

# **Stakeholder Participation in the Establishment of Biosphere Reserves: The Case of Local Communities in the Proposed Kimbi-Dumbo-Nyos Conservation Zone, Cameroon.**

**Discussion Paper presented by Dr. Thomas Fofung Tata at the International Expert  
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## **ABSTRACT**

This paper presents the general ideas for a study which the Bioresources Development and Conservation Programme-Cameroon (BDCCP-C) is proposing to be carried out to establish a biodiversity inventory and socioeconomic assessment of the Kimbi-Dumbo–Nyos zone in the North West Region of Cameroon for nomination as a Biosphere Reserve. The study will use the Wetlands Rapid Assessment Procedure (WRAP) methodology based on the landscape approach and the participation of major stakeholders, especially the primary stakeholders who depend mainly on the natural resources of the zone for their livelihoods. The proposed study will generate data/information that will enable the Cameroon Government to create a National Park for the conservation of biodiversity and the socioeconomic development of the zone, and subsequently propose the Park for nomination as a UNESCO Biosphere Reserve (BR). In emphasizing the importance and advantages of involving primary stakeholders from the start of establishing a National Park to its nomination as BR, the paper illustrates experiences in Africa where good-intentioned conservation and development efforts failed and/or succeeded because of the none-involvement and/or involvement in decision-making of the primary stakeholders. The major challenges which apparently seem to be encountered by BRs in Cameroon in particular, and Africa in general, are discussed, and which include: i) none establishment of biodiversity inventory and socioeconomic assessment; ii) inadequate personnel in terms of numbers and training; iii) inadequate funding; and, iv) inadequate involvement of all major stakeholders, especially the primary stakeholders in BR establishment and management.

## **1. INTRODUCTION**

Presently, Cameroon has three UNESCO Biosphere Reserves (BRs), all of which are Wildlife Reserves (Protected Areas), namely: Benoue with an area of 180,000 ha created in 1932 and made BR in 1981, and Waza with an area of 170,000 ha created in 1938 and made BR in 1979, and Dja with an area of 526,000 ha created in 1950 and made a BR in 1981. At the time of writing this paper, not much information is available on the situation of these BRs. A Management Plan was drawn up for Dja in 2004 but information is not available on the implementation of the plan.

This paper presents the elements of a proposal for the establishment of a fourth BR, with a difference from the others, in Cameroon. The difference is in the proposed ownership/land-use and stakeholder involvement: a) Wildlife Reserve (MINFOF); b) Cattle Ranch (MINEPIA); c) Nomadic cattle breeders; d) sedentary local communities practicing shifting cultivation; e) lake Nyos disaster survivors who are returning and re-settling in the formerly abandoned villages – carving out BR within the zone in terms of the Core areas, the Buffer Zone and the Transition zone, for effective management based on the landscape approach, the proposed name for which is: “Kimbi Dumbo Nyos (KIDUNY) Biosphere Reserve”. This name is being proposed by the “Bioresources Development and Conservation Programme – Cameroon” (BDCP-C), the promoter which is an NGO with Headquarters in Yaounde, Cameroon - the name may be changed as circumstances require.

## **2. Bio-Physical Characteristics of the KIDUNY Zone**

**The Kimbi/Dumbo/Nyos zone (KIDUNY)** is situated in the Western High Plateau region of Cameroon and falls within the Mount Cameroon chain of volcanic mountains range that extends from Mount Cameroon (4,095 metres altitude) on the coast, through Mount Oku (3,011 metres altitude) to the Adamoua plateau. Volcanism along the mountains range has created crater lakes some of which are said to contain disastrous toxic gases, e.g., Lake Nyos and Lake Mounoun. In terms of vegetation, the KIDUNY zone is in the tropical transition zone between the rain forests and savannah woodlands, with high concentration of rich gallery forests in the valleys, and with montane forests/wooded high savannah in the higher altitudes. The relief is characterized by numerous hills, valleys and mashy areas. The area is drained by numerous streams, the most prominent being rivers Junga and Kimbi which converge into the Katsina Ala. In terms of climate, the zone has a subtropical climate characterized by two main seasons; rainy season from mid-March to mid-October and dry from mid-October to mid-March, and temperatures are mild.

BDCP-C is developing a concept note that will enable a study to produce a “Biodiversity Inventory and Socioeconomic Assessment of the KIDUNY zone in the North West Region of Cameroon. The information/data to be obtained will be available to be used for the creation of a National Park in the zone and its subsequent nomination as a UNESCO BR with the following areas as components:

**i) The Kimbi Wildlife Reserve (5,625 ha)** officially Gazetted (1964) as a “Protected Area” is an IUCN Management Category IV Nature Reserve, under MINFOF, and is located in Bum sub Division in Boyo Division of the North West Region. The Kimbi and Junga Rivers constitute the reserve’s natural boundaries and have some species of fish.

**ii) the Dumbo Cattle Ranch (38,000 ha)** operated by a Development Agency, SODEPA as a ranch within which Government-owned cattle graze freely. Apart from SODEPA Ranching, human activities (farming, hunting, private cattle grazing, firewood fetching, etc.) are strictly forbidden – thus the Dumbo Cattle Ranch can be classified as a Protected Area. In effect, the gallery forest formations in the valleys are fairly intact and since the ranch keeps part boundary with the Wildlife Reserve, the animals in the reserve also move freely therein. The Dumbo, Kimbi, Subum and Nyos villages border the ranch and the wildlife Reserve on different sides.

**iii) Lake Nyos area** is the location of the “former” villages of Nyos, Subum and Chah which were victims of the 1986 Lake Nyos deadly toxic gas disaster, and including the villages of Kimbi and Dumbo. The Crater Lake Nyos is mid-way-up a steep hill.



Lake Nyos after the Toxic gas Disaster //Cattle killed in the 1986 Lake Nyos disaster  
(Water Encyclopedia)

**iv) The Village Communities in the zone** can be divided into four categories: a) the big villages of Kimbi and Dumbo (their populations not available); b) the re-settlement villages of Bua Bua, Kimbi, and Kumfutu (sedentary native population); c) the Kimbi re-settlements (nomadic cattle breeders); d) the “returning” survivors of the 1986 toxic gas disaster to their former villagers of Chah, Nyos and Subum that had been deserted; b) above and to where they are presently returning systematically to re-settle.

### 3 Socioeconomic and Cultural Characteristics of the KIDUNY Zone.

3.1 Socioeconomic Activities. The population of the KIDUNY zone are engaged in unsustainable shifting cultivation, nomadic grazing, hunting (mainly poaching from the Wildlife reserve and the cattle ranch), petit trading, etc. The zone is very ideal for tourism, but unfortunately that is yet to be developed and promoted.

3.2 Major Stakeholders in the Zone. The various stakeholders interacting in the zone with interests that usually are conflicting are categorized in the table below.

Stakeholders	Major Interests of stakeholders (usually conflicting)
<u>Government:</u> Kimbi Wildlife Reserve (MINFOF).	i) Park land protection; ii) wildlife conservation; iii) increasing the area of the reserve; iv) strengthening reserve management.
<u>Government:</u> i) Dumbo Cattle Ranch (MINEPIA).	i) Production of improved cattle breeds for local cattle breeders; ii) provision of veterinary services; iii) protecting ranch land, etc
<u>Government:</u> i) Councils (MINAT); ii) MINADER; iii) MINSANTE; iii) MINEDUC; iv) MINTOUR	Providing: i) administrative services; ii) extension services; iii) social services; iv) rural development activities, etc.
<u>Local Communities:</u> survivors of 1986 Lake Nyos toxic gas disaster.	i) Return to former villages; ii) extensive farmlands for shifting cultivation; iii) social services (health, education, rural finance, etc); iv) communication and rural

	infrastructure; v) energy (lighting and cooking), water and sanitation;
<u>Local Communities</u> : cattle breeders (indigenous fulanis) practicing unsustainable nomadic grazing	i) Free grazing land including land for dry season transhumance and water for animals; ii) graze their cattle in the richer pastures of the Dumbo Ranch and Kimbi Reserve; ii) social services (health, education, rural finance, etc); iii) water and sanitation; iv) communication and rural infrastructure;
<u>Local Communities</u> : sedentary farmers in Dumbo, Kimbi, etc., practicing unsustainable shifting cultivation methods	i) Open arable land for shifting cultivation; ii) harvest fuel-wood, timber and medicinal plants from the ranch & reserve gallery forests; iii) hunt wildlife for food requirement; social services (health, education, rural finance, etc); communication and rural infrastructure;
<u>Local Communities</u> : Petit traders, hunters, handicraftsmen, etc.	i) access to game hunting; ii) access to timber and non-timber products for various needs; etc.

For now, there are no NGOs operating in the zone – BDCP-C will be the first NGO in the zone, no Private Sector operators (unless for very small-scale traders?), and there no funding agencies financing projects in the zone.

#### **4. The Challenges in the KIDUNY Zone.**

4.1 Resource-use conflicts between the major stakeholders present in the zone directly arising from the usually conflicting stakeholder interests that have been listed in the table above, are attributable to the unfavourable socioeconomic conditions faced by the primary stakeholders, including generalized poverty, lack of access to improved agricultural input as well as markets for their output, no access to micro-finance facilities, very poor transportation infrastructures and no easy communication facilities, inadequate social services such as health, education, potable water supply, etc., with significant gender implications. These conflicting interests to a great extent exacerbate the other challenges discussed in the paragraphs that follow.

4.2 Degradation of Biodiversity and the Physical Environment. The biodiversity of the Kimbi Wildlife Reserve, the Dumbo Cattle Ranch, the biodiversity hotspots, and the Lake Nyo area is continuously being degraded in terms of their fauna and flora. The physical environment is being systematically degraded by bush fires, poaching, encroachment, slash and burn/shifting cultivation (most often soil burning), nomadic livestock breeding, landslides, unsustainable exploitation of timber and fuel-wood and soil erosion.

4.3 The impacts of Climate Change and Climate Variation. Over the years, the zone covered by the Kimbi Wildlife Reserve, the Dumbo Cattle Ranch, and the Nyo area, have witnessed the degradation of biodiversity, vegetation, agro-pastoral production and the livelihoods of local communities have been severely affected by the negative impacts of climate change and climate variation – a situation that has been exacerbated by unsustainable anthropogenic activities.

4.4 Disaster Risks. Toxic Gas Concentration in Lake Nyo and the threat of breaking-up of the natural dam through which the lake has a drainage outlet, and possibilities of

landslides from the surrounding hills pose disaster risks that can take international dimensions ranging from Cameroon to Nigeria.

## **5. The Proposed Study**

### **5.1 General Objectives of the Study**

Given the problematic situation and challenges described above, the WRAP methodology for biodiversity inventory and socioeconomic assessment of the KIDUNY zone would provide the basis for planning sustainable conservation and socioeconomic development of the project zone. The information to be collected should go a long way to serve conservation and development functions in the project zone including: i) conservation of biological diversity, ecosystems and landscapes; ii) promote socioeconomic development including ecotourism that is ecologically and culturally sustainable; iii) providing logistic support for research, monitoring, training and education related to local, national, regional and global conservation and sustainable development issues; iv) creation of an integrated research and development centre for adapted research on integrated farming systems for crops, trees and animals, study of the impacts of climate change and climate variation on biodiversity, crops, livestock, game and on the livelihoods of rural communities in order to draw results for the proposition of policy on adaptation measures, etc.

### **5.2 Methodology**

BDCP-C experts had already undertaken a number of preliminary information-gathering missions to the zone to be acquainted with the local communities, un-going projects, general bio-physical presentation of the zone, and conservation/development problems and opportunities. Based on the information gathered during the exploratory missions, BDCP-C will lead the study using the Wetlands Rapid Assessment Procedure (WRAP) methodology and the integrated Landscape Approach for the biophysical and socioeconomic components of the study. The study is intended to be a very unique one in Cameroon and perhaps most of Africa in general because it is expected to bring out a project document based on an integrated landscape approach for **the conservation of biodiversity and sustainable development with a human face**. Data/information to be collected and reported in the study will be available to the Government of Cameroon for the creation of a "conservation/development" National Park that should subsequently be presented for nomination as a UNESCO Biosphere Reserve. BDCP-C will propose that the villages within the zone should be adequately planned as **"sustainable/Eco-villages" within an "integrated landscape conservation and development system"**. The study will be conducted in four phases as follows:

**Phase 1: Consultative dialogue and negotiation with major stakeholders** – Government, local communities, Civil Society (to be identified), the Private Sector (to be identified), and prospective Funding Agencies.

**Phase 2: Wetlands Rapid Assessment Procedure (WRAP) methodology** to establish: i) establishment of a biodiversity inventory of the zone, and, ii) a socioeconomic assessment of the zone with major stakeholder participation, especially the primary stakeholders - this will analytically present the interaction between human activities and the biological resources in the zone of study. This phase will enable Government engage the necessary procedure to create a governance/management structure for the zone.

**Phase 3: Zonation.** This is a very critical phase of the study requiring the very effective participation of primary stakeholders so that agreement is reached as to the carving out of the area - zoning demarcation: i) the Core Conservation zones (the Dumbo Cattle Ranch and the Kimbi Wildlife Reserve are already fixed) but the Lake area and other biodiversity hotspots have to be added as core; ii) the Buffer Zones; and, iii) the Transition Zones. When all Major stakeholders, especially the local communities are agreed on the zonation, this means acceptance and assurance of responsibility for the decisions, then a Management and Development Plan for the area as a whole based on an "Integrated Landscape Approach" can be officially established for activities to start.

**Phase 4: Management of the KIDUNY zone.** This is the operational phase when Government has created the KIDUNY conservation and development zone and submitted necessary document for its nomination as a BR.

## **6. Stakeholder Participation.**

### **6.1 Functions of Biosphere Reserves.**

In order to fully take on-board the issue of stakeholder participation in the establishment of Biosphere Reserves (BRs), it is important to first recall the functions of BRs. UNESCO BRs fulfill the dual function of biodiversity conservation and improving human well-being within the context of sustainable development. BRs are protected areas in which human activities and nature coexist harmoniously, thus breaking with the assumption that nature can only be protected by separating it from man (UNESCO, 2002). BRs should contribute towards meeting community demands for food, wood/timber for building/construction, potable water, energy needs (fuelwood & electricity), employment opportunities, health and education facilities, financial (banking-type) services, communication and transportation infrastructures, etc., while conserving biodiversity.

Therefore in proposing the establishment of a Biosphere Reserve (BR) for the KIDUNY zone, it is important to prepare a project such that it will fulfill the standard functions of BRs by assuring the conservation of biodiversity and meeting the socio-cultural and economic development needs of the stakeholders, especially the local communities that rely on the natural resources of the zone for their livelihoods needs. The process of preparing the project for the establishment of a KIDUNY zone as a BR must therefore be based on a participatory approach, which is discussed below following the four phases leading to the establishment of the BR.

## 6.2 Types/levels of Stakeholder Participation (Involvement)

Participation may take different forms (Bouamrane, M. (ed.), 2006) that range from the extreme of **communication and awareness creation**, whereby the authority conveys a message to other stakeholders of what the authority asserts, suggests and decides in order to get stakeholder approval but without expecting any reaction from them, and extends to the other extreme of **negotiation** where decision-making is shared among stakeholders to arrive at mutually acceptable solutions.

In between the two extreme forms of participation, i.e., communication and negotiation are other levels that include: i) **consultation** during which the authority collects stakeholder opinion without debate, and there is no guarantee that the opinions will be taken into consideration; ii) **dialogue** where there is interaction between stakeholders as equals with the aim of understanding the issues at stake, but in effect there is no explicit commitment on the part of the authority; iii) **concertation** whereby some level of consultation and dialogue must have taken place and then through concertation to arrive at a broad-based understanding between the stakeholders on the constituent components of the project.

In Africa, the tendency for Governments is to limit its relationships, especially when it comes to local communities, at the level of consultations and to some extent dialogue and concertation. **In this paper dialogue is used with the connotation that it encompasses some combination of consultation and concertation that will lead major stakeholder an understanding and acceptance of the establishment of a Biosphere Reserve in the KIDUNY zone in terms of the roles, obligations, and responsibilities for the sustainability of activities in the BR, by having participated at all stages associated with the establishment of the BR, from consultation to zoning and so each is a "keeper" of the boundaries of the BR.**

Dialogue plays an important role in the effort to reconcile conservation and development, in the understanding, management and prevention of conflicts and in the elaboration of rules for the use of, and access to, BR resources. While dialogue is important during the entire lifespan of the BR, it is crucial at the time of its establishment and during periodic reviews (Bouamrane, M. (ed.), 2007). In view of the fact that local communities derive their livelihoods mainly from natural resources that are found in various ecosystems within their neighbourhoods, the idea to establish a Protected Area leading to its nomination as a BR should effectively start with dialoging with them because any negative consequences would affect them most as they are the most vulnerable stakeholders. In effect, continuous conflicts and failures of most conservation efforts in conservation projects in Africa are attributable to the absence of dialogue between the authorities and affected local communities.

Dialoguing with Local Communities, especially prior to the establishment of Protected Conservation Areas would come with a lot of benefits for both conservation and

development, while the absence of dialogue would lead towards failure in both conservation and development efforts. Some examples in Africa are discussed below.

### 6.3 Case of no Dialogue with Local Communities.

a) In Cameroon, the creation of National Parks/Protected Areas, some of which were eventually nominated as BRs, were based on Administrative Decisions that were taken and the local communities were afterwards communicated on the decisions for which compliance was required.



Entrance into the Kimbi Reserve

Grazing near boundary of Kimbi Reserve

(photographs by Thomas Tata, 2008)



Dumbo Cattle Ranch (photographs by Thomas Tata, 2010)

Because the local communities derive their livelihoods from the natural resources located in the areas carved out as natural parks, violations of the “no trespassing, no hunting/fishing, no farming and grazing of animals, no harvesting of timber and non-timber forest products”, and all other “nos” labeled at the entrance into National Parks/BR is a daily affair. The poaching of wildlife, illegal logging of timber, grazing of livestock in the Parks, etc., is a daily affair. The staff of both Kimbi Reserve and Dumbo Cattle ranch confirmed that it was very difficult to prevent encroaching graziers from taking their cattle into the reserve/ranch, let alone poaching and illegal logging!

b) In one case of the Korup National Park in Cameroon, decision was taken by authorities on the advice of international/bilateral advisers to remove all the six villages located within the Park and re-settle them outside the Park. Failure was registered with the very first village community that was removed from the Park and re-settled, as after a few years they moved back into the Park.

c) At the establishment of the Djoudj National Park in Senegal, five villages were removed from the Park area and re-settled on marginal lands outside the Park (the villagers indicated that they had not been consulted). The result has been continuous natural resource conflicts, especially for grazing and farmland needs of displaced village communities who were resettled in marginal lands, as per pictures below.



Djoudj National Park – fertile land  
(photographs by Thomas Tata, 2006)

Re-settlement village – marginal dry land

The left picture above shows fertile Park land to the back of the canal and the left-side picture is the re-settlement village located in very dry marginal land without adequate pastures for livestock. The result is that the local communities continue against regulations to graze their livestock in the fertile National Park land.

d) Local communities living and deriving their livelihoods on some islands on Lake Kivu in Rwanda will be removed and re-settled on the main land in order to establish a National Park on the Mbabara, Rwanuma and other Islands (see two pictures below) and to be proposed for nomination as UNESCO a BR. The Authorities communicated the information to the communities without telling them when, to where, the conditions for re-location, and whether they would still have access to the resources of the islands they and ancestors had occupied for ages.



Mbabara Island children  
(photographs by Thomas Tata, 2006)



Fishing by Rwanuma island

#### 6.4 Case of Dialogue with Local Communities

In the Ichkeul National Park, Tunisia, there seems to have been some level of dialogue between local communities and the Authorities as the local communities were allowed to remain within the Park from the time of its establishment, according to information given to visiting AfDB consultants in 2006. Roles, responsibilities and obligations were said to have been well defined between stakeholders including the local communities located in the Reserve in order to assure biodiversity conservation and development. However, farmland and animal herd sizes as well as other activities per family staying in the reserve are controlled in terms of estimated carrying capacity of the Park's natural resources.



(photographs by Thomas Tata, 2006)

The three photographs above show family farmland to the left and family home to the right, and below shows community participation in erosion control work within the Ichkeul National Park in Tunisia.

## 7. Conclusions

The following conclusions emanate from the discussion in this paper.

**7.1 The failures in effective biodiversity conservation** recorded in most Biosphere Reserves in Africa may be attributed to the following reasons:

- i) Non-involvement of riparian local communities, who are the primary stakeholders, in decision-making from the time of establishment of the BR to its management.
- ii) Establishment of the BRs with inadequate knowledge of the resources found therein – in some cases studies may not have been carried out to establish biodiversity inventories and socioeconomic assessments.
- iii) Staffing of BRs in some case may be inadequate in terms of numbers and level of training - and the same may be the case with needed equipment.
- iv) In most cases the issues of inadequate funding of BR activities is the main problem, especially counterpart finances from Government.
- v) The capability of most African BRs to effectively perform the three functions of: a) biodiversity conservation; b) economic and human development; and, c) logistical support by serving as the basis for research, monitoring, training and environmental education activities (Article 2 of the Statutory Framework), leave much to be desired for the reason given above.

**7.2 Notwithstanding, there have been success stories** in the area of effective primary stakeholder participation, of which one was illustrated in section 6.4 of this presentation. Certainly, there are many more success stories that participants at this workshop should bring out for discussion.

**7.3 Sustainability.** In addition to financial and management considerations, the sustainability of BRs will be more assured if major stakeholders, especially primary stakeholders participated effectively at all phases of its establishment, because it brings in elements of acceptability, ownership and responsibility for maintaining and respecting the zonation boundaries.

## 7.4 Recommendations

- i) The preparations for the establishment of BRs should start with consultations, dialogue, concertation involving all stakeholders, especially the primary stakeholders – and why not negotiation, especially if land is to be annexed from local communities into the “core areas” of the BR.
- ii) Where adequate dialogue may not have taken place before the establishment of the BR, measures should be taken to rectify the situation to bring on-board the primary stakeholders in BR management
- iii) Funding provisions should be made as a matter of urgency for studies to establish biodiversity inventories and socioeconomic assessments of the BRs for

which such studies had not been done. The same applies for the up-to-date of BR management Plans. The biodiversity inventories and socioeconomic assessments when established should be placed in a database that should be periodically updated.

iv) BRs should be equipped with Qualified staff BRs and a continuous training programme be drawn up for them, as well as provision of work materials to enable them effectively perform the three functions of: a) biodiversity conservation; b) economic and human development; and, c) logistical support.

v) UNESCO should urgently carry out an evaluation of the state of all BRs in Africa. This will enable UNESCO and members countries to decide what should be done to enable the BRs perform the functions for which they were established.

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