

## **Cameroon: Local initiative to protect Lake Ossa (#363)**

### **Summary**

This case study describes the progressive efforts of Watershed Task Group (WTG) – a local NGO, to strengthen participatory wetland management using sustainable livelihood approaches in the Lake Ossa Complex. It demonstrates the relevance of raising awareness/ capacity building, stakeholder dialogue and concerted action, and a holistic approach to water management.

### **Description**

The Lake Ossa complex contains nine (9) lakes and over twenty (20) islands. It is located in Dizangue, Littoral Region of Cameroon, and situated at the outlet of the Sanaga basin. The Lake Ossa Complex is a designated faunal reserve since 1968 and serves as the major source of livelihood for over 80% of the local population engaged in bivalve harvesting and fishing. The biodiversity values of the complex are under pressure due to unsustainable fishing, hunting and habitat destruction which affect threatened birds and protected manatees. Furthermore, the lake's water quality is probably effected by pesticides and chemicals used by the large agro palm industries (SAFACAM and SOCAPALM) located in the area as well as effluents discharged upstream by these industries. Another key driver of unsustainable fishing practices is the fluctuation of the Lake complex water levels due to upstream regulation of surface water flows within the Sanaga river basin by the National Electricity Corporation (SONEL). It would appear that SONEL does not respect the period allocated for fishing, during which time its dams are not supposed to be open. When SONEL acts otherwise, the population engage in over-fishing using unsustainable techniques before the water levels increases to levels unfavorable for fishing. Additionally, there are emerging issues like soil erosion and land degradation due to subsistence farming along the banks of lake. These factors are jeopardizing the ecological and biodiversity functions of the Lake complex, with negative impacts on the livelihood of the local population, which consequently leads to further unsustainable over-exploitation.

### **Actions taken**

Watershed Task Group (WTG) organised and facilitated education and awareness raising campaigns using posters, documentaries and workshops in different communities to highlight these problems and their consequences on the livelihood of the local population. The NGO also held consultations with local government administrators and traditional authorities on the need to foster collaboration in the protection of Lake Ossa Complex. This initiative led to several joint meetings that brought together the local community, WTG, traditional authorities, representatives of the agro industries and government to examine issues, challenges and chart the way forward.

### **Key outcomes:**

WTG succeeded in mobilising and harnessing the efforts of the different stakeholders. It has facilitated the formation and legalisation of over 12 user (hunters and fishermen) associations known as common initiative groups in Cameroon, developed the capacity of over 40 women associations in fish transformation, and provided training and equipment to engage in alternative sources of livelihood such as cassava cultivation and cane rat domestication to these stakeholder groups. Furthermore, in collaboration with the other different stakeholders participatory action plans have been developed and at

least three traditional protected fisheries reproduction zones have been established which have contributed to reduced conflict between fishermen and manatee.

### **Key lessons**

Active local NGOs can be vehicles for the mobilisation and enhancement of the skills of different stakeholders, organising and formalising users associations, building capacity and facilitating dialogue and concerted action through participatory action processes.

### **Tools used:**

B1.02: Local authorities

C8.02: Raising public awareness

**Keywords:** Lake Ossa-Cameroon, biodiversity, stakeholders, capacity building and livelihood.

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# FULL CASE

## General Description of Lake Ossa Complex

Located in Dizangue, Littoral Region of Cameroon, Lake Ossa Complex is the second largest fresh water lake in the country after Lake Chad. It is made up of 9 lakes and more than 20 islands covering some 6000 ha. The main lake (Lake Ossa) was designed as a Game reserve in 1968. It is the major source of livelihood (fishing and hunting) for over 80% of the local population. Lake Ossa is located at the outlet of the Sanaga basin and is characterised by lowland, swamp forests and mangroves (figure 1) with a very high biological diversity such as birdlife, West African Manatee, sea turtles, bivalves and fish.



**Figure 1: Partial view of Lake Ossa**

It is surrounded by large oil palm and rubber plantations (SOCAPALM and SAFACAM respectively). Dizangue is less than 15 km off the Douala-Edea highway, has an all season passable earth road, sandy soils and very limited social amenities and poor infrastructures. Even though the population density in the immediate vicinity of Lake Ossa seems to be low, the biodiversity values of the complex are under increasing pressure. In pursuit of economic survival, the resources of the complex are unsustainably over-exploited thereby jeopardizing the ecological functions, biodiversity and source of livelihood of the local population, consequently leading to further unsustainable over-exploitation (a vicious cycle).

## Opportunities for wetland management and conservation in Cameroon

Cameroon has a number of legislative instruments which can be exploited to enhance wetland management and biodiversity conservation in Cameroon. Some of these legislations enacted by the government of Cameroon include:

1. Law No 94/01 of 20<sup>th</sup> January 1994, which governs forestry management (including community forestry), wildlife and fisheries.
2. Law No.96/12 of 5<sup>th</sup> August 1996, relating to environmental management,
3. Law No 98/005/ of 14<sup>th</sup> April 1998, laying down regulations for water resources management

4. Law No 92/006 of 14 August 1992 relating to Cooperative Societies and Common Initiative Groups. It encourages local citizenry collective initiatives for social and economic well-being.

It is worthy of mention that these legislative instruments are under exploited and face several implementation challenges.

### **Triggers for participatory local actions in the Lake Ossa Complex**

There are several related issues of concern with an impact on the ecological functions, biological diversity and economic sustainability of the local population that have triggered the initiation of participatory local actions in the Complex. Some of the key issues include:

#### Inadequate state action

Despite the political efforts as evident by the above legislative instruments, state action and enforcement of legislation in the Complex was highly inadequate. The resident conservator was not equipped to work effectively and in collaboration with community, decision-making was highly centralized with a command and control approach to implementation. Additionally, the absence of stakeholder platforms for dialogue and concerted action made the local population to view the state as an intruder with antagonistic ideas.

#### Loss of biodiversity and natural resources

The fishing and hunting practices of the local population suggest that the local population have limited value for the natural resources, perhaps due to lack of awareness as well as tools and capacity for long term planning. Unsustainable fishing and hunting techniques have not only contributed to a decline in the number of species and quantity of fish and other aquatic species and animals but have also accelerated habitat destruction which constitute a threat to fish reproduction, birdlife and protected manatees.

#### Threats to livelihood and economic growth

Over-exploitation (fishing and hunting) and the use of unsustainable techniques are of growing concern for several reasons; threat to extinction due to the increasing destruction of habitat for reproduction and growth, and the harvesting of very young and protected species (figure 2).



**Figure 2: Some unsustainable practices which threaten future livelihood**

Another key driver of unsustainable fishing practices is the fluctuation of the Lake complex water levels due to upstream regulation of surface water flows within the Sanaga river basin by the National Electricity Corporation (SONEL). It would appear that SONEL does not respect the period allocated for fishing, during which time its dams are not supposed to be open. When SONEL acts otherwise, the population engage in over-fishing using unsustainable techniques before the water levels increases to levels unfavourable for fishing. These have resulted in decreasing productivity of the lake which impacts the economic potential of several households. A local resident interviewed during the field visit revealed that fishermen and hunters are increasingly spending long hours and sailing long distances to make any reasonable harvest. He also observed that birds which could further touristic attraction are also on a decline. In addition, the lake's water quality is probably effected by pesticides and chemicals used by the large agro industries located in the area as well as their effluents discharged upstream. Additionally, emerging issues related to soil erosion due to the clearing of riparian vegetation for cassava cultivation were observed during the field visit. The combined effects of these issues pose a significant threat to household incomes now and in the future, leading to yet unsustainable practices which further decreases the ecological and biological diversity values of the Complex

## **Actions taken**

In recent years, Watershed Task Group (WTG)- a local NGO, has initiated several activities and actions to support and strengthen participatory wetland management approaches that link conservation with human needs. The NGO has prioritised sustainable livelihood options to address ecological and biodiversity threats related to unsustainable exploitation of wildlife and fisheries resources. Some of the specific actions include:

- Facilitation of participatory multi-stakeholder dialogue among the community, local administration, traditional authorities and local industries.
- Education and awareness campaigns using posters, documentary, seminars and workshops on the problems of the lake and impacts on biological diversity and source of livelihood of the population.
- Formation and legalisation of gender specific and sensitive common initiative groups, capacity building, and the provision of technical and financial assistance toward alternative sources of livelihood.
- Participatory inventory of fishes, birds, and fishermen, as well as diagnosis of the sources of livelihood.
- Participatory and inclusive (men, women, youths, administration, local authorities and industries) elaboration and adaptation of annual work plan and 5-year strategic plan

## **Key outcomes**

Some early successes that have been recorded in the Lake Ossa Complex include initiation of partnership and enhancement of collaboration among key actors, an increasing sense of local ownership and collaboration as demonstrated by acts of community policing of fishing and hunting activities, as well as facilitating access to national and international funding opportunities for the local common initiative groups.

Key partners of the project include:

1. International Union for Nature Conservation Netherlands Committee Ecosystem Grants Programme (IUCN NL EGP)
2. Government of Cameroon through four ministries: Forestry and Wildlife (MINFOF), Fisheries and Livestock (MINEPIA), Agriculture and Rural Development (MINADER), and Environment and Nature Protection (MINEP).
3. World Fish Centre, Yaounde.
4. Global Water Partnership Cameroon
5. Traditional Authorities, and Local NGOs
6. Dizangue Rural Council
7. Local Common Initiative Groups

Some of the specific achievements of the actions taken are elaborated in table 1.

**Table 1: Elaboration of actions taken and achievements in reducing over-exploitation (fishing and hunting) in Lake Ossa Complex**

<b>Achievement</b>	<b>Activities</b>	<b>Indicators of results</b>	<b>Key lesson(s)</b>
Hunters and fishermen Associations established with functional codes of conducts and legalized.	Organized and facilitated community meetings to initiate the formation of users associations and collectively elaborate fishing and hunting codes of conduct.	-At least 180 persons /wetland users organized into 12 associations (estimated as at least 15 persons per group with at least 3 women per group) -Each association has an elected project management committee with at least one woman represented	- Local initiative, actions and leadership encouraged - Gender given adequate attention
	Facilitated the registration of fishing and hunting associations as common initiative groups		
Development of Participatory Action Plans (PAPs) for fishing and hunting , and enhancement of co-management of aquatic resources with active community participation	Organized and facilitated meetings for the development and evaluation of co-management and PAPs for hunting and fishing associations.		Participatory planning, co-management and community participation encouraged
Establishment of traditional protected fisheries recruitment zones. Fisheries recruitment improved and Manatee – Fishermen conflict reduced.	Raised awareness and lobbied for the establishment of community or traditional protected zones for fisheries recruitment in Lake Ossa Complex.	At least 3 Traditional protected zones for fisheries recruitment established covering over 10 hectares	-Role of traditional authorities harnessed, - Indigenous knowledge and local ownership improved - Proactive conflict reduction.
Women groups trained and equipped in fish preservation as alternative sources of livelihood.	- Trained and provided equipment to 4 women groups for fish preservation-salting technique	- 40 women from four groups in at least 6 communities trained - Improved monthly savings (at least double) by trained women in local meetings as indicated from financial records after one year.	- Capacity building and empowerment of women reduces pressure on aquatic resources - Improves financial and saving capacity - Scaling up ability with initial support
Large scale commercial fish conservation by salting and drying by three registered Common Initiative Groups	- Facilitated contact between groups and supplier of needed equipment. -provided initial capital, -provided a balance and 1 solar drier for at least two groups	- Reduced fishing pressure and all season availability of fish	
- Promotion of counter season cultivation and training in agricultural BMPs for Cassava and Egusi - Groups involvement in the National Program on counter season cultivation (Projet Bas Fonds) in MINADER and monitoring.	- Initiated and monitored group activities in counter season cultivation. - Trained groups and supplied basic inputs for counter season cultivation .	-at least half hectare of farm cultivated for one crop per group - Significant improvement in revenue after a short time of counter season activities - Significant reduction of time spent by group members in fishing	Promoting and supporting alternative livelihood activities improves revenue and reduces over-exploitation pressure on threaten species
Promotion of group Acadja fishing technique as temporary to intensively reduce unsustainable fishing practices	Trained 2 groups and constructed two pilot 20m x 20m Acadja fishing units	Visible Acadjas (20mx20m) inside Lake with live fishes	Improved techniques can serve as temporary measures to reduce unsustainable practices

Promotion of Cane Rat Domestication to reduce poaching and hunting pressure	Trained a group built 1 Cane rat Unit and supplied cane rats,	Presence of 3 cane rat in cages	Improved techniques can serve as measures to significantly reduced hunting pressure
Promotion of community based eco-tourism (Bird watching tower) with a significant 30% reduction in water bird hunting	<ul style="list-style-type: none"> <li>- Constructed 1 bird tower</li> <li>- Trained some youths in eco-tourism activities such as tour guides and hostel management</li> </ul>	<ul style="list-style-type: none"> <li>- Formation of an ecotourism board to coordinate all ecotourism activities and source funding</li> <li>- Youths actively participated as tour guides in community based eco-tourism and were paid reasonable amount.</li> <li>- International birders and researcher (South Africa and Belgium) attracted to the Complex</li> </ul>	Youths involvement can foster early successes and sustainability. These youths now see birds as partners in ecotourism business and have keen in birds survival and protection.

**Source: Modified from WTG technical and financial report, February 2009**

## **Challenges in sustaining and scaling up actions**

Despite these laudable early achievements, personal field observation and interviews reveal some challenges in sustaining and scaling up action.

1. Need to sustain, scale up and diversify training in livelihood. There is need for alternatives to match and out weigh regular quick-fix income provided by fishing and hunting. Although alternatives sources of livelihood have proven to be financial more productive, they seem to be considered as time consuming and labour intensive unlike the traditional fishing. It is therefore important to provide training in different types of livelihood alternatives for immediate, short-term and long-term revenue generation. Specific attention must be given to the immediate livelihood alternative to ensure that its comparative advantages far out weigh those of fishing and hunting. Else, people will still rely on fishing and hunting for urgent cash. Awareness should be promoted on personal financial management and saving opportunities.
2. Regular monitoring and corrective actions. It would appear that there is the need for regular on-site monitoring of activities and corrective actions as necessary. This seems to be limited by available financial and human capacities.
3. Local power-balance issues and leadership dichotomy. Interviews suggest that some elites are attempting to hijack project benefits by exercising authority over elected local representatives. The impact on community cohesion and concerted action can be significant.
4. Inadequate government action and buy-in from local industries. Local administrators seem not to be playing their role in enforcement and provision of social services and infrastructure. Furthermore, it would appear SAFACAM and SONEL are yet to fully integrate in the participatory management plans of Lake Ossa Complex.

## **Lessons learned**

This highly replicable case study has several important lessons for IWRM among which are the following:

### ***Active local NGOs as agents and facilitators of concerted actions***

The findings from this case study demonstrate that interventions by active local NGOs such as Watershed Task Group can foster participatory wetland and water resources management with several benefits. These benefits may include mobilising local communities, initiating and facilitating multi-stakeholder dialogues, providing support in building local community capacity, as well as in harnessing synergy of existing efforts for collective benefits. Furthermore, such NGOs can act as liaison in organising and facilitating access by registered groups to local and external sources of funding for local projects to promote sustainable management of water resources.

### ***Empowerment of local groups, especially women and youth, is more productive***

The empowerment of local community with the necessary knowledge skills and materials is an important first step to motivate and sustain self-mobilized actions in the community. It has also demonstrated that actions which engage youths and women are easily scaled-up and tend to have more positive influence within the community.

### ***Strategic stakeholders partnerships promotes more actions and yields creative results***

When all relevant key actors are engaged from the onset, problems are better diagnosed and alternatives solutions critically examined which is vital to overcome capacity constraints and reduce conflicts. It is also very productive in harnessing traditional authority powers in achieving sustainable wetland management and biodiversity conservation.

### ***Livelihood approaches are central to IWRM***

This case study demonstrates that to motivate and sustain local interest and actions in IWRM practices, considerable attention must be given to sources of livelihood especially those that provide cumulative comparative advantages that match and out weigh the financial and labour advantages offered by the traditional sources of livelihood in the immediate, short and long term.

### **Conclusion**

The awareness campaign, partnership and collaborative platform initiated by WTG are progressively motivating the Government of Cameroon through the ministries listed above to become more active in monitoring and control. However, this is still a challenge especially in ensuring that the local industries respect the mutual agreement. MINEPIA's involvement in local capacity building and Government's intention to construct a control post in Lake Ossa Complex are positive signs of the state renewed interest in actions to protect Lake Ossa. Furthermore, the mobilisation of the local community and their interest in alternative sources of livelihood, which are already yielding positive results especially in income and savings, are indicators that community pressure on the lake resources would significantly reduce in the future. This is expected to lead to sustainable exploitation and protection of the lake.