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LAKE CHAD BASIN COMMISSION (LCBC) PERSPECTIVES.

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1. General

The Lake Chad Basin Commission (LCBC) was created by the Fort Lamy (now N'Djamena) Convention signed on 22 May, 1964, by the Heads of State of the four countries which share the Lake Chad, namely Cameroon, Niger, Nigeria and Chad. In 1994, the Central African Republic was admitted as the fifth member state.

Although the hydrographic lake Chad basin extends over an area of about 2,355,000 km², the area of jurisdiction of LCBC, known as the Conventional Basin (CB) covered 443,000 km² at inception, extended to about 967,000 km² from 1994 to cover the active hydrographic basin.

Annual rainfall varies between 1,500 mm in the southern parts of the basin to less than 100 mm in the northern parts. The potential evapo-transpiration exceeds 2m. per year at the centre of the basin. The most important rivers influent into the lake are the Chari and its tributary the Logone, the Komadougou-Yobe, the El Beid and the Yedseram.

The lake is very shallow, its mean depth being estimated at 12m. in 1969. It has no outlet except the Bahr el Ghazal which last flowed in 1875 and drains towards the north-east direction when the lake level attains 283 meters above mean sea level. This level is, however, no longer achieved.

Since 1964, the lake level has continuously fallen with the surface area reducing from about 25,000 km² to less than 2,000 km², while its volume has decreased by close to 60%. The Logone and the Chari to a lesser extent spread within their inundation plains during the rainy season, over some 90,000 km². Thus, the annual losses through evaporation from the inundation areas (called the Yaéré in Cameroon) are estimated at over 5 million cubic meters per year, or about 30% of the annual runoff from the Logone.

four major aquifers. The quaternary phreatic aquifer constitutes a reserve estimated at about 150 billion cubic meters. The quality of this groundwater is suitable for domestic consumption of the local population and livestock. Next is the lower pliocene aquifer found at depths of about 250 m. with thickness about 60 m. In some parts of the basin, this aquifer is artesian. Although the reserve of the lower pliocene aquifer is unknown, the exploitation of this aquifer is estimated at about 3 million cubic meters per year, but the chemical properties of the water renders it unsuitable for irrigation.

The continental terminal aquifer is essentially an alternation of sandstone and clay about 250 m. in thickness. The annual recharge from the outcropping sandstones is estimated at 15 to 20 million cubic meters per year. The suitability of this water for irrigation is debateable, being used essentially for domestic water supply to the local population and livestock as well as the cost of abstraction.

Lastly, the continental hamadien aquifer is an important aquifer in the West African sub-region but very little information is available on this aquifer in the conventional basin.

The population of the conventional basin is about 20 million distributed as 2,550,000 in Cameroon, 193,000 in Niger, 11,376,000 in Nigeria, 5,048,530 in Chad and about 634,283 in Central African Republic. Majority of these people practise agriculture, nomadic and semi-nomadic animal husbandry and fisheries.

2.Challenges facing the LCBC

Although LCBC was established for the regulation and planning of the uses of the water and other natural resources of the conventional basin, most of the activities undertaken in its early days were in response to drought which devastated the sahelian region particularly between 1973 and 1983/84. The persistent drought and desertification led to the reduction of inflows into the Lake. This led to the shrinkage of the Lake from 25,000 km² surface area in 1960s to merely 2,000 km² in recent years. This situation created a very serious ecological imbalance and destabilized the entire ecosystem of the basin thereby creating problems of environmental refugees in the sub-basin. Thus, efforts of the Commission were geared towards containing the ecological disaster through increasing agricultural production and necessary food security preparedness.

3. User Groups and Associations and their Functions

User groups and associations are known to play very significant roles in the management of projects in many parts of the world. These user groups or associations function in a variety of capacities, ranging from advisory to planning and management and from coordinating to settlement of disputes and procurement of credits.

3.1 User Groups

Within the context of this paper, user groups are groups of people carrying out similar activities such as fishermen, cattle rearers, farmers, etc. Ideally, the functions of a typical water user group on an irrigation scheme are as follows:

- To participate in the management of the operation of the project.
- To construct, operate and maintain watercourse, secondary and tertiary channels.
- To assist in the conveyance of water to the field in accordance with irrigation regimes of the Project.
- To assist in the recovery of water charges.
- To recommend, if need be, other utilization methods of the non-irrigated land of a particular project land.

- To inform the project management and water users associations of any obstruction caused by anybody or of any work done by an individual capable of affecting water distribution on the project.
- To solve problems concerning the distribution of water arising amongst water users within their area .

Fisheries user groups could be formed to assist in:

- i) educating the fishermen in appropriate methods of catching their fish, such as utilization of appropriate fishing gears;
- ii) the necessity to conserve small fingerlings for full fisheries development;
- iii) assist in procurement of appropriate fishing gears for catching fish;
- iv) assist in processing and marketing of fish catches;
- v) assist in construction of fish ponds for fish culture.

A user group in livestock farming could assist in:

- i) the procurement of grazing areas and provision of watering points within a given project area;
- ii) ensuring the provision of cattle routes;
- iii) provision of drugs and facilities for the livestock;
- iv) liaison with the management and other crop farmers.

3.2 Water Users Association

Water users associations could be based on individuals forming themselves into associations of between 20 to 25 people for joint utilization of facilities. Such associations could be tied to a piece of land for all its operations and facilities. For example, an association of 25 people could be registered and tied to an area of about 80 to 100 hectares irrigable land. Such an association could coordinate all its activities on irrigation regimes, procurement of services, loans and marketing as a group. They could hire a tractor and all its attachments to work in their field at cost to the association. They could also take loans and market their produce jointly and repay for the services and loans likewise. Similar associations could be formed for livestock or fisheries purposes.

3.3 Water Management/Coordinating Committee

These are formed:

- To coordinate the activities of different User Groups within a given project area.
- To make recommendations to the Management regarding the distribution of water to the user groups.

- To initiate necessary work in conjunction with Management for efficient and appropriate water utilization within the project area.
- To solve problems concerning the distribution of water arising between Water User Groups within its area .

4. Users Participation in the Management and Financing of River Basin Organisations

4.1 National River Basin Organisations

In the case of national river basin management organisations which are established for data collection for project planning, design, construction, operation and maintenance of water resources infrastructures, there are ample possibilities of achieving users participation in the management and financing of these organisations. Basically, however, it is necessary to have a national enabling legal framework which would change the perception of the people about their entitlement to free water from the government.

The Nigerian water law, for instance, vested the right to the use and control of all surface and groundwater and of all water in any water course affecting more than one State in the Federal Government. After allowing for basic human rights for domestic and livestock, small personal irrigation schemes as well as limited fishing and navigation, it went on to make provisions for licencing as well as rates, fees and charges for acquisition of rights to divert, store, pump or use on a commercial scale of any water, or the construction, maintenance, operation, repair of any borehole or hydraulic works. The enabling legislation then prescribed penalties for a breach of the provisions of the law.

The detailed regulations for the administration and enforcement of the enabling legislation, apart from prescribing administrative charges for the acquisition of rights to carry out the activities recognised in the text as influencing the quality, quantity, distribution, use and management of water, also provides for payment of annual rent on water. These rates, fees and charges represent a classical way of achieving users participation in the financing of river basin management organisations particularly where some of the functions under the enabling legislation are delegated to the latter.

While advocating for such national enabling legal framework, however, it may be necessary to point out the need to make provisions in such laws for international rivers that may affect such nations which would reflect the international obligations of such nations viz-à-viz other riparian states.

On the other hand, in the case of irrigation infrastructures provided by the River Basin Development Authorities (RBDAs) in member states of LCBC, the RBDAs were permitted to establish irrigation bye-laws to regulate activities on their projects. The irrigation bye-laws prescribe charges for water and other input supplies which are applied on the authorities projects. Usually, the water charges imposed are a function of the cost of operation and maintenance of the headworks including dams, pumping stations (if involved) and main canals. Lately, farmers on the authorities projects (i.e. Kano River Irrigation Project Phase I) are encouraged to form water users associations to facilitate recovery of charges and fees and for the devolution of certain functions like the weeding and de-silting of secondary and tertiary irrigation canals and drains, to the users.

Experience shows that in countries where RBDAs exist and where users are actively involved in the management and financing of projects, the projects achieve a high success rate except in rare cases like the South Chad Irrigation Project (SCIP) which failure can be attributed to lack of water as a result of the recession of the lake Chad.

In projects where users are not initially involved in the planning, management and financing of projects, such projects are bound to fail. Such is the case of the SEMRY project in Cameroon where farmers were not involved initially, despite huge investment outlays by government in infrastructural development. Although the project was equipped with a dam and irrigation facilities, the farmers could not easily be attracted when at the later stages of the Project they were required to participate. The water storage in the Maga dam is now being released by another IUCN-sponsored project to re-inundate the Yaérés and restore the ecology of the area.

In projects which involve dam construction, the authorities sometimes entrust the management of the reservoir to the state ministry of agriculture which in turn issues out fishing licences to fishermen exploiting the reservoir and also imposes daily charges based on perceived weight of catch. Sometimes, the authority simply signs a contract, which could be for a period of three to five years, with a commercial fishing company which pays a fixed amount to the authority in exchange for the exclusive right to catch fish within the reservoir during the contract period (case of Upper Benue River Basin Development Authority).

In the case of domestic water supplies, cost recovery for management as well as operation and maintenance of facilities is relatively easy in urban centres where meter or household rates are charged and enforced through regular disconnections of defaulters by the state water boards. However, in rural areas, such charges are not possible due to the low income level of rural dwellers. As such, the arrangement adopted particularly by UN assistance agencies, consisted of standardizing vital equipment like handpumps and organising some representatives of the communities recipients of water supply projects in the basics of simple repairs and training artisans in the local manufacture of the standardised pumps.

4.2 Regional River Basin Organisations

In the case of regional river basin organisations like the LCBC, the member states who are owners of such regional organisations could be considered as the user groups. Such users participation in the management and financing of the organisation is quite practicable. What is important is the political will of such groups to cooperate and give the necessary mandate of active participation of such regional organisation in the development and management of regional infrastructures.

For instance, the major functions of the LCBC as defined in the statut are summarized as follows:

- a) Ensure the application of the principles defined in the Convention.
- b) Assemble, examine and disseminate data on projects prepared by member states and recommend a plan of action for development within the basin.
- c) Maintain liaison between member states in order to facilitate a harmonious and efficient use of the waters of the basin.
- d) Undertake major studies and works within the basin and keep member states informed.

e) Promote regional cooperation and settlement of disputes.

f) Plan, coordinate and implement projects of regional nature.

In effect, LCBC is expected to undertake regional activities and to emphasise the planning and management of water resources within the basin.

The Commission operates a one line recurrent as well as a development budget. The development budget is used to service the counterpart components of regional projects financed by external donors.

The contribution formula for the budget of the Commission among member states which was based essentially on the desire for cooperation as well as the sentiment of solidarity among the political authorities of member states, is as follows:

Cameroon: 26%

Chad: 11%

Central African Republic: 4%

Niger: 7%

Nigeria: 52%

The users participation in the management and financing of regional organisations like the LCBC could, however, be enhanced if their functions are reviewed to enable them undertake regional multipurpose projects which are not limited in scope to international river administration facilities but also projects designed to serve wider interests in the sub-region.

For instance, one major project in the Master Plan of the LCBC is on the Inter Basin Water Transfer from the Zaire basin to the Lake Chad basin offers a good example of such regional projects. The project which is still in it's conceptual stage plans to transfer about 100 billion cubic meters of water annually (3,200 m³/s) from the Zaire river to augment the available water resources of the Sahelian areas of the Lake Chad basin. The transfer route is a navigable canal 2,400 km. long. Furthermore, through the construction of dams both at the donor and the receiving basins about 30 to 35 GWh of electricity is expected to be produced which can be supplied to the countries in the region for distribution. Finally, an area of between 5 and 7 million hectares could be put under intensive irrigation development in the receiving basin.

Such benefits as the quantity of electricity supplied by the project to each state, the quantity of water supplied annually for irrigation, domestic water supplies as well as navigation benefits could then be quantified and charged by the regional organisation to the beneficiary states on annual basis to defray operation and maintenance costs as well as loan amortisations. The organisation and it's user groups could work out a percentage distribution of utilization of the proceeds to loans repayments, operation and maintenance of the organisation and dividends to the user groups. It should be emphasised here that the regional organisation should not go into distribution and charging for services at the national level but should only provide it's service to and charge member states who could in turn do the distribution and charge for the services.

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