

LAKE CHAD: MEANWHILE WAITING FOR THE SAFEGUARD, STOPPING ON THE MANAGEMENT OF THE POTENTIALITIES OF THE AREA

Rititingar Appolinaire ^a, Abakar Mahamat Soumaïne ^b, Abdoulaye Borgoto ^c,
Andjaffa Djaldi Simon ^d

^a Department of Biology, University of N'Djamena, Chad.

^{b,c} Interdisciplinary Centre for Research and Action as regards Chad's Development, Chad.

^d Department of Moderns Letters, University of N'Djamena, Chad.

^a Corresponding author: rititingarapollinair@yahoo.fr

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Abstract: The basin of the Lake Chad is the vastest endoreic basin of the world with 2.381.635 km², that is to say 8% of the surface of the African continent. The countries concerned are: l' Algeria, Cameroun, Niger, Nigeria, the Central African Republic, Sudan and Chad. However the zone d' intervention of the Commission of the Basin of the Lake Chad indicated here 'conventional Basin' covers after its extension in 1985 (5th Summit of the Lake Chad Basin Commission (LCBC), a surface of 967.000 km². It represents the active catchment area. The Basin of the Lake Chad is subdivided in several more or less distinct natural units: the northern area, alluvial basins and solid masses. The basin hydrologic active relates to only the southern part. The hydrographic network is primarily made up of the Logon-Chari river, Mandara mounts and Komadougou Yobe. The Lake Chad is a zone presenting of specificities which are clean for him: a rich potentiality economic, cultural, demographic, fauna, flora, etc. It is to ensure an equitable management of these resources that was born the Lake Chad Basin Commission in 1964 in Fort- Lamis (current N'Djamena), to ensure the follow-up of the laid down objectives and to confirm

thus the lake like frontier element between bordering countries cities mentioned above. However, the resources of the Lake Chad are with more a title, source of tensions, even conflicts between communities and interstates. Thus, at the time when that and there, the calls continue being launched in favor of the rescue of this ecological jewel, because of its disappearance certain due to climate warming and others, it is advisable to make the assessment of management of these resources and even in what this project will be benefit to the bordering countries of this area or will be a potential sources of conflicts.

This study will present the Lake Chad and the resources which compose it. It will harness with various conventions which government the management of these resources. It will interest in the various conflicts which occurred during management of these potentialities. Lastly, it will question on the project which consists in saving the lake with water of the river Ubangi (Central African Republic), RCA.

Keywords: Conflicts, Lake, Management, Potentialities, Rescue.

INTRODUCTION

Inherited from the colonization, then defended by the Organization of African Unity (OAU), in 1963, by virtue of the principle of the *uti possidetis juris*¹, the Lake Chad is a communication route very important in the Chadian Basin. In 1964, was born the Committee of Lake Chad Basin Commission (LCBC) in Fort-Lamis, now N'Djamena, capital of the Chad to confirm the border character of this lake between the Chad, Nigeria, Cameroon and Niger.

The lake is the vastest endoréic basin of the world with 2.381.635 km², which is 8 % of the surface area of the African continent. The concerned countries are: Algeria, Cameroon, Niger, Nigeria, Central African Republic, Sudan, Libya and Chad.

The basin of the Lake Chad is subdivided into several more or less cut natural units: the desert northern region, the alluvial basins and the massifs. The basin hydrological active concerns only the south party. The river system is essentially constituted by the system Logon-Chari, mounts Mandara and by Komadougou Yobe. The lake presents specificities which are appropriate for him: a potentiality rich in economy, a rich cultural diversity, a very dense demographic, of the fauna and the flora, etc.

From what proceeds, the zone of intervention of the Commission of the Lake Chad indicated "*conventional basin*" which was passed from 427300 km² to 1053455 km², with the membership of countries such as the Central African Republic in 1994 and Libya in 2008. It represents the active catchment basin. To date, member countries of this active party are: Chad, Cameroon, Nigeria, Niger, Central African Republic, Libya and Sudan² (observer member). It is to assure the fair management of these resources that had been born the LCBC. The concern was to assure the follow-up of the established objectives and to confirm so the lake as the element of border between the waterside States. However, the resources of the Lake Chad are in many respects, source of the tensions, conflicts between the local communities and even between States. So, as here and there, the appeals of safeguard are being launched to protect this merry ecological, because of sure sound of disappearance due to the

global warming, the blocking with sand and the others, it is urgent to make the evaluation of the management of these resources that compose these holdings to see in which measure this new initiative that consists of saving this potentiality will be advantageous in the waterside countries of the region or will be potential sources of the conflicts. It is time to know what has been done during the pass within countries members of the basin. It is matter to make an effective assessment of the resources of region. It is also the opportunity to analyze essential strategies made during the pass.

This study will present the Lake Chad and the resources which compose it, will run diverse conventions government the management of these resources. The paper will mention certain conflicts that occur during pass years as regards Lake Chad's resources management. Furthermore, the study will focus on LCBC with different reforms engaged and finally, the study will analyze the new project in terms of challenge which consists in saving the lake by transferring water from Oubangui - Chari (Central African Republic), CAR to Lake Chad.

It is a question for us to offering this scientific study which will allow synthesizing the already realized works, in particular by the researchers on the Lake Chad, and to identify better the phenomena bound to the resources of this basin and to propose tracks of actions towards a sustainable development for all the inhabitants of the basin.

METHODS AND MATERIALS

Series of scientific and university documents, journalistic statements and political speeches, etc. are regularly published on the question of the disappearance of Lake Chad. The Forums, Symposium and the reports of the NGO (Non-Governmental Organization) filled are available in libraries and web site on the future of this common heritage. These works have been consulted.

Besides, we interviewed person resources, including the workers of the LCBC and the partners that are involved in this fight against the disappearance of this lake. They reacted to the structured questionnaires. We hope that the questions raised in the present report have risen to inquiries deepened within the governments, the NGO and they understand how the safeguard of the Lake Chad has to be an advantage for the local populations in general and in States in particular.

¹ Nievesete, B.D. (2008), *HS 504: Economics and Societies of People of Lake Chad*, Lectures' notes, Principles defending the intangibility of boundaries inherited from colonization, University of Ngaoundere (Cameroon),

² Djasrabe Nguemadjita. (2012), *The Lake Chad Basin Commission*, paper presented at a day of the Lake Chad, N'Djamena, Chad

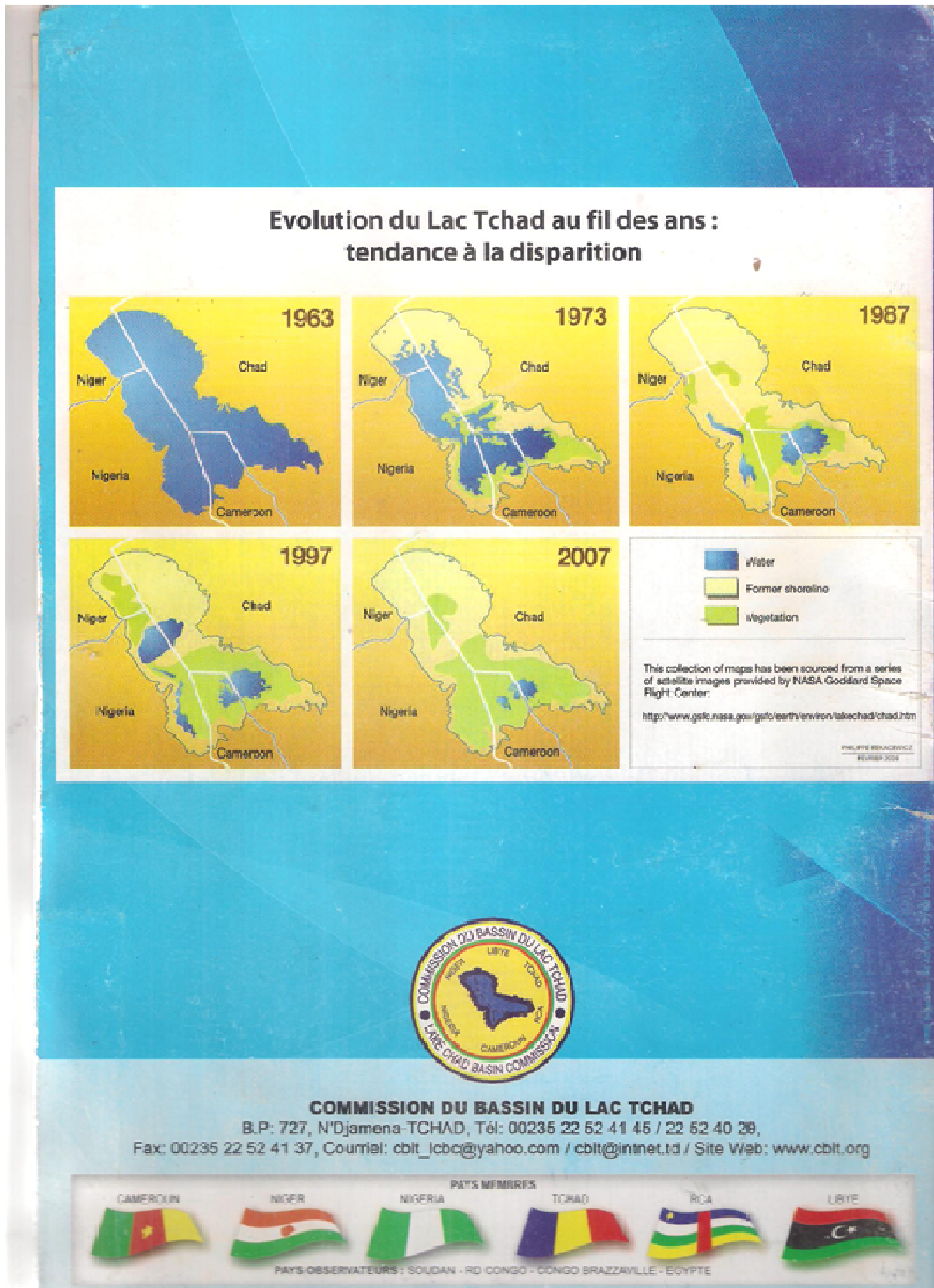


Figure 2: Map showing the evolution of Lake Chad’s decreasing from 1963 to 2007.

RESULTS AND DISCUSSION

The disappearance of the Lake Chad and its protection constitute an awkward debate today. It is thus a problem of a sustainable development which we need to investigate various sources of information to make a concise and precise contribution. This means adopting different approaches. That is why our study has brought a historic evaluation; under a multidisciplinary angle which helps to understand the management of the resources which compose the lake, the various conflicts which took place between the countries which compose this basin and to ask the question on the new problem of the rescue of this ecological jewel. Consequently, we present here in this work the Lake Chad and resources which compose it. The study exploits also diverse conventions which govern the management of these resources. It will be interested in the various conflicts which occurred during the management of these. Our question is to know will States are ready to give the priority to the local population with this new project? Does the local populations are well informed about this new project? Do States are ready to build an exemplary regional cooperation with this new project? What will request Central African Republic, by giving its water? These questions motivated us to exploit different sources of data to achieve this paper.

PRESENTATION OF THE LAKE CHAD

In this first section we would to present succinctly the Lac Chad basin.

The Lake Chad is a stream which does not open to the sea, we had said; whom the surface considerably decreased this last time. It is fed by the river Chari which takes his source in Oubangui Chari in Central African Republic and Logon which takes his source in the trays of Adamaoua in Cameroon. The Mounts Mandara and by Koumadougou Yobe are also feeding this lake with their water as we mentioned previously. Formerly considered as the inner sea of Africa, this lake is the 4th biggest river of Africa and the biggest lake endoréic of the world.

We cannot speak about the Lake Chad without speaking about the Chadian basin. It is to be said about the very lake and its tributaries³. It is for that reason that among member States of the LCBC, we find besides four waterside countries (Chad, Niger, Nigeria, and Cameroon) Sudan, Central African Republic and Libya today within the framework of the conventional basin which includes not only the countries which line directly the lake, but also those where its tributaries take their sources. The air of action of the organ of management of the resources of the lake is the conventional basin.

³ Niesezete, B. D. (2008), op cit.

The catchment basin, contrary to the conventional basin, has a surface of 2.335.000km²⁴ and is half desert; it extends until Algerian Hagggar, covers Ténéré and borders of the Airon Niger, Tibesti and Ennedi in the Chad. Let us remind that the hydrological part active of the Chadian basin which is not 700 000km²⁵ covers the province of the Darfur in Sudan. Lake Chad gave its name to the country of Chad. The name Chad is a local word meaning "large expanse of water", in other words, a "lake"⁶.

The Lake Chad, cradle of marvels and curiosities, was crossed by several explorers to try to discover him about 19th century. This is the way the English explorer Denham discovered for the first time the Lake Chad on February 04th, 1823 and gave the following impressions:

*"We discovered farther, unless one thousand places where we were, the big lake reflecting the beams of the sun. The view of this object so interesting for us produced in me a satisfaction and an emotion no expression of which would be rather energetic to return the strength and the liveliness"*⁷. The work of the discovery of the lake begun by Denham and completed by Dr Gustav Nachtigal, Vogel and French conquerors, namely the lieutenant colonel Monteil, Emile Gentil.

The Lake Chad represents a whole symbol of life for a cosmopolitan population of more than 30.000.000 million inhabitants. It is an important source of fresh water and economic activities among which the farming, the breeding, the fishing, etc.

However, the lake is less than seven meters deep. Its size has always fluctuated between seasons and between years, but over the past four decades, it has become progressively smaller. A dry climate and a higher demand of water for agriculture are the reasons for the decrease of its surface area, say researchers Coe and Foley⁸, quoted in the 19th issue

⁴ Fadimatou Dia. (2006). *The Lake Chad Basin Commission: 1964- 2004*, Master's Thesis, Department of History, University of Ngaoundere

⁵ Fadimatou Dia, (2006). op cit

⁶ *What is Lake Chad?* Retrieved from http://en.wikipedia.org/wiki/Lake_Chad#cite_note-footNoterom1994-4, May 23th, 2012

⁷ Mbodou Mbami Abdoulaye. (2006). *The Management of Resources in Water in Conventional Basin of Lake Chad*, Master's Thesis, Faculty of Law and Political Sciences, Department of Environment Law, University of Limoges

⁸ Coe, M.T. and Foley, J.A. (2001). *Human and Natural Impacts on the Water Resources of the Lake Chad Basin*, Journal of Geophysical Research, 106/DC/, 3349-3356

of World Climate News, a periodical published by the World Meteorological Organization (WMO). They calculated that the lake's size decreased by 30 percent between 1966 and 1975, with irrigation accounting for only five percent of that reduction. However, irrigation demands increased fourfold between 1983 and 1994, accounting for half of the additional decrease in the lake's size, according to the researchers in a paper titled "*Human and Natural Impacts on the Water Resources of the Lake Chad Basin*", published on 27 February 2001 in the American Geophysical Union's Journal of Geophysical Research⁹, that we mentioned above.

The Science-in-Africa web site reported that the project "(Lake Chad Replenishment Project)", would entail damming the Oubangui River at Palambo in the Central African Republic and channeling some of its water through a navigable canal to Lake Chad. "*It is a large-scale project which requires heavy resources*"¹⁰. Thus spoke former Niger's Minister of environmental and Hydraulic Affairs, Adamou Namata. It is reassuring to note that there is a will among some of the relevant governments of the region to save the lake. The size of Lake Chad has gone from 30,000 km² to 3,000 km² in 40 years, according to some sources - from 25,000 km² to less than 1,500 km² between 1966 and 1997, say University of Wisconsin-Madison researchers Michael Coe and Jonathan Foley¹¹. Succinctly, Lake Chad can be presented as follows.

Lake Chad

Lake Chad, it is situated at the southern fringe of the Sahara desert, east of the Sahel region between 12°20 and 14°20 latitude Nord, 13° and 20 longitude Est. Considered as old Chadian sea, Lake Chad is fresh water reserve with only 5% of salt content and it is bordered by Cameroon, Chad, Niger and Nigeria. Its depth varies between 1.5 and 10.5 meters and it is about 215 above sea level. It is Endoreic Lake.

Koumadougou- Yobe

The Koumadougou- Yobe, It is one of Lake Chad sub- basin long with 148000 km² and its upper basins provide natural inflows of about 7km²/ annum. According certain observers, only 0, 45 km²/ annum enters Lake Chad.

Chari- Logon

The Chari- Logon it is also one of the Lake Chad sub-basins long with about 590 000km² and provides

water for vast stretches of wetlands, Yaeres floodplains (6000km² of active surface area, wet years). It provides an average of 37.8km²/ year to Lake Chad. These two courses come from Central African Republic and Cameroon and contribute to 95% of total inflows into Lake Chad. Succinctly, Chari is formed by three rivers (Gribuingui, Bangoran and Bamigui) which take their source in the hills of Kagas between 500 and 600 meters of altitudes in CAR. In Chad, Chari is fed by Barhouk, Barhkeita, Barhsara and Barhsalamate. While Logon takes its source in the mount of Adamaoua in area of Ngaoundere with 1200m of altitude. It penetrates in Chad and receives Mbere grown bigger of Ngonou upstream of Mbaibokoum, with a few kilometers downstream it receives lim. These effluents come from the mount of Yade, the prolongation of Adamaoua.

However, the Lake is regressing and the causes are various. Therefore, the cause of Lake Chad shrinking can be listed as below.

CAUSE OF SHRINKING OF LAKE CHAD

In most people's opinion within the scientific community, the recoil of the lake would be the consequence of a long deficit of rainfall combined in a massive use of waters of the lake and the rivers for the irrigation. Some of causes of shrinking of the Lake Chad are discussed below.

The Climate Change

The climate change in Lake Chad is characterized by increased aridity towards and East: rainfall decreases, temperatures and evaporation increase with significant reduction of relative humidity.

Agriculture

It has become precarious, while surface water for fishing has decreased, prompting some fishermen to change their methods. The more adaptive ones, Asuquo-Obot said, now practice a form of "*enclosure fish culture*"¹² in which canals leading to dry depressions in the lakebed are dug. Water flows into the depressions, fish move into the relatively deeper water, the canals are blocked off and the fish allowed growing. They are later harvested, but fish diversity is reduced as the fishermen's catch is dominated by mudfish, a hardy member of the catfish family that survives in dried-up river- and lakebeds. Moreover, the average size of the fish shows that the resource is being severely exploited, the researcher said.

⁹ Coe.M.T.and Foley,J.A. (2001). Op cit

¹⁰ AdamouNamata.(2003).*WestAfrica: SavingLakeChad*,retrievedfrom<http://www.irinnews.org/Report/42215/West-Africa-Saving-Lake-Chad>, May 16th, 2012

¹¹ Coe,M.T.and Foley,J.A. (2001). Op cit

¹² AsuquoObot.(2003).*WestAfrica: SavingLakeChad*,retrievedfrom<http://www.irinnews.org/printreport.aspx?reportid=42215>, April 24th, 2012.



Figure 3: Rititingar, A. June, 2012 at Gore Island in Lake Chad. Peasants are explaining how they are using canals to drain water from lake for farming purpose.



Figure 4: Rititingar, A. June, 2012, in one local Market, in Lake Chad road



Figure 5: Rititingar, A., June 2012. Like so many cattle, they are going hundred kilometers before getting their feedings.



Figure 6: Chadian men collect water with plastic canisters loaded on a hand cart in Lake Chad, on the island of Kouïrom, January 27, 2007. (Stringer/Courtesy Reuters)

Irrigation's unwanted spinoffs: while irrigation has hastened the drying up of the lake, the dropping water levels have in turn affected irrigation projects. A case in the point is the Southern Chad Irrigation Project (SCIP) developed by Nigeria's government.

The goal of the SCIP was to irrigate 67,000 hectares, but as water levels in the lake fell in the late 1980s, no irrigation could take place. The SCIP had an unintended spinoff. Its dried-up canals have been taken over by the *Typha australis* bulrush, said Asuquo-Obot¹³, who has been doing research on the macrophysics vegetation of large lakes. *Typha australis* is an emergent rhizomatous plant that can survive long spells. It happens to be a preferred nesting ground of the Quelea bird, the avian world's equivalent to locusts.

The same project has been established by Cameroon in the province of Far North, department of Mayo Danaye: The project would be carried out over a six-year period (1977/78- 1982/83) and would consist of constructing two dikes, totaling 48 km, with main intake structure, feeder canal, regulators, and drainage outfall, constructing an irrigation and drainage system, including on-farms works and feeder roads, serving an area of 7,000 ha, constructing access roads linking, in particular, the main localities in the project area, viz. Tekele, Pouss, Maga and Guirvidig, totaling 50 km.

In Chad, agriculture is the major proponent of growth, before the advent of oil. Thus, in 1967 the Chadian Government created the Société de Développement du Lac (SODELAC), Casier B of Bongor town, C of Doba, A of Biliamyoursi and Mamdi project. SODELAC for instance had a mission to develop plodders and to help populations in the area of Lake Chad. Restoring national production capacities is therefore a primordial objective. The Lake Chad region holds a place of choice in the country's development Strategy¹⁴.

In one word, the society has to organize cultivation and provide wheat for the state-owned flour mill at N'Djamena, the Grands Moulins du Chad. The flour mill began operations in 1964 but closed in 1980; as of 1987, operations had not resumed. In the late 1970s, plans to plant some 20,000 hectares of wheat in polders failed because warfare around Lake Chad affected the infrastructure of SODELAC and the construction of new polders and because farmers resisted SODELAC-controlled production.

¹³ Asuquo Obot.(2003).Opt cit

¹⁴ African Development Bank. (2000). *The Republic of Chad. The Region of Lake Development Rehabilitation Program*, Completion Report, Country Department Central Region, OCDC

Furthermore, in Chad again, the Society of production of sugar based in Banda (Sarh), is using almost 40 millions of m³ of water Chari river; one of important lake's affluent¹⁵.

These types of activities are producing and also farmers are using canals that are then blocked off and the fish allowed to grow are harvested¹⁶. This contributes to the high rate of depletion of the fish fauna in the lake (we will come back to this issue in next session).

Pastoral activities

In addition to fishermen and farmers, pastoral communities have also been affected by the recession of Lake Chad since pasture has become very scarce around it. Cattle herders have been burning the sparse, coarse vegetation that is left in the hope that new plant life will sprout and provide a more palatable diet for their livestock, but there is no evidence that this works. Instead, the process seems to loosen the dry soil and make it more susceptible to erosion, Asuquo-Obot¹⁷ noted. It has become a routine activity in northern Cameroon for the herders to move regularly to Lake Chad according to the period to pasture their cattle.

As areas dry up, farmers and cattle herders have had to move southward towards greener areas, where they end up competing for land resources with host communities. This has led to some of the conflicts between herders and farming communities reported in recent years in northeastern Nigeria, according to Mike Adewale¹⁸, a Nigerian agricultural economist.

Other researchers specify that the problem of the Lake Chad is the result of the climate change on several decades owed to the degradation of the environment, to the successive periods of strong droughts of 1973 -1974, 1984-1985, to the devastation of the strong winds because of the deforestation, to the temperatures excessively high which accelerate the phenomenon of evaporation. *"The sudden lake of the cyclic variations and is at present in said configuration of small lake a more or*

¹⁵ Dembele, M. Koume. (2012). *Interview on June 18th, 2012*, at the Lake Chad Basin Commission's office

¹⁶ Djondang,S. Gao. (2012). *Interview on June 18th, 2012*, at Guitté Village

¹⁷ Asuquo-Obot.(2003).Opt cit

¹⁸ Adewale,M.(2003).*WestAfrica:SavingLakeChad*,ret rievedfrom<http://www.irinnews.org/printreport.aspx?reportid=42215>, April 12th, 2012.

less stable situation for the years 70/80, according to the pluviometer"¹⁹ mentioned Magrin.

According to the Director of the monitoring Center of the LCBC, infringements and modifications of ecosystems in the basin of the Lake Chad are the result of an always increasing demand in food, in some fresh water, in wood, in fiber and in energy²⁰. So these phenomena produce drastic consequences on the ecosystem and the man. In the section below, we are going to focus on these consequences.

CONSEQUENCES OF LAKE CHAD SHRINKING ON ECOSYSTEM AND POPULATION

Though there are different impacts, we are trying to analyze some of them so that to identify different strategies established on the issues.

The ecosystem

The decrease of waters of the lake has the consequences on the regional ecosystem with the following result: a drastic decrease of the Lake Chad, the loss of the biodiversity, the desert encroachment and the drastic reduction in the productions in farming, in breeding and in fishing.

The seller woman in Figure 4 is explaining how things are difficult with her since the Lake is no longer producing enough fish. Not only the quantity but, even the quality of fish that she is selling is the matter. *There is no big fish in the water, she alarmed*²¹.

Figure 5 clarifies how the consequences of this shrinking are not specific to only one sector. This is one colon of cattle going for their pasture. Some breeders are obliged to leave the lake area and are going to Southern Chad. Hence, the problematic of conflicts between breeders and farmers, because the cattle destroy the farms during their passage.

From what proceeds, after these pictures, it is important to mention succinctly the consequences of the shrinking of water on population of the area.

Consequences on the population

These consequences on the population engender disasters such as the poverty, the famine, the exhibition in health problems due to the malnutrition, to the drift from the land and to the reduction in the

socioeconomic level of the millions of persons in the region. *«The situation is more than play: Fish are reduced, the villagers have to cross more and more distance to find some water, the cattle suffers as well as the vegetation ... The drying out of the lake has disastrous consequences on the environment and the populations », alerted Alex Blériot Momha*²², of the CBLC, two years ago at the 8th forum of the Sustainable development which has been held in N'Djamena under the theme "to save the Lake Chad".

Anyway, villagers in Nigeria's semi-arid border region with Chad and Cameroon (north –East) for instance, understand full well the consequences of what is happening.

The rarefaction of the drinking water could finally increase the cases of diarrhea, cholera and typhoid in the region. The evaluations led in the region of the Lake allowed to loosen the information and the following trends affected by rates of Global Acute malnutrition reaching 21, 9 % in August, 2010, rates of severe feedings matter of 6 % in August, 2010 and 2,3 % in August.

This report proves that people living around the lake lack access to safe drinking water and proper sanitation. Since water is the first nutrition of human beings, this lack of access to safe water is may be responsible for poor quality of life in the region and it can affect people's health and their productivity.

*"I don't know what global warming is, but what I do know is that this lake is dying and we are all dying with it"*²³ said Mr Bello, reported by BBC.

Comments: this kind of water is serving for drinking, cooking, etc in certain Islands in Lake Chad. As consequence, hydrogenous diseases prevailed within the communities.

Towards a Combination of the Consequences

The human and ecological consequences introduce the other forms of problems. Among other things: a strong population growth, a misuse of the available resources (deforestation, bush fire), the pollution and the use of the appropriate methods of exploitation of the resources. In the past, a vibrant economy existed on the lakeshore, and people lived on the islands of the lake. Today, due to the drastically changing environment, this way of life has collapsed.

¹⁹Magrin,G.*CommentSauverleLacTchad?*retrievedfromhttp://www.novethic.fr/novethic/planete/environnement/ressources_naturelles/comment_sauver_lac_tchad/131984.jsp, May 10th, 2012.

²⁰ Dembele, M. Koume. (2012). Op cit

²¹Fish Seller woman. (2012). *Field research in Lake Chad*, June 26th, 2012

²²Blériot,A.Momha(2010).*CommentSauverleLacTchad*,retrievedfromhttp://www.novethic.fr/novethic/planete/environnement/ressources_naturelles/comment_sauver_lac_tchad/131984.jsp, May 20th, 2012

²³BBCNews.(2007).*LakeChadFishermenPackupTheirNets*,retrievedfromhttp://www.news.bbc.co.uk/1/hi/world/Africa/621447.stm, April 20th, 2012



Figure 7: Photo BBC News website, Lake Chad²⁴



Figure 8: Rititingar.A, June 15th, 2012 during the field research in one of local market of Lake Chad. These are some of potentialities of the lake threaten by the water decreasing.

²⁴ BBC News. (2007). Op cit

Selling firewood is an alternative income for struggling fishermen. But, this is destroying the environment, while governments' efforts in the region are constant to safeguarding the ecosystems.

THE RESOURCES OF THE LAKE CHAD

The Lake arranges enormous potentialities we had said it previously. Indeed, the first resource of the lake is the water, which is even, source of wealth. With water, we can make everything. Better, the water it is the life. These resources are various types of fishes, the spirulina (the seaweed blue), caimans, the elephants, the lions, Elands de Derby, gazelles, the manatee of the Lake Léré, etc.

The fauna

It is question here to expose briefly the various types of wealth in which abounds the lake.

The Fishing Resources and the physical species

By offering a shelter to 120 species of fishes and 317 kinds of birds, the basin is strategic for the biodiversity in global. The fishing establishes the foundation of the economic activity in the Lake Chad, although it is necessary to indicate the importance of the breeding and the agriculture. About 100 000 tons of fresh fish captured at the beginning of 1970s²⁵, the fish production is sometimes very important according to years. Better it is bound to the hydrology in the last years. The big production is essentially checked and widely directed to Maiduguri, the Nigerian capital of Borno State²⁶. Baga road market explains us more about it.

Fosi-Mbantenkhu and Mahamat (2005) reported that approximately 70 migratory species come from Lake Chad basin²⁷. In fact, there many floating islands are in the lake. It is home to have wide variety of wildlife, including hippopotamus, crocodile (both in decline), and wide communities of migrating birds including wintering ducks, ruff (Philomath's pugnax) and other waterfowl and shore birds. There are two near-endemic birds in the region, the rivet prinia (*Prinia fluviatilis*) and the rusty lark (*Mirafra rufa*). The shrinking of the lake is threatening nesting sites of the black-crowned crane (*Balearica pavonina*).

²⁵ Mbodou Mbami Abdoulaye. (2006). Op cit

²⁶ Djondang, S. Gao. (2012). Op cit

²⁷ Fosi-Mbantenkhu and Mahamat. (2005). *Study of the biodiversity in the Pond of the Lake Chad: case of the conventional pond of Cameroon. Final report of Consultation. FEM / CBLT RAF / 00 / G31 / P070252 project, Maroua, retrieved from <http://www.data.iucn.org/dbtw-wpd/html/EPLP-072/section5.html#fn5>, April 21th, 2012*

During the wet season, fish move into the mineral-rich lake to breed and find food.

The pastoral activities

On the pastoral plan, the basin of the Lake Chad is a cattle-breeding area par excellence. The breeding was, and remains, in spite of the succession of the oil, an essential link in the economy of the Chad for example. The North Cameroon for example is lived by a big of the breeders Fulani. Niger also, for its part one has a lot of mattering of beef herds.

Usually, yaérés (islands), very favorable to pastures and to varied breeding (bovine, caprine, etc.) welcome regularly the breeders of the region during the period of diminution.

Flora

It consists of savannas (afforested and grassy), the steppe and the desert. It is constantly threatened by the pastoral and agricultural activities. The lake is home to more than 44 species of algae, and has wide areas of swamp and reed beds. The floodplains one the southern lakeshore are covered in wetland fat.

The Spirulina

Spirulina is vivid blue - green alga that commonly grows in freshwater lakes and basins. It is considered a complete protein, as it contains an ideal balance of all essential amino acids, and spirulina powder is immensely more digestible than other rich protein sources like red meat and even soy.

Its whopping protein content isn't the only asset that gives spirulina super food status--our powder is loaded with vitamins A through E, iron, potassium and calcium. All it takes is one to two teaspoons per day, mixed into virtually any food or liquid, to add a major boost of protein, vitamins and minerals to your diet.

The agricultural activities

On the agricultural plan, the lake is a big ceaselessly growing surface of farmlands with its progressive drying out. Besides, the low degree of salinity of the lake returns the possible intensive farming on polders; what also favors the truck farming. The types of cultures are the corn, the groundnut, the sugar cane, and the potatoes. Besides, the valleys of the Logon du Chari and Koumadougou, any tributaries of the lake, and because of their fertility due to silt put down in period of floods, are also very favorable to the farming.

The photo of different farming's namely maize, bean, and cassava should be found in appendix. "Lake

Chad is a formidable land, we plant bean and we harvest it ,but is still continue to produce until the water comes and destroys it”²⁸, explained us one farmer; Mr. Yusuf Abakar at Gore Sara Island .

Commerce

Although the region of the lake is considered as being a zone of exchanges and business, the LCBC did not settle objectives relative to the commercial cooperation. The policy led in her under - region confronts in the development of the conventional basin and in the protection of the ecosystems of the aforementioned basin. So the domain of business connections is abandoned to the other organizations under regional in particular the Customs and economic Union of States of Central Africa (UDEAC) (old name), which was created on December 8th, 1964 between the Chad, Cameroon, the Gabon, Congo to which adhered Equatorial Guinea in 1984 and which will become the Economic and Monetary Community of States of Central Africa (CEMAC).It will be necessary to add the other organizations regulating the business in the region such as the Economic Community of the States of Central Africa (CEEAC), established by the treaty of Libreville of 1983, which groups among others the States of the CEMAC, Angola, Burundi, the Republic Democratic of Congo, Rwanda, etc. The Community of Sahel-Saharan States (CEN-SAD) is an international organization grouping 28 African States. It was created on February 4th, 1998 in Tripoli (Libya) at the conclusion of the summit gathering the heads of state of Libya, Mali, Niger, Sudan and Chad. It envisages the establishment of a global economic union based on a strategy through a complementary development plan with the national plans of development of the concerned countries, including the investment in the agricultural, industrial, energy, social and cultural domains. What exists in under - region it is bilateral agreements between certain States of the commission that deals with a commercial specific problem. There exist the agreements between countries to the quotas exportation of cattle on the feet²⁹.

However, this position should be contested because there many other agreements on the water management between some countries of the under region:

Nigeria-Niger: agreement between Nigeria and Niger concerning the fair sharing within the framework of the development, of the preservation and of the

development of their common water resources (1990). This agreement concerns the sub-basins of Maggia-Lamido, Gada-Goulbi, Tagwai-El Fadama, and Koumadougou Yobe. This last stream is a part of the network of the basin of the Lake Chad.

Nigeria-Cameroon: draft agreement decided at the conclusion of a meeting in January, 2000 under the aegis of the Niger Authority Basin (NAB). It concerns the information exchange on the hydraulic works and the daily hydrological data, actions coordinated on releases from dams and other restraints of water, the dialogue and the preliminary agreement before the construction of any new hydraulic work, the conception and the possible implementation of joint projects for the mutual interest of the rural populations of both communities, the inventory of the existing works, etc. ...

Chad-Cameroon: agreement says about Moundou (1970) carrying on the levels of taking of waters of Logon in purposes of hydro-agricultural arrangements

The business in the region is also based on the smoked fish towards Nigeria, and the import from this country of certain goods (Loincloths, sugar, soap, flour, hydrocarbon, cement, etc..) by the other member countries of the region. Chad and Niger export for example cattle on the feet towards Nigeria, Cameroon. Chad is exporting groundnut to Nigeria, Central African Republic and Sudan. From Sudan, it is importing juice, feeding products. Sudan and CAR are doing the same thing. With oils exportation, Chad is also exporting this to CAR.

Niger and Chad are exporting camels to Libya and from there; they are coming back with oil, cars or their pieces.

However, these are what people are seeing or what is usually done. There are so many smuggling roads and lots of things have been doing within bordering countries.

Another debate is that with the lake shrinking, fish become rarely and sometimes fish men are bringing this from Niger and Nigeria to sell it in Chad. The commerce in the region is dominated by Nigeria; without forgetting the force of its currency “Naira” on the communities living in basin.

Anyway, according to one agent of Ministry of Environment and Fishing of Chad met in local market during our field research, it is important to regulate the commerce within the region.

²⁸ Yusuf Abakar. (2012). *Field Research*, June , 2012

²⁹ Yokabdjim Mandigui. (1988). *The Cooperation between the Four riparian's Countries of Lake Chad*, Doctorate Thesis, University of Paris V



Figure 9: Ladies harvesting spirulina in Lake Boudou Andja. (Photos by Marzio Marzot from the FAO Report: The Future is an Ancient Lake, 2004)³⁰



Figure 10: Rititingar, A., June 2012 during the field research at Mustapha's Island in Lake Chad. These pictures show different farms (beans, maize, and cassava)

³⁰Marzio Marzot.(2004).*Spirulina of Lake Chad* retrieved from <http://www.petites-nouvelles.pagesperso-orange.fr/pnmars2012.pdf>, April 19th, 2012



Figure 11: Rititingar, A., June 2012 during field research in one local market. Bags contained fish brought from Niger to this market by fish men.

The populating of the region

Several human groups live there (Hausa, Djoukoun, Margui, Mousgoum, Massa, Ibo, Arabe-Choa, Kotoko). Nevertheless, Hausa Nigerians are majority. As indicates the survey realized by Mbodou³¹, more than 90 % is there to practice the fishing activities. The conventional basin counts a population estimated at more than thirty million inhabitants. The projections show that the population which depend directly resources of the lake will reach 35 million persons in 2020. But even there would need to unstitch it with the climate change.

In front of this deterioration without preceding ecosystems of the conventional basin, spaces released by the dispreading of the lake are sources with problem. From then on, the reduction of the surface of the lake is translated by the movement of fishes and appearance of islands rich in pastoral and

agricultural land tax. From then on, the control of this wealth becomes more and more difficult, because of the human and natural actions that constitute embarrassing debate for local people.

According to Halirou³², since the beginning of 1980s, the Lake Chad is the object of several conflicts between countries sharing its resources. And the living example is Darak's island. This conflict extends past national borders. Starting in the 1980s, the rapid recession of the lake drew Nigerian fishermen further into Cameroonian territory, leading to several military encounters. By the 1990s, more than thirty Lake Chad villages founded by Nigerians

³¹ Mbodou Mbami Abdoulaye. (2006). Op cit

³² Halirou Abdouraman. (2008). *The border conflict between Cameroon and Nigeria in the Lake Chad: the stakes around the Darak Island, disputed and shared*, Paper presented at Tanger's Colloquium on "Living and Underline the boundaries in Contemporary Worlds", January , 31th to August, 2nd 2008.

were counted in Cameroon³³. In 2002, the resulting border dispute went to the International Court of Justice, which settled in favor Cameroon. But the real problem still remains: there is not enough water to go around and Fulani herders have been forced further south in search of new pastures. This has put them into conflict with farmers facing similar resource limitations, and fishermen, too, who are competing with both farmers and herders over water diversion. *We become more and more depending on few spaces for farming activities. We give birth to children who at their turn, also got married and children, consequently, we need spaces to farming, added one farmer in Bachara Island*³⁴.

One should note that at the heart of these conflicts, the issue of struggle over water and fishing rights is a big challenge. Freedom³⁵ qualified these conflicts as incidences of conflicts of ownership that occur when the control over the resources of lake borders have involved parties from different nationalities.

Furthermore, the unique status of water, as a result of shared potentialities can provide a potential conflict, because the water brings input into the productive systems that maintain people's life. Freedom³⁶ still qualified this by conflict of use. It is to avoid such conflict that was borne the LCBC under the "Fort – Lamis's Convention".

During our field research, peasants also explained how in 1982, Nigerian soldiers and Chadian ones have fought on Kinassaroum island in Chad. It has been reported that the Nigerians claimed for this island and have occupied it which brought the misunderstanding and fortunately, this conflict does not take long.

BRIEF DESCRIPTION OF LCBC

The legal institutional authority in the basin of the Lake Chad is the Commission of the Pond of the Lake Chad. It was created after the African independences by the first leaders of the young States who tried the need to group together with the aim of solving common problems. The LCBC was born on

May 22nd, 1964 by the Convention of Fort- Lamy (now N'Djamena), signed by the former Heads of State of Cameroon (Amadou Ahidjo), Niger (Hamani Diori), Nigeria (Tafawa Balewa) Chad (N'garta Tombalbaye).

That list will be increased by adhesion of certain States below: Central African Republic (October 31, 1996), Libya (March 27, 2008), Sudan became observer member in 2000.

From its creation, the LCBC was a body of coordination and promotion of the sub-regional cooperation. Indeed, the agreement which creates it made reference in its introduction to the Charter of the United Nations in particular to the resolution of the Council Economic and Social relative to the international cooperation in the control and the development of water resources. Therefore, the LCBC is an institution organized in terms of law, and which has regulating and regional attributions.

The aforementioned convention, and in the introduction emerges that the creation of the LCBC answers in *«the need to formulate principles for the use of the resources of the Lake Chad in economic purposes, including the development of waters»*³⁷. The status annexed to the convention of 22/05/1964 define the principles applicable to the cooperation and bound in a specify way the field of application of the convention.

As an interstate body of cooperation under regional, the LCBC aims at realizing its fundamental objectives, namely the fair management of waters of the pond and the socioeconomic integration as well as the promotion of the peace and the safety between member states thanks to the means of action which are allocated to him by these last ones.

Out of Fort- Lamy's Convention, the Convention of Ramsar on the wet zones applies to the basin of the Lake Chad. Indeed, the Convention of Ramsar³⁸ offers a mechanism established by international cooperation, in particular as regards the management of the fresh water. The contracting parties consult each other on the execution of the obligations ensuing from the Convention, particularly in the case of a wet zone extending over the territories of more than contracting party or when a catchment basin is shared between several Contracting parties.

³³ Mondji, L. (2004). *The Bordering Conflict Cameroon – Nigeria in the Zone of Lake Chad with Accent on Darak (Historic Aspect)*, Bachelor's Degree Report, Department of History, University of N'goundere

³⁴ Mahamat Moussa. (2012). *Interview* on June 22nd, 2012.

³⁵ Onuaoha, F.C.(2007).*The State and Water Conflict in Africa: A Focus on the Lake Chad, 1960-2007*, Unpublished M.Sc. Thesis Submitted to the Department of Political Science, University of Nsukka, Nigeria

³⁶ Onuaoha, F.C. (2007).Op cit

³⁷ The Lake Chad Basin Commission. (1990). *Basic Documents (Revised), Convention and Statute, Rules of Procedures*, LCBC, N'djamena, Chad

³⁸ The Convention of Ramsar 1971, *retrieved from* http://www.ramsar.org/cda/fr/ramsar-home/main/ramsar/1_4000_1__

With regard to its agreement and to its statutes, the LCBC is responsible for regulating and for controlling the exploitation of the water and the other natural resources of the basin, for introducing, for promoting and for coordinating the development projects of natural resources and the research in the basin, for examining the complaints and for promoting the regional cooperation by the dispute settlement.

Organs of LCBC

The legal institutional authority in the Pond of the Lake Chad is the Commission of the basin of the Lake Chad, the LCBC. Below is its organ at its creation:

The Summit of the heads of States and Government

It is a supreme instrument of decision and orientation of the Commission. They meet every two year. The Summit of the Heads of State and Government are both authorities from which ensue the powers of the LCBC. The Main plans for the Development and the ecologically rational Management of the Natural resources of the Conventional basin.

The Council of Ministers

It is the authority of supervision and control of the commission. It meets every year in ordinary session for the adoption of the budget and the annual action plan of the Commission. The Council of Ministers is constituted by two Commissioners by member state.

The Executive Secretary

It is the organ of execution of the decisions of the summits of the heads of state and the resolutions of the Council of Ministers. From its creation today, Executive Secretaries are following: (a) Eng. Shanusi Imran Abdullahi , (2011-.....) (b) Dr Abdullahi Umar Ganduje , from Nigeria (2009- 2011); (c) Engineer Muhammad Sani Adamu , from Nigeria (2000-2008); (d) M. Abubakar Bobboi Jauro, from Nigeria, (1988- 2000); (e) M. Mustafa Sam, from Nigeria, (1983- 1988); (f) Chief Festus Olufemi Olufolabi, from Nigeria, (1976- 1983); (g) M.Benson Owa Tonwe , from Nigeria, (1976- 1983); (h) M. Muhammadou Aliyu Carpenter, from Nigeria, (1968-1972), (i) M. Omotayo Ogunsulire, from Nigeria, (1965- 1968).

They have the missions to carry out the mandate of the commission.

Mandate of the Commission

The LCBC has mandate as follow: (a) To Manage in a long-lasting and fair way waters of the Lake Chad and the other cross-border water resources of the basin of the Lake Chad; (b) To Preserve and protect the ecosystems of the conventional basin; (c) To

promote the regional integration, protect the peace and the security in the conventional pond.

Missions

(a) The CBLC has Mission to Collect, to examine and to broadcast the information on the projects prepared by member states and to recommend a planning of the common works and the joint programs of research in the basin; (b) To Maintain the connection between the high contracting parties with the aim of the most effective use of waters of the basin; (c) To Follow the execution of the studies and the works in the basin and hold it informed member states; (d) To Elaborate common regulations relative to the navigation (e) To Examine the complaints and contribute to the solution of the disputes; (f) To make better its mission with efficiency.

Since its creation, in 1964, the LCBC was able to carry out some realizations in spite of the diverse difficulties which she is confronted.

The Realizations of the LCBC

The realizations of the LCBC concerning the various projects of public interests show themselves much more in the agricultural domain, of the fishing and the forestry.

Farming

In this domain, certain number of projects with national character and regional was able to be realized. Let us see in detail these realizations:

At first, in terms of realizations, we can quote the centers of development of Malo in the Chad with a 125 hectare surface, the center of Kousseri in Cameroon for a surface of 200hectares on the banks of Logon with cultures made under the irrigation, the center of Diffa in Niger for a 160 hectare surface and an agricultural training center of Ngala in Nigeria. This center arranges departments such as farming, forestry, fauna, agricultural mechanization and the environment and the protection of vegetables.

The projects of farm aim today at the systems of small-scale irrigation instead of big supposed perimeters to be in strong water consumption.

Projects of protection of vegetables, supervision and coordination of the activities of the sanitary zones on the borders of member states as well as the development the pastoral hydraulics of yaérés establish efforts for the LCBC. The LCBC also realized exploits in the field of the breeding.

Breeding

The development of the breeding constitutes one of the common policies of the LCBC in terms of cooperation and the general development. We should

also note the project of development of pastoral hydraulics of yaérés financed by the United Nations Development Funds and the Islamic Bank of Development is to be encouraged. We could add the Assale (Chad) project, Serbewel (Cameroon), Borno (Nigeria) with water- mark the water supply, the creation of pastures, vaccination drives, the eradication of the diseases and the organization of the marketing of the cattle. It is important to add to this list the efforts consisting to preserve the bovine species (Kouri) in the Chad and in Niger.

The fishing

In this domain, efforts are supplied for preserve certain species of fishes. The concern of improvement of the techniques of fishing and the preservation of fishes, training of the trainers, coordination among others which led member states to create the training center with regional character of Djimtilo in Chad. In Cameroon for example, the Society of Expansion and Modernization of the Rice growing of Yagoua allowed a restraint of long-lasting water allowing the survival and the growth of certain species of fishes. In this domain also, the LCBC established the relations with the authorities of the Research such as the French Institute of Scientific research for the Development and the University of Portsmouth (UK).

The Forestry

Thanks to a policy of restoration of the plant place setting in the pond, several centers were created in Cameroon, (Kousseri and Woulky), in Niger (Diffa and Nguigmi), in Nigeria (Maiduguri) and in the Chad (Koundoul).

Civil Engineering and Telecommunication

The road infrastructures that must open up the sub-region and allowing a better circulation of the goods and the persons are:

The road Yagoua / Madaga / Bongor long of 151 km, the road Kousseri-Fotokol long of 151 km 120 km, Maiduguri / Diffa. The bridges were also built:

One bridge built on Logon between Yagoua and Bongor, another one on Koumadougou-Yobe between Diffa and Nigeria.

Let us add to it the efforts of the demarcation of the international borders of the basin realized in 1988 thanks to the national technical experts, the demarcation of the borders Cameroon-Nigerian after the verdict of The Hague in favor of Cameroon as well as the resolution of the Chadian crisis by Nigeria.

Let us add finally several other projects of big important à know: (a) The project LCBC / UNESCO / 507 / RAF / 45 on the studies of subterranean waters

in the basin of the Lake; (b) The project of support for the research - Development on the fight integrated against plagues into subsistence farming, (c) The integrated project by the Lake Chad; (d) The project of support for the feasibility study of the integrated project Chari-Logon; (e) The IPM project / BAD / LCBC; (f) The project of fight against cochineal of Neem concerning Cameroon and Chad; (g) The development project integrated by Chari-Logon financed by the BID; (h) The project of environmental protection;

The project of Aboutum and studies of pastures; The project LCBC / UICN for the preservation and the development of waza-Logon.

It is to rise that the financial participation of States in the budget of the LCBC is based on a key of repartition which is estimated according to the socioeconomic criteria of every State itself. Several keys of distribution were adopted by the commission during its existence. The current last one is distributed as follows: Nigeria = 40 %, Cameroon = 20 %, Chad = 11 %, Niger = 7 %, CAR = 4%, Libya = 18%, Sudan (as observer member does not contribute to the annual budget). And the main problem is facing the LCBC is annual contribution of member States, informed us one of our informer.

The LCBC knew various reforms. Of its creation to our days, the big striking date's sound stories are:

The Important dates of the Institution

(a) May 22, 1964: LCBC was created with 4 States; (b) 1994: adoption of the Main plan; (c) 1990: 1st restructuring of organization chart, retrocession of the implementation of the projects in member states; (d) 1996: the CAR became member as 5th Membership State; (e) 2000: adoption of the document "challenges of the pond of the lake Chad"; (f) 2008: Libya became official Membership as 6th member State; (g) 2008-2009: 2nd restructuring (significant strengthening of the organization chart, the Directors recruited in the merit by international vacancy to applications; (h) In September 15th, 2009: starting up of the project of elaboration of the Charter of the Water;

In October 13th, 2009: official starting up of the feasibility study of the Project of Transfer of water of Oubangui to the Lake Chad; (i) In November 18th, 2009: official launch of the feasibility study of the Project of Transfer of water of Oubangui to the Lake Chad; (j) 29th to 31th October, 2011: 3rd Africa Session of the 8th World Forum on Sustainable Development, held in N'Djamena on the topic "Save the Lake Chad"; (k) 2011: submission feasibility study of the Project of Transfer of water of Oubangui to the Lake Chad; (l) 2012: starting up of LCBC's boundaries security control, after the summit of

Heads of States held in N'Djamena; (m) May 22, 2012: Day of Lake Chad.

Source: Djasrabe Nguemadjita, Ministry of the Urban and rural Hydraulics Focal point LCBC, paper presented at a day of the Lake Chad, N'Djamena, May 22, 2012.

LCBC after the Reform of 2008 and 2010

The institutional reforms of the Commission has brought a new organization chart as follows.

The Central Department

The Cabinet of the Executive secretary with services connected to know the Monitoring Observatory of the Pond, the Financial Control, the Legal Council, the Direction of General services, Communication and Protocol, the Direction of the Regional Integration, the Cooperation and Security. Two General Directions are also connected with the Executive Secretariat: they are Directions of the Operations and Administration and Finances.

The Consultative Comity

(a) The Comity of the Landlords of Funds; (b) The Inter ministerial Comity; (c) The Comity of the Stakeholders; (d) The Technical Comity of Experts.

Reforming for New Visions

The institutional reform has enabled to formulate new visions of LCBC. As we mentioned above, the recruitment has been highly selective and the organization is now working with people that respond to its view.

The Principles

Exclusivity

Defend the interests of member countries and those of all the stakeholders at the international level, the national and community and promoting good understanding between them; Respect of the principles of good governance.

Skill

Offer products of high quality generated with a big scientific and academic rigor; Have skills and means suited for an international organization; Apply rules and international financial and administrative procedures.

Performance

Manage the talents and the resources so as to ambitious, economic and ecological time; Plan and check all the actions at the level of the politics the projects, and the operational processes.

Flexibility

Anticipate the evolution of the basin and know how to answer emergency situations; Cooperate to return the more flexible capacities of the organization. Settle its mandate and return relevant and useful services

The participation of the public and the transparency

This one must be applied so that all the actors, including communities, industries, and concerned organizations have the opportunity to participate at every level, in the decision-making and in the process of management of the basin. This is worth the access to the information concerning the environment prisoner by the public authorities and the access to the legal and administrative information which will allow the stakeholders to enjoy effectively their rights.

Achievements

The new equip sets up four years (2012- 2016) plan of investment as The Strategic Action Plan

The Strategic Action Plan

The Strategic Action Plan of the basin of the Lake elaborated the support of the international partners is a document suits of regional politics conceived for a voluntary membership of Member states. The SAP fixes objectives and targets clear that must lead to a plan of investment of priority actions; subject to the International Community.

In brief, the Strategic Action Plan aims to reinforce the LCBC to achieve its goals of Quality of Environmental Resources of Water³⁹.

The National Action Plan

It is the implementation of the Strategic Action Program in States as component of their national plans and as being a part of the mandate of the LCBC.

The Strategic Action Program completes the National Action Plan and identifies clearly targets and interventions to define priority actions of investment to be presented to the international community.

Quality of Environmental Resources of Water

This objective is contained in Observatory of the basin. It has been defined by the institutional reform of LCBC of 2010⁴⁰.

Furthermore, one should add also many other achievements such Regional Data Base, Charter of

³⁹ Monitoring Center of the Basin. (2012). *Strategy of Surveillance of the Basin of the Lake Chad*, Lake Chad Basin Commission

⁴⁰ Monitoring Center of the Basin. (2012). Op cit

water of Lake of Chad created in 2010 and the Program of Information and the Communication of the Observatory pond.

Projects in Progress or Achieved

PAIBLT Project aims to reduce and to stop the STD / HIV / AIDS

It has been started in 2008 and will end in 2013 and financed by African Development Bank. The project contributes to the fight against STD/ HIV/AIDS in LCBC region. The Cost of project is 11.1 Million UC.

The objective aimed is to fight against HIV/ AIDS at boundaries of member countries of LCBC. Many activities have been done: Training of different Non Government Organization's members (NGO's) and health care agents and their financial support. There are also the purchasing drugs and different materials for testing. In this term, the project has equipped five countries of LCBC with cars called mobile unity that enables to make HIV test. The cars have been given to National Councils of fight against aids.

Integrated Management of Waters Resources Project

This seeks to reduce poverty, insecurity food, deterioration of environment, sustainable and fair Management of Water resources. It was financed by European Union in 2009 and come to the end in 2011. The cost of project was 2. 5 Millions of Euro.

Lake Chad Sustainable Management of water resources surfaces

This aimed to manage cross-border projects, exchange of the data between member States. The project has been established in 2008 and is still running up to 2014. The is financed by GIZ (a Dutch Cooperation). The cost of this is 6 Millions of Euro.

Lake Chad Sustainable Management of water resources

This project aims to coordinate exchanging data on subterranean water between the member countries and to integrate them into the management system so that to establish strategies of sustainable character in terms of water resources. The project is financed by BGR at the rate of 3millions of Euros. It started in 2008 and will end in 2014. The program worked with local people to identify their problems at national levels so that to solve them sustainability, such as how to preserve some species of fish or how to fight against hydrogenous diseases. The project acts in terms of monitoring climate, getting people informed about the danger of climate. The information collected at national levels is exchanged with LCBC. The project also contributes to the training of LCBC's staffs.

The Project Charter of the water of Lake Chad Basin

This project aims at the regulation of waters of the Lake Chad and of its basin, the development of the management tools of cross-border waters with the aim of the reduction of the poverty and the socioeconomic development. It is financed by the FAE and the LCBC at the level of 850 million CFA francs by the first one and 150 millions still in the same currency CFA franc by the second. The project has already come to an end in 2011. With this program, LCBC has now charter of water that can serve as road map for water to every country members.

Sustainable development program of the Pond of the Lake Chad (PRODEBALT)

This one aims to the sustainable preservation of the lake Chad to assure the economic safety of the resources of the ecosystem of fresh water.

The integrated and sensible management of the river basin to realize a sustainable development and a fair use of natural resources for each country while keeping ,its ecosystems and its biodiversity.

The concerned countries are Chad, Cameroon, Niger, Nigeria and COACH. He is a financed by the BAD (30 million Euros), and the other partners (30, 07 million Euros); making in quite 60, 07 million Euros. It began in 2008 and will come to an end in 2015. The finality of the project is to contribute to the safeguarding of Lake Chad and its socio- economic environment role for the countries bordering, through the development of operational proposals, in the respect of the safeguarding of ecosystems and of a concerted management. This program is part of vision "2025" of LCBC.

One of the big challenges that the LCBC is now facing is how to save the Lake whom its disappearance is announced within 20 years. Many ways are exploited and the one that which is on the ground is the inter basin water transfer from Oubangui to Lake Chad. We therefore, would like to wound if this should be the good idea. Like this author, the question is to know: "*Inter basin Water Transfer: Solution or Problem*"⁴¹? We will try to answer this question in the section below.

THE WATER TRANSFER PROJECT

The water transfer project, which aims at constructing a navigable channel using some inflows from the Oubangui to supply Lake Chad with water; will have multiple impacts: To ensure river transportation in order to transfer goods from East to

⁴¹ Bagra, B.P.F and al. (1973). "*Inter basin Water Transfer: Solution or Problem*", Paris, UNESCO

West across Africa, to produce power and to develop agriculture (irrigation), in the region. Socio-economic and environmental effects are clearly proved according to Dembele⁴²: Extending and creating supply, promotion of trade, and so on. It will connect regions, tribes beyond borders. It is the principle of “benefit sharing amongst the riparian countries⁴³”, justified Mohammed Billa.

From proceeds, one needs to have a glance at this project.

History of the Project

The project originated from BONIFICA, an Italian consultancy firm since 1988. It has been part of the big project so called Transqua developed by that organization after the rude drought that has known the Sahel region in 1972, 1973, 1983 and 1984.

Origin of Water Transfer

The project aims to construct a retention dam at Palambo (upstream of Bangui, in Central African Republic) to serve as catchment area. The high flow through pumping gets into river Fafa, a tributary of Ouham and by the gravity through a 1350km long feeder channel to the Chari and Lake Chad hydrographic system, informed us Dembele.

The Feasibility Study of Water Transfer Project

The project was launched in 1994 in Abuja (Nigeria) during the 10th Summit of Heads of State and Governments. The LCBC member countries have contributed one million of US dollars , but Nigeria alone made an exceptional contribution of 5 millions of US dollars as supplementary funds to make this feasibility study being possible. Furthermore, Republic Democratic of Congo and the Republic of Congo as riparian countries of Congo- Oubangui, have been consulted as observers and have accepted the principles of no- objection.

The first call for the study was launched in 2001. In 2002, the committee was set up to analyze the terms of reference for the interest of two Congo.

The objectives of feasibility study souk to understand the impact of this project on concerning areas in various ways.

Institution in Charge of Feasibility Study its Tasks

In 2008, an international invitation to tender resulted in the selection of a Canadian Firm, CIMA –

International. On June 2009, a contract amounting to 3943296 US \$ was signed between the LCBC and the Firm. The work has started in August 2009 and consisted of data collection, review, analysis, project planning, alternative scenarios with enhanced recommendations for the crossing of the ridge of the two basins and preparing the detailed engineering design, tender documentation and submission.

The consultant has submitted its final report last year in March 2011. Another study will be launched so that to identify in details the real impact of this project before its implementation. By then, what comes out from the submitted report proves that the transfer project will has positive impact on LCBC member countries.

Expected Impacts of the Project on LCBC Member Countries

The impact shows how the local population will get or not benefit from this project after its implementation.

Socio- economic impact

The socio- economic activities such fisheries, animal husbandry, agriculture (irrigation) will be reinforced. In irrigation for instance, it will be big and will provide economic opportunities. The impact on the zone will be sunk by reservoir. It will improve the navigation because the channel will be created between southern Chad and northern CAR through Mayo- Kebbi River to reach Port – Harcourt in Nigeria. The Palambo dam for instance will facilitate the navigation. It is therefore a challenge for CAR because the navigation that was 4 months a year, on the Palambo River will be increased to 10 months a year.

Electricity’s cost which is affecting most of African economics should be solved in party, because 30 % of 100% of the electricity that will generate this project will be used by Central African Republic to solve its energetic problems and the remaining 70% will be used to pump the water that will feed the Lake Chad⁴⁴. Out of this impact, we have so many other impacts.

Environmental Impacts

According to the result of feasibility study, the project will have impact on far stretching floodplains (yaeres) and their uses on lower Chari, Logon and Chari- Benoue Channels. There will be also the transfer of physico – chemical and biological constituents from Oubangui aquatic water towards ecosystem of the Lake Chad and, to a lesser extent, those of Niger basin in spite of a “dry passage”.

⁴² Dembele, M. Kombe. (2009). *The Water Transfer Project* ,in Addressing Current Challenges and Adapting to Future Needs, World Water Week, Stockholm, August 16- 22, 2009, Pp 9-18

⁴³ Mohammed Billa. (2012). Interview at LCBC’s office, June 25th , 2012

⁴⁴ Dembele, M. Kombe. (2009). Op cit

There will be adjustment on Chari River along southern Chad and, Sarh town will get much benefit from this, because it is concerned according to the cartography of the study. Official Sites or natural reserves will not be affected, on contrary; they will be protected and adjusted. Once these impacts will be realized, we will certainly move towards new challenges which are to integrate sustainably population and the means into the debate.

Towards new Regional Integration with Transqua Project

The rescue operation of the Lake could be the embryo of a multi-form and varied regional cooperation. The challenges put in this opportunity, the already organized and current strategies, show the arrangement of the States of under region to forge ahead. It also means transforming the LC BC into an organization under - regional capable of promoting the economic development for the good interest of the people.

The proper use and application of LCBC's texts, and innovation brought to this organization is an indispensable ingredient in the sub- region development process. This will transform the structural economies as announced the Heads of States, especially the problematic of the emerging economies. With water transfer, we can be able to bring a model of development to others that having the same project. It is possible, because time has for Africa to be united⁴⁵ and the other Africa is possible⁴⁶. Though, in most cases, *despite the force of these arguments, virtually all regional integration efforts in Sub Sahara in Africa to date have failed*⁴⁷, such as commented Magrin two years ago.

Suggestions

The problem of management of the heritages (resources in waters) between various States remains the concern major States. The Water is a rare resource in the world without forgetting our States. Its use always poses questions of social justice, economic efficiency and long-lasting conservation of the properties of the society.

Certainly, it would make fastidious and pretentious to want so not enough time to approach the over all of

the natural resources which the conventional pond has. Less still, to make a detailed list of the realizations of the LCBC; the organ of management of these resources, rather, it is matter to contribute to the debates when we announce the sure death of the basin.

From what precedes, our suggestion to this debate can be listed as below.

The fair exploitation of the water resources of the basin can be security of a promotion of the social peace and the safety between our States.

Encourage the researches to synthesize the studies of impact of the drying up of the lake on the population. These studies can be (physical, biological, human, political, etc.). We dare to believe, that the studies of the front project detailed within the framework of the transfer of waters of Oubangui towards the Lake can emphasize this aspect. This has been already observed by Emile Malet, two years ago "*by gathering several disciplines of researches, by putting everybody around the table, the forum allowed to break the ambient Manichaeism*"⁴⁸.

Set up effective systems of collection and information sharing of decision-making support. At present, the LCBC arranges a mechanism of collection and transmission of the information, but would still need it to make it effective. To reach this objective, it is necessary to assure a level of financing suited for the exploitation of the collected data. It is the place for us to remind that in spite of difficulties of economic order, the members of the LCBC have to pay their contribution and at time, because when they arrive with a delay, we cannot execute the action plan.

Introduce a dialogue on the big dams with the aim of the consideration of the directives and the international standards suited in the national and regional strategies of planning and development of streams.

The water was always a strategic resource for the development and we find it at the heart of the production. Very often industrial sites became established near a resource of water, which is at the same time a source of energy, a raw material and a solvent or a fluid in the process. Its management must be mastered and optimized to sit sustainable development of it under region.

⁴⁵ Kwame Nkrumah. (1964). *Black Africa Must Unite*, Paris, Payot

⁴⁶ Rititigar, A. (2012). *African Fifty Anniversary for Another Africa: A Contribution to Social Crises Resolution*, paper accepted and published by waset (www.waset.org) at its International Conference on Agriculture in Kula Lumpur during February, 19th – 21, 2012

⁴⁷ Magrin, G. (2010). Op cit

⁴⁸ Malet, E. (2010). *Comment Sauver le Lac Tchad ? Retrie ved from* http://www.novethic.fr/novethic/planete/environnement/ressources_naturelles/comment_sauver_la_c_tchad/131984.jsp, April 10th, 2012

While waiting for the rescue, and even after the savage, the waterside population living directly waters of the lake needs to be supported through the projects socioeconomic to meet the challenges of food insecurity, access to the drinking water, to the education and to the health care.

While waiting for the rescue, information campaigns on the project of transfer of waters of Oubangui towards the Lake are indispensable to the waterside populations. "We do not know about it, inform us local people during our field research"⁴⁹ .

It is necessary to act if we do not want that this essential resource becomes the factor limiting to the sustainable development under region.

Make so that the national politics of the water plan specifically that the Lake Chad is the object of a common glance. This will help us to stay up its fair and reasonable use, the prevention of the important damage and the preliminary information. The charter of the water which the LCBC has henceforth is an asset. It is now advisable to make it operational with the aim of its effective implementation.

It is necessary to make sure that dams planned on the Lake Chad are not built when the member States of the LCBC lift an objection considered as based in its realization.

The effective implementation of the agreements (that creating the LCBC and those international ratified by States) would allow to take into account better and to protect the Lake Chad as ecosystem.

The Lake Chad has vocation to become an academic case for the educational and cultural scientific world. It represents a rich thematic subject from its economic, political, cultural and society dimensions. We therefore, think that it is good to associate youth to its safeguard.

CONCLUSION

In spite of the awareness generalized by the problems of the environment at about the 1970s and the proliferation of the legal instruments of universal and regional reach which followed it, the state of the biosphere becomes more and more catastrophic: considerable decrease of the biodiversity, the wild progress of the desert, the deterioration of the ozone layer and the rarity of the water.

The Lake Chad which is not only the common heritage of six member states, but also all the humanity is in this list and is endangered and its disappearance will take that of its entire ecosystem which undergoes at present a grave disturbance.

Although certain reforms are introduced to take into account certain concerns of moment, the situation of the environment in the basin of the Lake Chad is alarming.

Facing this macabre situation, we decided to contribute. Our objective was to assess what has been done to preserve this common heritage and to analyze strategies in progress to save it. The general report that one should clarify are enormous potentialities of the region: the area of lake is a rich zone in food crops. Sedentary stockbreeders there are also met and stockbreeders pastors of bovines and small ruminants. Thus, our report has been able to present the Lake the Chad, the cause of this disappearance. We also present these potentialities and how they are sometimes source of conflicts between the communities or ethnic groups. The organ in charge of the management of these potentialities is also presented in this work with its different realizations. Our study went through the new project of water transfer from Oubangui to the Lake Chad. Finally, our contribution to this debate focuses on different suggestions.

From what proceeds and globally speaking, our study tries to understand how different efforts have been made to contribute in long term to the empowerment of the living condition of the populations of the Lake Chad basin since its existence (from 1964) today. We recognize through this study that in spite of difficulties, many efforts have been done to the interest of local people through different projects initiated by LCBC, partners and countries members of this basin, but many efforts remain to be done. We also recognize that the decreasing of Lake Chad should not be only matter of climate change or other natural facts. On the contrary, we are part of what is happening.

By the term "stopping on management of potentialities of the area", we would like to understand through this, how the lake has been served the population's interest and its disappearance in progress is embarrassing to everybody. Its safeguard in progress should be a moment for rejoicing, to everybody and *let not solve a problem to create another*⁵⁰, as mentioned populations during the focus of this work. We hope this should be avoided and the project will serve to promote sustainable development by letting people access to clean water, education, health care avoiding the intercommunity conflicts, the cyclic hydrous diseases which prevail in all the wet areas of the basin.

Since we identified the reason why the lake is disappearing, we would like once more, to remind us

⁴⁹ Mustapha Island's people. (2012). *Focus group* on June 23th, 2012

⁵⁰ Guitte local market. (2012). *Focus group*

what Magrin has commented in terms: *The history showed that this type of very spectacular projects is very expensive and sometimes has negative effects which take it on waited profits ...who dread for example the return of intensive farming greedier in pesticides, being able to engender soil pollution and waters, or multiplication of the land problems*⁵¹.

However, no one wants to come to this point. This project is inscribed under the continuity of the sustainable program of development and will build another Africa!

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APPENDIX: SOME POTENTIALITIES OF THE LAKE CHAD

Figure 12: Rititingar, A. Fish coming from Lake Chad on sell at Dembe market, N'Djamena, June 1st, 2012.



Figure 13: Rititingar, A. One peasant's mangoes farm at Gore Sara Island, June 22nd, 2012.



Figure 14: Rititingar Appolinaire. This picture shows different farms (beans, potatoes...) from other side of the water. This water of course, is the “small lake”, since the bigger one has gone. Peasants are using this for irrigation, washing their clothes and for their cattle drinking. June 23th' 2012, Gore Sara Island.



Figure 15: Rititingar, A. One peasant's mangoes farm at Bachara Island, June 22nd, 2012.



Figure 16: Rititingar, A. Bean's farm between the Bachara Island and Mustapha Island.. After the first harvesting, the beans continue to produce for second time until the water the water comes and destroys it if not it will continue to produce commented our respondents met during our field research.



Figure 17: Rititingar, A. We are here with two young peasants Mahamat Barka Moussa and Ahamat, listening to their explanation about the different methods used to cultivate the maize , from the beginning to the end of activities. What is important to mention here is the fertility of the soil, but sometimes one can lose, because it depends also of quantity of the water received annually.



Figure 18: Rititingar, A. Visiting cassava farm during our field work. According to the explanation received from the owner, he can harvest this cassava now and plant other thing such as potatoes. Bachara Island, June 20th, 2012.



Figure 19: Rititingar, A. Vegetables farm, June 26th, 2012.



Figure 20: Rititingar, A. Young peasants are come back from the farm after harvesting the potatoes. Once harvested, potatoes are bringing home and then evacuate to N'Djamena, the focal selling place. Vehicles are regularly coming to collect them in the villages in spite of absence of good road. June 24th, 2012, Blangore island.

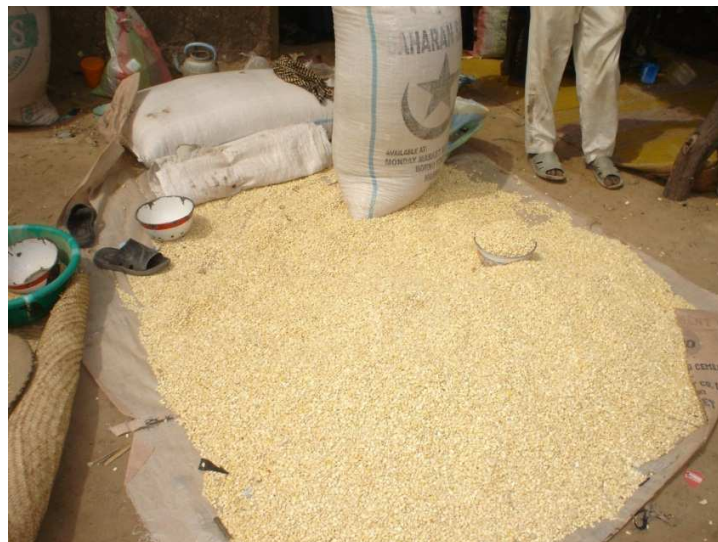


Figure 21: Rititingar, A. Maize at Guitte local market. June 24th, 2012.



Figure 22: Rititingar, A. One of the transport means of different villages of lake is donkey. It is also used to cultivate the land. Here are some in sell at Guitte local market. June 24th, 2012.

