of life, the fundamental rights of the individual, value systems, traditions and beliefs. This definition fits in well with that of Herricot who, laconically said that culture is all that remains when all has been forgotten. It
can strongly influence the management of natural resources which constitute the basis of human life.

The Larousse Encyclopaedia defines **natural resources** as the set of natural products, milieux, sites, balances and their traditional modes of management since the elements of this set are threatened with extinction or reduction as a result of industrial civilization. Land, water, forests, plants, air, natural gas, animals the wealth of the subsoil, etc. therefore constitute the natural resources which should be rightly considered as the means of life deriving from creation and hence the obligation to safeguard them.

Perhaps, it is worth specifying that in this study, man was considered as a fundamental natural resource since, in the area of development, we must admit that he is at the very centre of the whole process. He is the principal actor, the engine of development. He is the only word from which one starts and on which one ends, to borrow the words of Antoine de Saint-Exupery. Through his awareness and ingenuity, he is the real master and owner of nature. As such, he is the most delicate resource there is for all issues of development and for the universe, but which the African cultural environment is not always likely to preserve. This consideration is being asserted since most of the damage caused to natural resources is due to the fact man has not considered himself as being part of nature or reckoned that he was above it.

The sustainable management of a resource connotes for its part, a judicious, altruistic, harmonized and futuristic use of this resource, without a negative effect on oneself and on others. In other words, it is a use of the resource that makes it possible to meet fully the needs of present generations without compromising the capacity of future generations to meet theirs.

For some decades now, the peoples of the planet have been asserting themselves only through one single notion: **development**. It is the stage of development which makes it possible to evaluate the level of progression of nations. Thus, we talk of developed countries, developing countries and poor countries. The criteria of classification compel the inclusion of such elements as infrastructures, industrialization, Gross Domestic Product (GDP) and a certain number of parameters relating to the welfare of households. The degree of preservation of natural resources which constitute the very basis of life have not often been taken into account as a development parameter. Consequently, all the damage caused to natural resources have most often been justified by the unbridled race for development.
Being a fragile continent, Africa which had for a long time preserved its natural resource heritage has therefore been gangrened by this reductionnist paradigm of development, which in fact, procures nothing that safeguards humanity when we consider the current trend of events.

It is necessary to rethink development in order to incorporate in it a cultural dimension. Put in a better way, it is absolutely necessary to re-assign a more suitable, deeper and universally realistic content to the notion of development. Mervyn Claxton (1994) intimated this clearly when he wrote: “development resembles a seamless cobweb, woven with a multitude of intertwined threads. But it is culture that gives it its colour, texture, tram, suppleness and resistance”.

After the definition of these concepts, it is worth taking a retrospective look at the manner in which culture has most often influenced the management of natural resources in Africa.

2. BACKGROUND OF NATURAL RESOURCE MANAGEMENT IN RELATION TO CULTURE

From an archeological point of view, Africa is rightly considered as the cradle of humanity due to the discovery on this continent of one of the earliest human remains or bones. This reality marked the sign of biological and natural wealth with which the black continent was originally endowed.

When we go back into history, we realize that Africa’s wealth in terms of natural resources has experienced with the passage of time, some socio-cultural and economic phenomena which have appreciably exhausted it, thus explaining the sufficiently deteriorated state of natural resources on this continent today. From the microlitic period up to the modern time through the stone age, the African has gradually developed the technology which has made it possible for him to manufacture ceramic, pottery, stone and subsequently iron tools (Van Noten, fetal; 1989). The development of this set of tools, inter alia metallic tools, enabled the African to do away with his nomadism and his status as a hunter – farmer in order to get settled and begin to undertake activities such as cattle and sheep raising and farming which strongly induced an “attack” on natural resources. However, there was still more or less a balance between men and resources because the rate of population growth was relatively low due to high mortality.
With the colonial penetration which took place in the early part of the last century, Africa’s culture has progressively disintegrated up to now. Moreover, the rate of population growth (thanks to the progress of modern medicine) has not been followed by an improvement of the techniques of natural resource management. One of the objectives set by the colonial settlers was to have a greater number of colonized people in order to enjoy a more considerable influence as a metropolis compared with other colonizing nations, particularly in terms of power.

Colonization also introduced into Africa the notions of border, individualism and exercise of domination over others. These notions developed and began to breed conflicts sometimes supported and maintained by the same metropolises. These conflicts, particularly armed conflicts, have particularly caused some adverse effects on natural resources and the African environment. In the words of the Afro-pessimist René Dumont (2001): “Africa had a false start for having been the only continent to enter the 21st Century with a cohort of armed conflicts and regimes that ignored everything concerning good governance and the observance of human rights”. Berthual Kasamva – Tuseko (2001) confirmed it when he said that Africa was characterized by the seizure of power by arms, the establishment of one-party systems, the appointment of brothers to strategic posts, the imprisonment of journalists for denouncing corruption, negligence of agriculture and the environment and the misappropriation of official (development) aid.

In addition, if one refers to the recent report of the Stockholm-based International Institute for Peace (2000 report), Africa and Asia were the continents in which the greatest number of armed conflicts were registered, one of the major conflicts being between 2 States: Ethiopia and Erythrea.

On the African continent, various attacks of man on nature cause damage and exhaust the natural resources at an alarming rate. By cultivating and deforesting in an uncontrolled manner in many African countries, man has caused the disappearance of the forest for the benefit of the savanna which is only a prelude to the desert. This destruction of forests has been intensified by the settlement in the tropical zone of multinationals which plunder the natural resources in the eyes of governments incapable of producing a reliable and operational institutional and legal framework. In Congo, in the pool region, the vast stretches of land which formerly had a dense vegetative cover, are today a landscape where man cannot protect himself from the scorching heat of the sun. (Simon Mason, 2001). In countries where heavy doses of fertilizers are used in farming: Egypt, Libya, Mauritius, Guinea Bissau, Malawi, Zimbabwe, lands have become increasingly acidified. The wanton use of fertilizers and pesticides to increase productivity in
order to meet the needs of the ever-increasing number of mouths to feed, puts the African in other
types of danger. Indeed, fertilizers, nitrogenous fertilizers in particular, reduce the PH of the soil.
And when the PH of the soil falls below 4, there is a reduction of soil worms which hasten the
decomposition of organic material (PRSSE, 2001). The wanton use of fertilizers also causes an
eutrophization of surface waters (lakes, springs, streams) leading to the exhaustion of the
dissolved oxygen gas, which further causes the death of the fishes in these waters. Similarly,
nitrogen oxydes inter alia, the nitrite ions have harmful effects on red blood corpuscles and
muscular tissues when they are ingested by man.

African generations of several decades ago had the reflex of planting trees, in sharp contrast to
present generations. Similarly, the boundaries of localities or compounds were marked by tree
plantations which served at the same time as windbreaks by offering a grove-laden landscape.
Nowadays, all this threatened with extinction.

Today, Lake Chad is dwindling and dries up overnight. Rivers like the Congo, the Niger, the
Senegal, the Sanaga and the Nyong, etc. have become real sources of disease due to pollution by
man instead being the source of life as he was before. Fishes and other products derived from
these sources of life have become unwholesome for consumption whereas they were an ideal
source of animal proteins for human nutrition. According to the geographer Martin Leuch (2001),
over the last 40 years, Lake Chad has reduced by 40%. In 1963, its area was 25000km² due to
drought and uncontrolled irrigation causing starvation to 750,000 persons from Chad, Nigeria,
Niger and Cameroon. The Nile, Africa’s longest river has always been shared by 10 countries out
of which 3 are the greatest users: Egypt, Sudan and Ethiopia. These 3 countries depend heavily
on it, particularly for their food security due to its use for irrigated agriculture. Unfortunately, the
stark reality is that as the years went by, men developed some threats which tended to reduce the
quantities of water while the populations of these countries continued to increase at an average of
3% a year. These threats can be particularly attributed to the wanton construction of dams on
watercourses upstream, drainage and the choking up of dam lakes and irrigation canals due to
sediments resulting from erosion.

At present, about 1.2 billion people have no drinking water in the world (Martin Lench, 2001).
The countries concerned are mainly developing countries, a large number of which are located on
the African continent. The source of all this tragedy is the destruction of vegetative protection
and shade and the pollution of underground waters by the people. The data bank on the
population of cities (1995) showed through numerous studies that the physical dimensions of
cities in developing countries including Africa doubled between 1980 and 2000. This rapid urbanization entails the exertion of pressure on natural resources.

According to the studies of Sala Diakanda (1992), before the 60s, it was South America, particularly its central and tropical part, which was the continent with the highest population growth rate (2.72 to 3.02% a year). Since the 60s to date, it is Africa which has shown the highest population growth rate (around 3%); this predisposed the population to a doubling in size in 24 years instead of 32 years before the 60s.

This justifies somehow the projections of Jorge Wilheim (1996) who said that in the year 2025, 61% of the world population will live in the cities and most of the metropolises will be located in countries of the South including those of Africa, with all the pressure that this could exert on natural resources. Indeed, the emergence of cities is generally linked to the economic transition from an agrarian society to an industrial goods and services production society.

In view of the foregoing, it is paradoxical to observe that it was only during the course of recent years that African States began to think rather apprehensively about the formal involvement of communities in the management of the natural heritage: a measure which would have made it possible to avoid the damage currently observed if thought had been given to it earlier.

In sum, Africa’s cultural slippages have been the source of numerous constraints on its development. Yet, since the 70s, there has been a trend of ideas which seemed to nurture a certain level of awareness regarding the importance of culture on development. On the initiative of President El Hadj Omar Bongo (1989), the International Centre for Bantu Civilization (CICIBA), a cultural movement for the promotion of the development of Bantu peoples was created. But, the realities of modernism, and geopolitical dynamics seem to have failed to act favourably, especially with the economic crisis of African States. This why we are still painting a globally bitter picture of the effects of culture on the sustainable management of natural resources in Africa.

Following this historical background relating to the influence of culture, it appears that Africa’s escapism, its unbridled race to for development has not led to any encouraging results. It is time to go back to our initial roots, and return to what Daniel Etounga-Manguellé (1992) recommended, i.e. curing African diseases identified by Africans, through African medicines prescribed by African doctors. We Africans should appraise our culture, and take it into account.
in development because as Leopold Sedar Senghor said: “a people cannot be what it is by
denying itself”. To achieve this, it is necessary, as a matter of priority, to know how culture
currently influences the management of natural resources.

3. CURRENT DIAGNOSIS OF THE INFLUENCE OF CULTURE ON THE
SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES

The models of development and conservation of natural resources in Africa have had only a
limited success because they failed to take into account the cultural dimension. To integrate this
culture in the management of natural resources, it is worth knowing how it influences
management; this influence being either positive or negative.

3.1. Cultural factors that promote the preservation of natural resources

In many African communities, taboos, beliefs and other traditional practices contribute to the
conservation of natural resources, although sometimes, this is done quite unconsciously
(UNESCO, 1997). We shall illustrate this with a few examples: the sacred woods, the land
occupation system, housing, eating habits and totemic beliefs.

- The sacred woods

According to UNESCO, the sacred woods can be sacred forests, acquiferous formations, water
courses and ponds, coastal areas including the coastline, estuaries and mountain sides. They
derived from taboos and other local community beliefs.

For example, in the Western and North-Western part of Cameroon which have very high
population densities, the sacred forests constitute vegetation islets in completely deforested
regions. Access to those forests is forbidden or highly controlled. In other words, they are totally
protected forests (Tchebayou, 1992). They have implicit conservation objectives, since they
contain rare plant and animal species or any of such species which have completely disappeared
into the surrounding areas. The objective of conservation is only implicit since these forests are
preserved especially to serve as hiding places for the totems of chiefs and dignitaries of the area
or as places of sacrifice, initiation of new kings or burial of the kings when they die. In Western
Cameroon in particular, the sacred forests are close to chieftainries while the other sacred places
which are sanctuaries of divinity and self-revitalization are a bit remote from houses and serve as hiding places for totems. (Tagni Detio, private paper 2001).

In spite of this commendable aspect of conservation, the sacred forests are increasingly deteriorating due on the one hand, to the non-observance of animistic beliefs and contempt through the construction development infrastructures (roads, extension of cities, etc.), on the other hand.

- **Land occupation system**

In the higher plateau of Western Cameroon, the land occupation system includes necessarily quickset hedges that give the appearance of groves. The line of trees makes it possible to demarcate the compounds or land appurtenances within a dispersed habitat. These quickset hedges contain some rare species or species that have disappeared in the surroundings. They make it possible to control wind erosion and the crumbling of vegetation, and also provide habitat for some animal species, especially birds.

- **Eating habits**

Among the Mbutis of the Congo Democratic Republic for example, there are some foods which cannot be eaten at some periods of life or by some categories of persons. This is how young people, pregnant women, women in general or the couple with a young child are forbidden to eat some types of food, particularly the flesh of some wild animal species. This constitutes a sort of control of species sampling, and consequently contributes to the conservation of the animal species in question.

- **Belief in totems**

Some animals are considered as totemic and are not eaten by the members of a particular clan. These are either mammals (Lion, panther, elephant, buffalo, etc.), reptiles or birds. The totemic animal varies according to the clan. That of the bafias in Cameroon is the tortoise. Thus, no member of this clan should eat the flesh of this animal.
Considering only these factors, it could be said first and foremost, that culture is a great protector of natural resources in Africa, but this is not always the case since it has many negative influences on the conservation of these resources.

### 3.2. Negative factors of Culture on natural resources management

The manner of thinking and acting as well as the beliefs of Africans have negative influences on the management of natural resources. We shall analyze in succession the perception of land, the mode of housing, the difficulty of translating theory into practice, farming techniques, eating habits, handicrafts, decoration and prestige, and the culture of State.

- **Perception of land**

  Africans are characterized by the absence of a culture of collective good or communal estate. This depends on the manner in which they perceive land. Among Africans, individual interest (individual, family, lineage or clan) always overrides the general interest (Geny et al, 1992). They notice only the limits of the territory of their group. The concept of national territory on which the strategy of conservation (national parks, forest reserves, etc.) is based is not something that is widely shared. It is for this reason that out of the 9793 protected areas of the whole world, Africa accounts for only 729 i.e. 149 540 000 hectares representing only 4.9% of its forests. And yet as Amadou Moctar Mbow (1981) asserted, the convention on the protection of the world cultural and natural heritage was signed in 1972 and many are the African countries that are parties to it. This state of affairs is not likely to promote the conservation of natural resources. Furthermore, the local populations encroach regularly on national parks and other existing forest reserves.

- **Mode of housing**

  In the forest area of Cameroon as is the case everywhere in Central Africa, houses are made of poles bamboos and mats. They have a negative influence on natural resources in the sense that the materials used should be regularly replaced. This is how some vast raffia plantations that produce bamboos and good wine are today threatened with extinction due to overexploitation for these housing purposes without any attempts to replant them. Raffia produces not only wine which has an important socioeconomic role in the communities, but also plays a great environmental role in the sense that it is a water-catchment species.
In the coastal area on the other hand, houses are made of the planks of some species, which are particularly treasured (since they split or crack easily). This is indeed the case with “llomba” (Pycnanthus angolensis), which is overexploited for this purpose.

House made of Bomboos and stakes

House made of planks

- The difficulty of translating theory into practice

It is a factor connected with man as a natural resource. This difficulty is seen first among farmers who receive some pieces of advice from agricultural extension officers. It is for a good reason that in analyzing the causes of deforestation in “dry Africa”, Buttod (1995) notes that there is a school of thought that reckons that the paramount factor is culture, because cultural difference obstructs the transfer of the required information between the expert and the peasant. Peasant have difficulty in adopting new techniques because they still persist in doing what their parents did. In other words, their culture does not contribute to the conservation of natural resources. This culture that Daniel Etounga Manguelle (1991) refers to as a resumé or digest of mental programmes is transmitted from generations to generations with such obstinacy that many people have difficulty in understanding whether it is a question of acquired and uninherited characteristics.

The difficulty in translating theory into practice is not only inherent in peasants. It is also a characteristic of development officials. Africa has development officials of all kinds (agriculturists, zootechnicians, foresters, etc.) who have nothing to envy of those from other regions in the world. These officials are sometimes even very well trained because they attended the same schools as those who are currently produced in the West. The tragedy is that these technicians are unable to translate into practice the theory they learned in school.

- Handicraft

Handicraft negatively influences natural resources in the sense that in the manufacture of talking-drums, balaphons, canoes, statues, masks and other objects of art, some special species of wood are used. This is especially the case with ebony (Diespyros crassiflora), the Africa Cordia (Cordia platythyrsa) which are used generally in the manufacture of statues. Some of these species are being threatened, because their exploitation is not followed by a consistent
regeneration effort. The few species of trees that have been re-planted are those that provide timber. Yet, handicrafts are a means of subsistence for many families and could continue to be more so.

Some wooden and bronze masks in a Cameroonian craftsman’s shop Charcoal used in melting the bronze used in the manufacture of masks

- **Eating habits**

Although it has been noted that eating habits contribute to the conservation of natural resources due to certain taboos and other beliefs, it is nevertheless true that they also contribute largely to the degradation of these resources.

From the point of view of these animal resources, many people eat only game meat because it is less expensive. They do so much more by habit. They say generally that game is much more appetizing and does not give gout. However, it is worth acknowledging that some village populations eat game because of poverty. Animal raising is less developed and constitutes more often only a prestige. Raised animals are used only for certain traditional rites or eaten on special occasions such as funerals and marriages.

In Africa, no one is ignorant of the role of bees by virtue of the honey that they produce. In Sub-Saharan Africa more particularly, the well-known bee stock is Apis mellifica adansaï whose population is today threatened because of poor harvest practices and bushfires. This is particularly remarkable in certain countries of Central Africa such as Gabon, Congo, CAR and Cameroon. And yet this stock is very prolific. Countries of West, East, Southern Africa and the Maghreb have made some appreciable efforts in the interim but these efforts are insufficient.

A poacher holding a protected monkey species

From the point of view of floristic resources, some species are particularly treasured in food; this is the case inter alia, with Garcinia kola, Gnetum africanum called “eru” in Cameroon. Some numerous species are used as spices (Scorodophloeus zenkeri, Fagara zantoxylon, Ricinodendron heudelotii) or in local pharmacopoeia (Enanthia chlorantha, Ananidium mannii,
Alstonia boonei, etc.) Due to the fact that most of these species do not provide lumber, they are not regenerated. Some of them are today threatened with extinction.

- *Decoration and prestige*

In Cameroon as in many African countries, certain objects are particularly sought for purposes of decoration and prestige. This is particularly the case with the skins of the panther and boa, the horns of the buffalo, the tusks of the elephant, the feathers of certain birds which are obtained through the slaughtering of these species, many of which are seriously threatened with extinction in spite of all the conservation efforts made hitherto. In the traditional chieftaineries of West and North Africa, the skin of the panther is a sign of power and especially bravery. Among the elite generally, to be recognized as a person of distinction, it is necessary to bring the skins of the panther to the village chief (Tagni Detio, personal paper, 2001).

- *The culture of state*

African countries inherited from colonization still continue to apply texts designed by the colonizer. Even if some of these texts have been changed, the spirit remains. Doubtless, they were designed to protect the natural resources of the countries, but in the interest of the colonial settlers. It is in this vein that for Cameroon, the text authorizing the government of Cameroon to protect the forest wealth of the colony was signed in Berlin in 1900 (Tengoua, 1991).

As regards land resources for example, almost everywhere in Africa, it was decided that all uncultivated lands belong to the state; in other words, they constitute the national estate (Ela, 1982). In Cameroon, the current land tenure system (Law No 74 of 6 July 1974) adds that the land belongs to the one who develops it. This development has far-reaching consequences on forest resources because forest exploitation is not considered as a development. Furthermore, farmers are not allowed to cut the trees on their farms. It stems from article 39 paragraph (4) of law No 94/01 of 20 January 1994 establishing the forests, animal and fishing system that “forest products found in natural formations located on the land of an individual belong to the State”.
Thus, farmers do not consider forests as a resource that should be protected. This is why they fell and burn trees for crop cultivation (cocoa, coffee, palm-oil, etc.). It is only after this destruction of forest resources that the State considers that the land has been used and can therefore, grant a title deed to its owner. (Tchoffo, 1997)

Deforestation for an agricultural plantation project.

The culture of State did not make it possible for Cameroonian policymakers to fluid a good form of popular participation in forest management. The 1994 new law on forests established “community forests” which are far from reducing the rate of forest degradation. This is why small scale farmers are considered responsible to the tune of nearly 90% for the deforestation in Cameroon (Essama and Gockowski, 2000). The process of community forest acquisition still exists. Such a legislation that has been in force for years has caused the loss of tree cultivation habits on the part of the populations. The people do not want to plant trees since they reckon that the State may claim them, more especially as there is no difference between planted trees and natural trees. In certain regions, people prefer to plant only exotic species which are more easily recognizable. This is the case *inter alia*, with eucalyptus trees which sometimes have adverse effects on the environment as they lower the underground water level.

- *Crop cultivation methods and cultural systems*

African farmers practice regularly the shifting cultivation system on burnt land which consists in gathering plant material and setting fire to it before planting. This burnt land releases the minerals which are directly assimilated by the plants according to the theory of “buffer power”. This puts farmers under the illusion that this system fertilizes the soil. In reality, it is also an illusion since in the absence of organic material, the released mineral elements are washed away and 2 or 3 years later, the soil is impoverished, thus compelling the farmers to abandon the plot and occupy a new one to the detriment of the vegetation. Similarly, burnt land destroys the telluric fauna.

In order to cope with this practice, agricultural extension officers recommended the use of fertilizers of which farmers have a rather negative perception. For, according to farmers, fertilizers destroy the soil. The reason for this is that it is necessary to use them regularly to have
sustained output. It is therefore a fundamental problem. Hence, it could be said that the farmer and the agricultural extension officer are at the antipodes. On sloping lands, it is usually advised that cultivation be carried out in conformity with the contour lines in order to avoid soil erosion. Unfortunately, in practice, a host of African farmers avoid the observance of the contour lines because they feel that this system gives excess work. The result of this is that the humus-bearing stratum is washed away.

- **Armed Conflicts**

By means of dictatorship and corruption, armed conflicts countless hotbeds of which can be found in Africa (Chad, Central African Republic, Democratic Republic of Congo, Rwanda, Erythrea, Liberia, Sierra Leone, Angola, Guinea, Uganda, Côte d'Ivoire and Senegal) take their toll of human life and natural resources.

- **Negative factors of culture that act on man as a natural resource**

Although it is true that man is sometimes considered as a human resource excluded from nature or being above it, it is nonetheless true that he forms an integral part of this nature. The elements of the African culture which negatively influence man include *inter alia*, witchcraft, jealousy, vampirism, spite, egocentrism (selfishness), traditional autopsy, etc. All these evils seem peculiar to the African. Hence, as soon as someone strives to emerge, particularly by adopting a new technique which could increase production and consequently contribute to the conservation of natural resources, the others are jealous and do everything to eliminate him through witchcraft or other practices.

From the foregoing, it appears that culture has both positive and negative influences on the management of natural resources. The essential thing is not only to identify these influences, but also, to strive to know how to maximize the positive influences and eliminate, or at least reduce the negative influences. In other words, as Daniel Etounga Manguele (1991) puts it, we need to undertake a cultural adjustment.

4. **FUTURE PROSPECTS: ASPECTS OF CULTURAL ADJUSTMENT FOR AN IMPROVED MANAGEMENT OF NATURAL RESOURCES**
To go over the interrogations of Robert Klitgaard (1992), it has been known over the past forty years or so that culture should be taken into consideration in the African development process. But what remains unknown is how to take it into account scientifically and practically. To date, there are no well developed theories, practical guidelines and inter-professional links between those who study culture and those who direct and manage development policies for African States.

The idea is first to identify the positive and negative aspects of culture on which some concrete research activities could be conducted and subsequently propose a strategy relating to the establishment of a training and education programme with a view to directing people to change their behaviour.

4.1. Aspects of Adjustment to cultural factors that promote the preservation of natural resources

We shall analyze one after the other, the promotion of sacred forests, the control of the hunting of some animal species for food consumption purposes and harvesting periods, the promotion of groves or woodlands as a system of land occupation.

- The promotion of sacred forests

Religion, particularly through the sacred forests has always been a fundamental factor of natural resource conservation. But increasingly, it is found that some of these sacred forests are neglected by their protectors. The research to be conducted in this regard, will be, initially, to see how the existing sacred forests could be preserved and regenerated. Is it possible to regenerate deteriorated sacred forests? Secondly, the question will be to know if it is possible to extend this large-scale conservation; in other words, can this concept be used in the conservation of protected areas as it is practiced at present?

- Control of the hunting of species and harvesting periods

The issue on which research will have to focus is to know how to capitalize these practices in order to achieve a sustainable management of natural resources.

- The promotion of groves or woodlands as a land occupation system
As we have mentioned above, woodlands contribute to the preservation of plant and animal species. Moreover, they are genuine windbreaks or shelter belts and consequently prevent soil erosion. Unfortunately, these woodlands are being increasingly destroyed for the sake of development. Here, the research will involve finding out how to reappraise this system in the areas where it exists, and how to promote it in areas where it does not exist.

4.2. Aspects of adjustment to cultural factors that negatively influence natural resources

The idea will be to find ways and means to eliminate, attenuate or identify some alternatives to these factors that negatively influence the management of natural resources. The activities to be undertaken include *inter alia*, land reform, tree cultivation, promotion of certain plants (medicinal, spicy, food and cottage industry), directing of the training of rural development officials towards the practice and promotion of housing units made of beaten earth and stones.

- **Land reform as a natural resource conservation factor**

We have seen that in most cases, there is a superimposition of the traditional land system and the modern land system. The modern land system maintains that the land belongs to the one who develops it. This development consists in cutting and burning the forest in order to do farming generally. The people for their part, think that the land belongs to them. This state of affairs is not likely to contribute to the conservation of natural resources, because, what belongs to all belongs to no one and cannot be the object of any attention or care.

The research to be conducted in this regard will consist at an initial stage, in examining what the problems are as regards the superimposition of a “modern” law (State law) on traditional law in forest management. Subsequently, it will be necessary to see how to review land legislation.

- **Tree cultivation as a factor of sustainable forest management**

The idea will be to see how to reintegrate tree planting in the customs and practices of the people. In Cameroon for example, no legislation to date makes it possible for an individual to possess a portion of the forest. Yet, the people still believe that they are the primary owners of these forests, since they have always belonged to their ancestors. This state of affairs is not likely
to promote rural reforestation. Generally, a certain form of culture has been acquired, namely, cutting trees without replanting them. Agro-forestry which is a system of farming in which the woody species are planted in specific areas around crop cultivation plots, also participates in the reintegration of tree cultivation in the agrarian landscape.

- **Promotion of medicinal, spicy, food plants and species used in cottage industry**

The idea is to study how to regenerate these species which play a very important role in the life of the people, but to which no attention is paid in the area of forest regeneration. Some research work has begun on some of these species, but in a very mixed manner since they are of interest to only farmers, the voiceless lot.

- **Promotion of game raising**

Given that game consumption forms part of the eating habits of some populations who cannot do without it, it is worth seeing the extent to which the raising of certain game species can be promoted. This will make it possible not only to reduce the pressure on the fauna, but will contribute to the action to combat poverty.

- **Directing the training of rural development officials towards practice**

Given that rural development officials have difficulty in translating theory into practice, the research will consist in exploring how to set up a practical oriented training programme. This will involve the need to examine how to train officials who will “do” and not “get done” as is the case with the present cream of senior officials, especially those in the civil service. These new officials will adopt undoubtedly some new practices to the neglect of burnt land cultivation and consequently, contribute to forest conservation.

- **Promotion of housing units made of beaten earth or stones**

Houses made of such materials are more or less definitive and will consequently reduce the pressure on natural resources.
The various activities to be undertaken both on the positive and negative aspects of culture have nothing new as such, and what changes fundamentally is the angle of view; in other words, this culture itself. However, it is worth knowing how these different activities can be put into practice.

4.3. Strategy relating to the establishment of an education and training programme

In this part, the aim is to describe the stages to be followed in the approach to a cultural adjustment of the peoples in Africa.

a) Identification of target groups

This approach which tends to effect a behavioural change on natural resource management should be integrated. It is therefore necessary that the structures deemed strategic be identified as a matter of priority in order to facilitate efforts to reach out to the popular masses who constitute the target of the programme. The following persons and structures will form part of this entity.

- Environment protection and sustainable development NGOs;
- Traditional chieftainries;
- Local representatives (members of parliament, mayors);
- Representatives of development Committees;
- Academics; *inter alia*, those who operate in the area of sociology and natural resources;
- Policymakers and technical service officials connected with natural resource management (environment, forests, agriculture, animal husbandry, culture, urbanism and housing, national estates, territorial administration and justice);
- New officials. Here, we mean completely new skills whose role in the programme will be to put into practice the new methods of natural resource management in order to direct the people to follow their steps. Indeed, senior officials operating usually on the field might not easily change given the cultural limitations with which they have long been beset.

The identification of these persons and structures supposed to represent them in the programme should take account of the gender aspect. Thus, a considerable number of women will be included since it is they who are directly in contact with the natural resources.

b) Information and sensitization
The structures previously identified should choose representatives who will be trained to become guides and trainers themselves for the masses. Information and sensitization are required for their benefit. The means used could be the print media as well as the radio and television, banderoles, posters, spots and even Internet.

c) **Preparation of training themes or topics**

The experts fully authorized by the African Itinerant College for Culture and Development will be responsible for preparing some training modules which they will use to train trainers.

d) **Programming and training**

An operational progranmining will be undertaken bearing in mind the volume of modules, the duration of the training, the number of participants and their categorization, the venues and periods of training. An attempt will be made to distinguish *inter alia*, the usual field actors characterized by some cultural limitations in whom a new vision would be inculcated on natural resource management and the new cadres who constitute a completely new source of skills and who will be involved in various sectors of activities. These cadres will show the example of a sustainable management of resources, because it is generally said that example is better than lesson. These new cadres could be young people who have just left school and have not yet been “soaked” in the lethargic cult of the civil service.

As regards the content of the training programme, the following elements will be developed:

- Early warning on the state of degradation of natural resources and the potential dangers on development;
- African culture and its constraints on natural resources;
- Inventory of threatened natural resources;
- Current practices to be abandoned or promoted;
- Techniques relating to the provision of guidance to the masses to direct them towards a change in behaviour; inventory of concrete projects that can be implemented to accompany and sustain the programme.
Given the immensity of the problems involved, it is not possible to resolve all of them at the same time. The pilot areas could be circumscribed where necessary.

*e) Operationlization*

After their training, the cadres become directly operational on the field. The usual field actors will continue to work in their respective sectors while undertaking a sensitization exercise on the adoption of some sustainable methods of natural resource management. The new cadres for their part, will settle down, undertake self-managed micro-projects while putting into practice the new methods of sustainable management of natural resources. Through a snowball effect, they will train the popular masses to follow them in their manner of production as they see the results emerge. For the settlement of these new cadres, some micro-credits could be granted to them.

**Expected results**

The expectations of this programme include:

- A change of behaviour on the part of the populations regarding the manner in which natural resources can be managed, particularly through an improvement of the practices that promote the conservation of resources and a rejection of the practices that have a negative effect;
- A decline in the rate of exhaustion or depletion of natural resources;
- A renewal of certain natural resources;
- A progressive restoration of natural resources with a view to a viable and lasting socioeconomic equilibrium.

All this constitutes genuine prerequisites for Africa’s sustained development.

*g) Evaluation indicators*
In order to evaluate these results, we need, not only some analytical tools and models, but also some reliable evaluation indicators. The table below shows some indicators and means of verification.

<table>
<thead>
<tr>
<th>N°</th>
<th>Indicator</th>
<th>Means of Verification</th>
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<tbody>
<tr>
<td>1</td>
<td>Number of new cadres who have been actually settled and putting into practice the new methods of natural resource management</td>
<td>Counting</td>
</tr>
<tr>
<td>2</td>
<td>Number of regular cadres who have settled down on their own account and are putting into practice the new methods of natural resource management</td>
<td>Counting</td>
</tr>
<tr>
<td>3</td>
<td>State of degradation of natural resources</td>
<td>Inventory of natural resources before and after the programme in the pilot areas that may have been chosen in advance</td>
</tr>
<tr>
<td>4</td>
<td>Number of persons involved in the raising of game</td>
<td>Counting</td>
</tr>
<tr>
<td>5</td>
<td>Number of trees planted (Medicinal, spicy, handicraft or others)</td>
<td>Inventory before and after the programme</td>
</tr>
<tr>
<td>6</td>
<td>Reduction of bamboo, pole and plank-made houses</td>
<td>Counting before and after the programme</td>
</tr>
<tr>
<td>7</td>
<td>Number and area of sacred forest</td>
<td>Counting and measurement before and after the programme</td>
</tr>
<tr>
<td>8</td>
<td>Tonnage or herd of production (Game, fruit, spice, medicinal plants)</td>
<td>Counting or weighing</td>
</tr>
<tr>
<td>9</td>
<td>Modification of land and forest legislation</td>
<td>Observation of the amendment of laws</td>
</tr>
<tr>
<td>10</td>
<td>Reduction of the number of armed conflicts</td>
<td>Counting</td>
</tr>
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</table>

h) Follow-up and Coordination of programme
The coordination of this programme will be secured by the African Itinerant College for Culture and Development which will be supported by the partner structures already engaged in the programme and many others which could be subsequently identified. This support will be provided both at the regional and subregional and even local level.

CONCLUSION AND RECOMMENDATIONS

At the end of this study, it will be necessary to point out the remarkable fact that the culture of Africans has for decades, been greatly influenced by colonial penetration. The Western models brought by the colonial settlers were adopted almost without any sorting and adaptation to the daily lives of Africans engaged in the search for their development. The very notion of development was imported from the West without the parameters being well defined, even at the international level. Put in a better way, the unbridled race for development neglected the parameters relating to the conservation or sustainable development of the natural estate for the benefit of the economy, infrastructure and industry.

What is paradoxical is that hitherto, Africa has not been able to find its bearings since it has a large number of the least developed countries of the planet, while at the same time, its natural resources keeps dwindling at a destabilizing rate. Today, one realizes rather sadly that the Black continent has been somehow diverted from the real paths of its development due to cultural perversion. The consequence of this is the continent’s stagnation over decades. This trend requires a shock therapy to reverse it in order to cherish the hope of saving the future from catastrophe. To achieve this, we must agree on the need to take a retrospective look on our past, take stock of and shore up African cultural values to put them at the services of a sustainable development. From this point of view, natural resources which constitute the very basis of life should be permanently controlled and managed.

The knowledge and modes of life of African communities should be reviewed, and those that could have a positive impact on development promoted while eliminating those with a negative effect. Such a system could be enriched by the positive and locally adaptable aspects of the cultures of other continents. Thus, this will lead to an original adjustment of development indicators for Africa. The approach to be followed should take account of the fact that it involves a mass behavioural change, since it is much more a question of directing people to change than encouraging them to develop increasingly what they are already doing, the negative factors of culture on the sustainable management of natural resources overriding the positive factors.
Hence, a clearly defined strategy would be to take stock from the outset, of the cultural points with a positive or negative effect on the sustainable management of natural resources, identify the projects and target groups, prepare a clearly defined strategy together with adequate resources, good indicators and good analytical tools before taking action.

Finally, this new realistic manner of thinking and acting, initiated by the African Itinerant College for Culture and Development could make it possible to cherish hopes and face the future with optimism inpite of the blunders committed hitherto on the African development landscape.