

MAPPING OF PROTECTED AREAS EVOLUTION IN CAMEROON FROM THE BEGINNING TO 2000: LESSON TO LEARN AND PERSPECTIVES.

Mesmin Tchindjang¹, Clair René Banga², Appolinaire Nankam³, Jean Sylvestre Makak⁴

¹University of Yaounde I, Department of Geography PO Box. 30464 Yaounde Cameroon mtchind@yahoo.fr

²Ministry of Forestry and Fauna, DFAP, bangaclair@yahoo.com

³Ministry of Forestry and Fauna, DFAP, apponankma@yahoo.fr

⁴Cameroon Environmental Watch, Yaounde smakak2000@yahoo.fr,

ABSTRACT

The first protected area of Africa was that of the Sabie Game Reserve in South Africa, created in 1896. In other parts of the continent, main protected areas were created during the 20th Century. Cameroon main protected areas appears in 1932 during French colonial administration rules. Those areas were situated in the northern part of the country. Up to 1975, the number of protected areas was stable (9) and one can observed the disequilibrium between the North and the South.

Since the Earth Summit of Rio de Janeiro in Brazil in 1992, the number of protected areas increased enormously and brought a relative equilibrium between the two main regions of the country.

Our mapping approach aim to show the conceptual framework difficulties in management of protected areas that justified decision makers' resistances to international laws and conventions. For, the increase of protected areas numbers is followed unfortunately by the decrease of biodiversity and other natural resources.

Key Words: biodiversity, Cameroon, French, protected areas, Rio Conference.

I. INTRODUCTION

Cameroon today counts over 20 protected reserves made up of national parks, zoos, forest reserves and sanctuaries whose tourism and ecotourism potentials cannot be put into question. Some thirty years ever since the creation of the first national park in Cameroon, the number of protected areas has increase and its role on the development of tourism and ecotourism has been dwindling in all aspects meanwhile that of the Kenyan parks have been on a steady increase. Cameroon paradoxically has double the number of parks of Kenya and those of France.

For over two decades only two provinces (North and Far North) in addition to the Littoral, concentrated the main natural rescues and carried consequently touristic exploitation of these natural wealth. Six of the nine national parks were located in the Northern provinces (Adamawa, North and Far North) of Cameroon. With this potential Cameroon ranks first as the first African country and should logically be or becomes the leading nation in Africa in matters of ecotourism. This is unfortunately and surprisingly a near contrary.

The existence of protected reserves and the difficulties in the utilisation of "biodiversified" ecological are commonplace in almost all regions of Cameroon. The objective of this paper would be to provide the historical circumstances of the creation of these reserves, their evolution and expectations, their ecological situation and the lessons to learn. The overall aim would be to examine the problems associated with their exploitation in order as to provide a panacea.

2. METHODOLOGY

We make a field survey to collect useful data that have been transformed statistically using Excel software in order to produce final graphs on protected areas. We also use ADOBE ILLUSTRATOR, MAPINFO and ARCVIEW software to map out some significant protected areas of Cameroon.

3 – THE HISTORICAL CONTEXT OF PROTECTED AREAS

The dawn of protected reserves in the world started in Wyoming in the United States of America, with the creation of the Yellow Stone National Park. On the African continent, the very first reserve was the Sabie Game Reserve of South Africa, which eventually became the Krüger National Park in 1898. After these two, colonial authorities erected parks, forest reserves and botanical gardens in their various territories. Thus in black francophone Africa, the first protected site was created in 1920. According to Sournia (1998) the first ever inventory of protected reserves in the world was published in 1967, when J.P. Harroy, counted 1204 protected territories. This inventory was then followed in 1974, which identified 1422 protected reserves. Presently, we count about 3000 protected sites on about 600 million ha being about 3% of the earth's surface. Africa has the lion's share, especially Central Africa with some 23 millions ha being 6% of the area, but unfortunately with an income of only 32 million dollars.

As concerns Cameroon, protected reserves (fig.1) were started in the Northern provinces, covering about with 4% of the national territory and this has kept pace to the extent the administrative authorities now want to raise it from 12% to 30%. All started with the Waza National Park, which is the most popular and most visited. The forest reserves of Mozogo Gokoro and that of the Benue were created on the 12th June and the 19th November 1932. On the 12th September 1933, Dr Jeannin, Nature Conservator and Chief of Veterinary Services of the North Region presented to the French High Commissioner to Cameroon, a proposal for the creation of a 3rd reserve being the Waza. This was signed on the 24th March 1934, and the initial starting area was 155 000ha but was raised to 165 000ha in 1935. The colonial administration had four objectives:

- Make a protective shield between the poorly vaccinated cattle of the Far North and those of the South that were well vaccinated against cattle pests which could infest the buffaloes and other animals of the reserve.
- Prevent the illegal trade of cattle to Nigeria by destroying the temporary huts of the smugglers on the edge of the reserve
- Favour a natural reforestation and permit the execution different methods to reafforest the Reserve.
- Promote neighbourhood tourism by favouring the multiplication of the great mammals of Waza

Of these objectives, only the first two were achieved but it is the last two that are of interest to us from an ecological point of view. The second objective is a struggle of the order of the day, which requires that every body should get involved in the struggle.

4 – THE EVOLUTION OF PROTECTED AREAS IN CAMEROON

4.1 – Main steps

There are four main steps in the evolution of protected areas (in Cameroon.

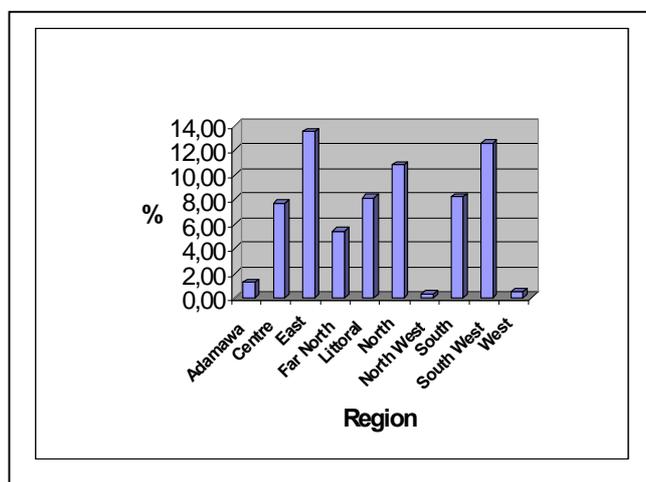
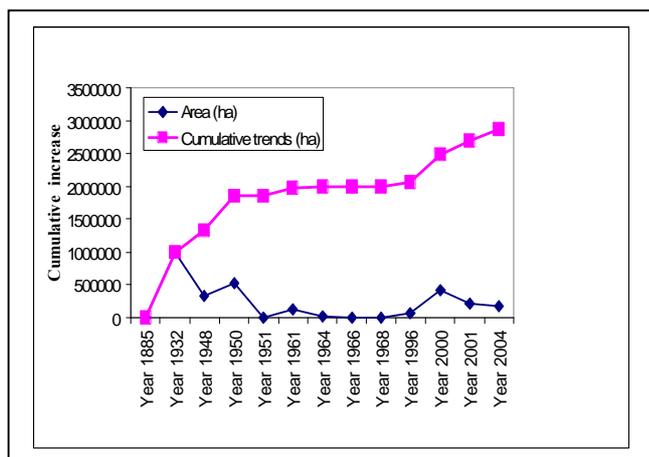
From the beginning to 1960, one can counts 10 protected areas

1960-1980: 6 protected areas more

1980-2004: 5 protected areas more

After 2005, 8 protected areas that file have been forwarded to Prime Minister (see table I).

The graphs show (fig.2a) that areas of protected and classified sites climbed up gradually and faster in Cameroon since Rio de Janeiro Earth Summit.



Protected Rescues	Areas (ha)	Province	Creation Reserve CIZ	Erection National Park
Waza National Park	170.000	Far North	1932	1968
Kalamaloue National park	4500	Far north	1947	1972
Mozogo-Gokoro National Park	1400	Far north	1932	1968
Benue National Park	180.000	North	1932	1968
Faro National Park	330.000	North	1932	1980
Bouba – Ndjida National Park	220.000	North	1947	1968
Korup National Park	126.000	South West	1962	1982
Dja Reserve	526.000	East	1950	--
Douala Edea Wild life Reserve	160.000	Littoral	1932	--
Lobeke Wild life park	43.000	East	--	2000
Campo Wild life Park	271.000	South	1932	2000
Kalfou Wild life Park	4.000	Far north	1933	--
Lake Ossa Forest Reserve	4.000	Littoral	1968	--
Kimbi Forest Reserve	5600	North West	1964	--
Santchou Forest reserve	7.000	West	1968	
Mbi Crater	400	North West	1964	--
Mengame game sanctuary	17500	South	--	2000
Mbayang Mbo Game Sanctuary	48500	South West	--	2000
Mbam et Djérem	416512	Centre- Adamawa	--	2000
Boumba Bek	210000	East	--	2000
Lobeke	428000	East	--	2000

Table I: Protected Rescues of Cameroon and their Areas

4.2 – Ecological conditions and situation of protected areas

The ecological stakes of the 21st century put the International Community before the obligation of environmental protection started in Stockholm in 1972, followed up by the Rio de Janeiro in 1992 and evaluated in South Africa in 2002. In the New Ecological Order that stemmed from the Rio Summit, and emphasis was placed on the protection of the environment of the countries that have protected species and that are threatened by extinction through credits and transfer of technology. In order to achieve a sustainable development, the reserves of the biosphere created by the UNESCO since 1976, have continued to increase with four key objectives:

- Reinforce the conservation of genetic resources and ecosystems as well as the surveillance the species with a high ecological value.
- Maintain an animal and vegetal biodiversity.
- Concretely associate to the protection of the environment and the exploitation of tourism and ecotourism resources for sustainable development
- Promote research and education activities in order to assure a scientific follow-up

All of these actions are interrelated but the evolution of protected reserves in Cameroon does not tally with these four options. It has only been thanks to the funds of the Agenda 21 that there was an ecotourism element developed at Waza (fig.3) that associated

- A participative management that saw the reopening of the closed camps
- The establishment of cultural villages at the scale of those existing in South Africa
- The zoning of the park with the association of neighbouring population as guides. Even if much still remains to be desired these three elements are satisfactory and make for a sustainable development.

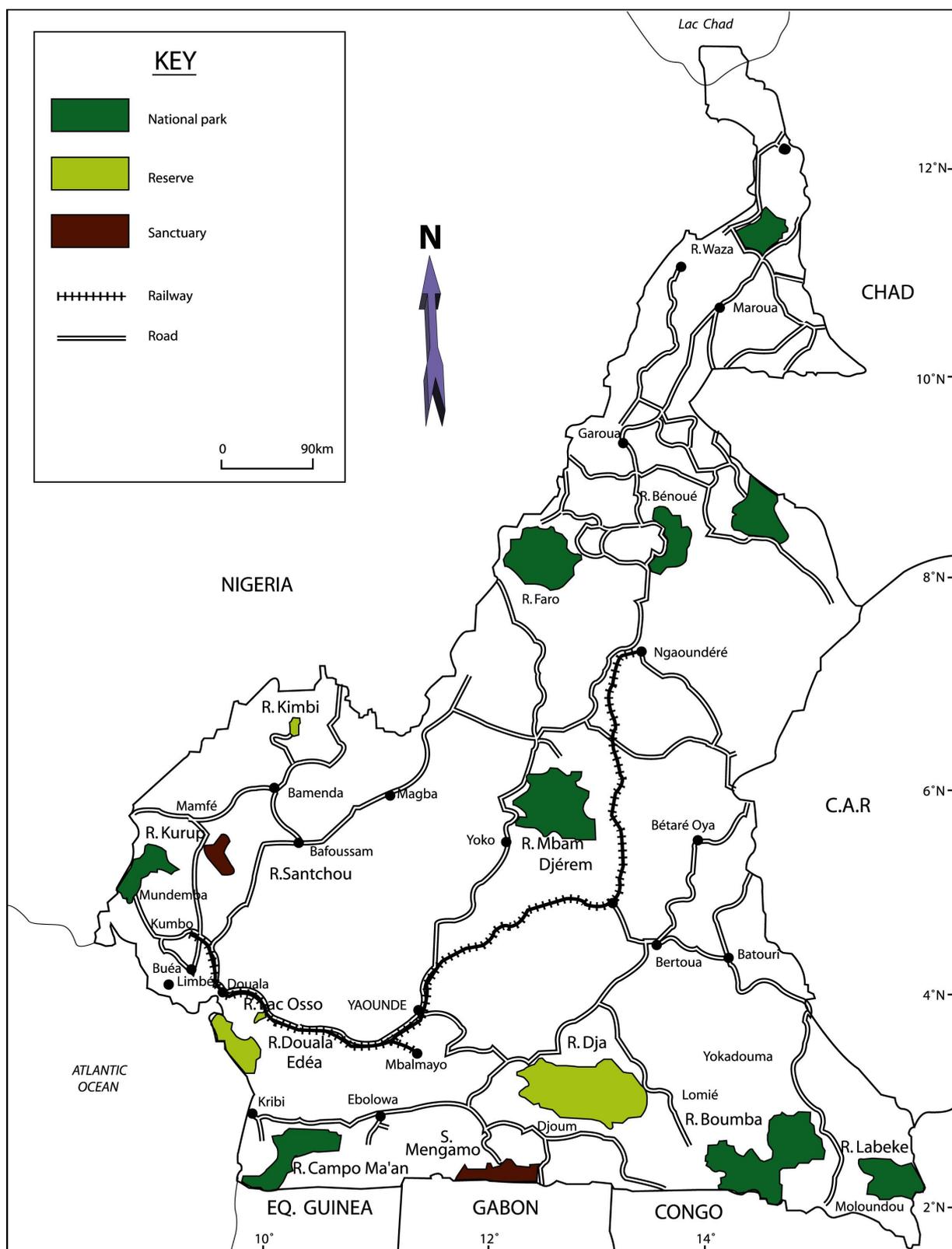


Fig. 1 – Protected areas of Cameroon

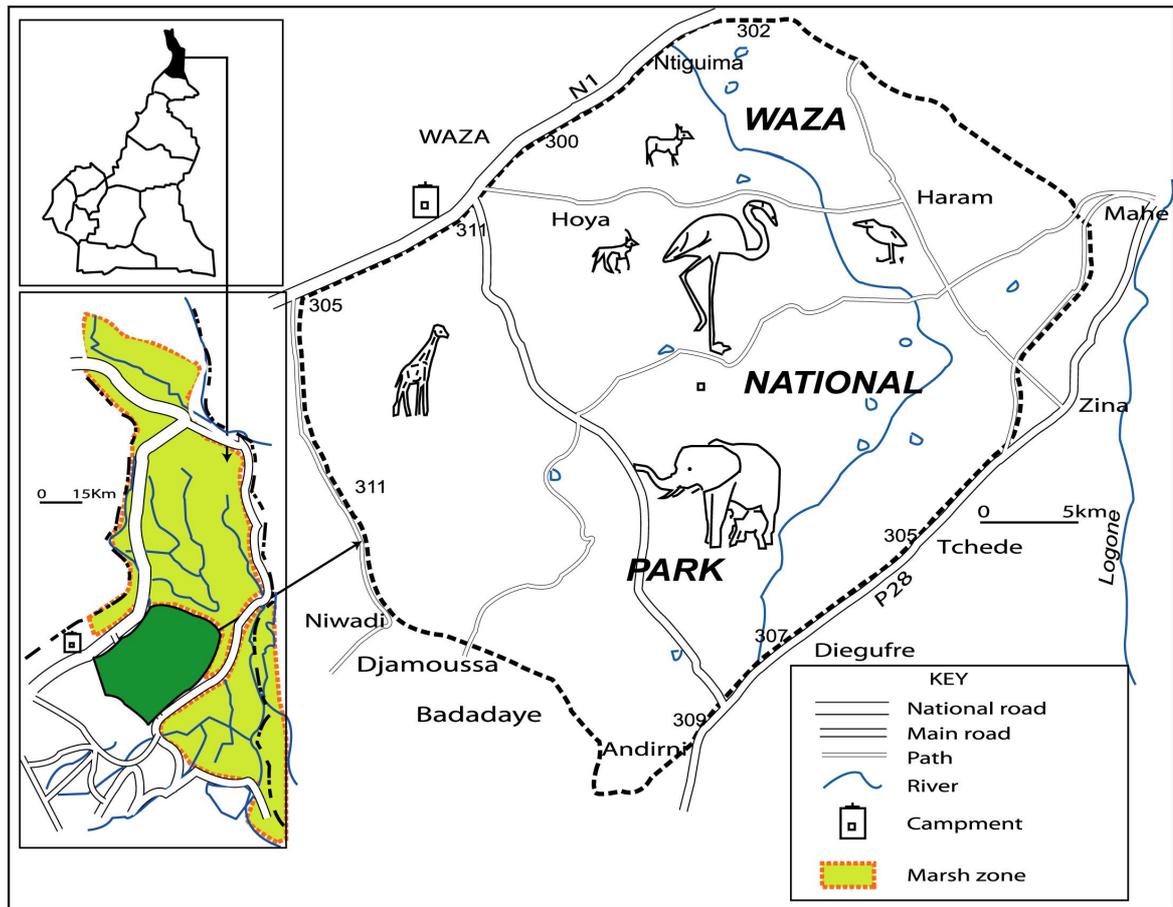


Fig.3 – Waza National Park

Table II gives the ecological conditions of the protected reserves in Cameroon. The country is marked by an impressive relief and climate (from low to highland), protected sites that stretch from sea level up to 2000m under varied climatic conditions ranging from equatorial to tropical climate. It is true that at the start protected reserves were created only in the savanna region but as of present in Cameroon, they exist in all the ten provinces of Cameroon each with its topographic, climatic, hydrological biological variants (Table II).

	Sites at the Interface Land/Ocean (0 - 300m)	Lowland Sites (50-300m)	South Cameroon Plateau Sites (700m)	Mountain and Plateau protected areas (> 1000m)	Transfrontier protected areas
Number	03	10	08	08	08
Names	Campo-Ma'an, Douala-Edea, Korup	Waza, Kalamaloue, Kalfou, Campo-Ma'an, Korup, Lake Ossa, Douala-Edea, Benue, Faro, Bouba Ndjida.	Dja, Lobeke, Boumba Bek, Mengame, Nki Mbam Djerem, Mpem Djim, Sanaga Yong, Lom Pangar	Kimbi, Mozogo Gokoro, Bayang Mbo, Mbi Crater, Santchou, Mbere valley, Bakossi Mountains, Rumpi Hills	Kalamaloue, Bouba Ndjida, Lobeke, Korup, Boumba Bek, Mengame, Campo Ma'an, Faro.

Table II : Ecological situations of protected areas of Cameroon

4.3 Relevant data on tourist income and visits in the protected areas.

The pieces of data at our disposal concern only the northern provinces of Cameroon. With all that Cameroon has as protected reserves, it got only 25 billion FCFA (40 millions US dollars) for its tourism in 1998 whereas in a country like

Kenya, tourism was the greatest contributor of 419 millions dollars to the Gross National Product (GNP), which is 10 times more than that of Cameroon. South Africa generates 70% of the running cost of protected reserves from tourism income of its parks and forest reserves. It is therefore clear that what Cameroon gets from tourism of protected reserves is insignificant when compared to other countries that are not even well endowed like Cameroon such as Kenya with 1,05 million tourists based only on its protected reserves and Zimbabwe where the number of visitors has almost doubled in four years passing from 375000 to 658000 between 1988 and 1992 (Atlas Jeune Afrique; 2000)

It is a truism that in francophone Africa tourism in protected areas appear to be of little importance probably for reasons of management, security, transport cost, equipment, and even advertisement. Whereas millions of tourists visited protected reserves in Eastern and Southern Africa, only 1/20th or 1/25th visited classified sites of francophone Africa (Western and Central Africa). This includes Senegal and Côte-d'Ivoire who equally recorded less than 200000 visitors per year in their parks. Cameroon could have even consoled itself with the low level of tourist visits in these protected reserves if this rate was even constant. This rate is unfortunately dropping in all aspects in Cameroon, which totalled only 10000 visitors in all the parks of the Northern provinces between 1982 and 1983 (Fig. 3). The average rate if increase is negative, less than 1-5% on the whole. Of the four sites studied none showed any positive evolution giving the impression of dead neighbourhood tourism in Cameroon with widespread poaching that has greatly reduced that number of animals. As a matter of fact we sale more hunting permits than the income from entry tickets into the national parks.

Considering the ongoing facts, we find that Cameroon has a good number of protected reserves, which seem to serve just for aesthetics or a blocked conservatory museum since it records too few or even no visitors in these sites. The record was reached only in 1983 when the Waza and Benue parks received 6733 and 3000 tourists respectively whereas Kenya as from 1971 was receiving 300000 tourists in its national parks already. Cameroon appears to have even completely forgotten the tourism fluxes. The tourism function rate of Waza and other parks put together is insignificant. This is the same case with the rate of tourist visits and the lodging capacity, which is what the table III below expresses.

	Tourism Function Rate (1)	Lodging Capacity (2)	Land Index (3)	Spatial Index Spatial of Tourist Visits (4)
Benue	0,002	0,001	13,22	1,6
Bouba Ndjida	0,003	0,0002	6,02	0,03
Faro	0,006	0,00	28	-
Kalamaloué	0,0006	0,01	13,70	6
Waza	0,03	0,02	13,70	3,63

Table III: some touristic index of Northern Cameroon National Parks

- (1) Number of tourist beds / number of inhabitants x 100
- (2) Number of tourist / number of inhabitants
- (3) Tourism land wealth in ha / indigenous land reserves x 100
- (4) Number of tourist per ha per year

The table reveals that the most visited park does not reflect its minimal tourism function. This is a preoccupying situation that merits deeper analyses with regards to the causes and consequences. From these observations and reports, there are many lessons to learn about Cameroonian protected areas management case.

5 – LESSONS TO LEARN AND PERSPECTIVES

In the context of the 21st century, all protected areas must become local, national and regional development tools, which must raise benefits from the ecological and scientific points of view (exchange of information on the milieu, the putting in place of ecological and scientific systems of follow up) as well as from the economic and social points of view (park zoning, mastery of the movements of the rural populations, best management of plots, legal controls, employment opportunities, training, regional integration, and a halt to rural exodus)

In this light, Cameroon should quickly kick aside the model of protected areas based on colonial principles that exploited the native population. The protected reserves are an instrument of follow up of complex biological systems that we are part of and depend upon. For this fact, we grouped our results in three main domains.

5.1 – Socio political lessons raised up by Cameroon protected areas

The social context in Cameroon is strongly influenced by economic misery involving the informalisation of activities. There has been a rise in marginalisation and under employment (67%), without forgetting the strong rates of school drop out since 1990 increasing regional discrepancies, household poverty. The informal sector supplied over 70% of the household needs. The rural poor rose from 49% in 1983 to 71% in 1993 for a population that is 50% less than 15 years.

The poorest zones are therefore the rural zones where the protected reserves are established. It is thus state responsibility to curb poverty so as to reduce the stress on tourist resources through poaching and other illicit practices of this poor population. An investigation carried out in 1996 shows that the poverty index (PI) is highest in the rural savanna, montane, and forested zones with a record height for the far north province (PI = 0,49), followed by the North province (PI = 0,44), Adamawa (PI = 0,37) and East (PI = 0,30). The three poorest provinces have more than half the number of protected reserves. This situation requires a review. The increase in the number of protected areas reserves should be accompanied with the number of guards, which is what should have reduced the pressure on these sites. The table below summarises the situation as it was before and after January 2000

Type of Protected areas	SITUATION BEFORE JANUARY 1994				SITUATION AFTER JANUARY 2000			
	Number	Area (ha)	%	Guards	Number	Area (ha)	%	Guards
National Parks	07	1026800	2,20		17	3148937	6,62	
Reserves	07	1002995	2,15		06	702995	1,47	
Cynegetic zones	28	2364396	4,72		56	4735250	9,96	
Zoo Gardens	03	4,07	0,0008		03	4,07	0,0008	
Sanctuaries	00	00	00		03	246368	0,52	
Total	46	4394195,07	9,24		85	8833554,07	18,58	

Table IV : Situation of protected areas in Cameroon since 1932

Additionally, the guards are poorly and irregularly paid and badly equipped, which is a situation that creates conflicts on the field. They lack means of interpersonal communication, arms and other material for effective work and protection against wild animals like lions and panther. Where the material exists; it is obsolete (guns of MASS 36) and often lack bullets. These wooden guns of the guards are of low performance when compared to Calibre 12 guns used by the poachers. Their houses lack the basic facilities like water, electricity, furniture, etc. They often even lack fuel although they have the obligation to cover more than 150km each day for inspection purposes in each of their sectors. How can it be expected that the guard salary of 160 US dollars /month can buy fuel for the motorcycles, and bullets for the guns whose last supply was as of 1981? Only the tyres of the bikes cost 160 US dollars, which is already the monthly salary for guards who each already have heavy family responsibilities. How could they then be expected to succeed in their mission without fuel whereas the administrators in the towns easily have fuel? During fieldwork, we found too many problems that it then became understandable why some parts of the park have been left at the mercy of the poachers coming in from Chad (the case of the Bouba Ndjida Park; or from Nigeria (the case of the Faro park;). The presence of armed highway robbers adds to the social anguish of this region.

There has also been a steady rise in social conflicts due to poverty, bad or no training of park guards. As such in the Mayo Rey Division, a guard was imprisoned for 40 days; a poisoned arrow of cattle breeders in the hunting permitted zones (CIZ) wounded another. In such a condition the conservator spends time settling conflicts rather than fully carrying out his responsibilities.

In 1986, there were 15 CIZ (N° 1-8, 9-12, 4-16) in the North on an area of 729 390 ha. In 1996, there were 27 CIZ (N°1-5, 7-22, 23-26) an area of 2 190 048 ha making a 200% increase. In 1998, 28 CIZ N° 1-5, 7-26; (fig. 4a) were identified on an area of 2 339 160 ha being 6,80% increase. These 28 CIZ have a peculiar distribution: 23 are reserved for hunting guides, 3 are state-run, 1 is for the Lamido of Rey Bouba and 1 is reserved for game ranch experiments. The population therefore has only pastureland and their land has thus been taken away without their opinion just as during the colonial period. These cattle breeder population has thus only been clamouring for a return of their land especially ZIC N° 23 and the zone of Mayo Boddo handed to CIZ N° 25, in addition to the cancelling of CIZ N° 10 to permit the movement of animals during transhumance (Fig. 4a).

A situation of social revolt has emerged, such as the phenomenon of armed highway robbers stems from poverty, training and illiteracy, and the salary delays. The increased misery in the dry zone has pushed the park guards and the local populations to even take part in the poaching in two ways. Firstly, through silent complaisance, or secondly through an inaccurate declaration of figures to MINFOF,

Between 2000 and 2003, Cameroon create 28 more cynegetic interest zone in its forestall area (fig.4b); for which Purpose? All CIZ are held by foreigners from European countries. This CIZ in the southern part of the country are border by forest unit management (FUM). These constitute another reason of socio-political conflict because how the policies could protect classified areas by multiplying hunting domains. FUM and CIZ could not allow wild life to move again through their corridor because at the same time, timber exploitation reduces in quality and quantity biodiversity in terms of plant and animal species. It is a proof of lack of scientific follow-up unit in protected areas of Cameroon.

The above situation shows the lack of participative management in Cameroon especially in the Northern provinces where the implication of the local populations in the management of their milieu wealth has been a failure. So how can

it be possible to create and protect animals in a park whereas the surrounding population is crumbling in misery? The poverty rate is too high in rural milieu! What then is the best option of conservation and dialogue? The breakdown of the local traditional authority only goes to increase social conflicts and social pressure on resources. The conservation of resources would not be possible if the neighbouring population is considered as actors and partners in the CIZ with rights and obligations. However, the best management and knowledge of protected areas needs a good prevention of poaching through a greater involvement of the neighbouring population at three levels.

- Firstly, at the level of identification and discussion - Secondly, at the level of decision taking, which involves all the societal groups and the opinions of the neighbouring population to the protected reserves? - Thirdly, at the level of the inspection of the park, two steps are necessary.

Politically, the multiplicity of institutions charged with the management of tourism without a proper coordination have divergent visions and interests: MINFOF for the management of protected reserves, MINATD for administration, MINPAT for public investment, MINAGRI for agriculture, MINEPIA for fisheries and animal husbandry, etc. Such a situation causes conflicts of operation and not even forgetting that road maintenance is the preserve of the Ministry of Public Works and Transport. Also, the promotion of discovery tourism does not exist or is probably too low in Cameroon.

5.2 – Economical and logistics

Most protected reserves areas in Cameroon are at enclaves that are inaccessible and so lack organised services and the bad state of the roads makes journeys to be long, tiring and even dangerous. Also, there are no airstrips for small aircrafts near the parks. This is the case in the parks and reserves of Cameroon from the north to the south especially that of the Faro, Boumba Bek, Lobeke, Korup and the reserve of Dja that is very isolated.

Equally, the road network in Cameroon has less than 7000 km of tarred roads on 60000km of pre-existing roads amongst which 52% are classified (with 6% tarred and 46% earthed surface) and 48% are unclassified. Also, this network is defective, ill-adapted, and poorly maintained, even old and inexistent in some areas.

This flaw of road traffic badly inhibits the visits of protected reserves and encourages poaching in Cameroon. More, the lodging facilities are derisory and the most cosy of them are too distant from the parks, except for the camps in the region of the national parks of the Northern provinces that have been refurbished.

During the analyses of the data on tourists' visits, there is a lack of tools to do a daily, monthly and annual planning of tourist visits. This explains the five-year gap between (1990 and 1994) on the tourist visits to the Waza Park. The others lack data for 15 to 27 years (Benue, Kalamaloue, Bouba Ndjidah).

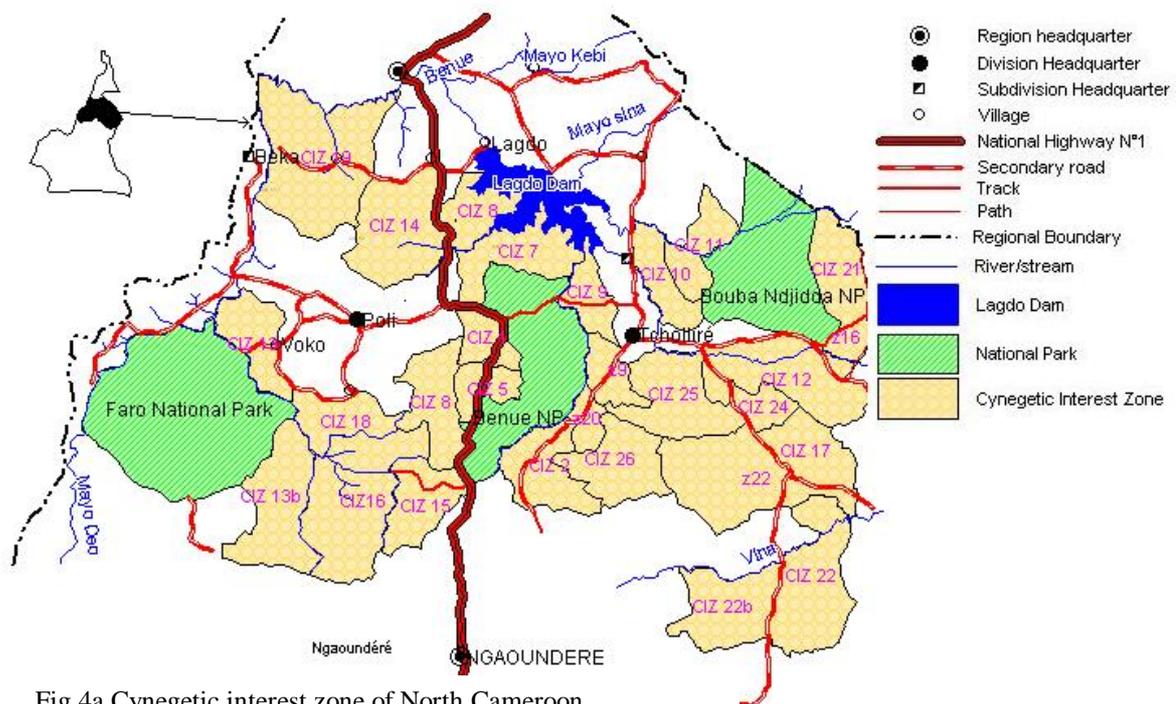


Fig.4a Cynegetic interest zone of North Cameroon

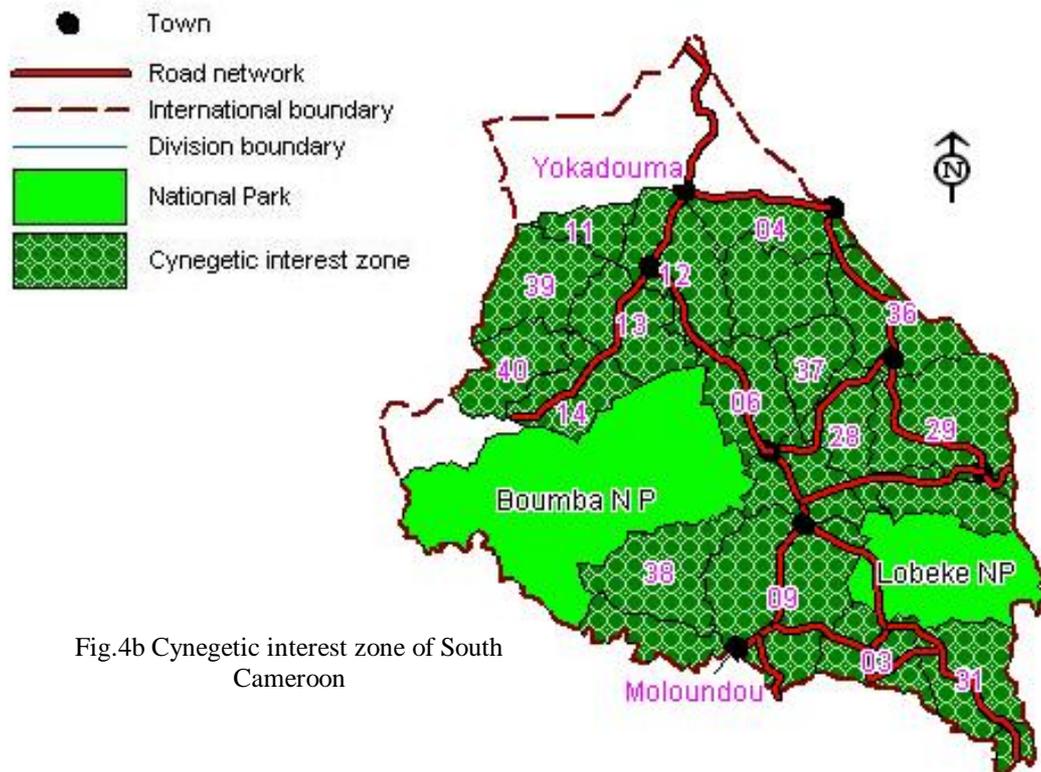


Fig.4b Cynegetic interest zone of South Cameroon

5.3 – Scientific data

Ever since the creation of Man and Biosphere (MAB) by UNESCO the roles and types of protected reserves have seen their day all over the world. Cameroon has five types of protected reserves

- The site international wealth these are protected reserves whose biological elements are of international importance. These sites are identified and proposed by states that accept to take the responsibility to protect this wealth as soon as their registration on the world wealth list has been made.
- Biosphere Reserve characterises all classified sites whose objective is to conserve the diversity and the integrity of the animal and vegetal community to achieve a present and future use. The protected reserves that enjoy this status play a research, education and training role: being the case of the Waza and Benue parks. Various countries, to the MAB office, propose the sites of these biosphere reserves before being approved in the last place by UNESCO;
- The national park is a protected reserve in which the natural regions and exceptional landscapes are protected for scientific goals are scientific, educative and recreational All extractive activities are forbidden from these protected reserves which must be vast (Mbam and Djerem, Faro, and Korup reserves, etc.
- Integral natural reserve concerns a classified site where we protect nature and natural processes in the undisturbed state in order to keep the milieu in its dynamic and evolving state. This is the case of the Kimbi Reserve, Mbi Crater, Douala-Edea reserve and Lake Ossa;
- A fauna sanctuary is a protected reserve whose main objective is to maintain the necessary natural conditions to protect the species or the biological communities of national importance through human activities, like the Sanctuary of Mengué for Gorillas and the Sanctuary of Bayang Mbo.

All of this has not given rise to the creation of a follow up scientific section and the treatment of animal species in the parks of northern Cameroon. It is known world wide that park workers are of three types: administrative, scientific and technical section and an inspection section. In Cameroon, this distribution either does not exist or is blurred. The conservationist in most cases is like an all-purpose machine, keeping aside the heavy administrative and preoccupying tasks that the MINEF is giving it. The technico-scientific section does not exist in this country that has a varied fauna. However, according to Kirida Philippe (2000) some studies have been made on the elephants of Waza (whose population is increasing) by the biologist, Joël Okula, and the counting of the mammals of the Waza since 1973 by the Fauna School of Garoua. Apart of these, there are no on the spot technical and scientific sections for studies and health care of the animals. Despite the high reputation of the Fauna School of Garoua, we still notice that the fauna of the park is reducing.

Also, the bio and zoogeographical distribution of animals is known. The scientific goal has been pushed to the background even though Cameroon has high-level structures that can do such studies with the financial support of NGOs. The various ministries that play a role in this domain (MINTOUR, MINFOF, MINEP, MINESUP), should join their efforts to try to create observatories of the various existing or relict natural milieus (sudan, sahel, guinean, montane, littoral or maritime) in Cameroon. Each park should possess a research zone even if only on the bases of the transfer of technology in conformity with the accords of the Rio Convention. Research should emphasize the dynamic aspects of the fauna and flora of the protected sites. Pollen studies are eventually necessary especially in the relict milieus such as Northern Cameroon where there exist a strong trace of the presence of fossils of dinosaurs in the parks of Bouba Ndjida and Benue. It is possible to conserve and to protect the present species that are threatened by extinction such as the black Rhinoceros.

Regarding the inspection section, it has many loopholes. The currently happening (1 guard to 15000ha if not more) is very weak, as compared to what ought to be happening (1 guard for a maximum of 5000ha). For all the protected reserves of Cameroon it would require the training and deployment of at least 2000 guards in addition to the administrative and scientific personnel, which would carry up the number of workers of the protected reserves to 2500 persons without including the tourist guides. This requires an ample sensitisation, measures to spur people of the private sector towards tourism, control measures and an appropriate logistics. Add to this there is a lack of maps and mapping facilities that could help to masteries the trends of protected areas.

6 – GENERAL CONCLUSION

Protected areas aim to reduce local poverty by ensuring stakeholders welfare. Thus Cameroon makes effort to increase significantly the number of these classified sites. But many problems remain and the government shall try to build up a good active participatory management methods to reduce local population lack of conscience. Those methods could bring local population to be aware of pressure in resource. The reduction of poverty by good governance policies is a warranty of maintaining wild life in the protected areas of the country that could keep stakeholders patrimonial welfare away of spill ness. The government has to reduce significantly the number of FUM and CIZ near the protected areas and to forbid any type of timber exploitation closely to the protected sites.

In the other hand, we argue that the protected areas are not clear in the local population mind because the goods were spoliated during colonial period without any compensation. So the local population carries the after effects of colonial period during which their land was spoiled without no damage paid. Government nowadays seems to use the same methods in the creation of new protected areas without involving the local population participation. So one can ask which future for Cameroon protected areas and how to build a good and successful participation processes to efficient, economic and sustainable development of protected areas?

Finally, the idea of patrimony should guide all decision makers by the neighbouring population. We can protect the patrimony only by taking stock of the local resources in order to develop and diversify eco tourism. In this case, the delays that Cameroon has had should permit a detailed study that would sharpen appropriate strategies and means of management. Some NGOs in partnership with the local population and the government set the role of each partner before engaging itself in the management. In this way Cameroon shall avoid joking with the future of its huge touristic patrimony and potential.

7 - REFERENCES

- Jeune Afrique (2000).- *ATLAS de l'AFRIQUE* . Edition du Jaguar, Paris, 207p.
- CANOPEE N° 13, (1999).- *L'Afrique Centrale et le Tourisme de Nature*. ECOFAC, Libreville. 28p.
- CANOPEE N° 20, (2001).- *A Quoi Servent les Aires Protégées ?* ECOFAC, Libreville, 16p.
- CANOPEE N° 21, (2001).- *Y a-t-il Surexploitation des Ressources Naturelles ?*. ECOFAC, Libreville, 16p.
- CEFDHAC (1996). - *Processus de Brazzaville, Avant Projet d'Action*. Conférence sur les Ecosystèmes de Forêts Denses Humides d'Afrique Centrale, inédit, 58p.
- THE COURRIER N° 175, (1999). - *The Sustainable Development of Tourism*. Bruxelles, Pp. 41-71.
- Kirda, Philippe. (2000).- *Les Activités Cynégétiques dans la Province du Nord Cameroun entre 1983 et 1997*. Consultation réalisée pour le compte du WWF, projet savanes soudaniennes du Nord, Garoua, 38p.
- MINEP (2001).- *Programme de Conservation et de Gestion de la Biodiversité au Cameroun*. Parc National de la Bénoué. *Plan d'Aménagement du Parc et de Zone Périphérique, 2002-2006.*, 27p.annexes. Yaoundé, 97p.
- MINEP-UICN (1997).- *Plan Directeur d'Aménagement du Parc National de Waza*. 54p.annexes. Yaoundé. 63p.
- PNUD (2000).- *Rapport sur le Développement Humain 1998. La Pauvreté au Cameroun*. Yaoundé, 100p.
- Sournia, Gérard. « Sous la Direction de » (1998).- *Les Aires Protégées d'Afrique Francophone*. IEPF ACCT, Editions Jean Pierre de Monza, Paris, 272p.
- UICN (1990).- *Aménagement des Aires Protégées Tropicales*, Gland, Suisse, 289p.

MAPPING OF PROTECTED AREAS EVOLUTION IN CAMEROON FROM THE BEGINNING TO 2000: LESSON TO LEARN AND PERSPECTIVES.

Mesmin Tchindjang¹, Clair René Banga², Appolinaire Nankam³, Jean Sylvestre Makak⁴

¹University of Yaounde I, Department of Geography PO Box. 30464 Yaounde Cameroon mtchind@yahoo.fr

²Ministry of Forestry and Fauna, DFAP, bangaclair@yahoo.com

³Ministry of Forestry and Fauna, DFAP, apponankma@yahoo.fr

⁴Cameroon Environmental Watch, Yaounde smakak2000@yahoo.fr,

BIOGRAPHY OF DR MESMIN TCHINDJANG

Dr Mesmin Tchindjang was born in Douala Cameroon on August 26, 1961.

Title: Holder of:

1- Ph.D thesis in Geomorphology in 1996 at University of Paris 7 in France entitled: The Central Bamileke Plateau and its surrounds: Regional morphology and slopes dynamic, Geomorphological study. The thesis dealt with Relief, Surface dynamic and Natural Risks.

2 – Master of Sciences in GIS (Methods and Techniques of Management of Environmental Information) at University Omar Bongo Ondimba of Libreville Gabon.

Function:

3 - Senior Lecturer in University of Yaounde I Cameroon, Department of Geography. My teaching domains in University of Yaounde concern: Geomorphology, Cartography and Remote Sensing, Environment, Tourism and Eco tourism.

4 – Associate Lecturer in Geomorphology and Remote Sensing at ENEF; Libreville Gabon.

Experiences:

- General Secretary of The National Geography Committee of Cameroon.
- Member of ICA working Group on Colonial Cartography
- Member of IGU working group on cultural geography
- Founding Member and coordinator of CARGIS; a Cameroonian association of cartographers, GIS and remote sensing
- Program Manager and Coordinator of Postgraduate Diploma and Master of Sciences in EIA in CRESA FORET-BOIS (University of Dschang) Cameroon.

Publications:

More than 15 scientific articles focussed on: The weathered pebble of the Bamileke plateau, The geological rock strata in Cameroon, Mining Sand exploitation on the Pan African granite rock of Batie Region, Central Bamileke maars, inundation risks in the Lake Nyos Valley, Erosion and Dissolution potholes on the Lake Nyos pyroclastic dam, tourism and ecotourism. Supervisor (students' research works) of almost 15 Master of Sciences thesis in Geomorphology, Management of Natural and touristic resources, Environment with tourism and Eco tourism, Farming transformation in West Cameroon, Sustainable Management of Fauna specimen (CITES Case) in Cameroon, Inundation and risks linked with shallows occupation in Yaounde town, Remote sensing and ecological prospect of biodiversity on Cameroon Mountains after 1999-2000 eruptions.