## Annex A
## Incremental Costs

### BROAD DEVELOPMENT GOALS

The CBD and the CCD recognise and prioritise the in-situ conservation of biodiversity. In many parts of the world, savanna ecosystems have been converted or transformed into agricultural systems of various kind or have been replaced by expanding urban areas and other types of development. One consequence of this landscape transformation is that many types of savanna ecosystems are now confined to protected areas.

The six countries have identified biosphere reserves as effective tools for the in-situ conservation of savanna ecosystems as reflected in their respective National Biodiversity Strategies and Action Plans. The global significance of the biodiversity that each biosphere reserve contains has been a primary stimulus for the identification and designation of the six biosphere reserves involved in the project, all of which are now inscribed in the World Network of Biosphere Reserves. Each biosphere reserve is intended to fulfil three basic functions, which are complementary and mutually reinforcing: a) conservation function - to contribute to the conservation of landscapes, ecosystems, species and genetic variation; b) development function to foster economic and human development which is socio-culturally and ecologically sustainable; and c) a logistic function - to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development.

Within each country, policies are established to improve legal and institutional frameworks for conservation, increase environmental awareness and education, and strengthen management of protected areas and natural reserves, including biosphere reserves [7].

### BASELINE

### INFORMATION FOR CONSERVATION MANAGEMENT

The partner countries recognised the need to implement field-based activities to better inform biodiversity conservation and sustainable use strategies in each biosphere reserve. This has been recognised as a priority in the NBSAPs of the six countries but has been weakly implemented for lack of resources. International programmes/projects are conducting activities that have the potential to provide support for country actions such as in the case with the European Commission ECOPAS Programme for the W region (Bénin, Burkina Faso and Niger). The limited activities and programmes in the biosphere reserve sites that are geared towards generating management information focus almost exclusively on natural sciences.

The resources allocated to ongoing management information activities are approximately US$ 1,410,000.

[7] As detailed in the table in Annex J.

## CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY

Each biosphere reserve participating in the project has a management plan that specifies the main activities to be undertaken in order to conserve and sustainably use biodiversity. Countries do not have the financial means to fulfil all the objectives assigned in an effective management plan, nor do they have the financial and human resource capacities to efficiently attain the first objective of a biosphere reserve, i.e., conservation. Therefore, the countries are concentrating their financial and human resources on classical baseline conservation activities, such as park/core area surveillance and monitoring of fauna and flora.

Other national, regional and international partners are supporting the countries in the implementation of their biodiversity strategies, especially in protected areas. Countries like Bénin have been successful in obtaining substantial financial support for their biosphere reserves and other protected areas, through various funding sources, such as the GEF, the German Cooperation (GTZ), and the French Government.

Overall, the current baseline costs for the conservation and sustainable use of biodiversity by international partners, has been estimated at $10,215,000, with Bénin receiving up to $7 million, and Burkina Faso, Niger and Sénégal benefiting from substantial support for the next five years.

## MANAGEMENT CAPACITY AT INDIVIDUAL AND INSTITUTIONAL LEVELS

All countries have limited financial resources to implement capacity building activities (e.g., training in natural resource management, conflict resolution, environmental awareness, public education etc.) for target groups such as biosphere reserve staff, local communities, students from all educational levels, general public etc. When resources *are* available, the needs of the park and biosphere reserve staff are the top priority and training focuses on conservation aspects in the core areas.

International partners are supporting Bénin, Niger and Sénégal to develop basic infrastructure such as libraries and small research centres. Limited public awareness activities are being conducted by NGOs with local populations and with the general media.

The total baseline projection for this component is $US 2,100,000.

All the countries are participating in the AfriMAB network and therefore are dedicating some very limited resources to regional information exchange. The total baseline projection for this regional component is $US 238,000.

## GLOBAL ENVIRONMENTAL OBJECTIVES

The global community benefits greatly from the indirect use values (e.g., ecosystem services) that the savanna ecosystems of the six biosphere reserves provide which cover an area of 5,970,000 hectares. Ecosystem conservation at the six biosphere reserves will help maintain

future indirect use values for the global community. Successful implementation of the biosphere reserve concept and processes (conservation function - to contribute to the conservation of landscapes, ecosystems, species and genetic variation; development function to foster economic and human development which is socio-culturally and ecologically sustainable; and logistic function - to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development) will increase and extend the maintenance of indirect use values.

In addition to the indirect use values, the global community benefits from the existence of the unique dryland biodiversity that is found in the savanna ecosystems that dominate the biosphere reserves. Savannas are dynamic ecosystems, determined by plant-available moisture, plant-available nutrients, fire and herbivory, at different spatial and temporal scales. They have a long history of human use.

West African savannas contain woodland areas with an understory of tall grasses, as well as shrubs and herbs. West Africa savanna is not particularly renowned for endemic or local richness of its fauna, especially in comparison with savannas in East and Southern Africa. It is better known for its endemic plants. Since the climate is tropical, but strongly seasonal, a significant migration of large vertebrates and birds occurs. A number of mammal species are threatened with extinction, and most of remaining populations and savanna habitats are found in the protected areas and in the six biosphere reserves of the project. These habitats are mainly threatened by unsustainable socio-economic activities, and pressures on access to land and resources.

Ungulates such as elephants and giraffes, which are only found now in W Niger transition area and thus represent a key component of this global benefit for the West African region. However, populations of all these mammals have become much smaller as their habitats have either disappeared or become fragmented, and in some countries they are locally extinct.

Without additional resources to improve management in the biosphere reserves, global benefits derived from the biodiversity found therein will be steadily eroded. This erosion will diminish indirect use values (ecosystem services, etc.), future option values, and existence values provided to the global community. Support from the GEF will assist six West African countries to implement effective biosphere reserve management that balances conservation and development imperatives for the benefit of local and global communities.

**ALTERNATIVE**

**INFORMATION FOR CONSERVATION MANAGEMENT**

The activities planned by the partners will support the development of common procedures and protocols for developing human pressure biodiversity impact indicators. In addition, outputs from activities geared towards generating conservation management information will inform the identification of land use practices that conserve and sustainably use biodiversity. Staff and relevant stakeholders at each biosphere reserve will determine sustainable management practices and land uses by studying the impact that resource users are having on

the environment and applying this information for management purposes. In particular, viable resource use practices will be tested and piloted in Component Two.

The incremental costs of this component area estimated at $1,155,000 of which national agencies in countries will provide co-funding of $633,000. GEF support is requested for an amount of $522,000.

### CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY

The project will test the indicators elaborated in Component One and will establish biodiversity monitoring systems both in core, buffer and transition areas for studying the impacts of resource use on biodiversity. These monitoring systems will help evaluate impact of the pilot conservation and sustainable use activities to be undertaken in Component Two. The conservation status of the core area of the biosphere reserve should be improved through the identification, piloting and initial validation of sustainable use practices of local communities in buffer and transition zones. Support from the local communities for the conservation of the biosphere reserve will also be improved.

The incremental cost of this component is estimated at $1,260,000. GEF support is requested for an amount of $421,000. Co-financing from international and national partners is estimated at $839,000.

### MANAGEMENT CAPACITY AT INDIVIDUAL AND INSTITUTIONAL LEVELS

Local and national training for local communities, students from all educational levels, the general public, and biosphere reserve staff have been identified as a priority and this will be undertaken in a number of key areas such as use of informatics, the use of GIS etc. Materials will be produced to raise environmental awareness in the biosphere reserve and at national level.

The incremental costs for this component is $US 1,325,000. GEF is requested to support this component with $576,000. Co-financing is expected to provide $749,000.

Regional training will be held in issues such as conflict management and resolution and the socio-economic dimensions of biodiversity conservation and sustainable use. Regional workshops will be held on common thematic aspects in order to exchange information and experience. Results of the project will be disseminated via the AfriMAB network and through the internet and other existing communication mechanisms such as the AfriMAB regional bulletin.

The incremental costs for this regional component is $2,358,000 of which $881,000 is requested from GEF. Co-financing is expected to provide $1,477,000.

## SYSTEMS BOUNDARY

The system boundary of the project in the geographic sense includes the entirety of the six biosphere reserves including of course the ecosystems and the set of species that occur within them. The key thematic domain within the project is the existing knowledge base on the conservation and sustainable use of biodiversity within savanna ecosystems. A secondary domain includes the existing institutional, social and management frameworks within each biosphere reserve related to management of the biosphere reserve and implementation of scientific research and conservation activities with local communities.

The scope of analysis for the project included operational activities within each biosphere reserve related to the generation of information and knowledge to support informed conservation management, conservation and sustainable use of biodiversity, and capacity building and training.

## COSTS

Baseline expenditures amount to $13,963,000. The alternative has been costed at $20,061,000.

The incremental cost of the project $6,098,000 is required to achieve the project's global environmental objectives. Of this amount, $2,400,000 is requested for GEF support, corresponding to 39% of the total cost of implementing the alternative. The remaining 61% of the cost of the alternative will come from national and international partners and other donors and includes in kind contributions.

## Incremental Cost Matrix

| Cost/Benefit | Baseline (B) | Alternative (A) | Increment (A-B) |
|---|---|---|---|
| **Domestic benefits** | • Absence of a systematic approach to building knowledge, expertise and institutional skills<br>• Biosphere reserves functioning but at a very low level<br>• Limited participation by local people and communities in biosphere reserve management<br>• Shortage of local personnel adequately trained in the conservation and management of natural resources<br>• Limited opportunities for alternative income activities<br>• Direct use values of hunting, fishing, plant collecting, etc exist but under threat without effective management<br>• Ecosystem services and functions provided by biosphere reserves threatened by unsustainable resource use | • Information/knowledge generated including local knowledge integrated into resource management decisions<br>• Integrated management of the biosphere reserve<br>• Biosphere reserves function per design<br>• Biosphere reserve management effectively includes local communities and resource users in management activities<br>• Decrease in conflicts over resource use between local communities and biosphere reserve staff<br>• Adoption of sustainable use activities by local communities<br>• Ecosystem services, functions and direct use values maintained through effective biosphere reserve management | • Improved management of biosphere reserves<br>• Enhanced use of scientifically-based information for resource management decisions<br>• Socio-economic needs of local communities addressed in a more systematic way<br>• Steady state or increased flow of long-term benefits from ecosystem services and resource use<br>• Direct use values and resource use managed under sustainable management approaches |
| **Global benefits** | • AfriMAB network provides platform for exchange of experiences and lessons learned amongst countries<br>• Lack of knowledge and limited awareness amongst the region of importance of savanna ecosystems<br>• Globally significant biodiversity in the biosphere reserves are under threat from unsustainable resource use<br>• Inadequate participation of local communities, limited scientific and technical capacity for management of biosphere reserves, insufficient knowledge base for applying sustainable resource management activities with local stakeholders, weak institutional co-ordination | • Strengthened and more effective AfriMAB network improves cooperation in the management of West African savannas and raises awareness of the importance of savanna ecosystems<br>• Conservation and sustainable use of globally significant savanna ecosystems improved within the biosphere reserves<br>• Scientific and technical knowledge and capacity to conserve and sustainably use biodiversity strengthened<br>• Local knowledge on conservation and sustainable use of biodiversity maintained and applied | • Increased area of globally significant savanna ecosystems under improved management<br>• Threats to globally significant biodiversity reduced<br>• Globally significant biodiversity sustainably used<br>• Maintenance of global conservation and indirect use values<br>• Enhanced long-term conservation prospects through integration of development and conservation objectives within each reserve |

| Cost/Benefit | Baseline (B) | Alternative (A) | Increment (A-B) |
|---|---|---|---|
| **Component One.**<br><br>**Generation of Management Information to Improve Conservation and Sustainable Use of Biodiversity** | • Limited data and information required for management and conservation needs<br>• Limited information to identify and apply sustainable use activities<br>• Lack of substantiation of local knowledge in conservation plan and strategies<br>• Lack of standard or inter-calibrated methods and research protocols to identify, measure and monitor biodiversity and the goods and services provided by the biosphere reserve | • Enhanced understanding of interactions between local communities and savanna ecosystems<br>• Common research and monitoring protocols adopted within the biosphere reserves and the AfriMAB network and long-term research indicators established on the impacts of land-use on biodiversity.<br>• Database for scientific and management purposes created.<br>• Monitoring and evaluation mechanisms for adaptation of research objectives to socio-economic needs | |
| | Baseline for output 1 :<br><br>Bénin : 165,000<br>Burkina Faso : 370,000<br>Côte d'Ivoire :245,000<br>Mali : 130,000<br>Niger : 310,000<br>Sénégal : 150,000<br>UNESCO : 40,000<br><br>Total : 1,410,000 | Alternative for output 1:<br><br>Bénin : 450,000<br>Burkina Faso : 620,000<br>Côte d'Ivoire : 375,000<br>Mali : 260,000<br>Niger : 450,000<br>Sénégal : 280,000<br>UNESCO : 130,000<br><br>Total : 2,565,000 | Bénin : 285,000<br>Burkina Faso : 250,000<br>Côte d'Ivoire : 130,000<br>Mali : 130,000<br>Niger : 140,000<br>Sénégal : 130,000<br>UNESCO : 90,000<br><br>Increment total: 1,155,000<br><br>Co-finance: 633,000<br><br>Cost to GEF: 522,000 |
| **Component Two.**<br><br>**Conservation and Sustainable Use of Biodiversity** | • Inadequate conservation of the core area of the biosphere reserve<br>• Limited economic alternatives for increasing livelihoods of local communities | • Conservation status of biodiversity in the core area improved<br>• Demonstration of sustainable use activities tested in sites located in buffer and transition zones and adopted by local communities | Bénin : 240 ,000<br>Burkina Faso : 250,000<br>Côte d'Ivoire : 120,000<br>Mali : 270,000<br>Niger : 150,000<br>Sénégal : 110,000<br>UNESCO : 120,000<br><br>Incremental Total: 1,260,000<br><br>Co-finance:839,000<br><br>Cost to GEF: 421,000 |
| | Bénin : 7,260,000<br>Burkina Faso : 550,000<br>Côte d'Ivoire : 425,000<br>Mali : 400,000<br>Niger : 820,000<br>Sénégal : 720,000<br>UNESCO : 40,000<br><br>Total :10,215,000 | Bénin : 7,500,000<br>Burkina Faso : 800,000<br>Côte d'Ivoire : 545,000<br>Mali : 670,000<br>Niger : 970,000<br>Sénégal : 830,000<br>UNESCO : 160,000<br><br>Total :11,475,000 | |

| Cost/Benefit | Baseline (B) | Alternative (A) | Increment (A-B) |
|---|---|---|---|
| **Component Three (National level)**<br><br>**Strengthening Capacity and Institutional Co-ordination to Effectively Manage Biosphere Reserves** | • Inadequate collaboration between stakeholders involved in biosphere reserve management and conservation.<br>• Limited staff capacity in natural resource use and conservation activities, information management, and conflict resolution<br>• Lack of knowledge and awareness amongst local communities about the biosphere reserve, its management objectives and how they can benefit. | • Collaboration agreements exist between relevant stakeholders and institutions that allow coordinated action.<br>• Mechanisms are identified and supported for integration of local communities into decision making<br>• Managerial skills and technical capacities of biosphere reserve managers and their staff, local communities, government agencies institutions involved in biosphere reserve management enhanced.<br>• Working mediation mechanisms functioning in all six biosphere reserves for conflict-management and resolution amongst biosphere reserve managers, local communities, scientists, and national and local government agencies. | |
| | Baseline for output 3 :<br><br>Bénin : 590,000<br>Burkina Faso : 355,000<br>Côte d'Ivoire : 180,000<br>Mali : 150,000<br>Niger : 375,000<br>Sénégal : 420,000<br>UNESCO : 30,000<br><br>Total : 2,100,000 | Alternative for output 3 :<br><br>Bénin : 890,000<br>Burkina Faso : 605,000<br>Côte d'Ivoire : 330,000<br>Mali : 335,000<br>Niger : 515,000<br>Sénégal : 550,000<br>UNESCO : 200,000<br><br>Total : 3,425,000 | Bénin : 300,000<br>Burkina Faso : 250,000<br>Côte d'Ivoire : 150,000<br>Mali : 185,000<br>Niger : 140,000<br>Sénégal : 130,000<br>UNESCO : 170,000<br><br>Increment total: 1,325,000<br><br>Co-finance: 749,000<br><br>Cost to GEF: 576,000 |

| Cost/Benefit | Baseline (B) | Alternative (A) | Increment (A-B) |
|---|---|---|---|
| **Component Three (regional level)**<br><br>**Strengthening Capacity and Institutional Co-ordination to Effectively Manage Biosphere Reserves** | • Willingness to cooperate at regional level but lack of financial resources and institutional incentives | • Increased scientific and technical information flow on biosphere reserve management and conservation in each biosphere reserve and within the region through regional workshops, electronic conferences and regional publications | Bénin :280,000<br>Burkina Faso : 250,000<br>Côte d'Ivoire : 260,000<br>Mali : 160,000<br>Niger : 165,000<br>Sénégal : 160,000<br>UNESCO : 1,083,000<br><br>Increment total: 2,358,000<br><br>Co-finance: 1,477,000<br><br>Cost to GEF: 881,000 |
| | Baseline for Output 4 :<br><br>Bénin : 25,000<br>Burkina Faso : 20,000<br>Côte d'Ivoire : 25,000<br>Mali : 40,000<br>Niger : 55,000<br>Sénégal : 40,000<br>UNESCO : 33,000<br><br>Total : 238,000 | Alternative for Output 4 :<br><br>Bénin : 305,000<br>Burkina Faso : 270,000<br>Côte d'Ivoire : 285,000<br>Mali : 200,000<br>Niger : 220,000<br>Sénégal : 200,000<br>UNESCO : 1,116,000<br><br>Total : 2,596,000 | |

## ANNEX B
## PROJECT LOGICAL FRAMEWORK MATRIX

| Narrative Summary (Intervention Logic) | Objectively Verifiable Indicators | Means of Verification | Important Assumptions & Risks |
|---|---|---|---|
| **Development Goal** | | | |
| Conservation and sustainable use of globally significant biodiversity in six biosphere reserves. | Status of indicator species for each individual biosphere reserve remains steady. (Elephants (Boucle du Baoule, Pendjari and Niokolo Koba Biosphere Reserves, Giraffes ("W" Biosphere Reserve, Hippotamus (Mare aux Hippopotamus), Savanna buffalo (Comoe Biosphere Reserve) Hippotragues (*Hippotragus equinus*) in Pendjari and Comoé Biosphere Reserve.<br><br>Basal coverage of vegetation and diversity of vascular plants remains steady.<br><br>Monitoring will be done at year 2 and year 4, compared to baseline information collected in year 1. | Remote sensing data and land cover analysis (tree cover evolution)<br><br>Field Reports (species and habitat surveys) | Political and economic stability in the six countries<br><br>Other factors outside the systems boundary of the project do not negate positive impact of this targeted intervention. |

| Narrative Summary (Intervention Logic) | Objectively Verifiable Indicators | Means of Verification | Important Assumptions & Risks |
|---|---|---|---|
| **Project Purpose/Immediate Objective** | | | |
| Strengthened scientific and technical capacity for effective management of the biosphere reserves. | Implementation indicators of the Seville Strategy (See Annex I for implementation indicators to be used at national reserve level.)<br><br>Improvement in management effectiveness of core area using the IUCN/WB protected area management scorecard. Baseline established at project initiation<br><br>Biosphere reserves used as demonstration sites for scientific purposes and environmental awareness programme | Reports on Implementation Indicators of the Seville Strategy<br><br>Annual reports from IUCN/WB protected area management scorecard<br><br>Remote sensing data and field reports (species/habitats surveys)<br><br>Transects in the core zones<br><br>Field surveys and reports from the rangers of the core areas<br><br>Biosphere reserve annual reports | Political and economic stability in the six countries.<br><br>Staff are not rotated to other sites or offices on a regular basis<br><br>Trained staff are not immediately promoted to new positions which are of little relevance to project purpose<br><br>National and local Government support is provided on a consistent basis.<br><br>Qualified staff available to conduct monitoring. |

| Narrative Summary (Intervention Logic) | Objectively Verifiable Indicators | Means of Verification | Important Assumptions & Risks |
|---|---|---|---|
| **Outcome One. Improved understanding of the impact of human activities on savanna ecosystems** | Population dynamics of key species and condition of key habitats understood by the end of year 3 | Research reports | Scientific teams are constituted and willing and able to work together |
| | Sustainable use activities identified for application in the design of resource-use demonstrations in Component Two. | Field surveys on interactions with human communities in demonstration sites | Participation of local communities<br><br>Sustainable and economically viable alternative livelihood options exist<br><br>Trained staff, expert collaborators available to conduct field studies |
| | Human pressure indicators developed and applied by year one. These will include impacts of agriculture, pastoralism, fishing, plant collecting, firewood collecting, and hunting on biodiversity. | Research reports | Participation of identified villages in the research activities<br><br>Applicable indicators can be developed |
| | Twenty % increase in the number of users of the database for scientific and management purposes (Database usage baseline established at year 3). | Database log recording usage | Suitable qualified personnel available to develop, test and use the system |
| **Outcome Two: Enhanced conservation and sustainable use of biodiversity** | Increase in income due to sustainable resource use strategies adopted by test villages at demonstration sites. Baseline established at year one and the target for percentage increase of income will be defined for each project site at end of year one. (Fish farming in the regions of Tiawassage and Porga in Pendjari Biosphere Reserve, collection of medicinal plants in two villages in Mare aux Hippopotames Biosphere Reserve, development of ecovillages in Comoé Biosphere Reserve, commercialization of non wood forest products in Darouma region of Boucle du Baoulé Biosphere Reserve, Craft industry in two villages of the "W" Biosphere Reserve in Niger and in transition zone Niokolo Koba Reserve). | Field reports, records and surveys conducted by biosphere reserve staff<br><br>Socio-economic surveys<br><br>Field surveys and reports from the rangers of the core areas | Participation of local communities<br><br>Understanding of the zonation of the biosphere reserve and respect and recognition of the biosphere reserve management framework<br><br>Political and economic stability permit Government agency responsibilities to be met<br><br>Communities have an interest to pursue alternatives and local political support exists to pursue alternatives |

| | | | |
|---|---|---|---|
| | Adoption of sustainable resource-use strategies by 3 villages outside of target demonstrations sites in each biosphere reserve by year 3 of the project.<br><br>Reduction of incursions in the core area of each biosphere reserve (Baseline established at year 1, 10-15% decrease in incursion in the core areas at end of year 4). | | |
| **Narrative Summary (Intervention Logic)** | **Objectively Verifiable Indicators** | **Means of Verification** | **Important Assumptions & Risks** |
| **Outcome Three: Strengthened managerial and technical capacities of biosphere reserve managers and their staff, local communities, and government agencies institutions** | | | |
| Coordination | • Number of signed Memorandum of Understanding between national scientific institutions and the biosphere reserve management institution<br>• Establishment of formal links between national universities and research institutions<br>• Increase in the number of agreements signed between representatives of local communities and biosphere reserve staff defining rights and duties of local communities and staff of the biosphere reserve<br>• Creation of a mechanism for conflict resolution in each biosphere reserve (such as a mediation committee)<br>• Established meeting schedule to discuss resource management conflicts<br>• Number of meetings held per year by committee. Steady number based on regular meeting scheduled agreed during year one.<br>• Decrease by 15% in resource management conflicts by Year 3 as compared to Year 1 of the project | • Survey and records from the biosphere reserve staff and participatory interviews in the villages<br><br>• Meeting minutes | Intersectoral cooperation is supported<br><br>National and local government agencies, NGOs, local communities and national universities and research institutions cooperate effectively<br><br>Institutional stability of all organisations involved |

| Narrative Summary (Intervention Logic) | Objectively Verifiable Indicators | Means of Verification | Important Assumptions & Risks |
|---|---|---|---|
| **Outcome Three (continued): Strengthened managerial and technical capacities of biosphere reserve managers and their staff, local communities, and government agencies institutions** | | | |
| Scientific and Technical Capacity | • Biodiversity monitoring programme operational by middle of year 2<br>• Application of studies of human /biodiversity interactions and GIS in biosphere reserve planning and management<br>• Increase in number of publications produced by scientists for applied purposes including interdisciplinary work on biodiversity (baseline established at project initiation)<br>• At least one successful microenterprise functioning in each biosphere reserve at project termination. Success indicators for each will be established at initiation of each microenterprise<br>• Number of users of internet in each biosphere reserve including % of users who reside in local communities<br>• 12 national Phd students graduated at year 4<br>• 24 master degrees students graduated at year 4<br>• 2 local mediators operating per biosphere reserve (12) at year 4<br>• 150 persons directly trained through national and regional training seminars at year 4 | • Biodiversity monitoring results<br>• Scientific articles (6), book (1), methodological guidelines and case studies on biodiversity (7)<br>• Regional internet website<br>• Reserve management plans updated with use of new technology<br>• PhD and Masters thesis that produce relevant information for conservation management in the reserves<br>• Official list of mediators for each biosphere reserve | Staff are not rotated to other sites or offices on a regular basis<br><br>Trained staff are not immediately promoted to new positions which are of little relevance to project purpose<br><br>Staff are interested in receiving and utilising training |

| | | | |
|---|---|---|---|
| **Narrative Summary (Intervention Logic)** | **Objectively Verifiable Indicators** | **Means of Verification** | **Important Assumptions & Risks** |
| **Outcome Three (continued): Strengthened managerial and technical capacities of biosphere reserve managers and their staff, local communities, and government agencies institutions** | | | |
| Awareness raising | • Fifteen percent increase in number of users of biosphere reserve web page and MAB National Committees web sites at year 2, 3 and 4<br>• By year 4, 10% of schools located in the transition areas are participating in school competitions related to the biosphere reserve<br>• By year 4, a 30% increase over year one surveys of the number of people aware of importance of savanna ecosystems in the country and the role of biosphere reserves in conserving them<br>• Increase in the number of TV programmes, articles in newspapers, local and national radio on biosphere reserves compared to year 1 of the project<br>• Biosphere reserve role in biodiversity conservation is mentioned in national and regional reports, workshop and international monitoring networks | Reports of biosphere reserve staff<br><br>Website log and record of user searches<br><br>Specific field surveys | Participation and collaboration of media; public information reaches appropriate stakeholders<br><br>Local schools and communities support awareness raising activities<br><br>Trained staff available to conduct awareness raising activities |

| Narrative Summary (Intervention Logic) |
|---|
| **Activities** |
| **Component 1. Generation of Management Information to Improve Conservation and Sustainable Use of Biodiversity** |
| |
| **1.1 Analysing dynamics of land occupation and its impact on ecosystems** |
| 1.1.1 Study the evolution of demographic pressure in each biosphere reserve |
| 1.1.2 Study spatial dynamic of agriculture and biodiversity |
| 1.1.3 Study the impact of land occupation of biodiversity |
| |
| **1.2 Analysis the impact of fishing, hunting, collecting, pastoralism and wood collecting on the ecosystems** |
| 1.2.1 Fish and Biodiversity: organisation of fish activities and building of indicators |
| 1.2.2 Pastoralism and Biodiversity: building of indicators |
| 1.2.3 Collecting and Biodiversity: building of indicators |
| 1.2.4 Fire wood collecting and biodiversity: building of indicators |
| 1.2.5 Local hunting and biodiversity: building of indicators |
| 1.2.6 Poaching and biodiversity: building of indicators |
| |
| **1.3 Conduct analyses on local communities and the ecosystems** |
| 1.3.1 Study the local economies and institutions in the demonstration sites |
| 1.3.2 Study the local representations of nature |
| 1.3.3 Study local knowledge of flora and fauna and biotopes |
| 1.3.4 study main constraints on local communities (insecurities) |
| |
| **1.4 Publication of results** |
| 1.4.1 Prepare and publish scientific results of project |
| 1.4.2 Produce guidelines manual for managers |
| |
| **1.5 Consolidation of research surveys** |
| 1.5.1 Develop a scientific database |
| 1.5.2 Update and facilitate its permanent use |
| |

| |
|---|
| **Component 2. Conservation and Sustainable Use of Biodiversity** |
| |
| **2.1 Testing the sustainability of the ecosystems in the six biosphere reserves** |
| 2.1.1 Categorising of human uses impacts |
| 2.1.2 Test the ecological, agricultural, economical and social adaptability of the six biosphere reserves (using indicators and the demonstration activities defined in component one: Fish farming in the regions of Tiawassage and Porga in Pendjari Biosphere Reserve, collection of medicinal plants in two villages in Mare aux Hippopotames Biosphere Reserve, development of ecovillages in Comoé Biosphere Reserve, commercialization of non wood forest products in Darouma region of Boucle du Baoulé Biosphere Reserve, Craft industry in two villages of the "W" Biosphere Reserve in Niger and in transition zone Niokolo Koba Reserve) |
| 2.1.3 Analyse and model ecosystems dynamics (SIG and Agent-based modelling) |
| |
| **2.2 Testing the sustainability of local communities** |
| 2.2.1 Test the dependency of local communities vis à vis the biosphere reserve |
| 2.2.2 Test the sustainability of local co-ordination structures for land and resources management |
| 2.2.3 Test the local conflicts management structures |
| |
| **2.3 Implement the biosphere reserve concept: sustainability of local communities and ecosystems** |
| 2.3.1 Analyse the relationships between managers and local communities |
| 2.3.2 Analyse the source of incomes (real or potential) from the biosphere reserve for the local communities |
| 2.3.3 Analyse the implication of local communities into the management of the biosphere reserve |
| |
| **2.4 Establish long term mechanism for integration of research and monitoring process into the management plan** |
| 2.4.1 Identify national research and education institutions interested in collaborating |
| 2.4.2 Study the co-operative long term modalities |
| 2.4.3 Support the establishment of the formal co-operative links and promote the Co-operation at the national level |
| |
| **Component 3. Strengthening Capacity and Institutional Co-ordination to Effectively Manage Biosphere Reserves** |
| **National Level** |
| **3.1 Provide training for local populations in:**<br>a) accessing microcredits, creating and managing microenterprises, e.g., ecotourism (village ecoguards) etc as per opportunities in each reserve<br>b) informatics |
| |
| **3.2 Provide training for site managers in the use of GIS, database management and application in resource use planning** |
| |
| **3.3 Provide field training for national and local university students (2 PhDs per site) and masters students in the biosphere reserve to implement the priority information management needs/programme defined in Component One** |
| |
| **3.4 Provide basic equipment and access to email and internet in each site and for each MAB National Committee** |
| |
| **Component 3 (continued). Strengthening Capacity and Institutional Co-ordination to Effectively Manage Biosphere Reserves** |

| |
|---|
| **3.6 Establish mechanisms for improving coordination structure for the biosphere reserve** |
| 3.6.1 Support the institutional efforts in each site for improving the co-ordination of activities in the biosphere reserve |
| 3.6.2 Facilitate the integration of community participation in these co-ordination structures |
| |
| **3.7. Provide support for the organisation of local and national meetings for exchange of information and provide support for local communication exchange (such as radio programmes, local newspapers, TV programmes)** |
| |
| **Component 3. Strengthening Capacity and Institutional Co-ordination to Effectively Manage Biosphere Reserves** |
| **Regional Level** |
| |
| **4. Implement region-wide training programmes in:**<br>a) Environmental education and awareness raising<br>b) Training in conflict management and mediation<br>c) Training in multidisciplinary work for research and for diagnosis<br>d) Training in socio-economics dimension of biodiversity<br>e) Training in informatics |
| |
| **5. Organise Cross site visits between the sites (for managers, local populations and scientists) in order to exchange experience and information** |
| |
| **6. Conduct regional thematic workshops (monitoring and socio-economic indicators; quality economies) with one representative of local communities, managers of the biosphere reserves, MAB National Focal points and a Scientific resource person from each biosphere reserve and experts.** |
| |
| **7. Establish dissemination strategy within AfriMAB Network** |
| 7.1 Establish necessary infrastructure, personnel and equipment (provide network connection between the six sites) |
| 7.2 Develop agreed procedures and mechanisms for information exchange |
| 7.3 Produce joint publication on the results and success stories in the demonstration sites (electronic bulletin, paper bulletin, wallcharts, pedagogical kit)) |
| 7.4 Seek support for TV and radio programmes on biosphere reserves |

## WORK PLAN AND TIME TABLE

| Activities | Year 1 | | Year 2 | | Year 3 | | Year 4 | |
|---|---|---|---|---|---|---|---|---|
| **Component 1. Generation of Management Information to Improve Conservation and Sustainable Use of Biodiversity** | | | | | | | | |
| | | | | | | | | |
| **1.1 Analysing dynamics of land occupation and its impact on ecosystems** | | | | | | | | |
| 1.1.1 Study the evolution of demographic pressure in each biosphere reserve | | | | | | | | |
| 1.1.2 Study spatial dynamic of agriculture and biodiversity | | | | | | | | |
| 1.1.3 Study the impact of land occupation of biodiversity | | | | | | | | |
| | | | | | | | | |
| **1.2 Analysis the impact of fishing, hunting, collecting, pastoralism and wood collecting on the ecosystems** | | | | | | | | |
| 1.2.1 Fish and Biodiversity: organisation of fish activities and building of indicators | | | | | | | | |
| 1.2.2 Pastoralism and Biodiversity: building of indicators | | | | | | | | |
| 1.2.3 Collecting and Biodiversity: building of indicators | | | | | | | | |
| 1.2.4 Fire wood collecting and biodiversity: building of indicators | | | | | | | | |
| 1.2.5 Local hunting and biodiversity: building of indicators | | | | | | | | |
| 1.2.6 Poaching and biodiversity: building of indicators | | | | | | | | |
| | | | | | | | | |
| **1.3 Conduct analyses on local communities and the ecosystems** | | | | | | | | |
| 1.3.1 Study the local economies and institutions in the demonstration sites | | | | | | | | |
| 1.3.2 Study the local representations of nature | | | | | | | | |
| 1.3.3 Study local knowledge of flora and fauna and biotopes | | | | | | | | |
| 1.3.4 study main constraints on local communities (insecurities) | | | | | | | | |
| | | | | | | | | |
| **1.4 Publication of results** | | | | | | | | |
| 1.4.1 Prepare and publish scientific results of project | | | | | | | | |
| 1.4.2 Produce guidelines manual for managers | | | | | | | | |
| | | | | | | | | |
| **1.5 Consolidation of research surveys** | | | | | | | | |
| 1.5.1 Develop a scientific database | | | | | | | | |
| 1.5.2 Update and facilitate its permanent use | | | | | | | | |
| | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Component 2. Conservation and Sustainable Use of Biodiversity** | | | | | | | | |
| | | | | | | | | |
| **2.1 Testing the sustainability of the ecosystems in the six biosphere reserves** | | | | | | | | |
| 2.1.1 Categorising of human uses impacts | | | | | | | | |
| 2.1.2 Test the ecological, agricultural, economical and social adaptability of the six biosphere reserves (using indicators) | | | | | | | | |
| 2.1.3 Analyse and model ecosystems dynamics (SIG and Agent-based modelling) | | | | | | | | |
| | | | | | | | | |
| **2.2 Testing the sustainability of local communities** | | | | | | | | |
| 2.2.1 Test the dependency of local communities vis à vis the biosphere reserve | | | | | | | | |
| 2.2.2 Test the sustainability of local co-ordination structures for land and resources management | | | | | | | | |
| 2.2.3 Test the local conflicts management structures | | | | | | | | |
| | | | | | | | | |
| **2.3 Implement the biosphere reserve concept: sustainability of local communities and ecosystems** | | | | | | | | |
| 2.3.1 Analyse the relationships between managers and local communities | | | | | | | | |
| 2.3.2 Analyse the source of incomes (real or potential) from the biosphere reserve for the local communities | | | | | | | | |
| 2.3.3 Analyse the implication of local communities into the management of the biosphere reserve | | | | | | | | |
| | | | | | | | | |
| **2.4 Establish long term mechanism for integration of research and monitoring process into the management plan** | | | | | | | | |
| 2.4.1 Identify national research and education institutions interested in long term collaboration | | | | | | | | |
| 2.4.2 Study the co-operative long term modalities | | | | | | | | |
| 2.4.3 Support the establishment of the formal co-operative links and promote the co-operation at the national level | | | | | | | | |
| | | | | | | | | |
| **Component 3. Strengthening Capacity and Institutional Co-ordination to Effectively Manage Biosphere Reserves** | | | | | | | | |
| | | | | | | | | |
| **3.1 Provide training for local populations in:**<br>a) accessing microcredits, creating and managing microenterprises, e.g., ecotourism (village ecoguards) etc as per opportunities in each reserve<br>b) informatics | | | | | | | | |
| | | | | | | | | |
| **3.2 Provide training for site managers in the use of GIS, database management and application in resource use planning** | | | | | | | | |
| | | | | | | | | |
| **3.3 Provide field training for national and local university students (2 PhDs per site) and masters students in the biosphere reserve to implement the priority conservation management information/needs programme defined in Component One** | | | | | | | | |
| | | | | | | | | |
| **3.4 Provide basic equipment and access to email and internet in each site and for each MAB National Committee** | | | | | | | | |
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|---|---|---|---|---|---|---|---|---|
| **3.5 Conceive materials for environmental awareness in the biosphere reserve (for local communities, biosphere reserve staff, material to be used in schools environmental education programmes (in the transition areas) and for public visiting the biosphere reserve. Translate environmental awareness materials into main local languages.** | | | | | | | | |
| | | | | | | | | |
| **3.6 Establish mechanisms for improving co-ordination structure for the biosphere reserve** | | | | | | | | |
| 3.6.1 Support the institutional efforts in each site for improving the co-ordination of activities in the biosphere reserve | | | | | | | | |
| 3.6.2 Facilitate the integration of community participation in these co-ordination structures | | | | | | | | |
| | | | | | | | | |
| **3.7. Provide support for the organisation of local and national meetings for exchange of information and provide support for local communication exchange (such as radio programmes, local newspapers, TV programmes)** | | | | | | | | |
| | | | | | | | | |
| **Regional activities** | | | | | | | | |
| | | | | | | | | |
| **4 Implement region-wide training programmes in:**<br>a) Environmental education and awareness raising<br>b) Training in conflict management and mediation<br>c) Training in multidisciplinary work for research and for diagnosis<br>d) Training in socio-economics dimension of biodiversity<br>e) Training in informatics | | | | | | | | |
| | | | | | | | | |
| **5 Organise Cross site visits between the sites (for managers, local populations and scientists) in order to exchange experience and information** | | | | | | | | |
| | | | | | | | | |
| **6 Organise regional thematic workshops (monitoring and socio-economic indicators; ecotourism; quality economies) with one representative of local communities, managers of the biosphere reserves, MAB National Focal points and a Scientific resource person from each biosphere reserve and experts.** | | | | | | | | |
| | | | | | | | | |
| **7 Establish dissemination strategy within AfriMAB Network** | | | | | | | | |
| 7.1 Establish necessary infrastructure, personnel and equipment (provide network connection between the six sites) | | | | | | | | |
| 7.2 Develop agreed procedures and mechanisms for information exchange | | | | | | | | |
| 7.3 Produce joint publication on the results and success stories in the demonstration sites (electronic bulletin, paper bulletin, wallcharts, pedagogical kit)) | | | | | | | | |
| 7.4 Seek support for TV and radio programmes on biosphere reserves | | | | | | | | |

## ANNEX C
## STAP ROSTER EXPERT PROJECT REVIEW

**STAP Review of**

**'Building Scientific and Technical Capacity for Effective Management and Sustainable use of Dryland Biodiversity in West African Biosphere Reserves'**

3 February 2003
Reviewer: RJ Scholes

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**Project overview**

The proposal relates to support for six established West African Biosphere Reserves, in Senegal, Burkino Faso, Benin, Niger, Mali and Cote d'Ivoire, and is for a period of four years. It aims to:

1. undertake applied research relevant to biodiversity management;
2. develop the capacity conserve and sustainably use the biodiversity in the reserves; and
3. enhance the capacity for management in individuals and institutions involved in the conservation of the reserves.

The combined area of the reserves is nearly 6 million hectares. They all fall within the savanna biome, which in West Africa is relatively high in biological diversity, but under-protected and threatened. The reserves are part of the AfriMAB network.

| Biosphere reserve | Country | Area (ha) | Biodiversity features |
|---|---|---|---|
| Pendjari | Benin | 623000 | Extant large mammals (none unique) |
| Mare aux Hippopotames | Burkino Faso | 186000 | 100 bird species (many migratory) and ~100 fish species |
| Comoe | Cote d'Ivoire | 1150000 | Varied habitats, large mammals (rare in W Africa, but not unique) |
| Boucle du Baoule | Mali | 2500000 | Crosses biogeographical zones. Elephants. |
| W | Niger | 728000 | 80% of Niger's biodiversity represented. Large mammals, including giraffe |
| Niokolo Koba | Senegal | 913000 | Derby eland, chimpanzees other large mammals |

The total cost of the project is estimated as $19.8 million, representing an increment of $5.9 million over the baseline expenditure of $13.9 million. An amount of $ 2.4 million is being requested of the GEF; the remainder of the increment is sought from national government (37%, almost entirely in kind), in-country sources (19%) and international partners (44%).

The project addresses locally and nationally-determined needs that complement existing national and international investments. Together they have a reasonable chance of slowing the loss of biodiversity in a highly threatened area of global biodiversity significance.

**Key Issues**
**Scientific and technical soundness**

Savannas occupy at least an eighth of the global land surface, and contain an approximately proportional fraction of the known biodiversity, but have not enjoyed a commensurate focus of attention. In Africa they cover about 14 million $km^2$ (closer to 60% of Africa than the 40% quoted in the proposal: see White, F 1983 Vegetation of Africa, UNESCO). West African savannas cover about 4.6 million $km^2$ (460 million ha).

West African savannas share many ecological attributes with East and southern African savannas, and some high-level taxonomic similarities, but at species level they are fairly distinct. Largely due to the accidents of pre- and post-colonial history, the East and southern African savannas are relatively well conserved, but the West African savannas are poorly protected in a formal sense. The reserves targeted in this proposal represent a very significant part of the 28.7 million ha of protected area (all biomes) in West Africa, and sum to about 1% of the potential savanna biome extent in West Africa. Outside of the formally protected areas, transformation resulting from intensive agricultural use (grazing, cultivation and harvesting) continues at a high rate, and the prospects for biodiversity conservation are not very favourable. The most likely sites for developing biodiversity-favouring land use systems are arguably in the buffer and transitional areas around the reserves, as is suggested in this proposal.

The proposal is vague about the particular aspects and levels of biodiversity it may address. Hanging the proposal on remnant populations of elephants, chimpanzees or giraffe may be good publicity, but is poor science. A much more convincing case could be based on an analysis of plant and bird diversity, which run to thousands of species, many of which are unique to the region. An even better case would incorporate a landscape and habitat (ecosystem) analysis that would, I am sure, demonstrate that these are among the last areas in which viable core populations could be protected, along with their natural interactions.

The argument put forward in the proposal is that sound management of the reserves must be based on reliable information regarding the distribution and status of the biodiversity, on the one hand, and the nature and trend in land use practices in and around them, on the other hand. The second and third components of the argument, that sustainable resource-use practices need to be identified and implemented, and that doing so will require the development of management capacity in individuals and institutions, are also sound. As a stand-alone project, the three interventions are insufficient in scope, intensity and duration to achieve the desired goal ensuring a sustainable future for these reserves. They must be presented in the context of other efforts targeted more directly at conservation management and human development in the biosphere neighbourhood.

The increment requested is relatively small in relation to what is estimated to be the current expenditure on the conservation of these resources. It is qualitatively different, in that it addresses information, coordination, capacity and research issues deemed to be critical, but not catered for in existing expenditure.

The history of encroachment on the core areas and intensification of use in the buffer and transition zones is unlikely to be reversed by research interventions alone; but they could be effective as complementary investments to a substantial programme that delivers the basics of conservation management and livelihood development.

The key issues with respect to sustainability are political commitment at national level, the ability to implement national biodiversity conservation policy on the ground, a genuine perception by local communities that the protection and sustainable use of the resource is in their best interest, the viable livelihoods that permit them to do so.

The proposal identifies three 'common barriers and constraints limiting effective management' (by what process, and by whom this identification was performed, is not stated). They are

1. a knowledge gap;
2. weak institutional coordination; and
3. limited capacity of stakeholders.

These form the basis of the three components of the project. Specifically, the knowledge gap relates to both on-the-ground information about the biodiversity resources (indicators), and the way in which local communities use and impact on them. More information is apparently available in the natural than social sciences. The identified areas of focus are the dynamics of human settlement, the local economies and the perceptions of local communities. The work plan tends to reinforce the bias towards natural science, since the social indicators have yet to be developed. A plan for the dissemination of results focuses on public media (radio, theatre, speakers). Is this where the knowledge gap is most acute, and information most effective?

The institutional weakness is said to be poor coordination between research, conservation and natural resource institutions, and the absence of conflict resolution structures. The coordination structures proposed are relatively complex (Annex E) and could consume a significant part of the effort, while changing little on the ground. The neglect of indigenous technical knowledge is raised as an issue here, but a cogent case as to why more emphasis on ITK would solve the problem is not given, leaving the impression that it was simply introduced because it is fashionable (like the word 'indicators'). The proposed response is to identify and promote viable activities that conserve and use biodiversity sustainably. These will build on existing management plans (no specific examples are given) and on findings of the research carried out above – which is unlikely to be delivered until late in the project.

The main capacity need is identified as the knowledge and skills needed for collaborative management of a biosphere reserve. The interventions are proposed to be training modules, internet connections, laboratories, and the development of a coordination mechanism. These seem to be strategies of hope and habit rather than based on a rigorous analysis of what skills are needed, who should get them and how they should be developed.

**Global benefits and risk**

The effective protection of biodiversity within the target areas identified by the proposal would constitute both a local and global benefit. The magnitude of this benefit is hard to quantify, but is

significant, given the relative richness of the biome in plant and animal species, and the risk that it faces in terms of historical trends of land transformation and unsustainable use.

**Fit to goals of the GEF**

The GEF is mandated, among other things, to support the incremental costs of projects aligned with the aims of the Convention on Biological Diversity. This proposal meets that requirement. It is further evidently aligned with National Biodiversity Conservation Strategies.

**Regional context**

The proposal makes insufficient use is of the regional dimensions of the project. The locations are distributed over six countries, and a range of ecological situations. This imposes logistical difficulties and additional costs on the project, which are presumably balanced by some benefit. What is that benefit? Is it ecological (the reserves can exchange species, for instance, or collectively comprise a robust sample of West African savanna diversity) or is it institutional (exchange of learning, skills and experience, the greater political clout of a regional consortium)? Unless these are spelled out, the impression remains that the partners are in a marriage of convenience whose main purpose it its self-perpetuation, and will essentially operate as individual entities, diluting the potential impact.

**Replicability**

All of the actions proposed here are in principle replicable – they could for instance be replicated from experience with successful projects of this nature in southern Africa. There is some scope for replication in West Africa, but the potential for further projects at this scale is limited, since there remain very few areas of sufficient size and condition to act as cores for biosphere reserves.

**Sustainability**

The project is structured as a short-term intervention, with little explicit attention to the mechanisms by which it would become sustainable in the longer term. It is quite likely that when the project funding is finished, the level of effort will simply fall back to the baseline, with little long-term benefit, unless another tranche of intervention funding follows, or unless some explicit attention is given to sustainability issues. In my experience it is unlikely that four years of funding will generate an intellectual capacity, or an institutional capacity, that is self-sustaining. Successful projects of that nature typically require much more focus (i.e., fewer locations, selected for their economic viability) and support over a decade or more. It is relatively easy to conduct once-off biodiversity or social surveys, but the long-term maintenance of monitoring programmes, funded by national governments, is much more problematic. It will only succeed if it is driven by genuine demand for the information at a policy-formulating level. How will such a

demand be developed? The development of institutional and individual capacity has a very patchy history in Africa – the institutions collapse unless they can establish a support base, and the individuals are ineffective in the absence of a context in which they can work. Can the individuals become sufficiently skilled in the time available that they can in turn become a training resource for future generations?

Reading between the lines, other parallel proposals are intended to provide part of the future need for support. There needs to be more attention in the proposal to the institutional context into which the knowledge and capacity will be fed, since this is what could provide it with the critical mass and longevity to achieve sustainability.

**Secondary Issues**
**Linkage to other focal areas**

There is no explicit linkage in the proposal to other GEF focal areas. Potential linkages exist with climate change (African biodiversity is significantly threatened by climate change, particularly in the context of an increasing fragmented landscape and the low capacity of conservation institutions to respond to the problem). A case could be made for linkage of this proposal to the Convention on Combatting Desertification, if the actions proposed would halt or reverse degradation (i.e. loss of ecosystem services) in the core, buffer or transitional areas.

In my opinion, neither of these linkages *substitute* for a clear focus on the biological diversity benefits of the project. They are simply additional benefits.

**Linkage to other programmes**

The proposal is strongly linked to (in fact, apparently emanates from) the AfriMAB network of the Man and the Biosphere programme of UNESCO. It is not clear what other benefits accrue (e.g. methods, skills, political influence) from membership, or what benefits may flow to the global community from this project via the AfriMAB network. A significant portion of both the baseline and incremental funding originates from linkages to other programmes.

At Pendjari reserve there is a linkage to an existing GTZ-funded project with very similar objectives. A 'PDF-B' is under preparation for the GEF relating to community-based conservation in the transition zone of three reserves (Arly, W and Pendjari). At Mare aux Hippopotames there is a GEF/World Bank project, and the reserve is part of the ROSELT network. Comoe has received Word Bank support in the period 1996-2003. Boucle de Baoule has received UNESCO support and a UNDP proposal is in development. 'W' is supported by the European Commission, as does Niokolo Koba; the latter is linked to a UNDP/GEF project as well.

**Other benefits and impacts**

The introduction of viable and sustainable livelihoods in the areas surrounding the reserves has economic and human well-being benefits. It has been observed in other parts of Africa that if a

biodiversity conservation area is perceived to be the recipient of special benefits and services, it can have the perverse effect of attracting more people, placing further pressure on the resource. Capacity building has economic and social benefits even if they are ultimately not delivered in the immediate context of this project.

Interventions of this nature run the risk of creating a dependency on international funding to maintain what should be a national and local responsibility. This can be mitigated by rigorously ensuring that what is supported is either clearly the 'additional' part of the expenditure (i.e., the expenditure which is necessary to secure a global benefit, but which would not reasonably have been incurred if local benefit was the sole objective), or that a clear path to self-sufficiency, including a realistic time-line, is mapped out.

**Involvement of stakeholders**

The generation of the proposal has been based on an extensive process of consultation. The objectives are those identified by the stakeholders themselves. The arrangements for future stakeholder involvement at the national, regional and local level are given in some detail. The proposed involvement includes meetings, the creation of structures, and training in conflict resolution. These will help, but real and sustained stakeholder engagement will depend on the delivery of tangible benefits.

**Capacity building**

The proposal would benefit from a quantitative analysis of how many people, at what levels, would be targeted for capacity building, and what form that capacity would take. How many higher degrees will result? How many people will attend workshops? How many articles books and guidelines are envisaged?

**Innovation**

Other than the fact that it is the first regional proposal of this type in West Africa, the proposal is generally not particularly conceptually innovative (and perhaps it does not need to be). It does not, for instance, address issues of the legal ownership and responsibility for natural resources, or propose specific new ways in which sustainable benefits could accrue from the resources. There are interesting developments in community-based monitoring of biodiversity that could be included in the proposal.

**Recommendations**

1. The proposal relates to an area of important biological diversity that is under current threat.

2. The proposal needs to make a more convincing case that the incremental funding will lead to a substantial and sustained global benefit.

3. The proposal can be improved to a point where the benefits are obvious. In particular, more attention needs to be given to

    a. the longer term vision of how all the past and future short-term interventions will lead to a situation where continuous crisis-driven responses are no longer necessary; i.e. how social and economic sustainability is to be achieved;
    b. a rigorous analysis of what aspects and regional fractions of biodiversity can be protected by a focus on this set of reserves, based on information already available in the open literature;
    c. more specifics regarding the types of viable land-use strategies that can be developed, based on learning in other parts of Africa, since there is too little time within the project to commence without any idea of what these might be;
    d. greater leverage of the regional aspects, showing how a regional approach is better than a piecemeal approach;
    e. a capacity-building plan that is based on a needs analysis and sets quantitative targets.

## ANNEX C1
## RESPONSE TO STAP ROSTER EXPERT PROJECT REVIEW

**UNEP General Comment on STAP Review**

We would like to thank the STAP reviewer for the exhaustive and comprehensive review of the proposal. We appreciate the constructive nature of many of the suggestions for clarification, refinement and improvement. We have attempted to clarify and respond to the issues raised in the comments that follow. In addition, we have amended the version of the project proposal he reviewed in response to various suggestions made.

One general remark concerns the clarification of the work and consultations carried out during the PDFB process, a project design activity that has lasted 2 years. In each country, national consultations were held within the biosphere reserves and at the national level to discuss with the various stakeholders about the project so as to avoid duplication and ensure complementarity with on-going or planned projects in the same sites or on similar themes. National scientific reports were developed, compiling the needs for information to aid management and capacity building levels for all the six biosphere reserves. These proposals were synthesised at the regional level in Dakar, in February 2002. Each country was represented by the national scientific consultant, the MAB National Committee focal point, a representative of local communities and the biosphere reserve managers. All knowledge/information gaps and training needs were therefore the needs identified by the participating countries, through consultations at the biosphere reserve level (local), national levels and regional levels.

The six countries have produced national reports, describing the biodiversity in each site, the main threats and problems they were facing and the activities they wanted the project to support in the next four years.

All of these supporting documents were of course produced in French, and due to budgetary constraints, funds were not available to translate the documents into English. For those areas where the STAP reviewer believes that the information provided in the existing proposal could be bolstered (biodiversity descriptions, capacity building plans and strategies) we translated and summarized the key information from these thematic areas in an Annex and have referenced the French documents in Annex M. In addition, the document has been strengthened with more explicit and detailed descriptions of West African savanna biodiversity (para 4 and Table One), inclusion of targets for capacity building within the logframe (see Annex B), the translated summary of the capacity building strategy as Annex K, and a description of the participatory design process that was executed during the PDF B stage (see footnote two and Annex L).

**UNEP Response to STAP Comment on Scientific and Technical Soundness**

In reference to the STAP reviewer's suggestion that "even better case would incorporate a landscape and habitat (ecosystem) analysis…", we would agree with the STAP reviewer. The ecosystem approach will be used and tested. The analyses carried out during the programme will be undertaken in the core area and in the transition zone of the biosphere reserve, so as to compare the impact of selected human uses and practices on the ecosystems. Expected outputs will therefore be: qualitative and quantitative descriptions of the consequence of selected uses and practices in the core areas, maps of impacts of selected uses and practices in the core areas and transition areas of each biosphere reserve.

The very targeted intervention proposed through this small investment is meant to meet a very specific need identified by the countries. Building scientific and technical capacity of local and national individuals and institutions as is proposed in this intervention will complement ongoing national and international investment in these reserves and help ensure sustainability of the entire suite of ongoing interventions in the BRs. Only in combination and complementary to existing baseline investment will a sustainable future for the reserves be established. The purpose of the project (in the language of the logframe this is what the project is expected to deliver) is "to systematically strengthen scientific and technical capacity for effective management of the reserves". The project development goal, as is noted in the logframe, is the "conservation and sustainable use of globally significant dryland biodiversity". In the language of the logframe, the development goal is something to which the project contributes not what the project is expected to produce. In the case of this particular initiative, many other projects and actions will contribute to the development goal of the project as noted in Annex J. The nature of this intervention is very different than the comments of the STAP reviewer seems to expect out of the project and thus the project should not be judged against that but rather against what is noted in the project logframe as the project purpose. National and local stakeholders have identified key gaps and barriers that they wish to address through this targeted intervention. However, we note the STAP reviewer's confusion and have clarified the presentation of the proposal such that the nature of the intervention is very clear.

**Particular aspects and levels of biodiversity**

During the PDFB phase, a regional technical meeting was held in Dakar, Senegal with representatives of the six countries involved in the project. Each country was represented by a key scientist, the MAB National Committee focal point, the manager of the biosphere reserve and a representative of local communities. They expressed their needs and shared their views about the outcomes of the project. One main concern aired by the six countries was the difficulty to define biodiversity (in terms of the CBD Convention), how it was perceived differently by the various stakeholders, and the necessity to develop indicators in order to compare the six sites.

During the Dakar meeting, it was also emphasized that local communities were perceived as crucial to the management of each biosphere reserve, but that also they were perceived as the main problem in reaching an effective integrated management of the biosphere reserve. Traditional knowledge of local communities was recognized as useful, but mostly seen as

"folkloric".

Finally, the six countries have indicated that much data are available on the inventory of fauna and flora. Some good examples are from Comoé biosphere reserve in Côte d'Ivoire as well as in Senegal. These surveys have been thoroughly detailed in the six national reports that were not attached to the document for the reasons noted above given translation costs.

The ecosystem approach, as applied in the MAB programme and recommended by the CBD is the approach that will be applied in the project, recognizing that people are integrated into these ecosystems. The project will serve to improve knowledge of ecosystem function and structure. It will also define the roles of the components of biological diversity in these ecosystems, especially in terms of understanding more deeply a) ecosystem resilience and the effects of biodiversity loss (species level) and habitat fragmentation; b) determinants of local biological diversity in management decisions (ecosystem level).

Explicit in the ecosystem approach is that the benefits derived from biological diversity should be distributed equitably among human populations and subsequent use. In particular, biodiversity should benefit the stakeholders responsible for its production and management. Attaining this objective requires capacity building, especially at the level of local communities managing biological diversity in ecosystems and the proper valuation of ecosystem goods and services. Ecosystem management has to incorporate the diversity of social and cultural factors affecting natural-resource use. Therefore, the study of traditional ecological knowledge, which needs specialists in ethno-sciences is a key component in the project.

The most significant issue that the management information and training programmes will address is: "how to manage the interactions between human societies and ecosystems in the biosphere reserves". Based on the request of the six countries and their representatives activities geared towards generating management information will mainly focus on interactions between ecosystems and human societies. This approach means identifying the variability, instability and changes that are at the heart of all living systems, natural or social. Since ecosystem processes and functions are complex and variable, associated with a high level of uncertainty and difficult to measure directly, the project intends to build "interaction indicators". The building of interaction indicators in the six countries is part of the global efforts of monitoring in MAB. Following the BRIM initiative at the global level, this project will serve as a contribution to a global effort. At the scientific level, the building of such interaction indicators will be innovative since it will build on perceptions of biodiversity at the local level, with the active participation of community and staff of the biosphere reserve. These programmes will therefore concentrate on the following identified uses and practices that are common to all six sites, where conflicts of sustainable resource use and biodiversity conservation arise: Agriculture and biodiversity; Fishing and biodiversity; Pastoralism and biodiversity, Collecting fire wood and biodiversity, Hunting and biodiversity, Tourism and biodiversity.

For each of these activities, the inventory and analysis of local modalities and institutions for managing resources will be assessed. The development of such indicators and sound socio-economic research will be a contribution to the development of institutional capacity building, so to strengthen existing institutional structures for managing resources at the local level (local communities institutions, coordination and management structure in the biosphere reserve) and at

the national level (support to MAB National Committees, establishment of official linkages between research and training institutions and biosphere reserves as demonstration sites).

Individual and Institutional capacity building

We fully agree with the STAP reviewer that political commitment at the national level is essential for success for the project, as well as the national ability to implement national biodiversity conservation policy on the ground, linked with a genuine perception by local community that the protection and sustainable use of resources are crucial. The project aims to build sustainable links, and connections between the various stakeholders involved in the management of the site by facilitating dialogue between the local communities and the managers, through the development of information/knowledge to improve conservation management, taking into account stakeholder knowledge and needs concerning biodiversity, their livelihood options and future perspectives. The project aims to involve local communities and other key stakeholders in management discussion and negotiation, through detailed analysis of local structures and institutions for managing resources, through providing training in conflict prevention and resolution in each biosphere reserve and at the regional level, through interdisciplinary work and research, involving existing national research and environment institutions and the MAB National Committees.

The project will serve to demonstrate and establish the role of biosphere reserves as field sites for monitoring, environmental education and development of information for conservation management, by initiating formal procedures between national scientific and training institutions and the management authorities of the biosphere reserves and by strengthening local and national institutions for sustainably managing resources in the sites over a long term period. The project will demonstrate how biosphere reserves could serve as operational sites for developing national sustainable development strategies and thus responds to, *inter alia*, one of NEPAD objectives as to find operational sites for testing sustainable development strategies.

Information, communication, dissemination

The information, communication and dissemination strategy will use local and national communication tools (radio, TV) but will also build on publications, participation to regional thematic workshops, exchange of national scientists including higher-level student exchanges. The project will also produce guidance material and case studies on conflict resolution and on biodiversity uses and practices in biosphere reserves (i.e. fisheries, pastoralism, hunting) which will be translated into local languages, French and English and will be disseminated at the national and regional level, using MAB regional and thematic networks.

**UNEP Response to STAP Comment on Regional Context**

We agree that we could make this case more convincingly in the text and will include this description below in the main body of the proposal (see paragraph 32).

The regional dimension of the project will add value to achieving the project purpose in the area

of scientific and technical capacity and institutional strengthening as detailed below:

Scientific and Technical Capacity

- An increased understanding of ecological processes across a gradient of biophysical and human cultural conditions that are representative of W African savannas will support more informed management decisions within each reserve and, over time, in other protected areas outside the scope of this project. In addition, application of common impact indicators of human activity for comparison of the sites and tested at the regional level will enhance understanding of human impacts at the reserves and provide needed scientific input to management decisions. This cooperation will allow for a regional biodiversity conservation and monitoring system of west savannas in place and functioning through the AfriMAB network.
- A functioning regional biodiversity information system exchanging data and information (including best practices in sustainable use) and a biodiversity expertise network will contribute to improved management throughout the reserves and the region. Expected contributions of case studies on biodiversity and on conflicts related to access and use of resources; and analysis of local and national institutions responsible for managing resources will permit comparative analyses of lessons learned and best practices.

Institutional Strengthening:

- The reinforcement of the AfriMAB network will facilitate exchange of learning, skills and experience in similar ecosystems being managed under similar structures, i.e., biosphere reserves.
- A strengthened and more effective AfriMAB network will improve cooperation in the management of West African savanna ecosystems and raises awareness of the importance of savanna ecosystems in the region.
- Improved communication and information-sharing occurring between the six sites and the six MAB national committees will result in strengthening the management systems/institutions of the individual biosphere reserves.

**UNEP Response to STAP Comment on Replicability:**

The sustainability of these areas is dependent on the long-term preservation of the core areas of these six biosphere reserves. This is precisely where the biosphere reserve approach is essential, by combining conservation objectives with sustainable development ones. Therefore, participation and long-term support of local communities are essential and this will be achieved through building long-term institutional platforms for permanent dialogue and management of resources in each of the biosphere reserves. Potential areas for creating and developing new biosphere reserves exist elsewhere and the project approach could be replicated. The “W” region transboundary Biosphere Reserve (Benin, Burkina Faso and Niger) was designated by the MAB Bureau in 2002. The ministries of environment of the three countries jointly submitted the nomination file to the MAB Secretariat, demonstrating the political will and the demand for such a regional tool for preserving savannas in West Africa.

**UNEP Response to STAP Comment on Sustainability**

We agree that the issue of sustainability is crucial and we agree with the STAP reviewer on the complexity of reaching such an objective. A key to sustainable functioning of a biosphere reserve is the continued support of all stakeholders. This requires a coordination mechanism that involves credible and legitimate institutions and that provides tangible benefits to local people. The project aims to support existing local and national institutions, to facilitate a permanent dialogue between the different stakeholders in each biosphere reserve by building on local existing rules, customs, institutions to manage the resources, access and control of resources. To decrease the dependency of the six sites on external aids, institutional and financial solutions will be explored.

The Pendjari Biosphere Reserve is presently studying the possibility of creating a trust fund for the Pendjari Biosphere Reserve. This study will be shared with and explored in the five other biosphere reserves. We think that such local initiatives could be explored and developed in a short-term period and could lead to financial self-sufficiency. Another source of income for each biosphere reserve is eco-tourism. This is one of the thematic issues to be studied and explored during the project in each of the six biosphere reserves. One key need expressed by the national authorities during the PDFB process was how the biosphere reserve could increase the sources of incomes, and eco-tourism at the regional level is seen as a promising option, which requires further study. Regional cooperation on ecotourism is important and is backed up by initiatives such as the creation of a regional tourist visa between biosphere reserves and parks in Niger, Burkina Faso and Bénin. Tourists can benefit from the three biosphere reserves in one visit. Game hunting is also an important source of income for some biosphere reserves such as Pendjari. This option is also one of the thematic issues that will be addressed by the project. Information about potential and existing income from such activities stem from a genuine demand at the political level. The project aims to demonstrate how biosphere reserves are potential sites for developing income for the park and for local communities, without compromising the health of the savanna ecosystems.

Another key issue for sustainability is institutional capacity building. As part of the extensive studies of local institutions and coordination structures within each biosphere reserve, and the involvement of local communities and other key stakeholders in the management of the biosphere reserve, it is planned that a substantive reduction of conflicts for access and use to resources in the six sites will happen. The organization of training for conflict resolution in each site and at the regional level will also facilitate the identification of local and national mediators. In each biosphere reserve, there exist individuals who are called upon for solving conflicts between groups of villagers or between the villagers and the staff of the biosphere reserve. The projects intend to identify these local mediators, to train them and to use them as trainers in a second step. This process will allow for legitimisation of local mediators in each biosphere reserve at the end of the project, who will be acknowledged by each country. One concrete output of the regional project will be a list of recognized mediators for each biosphere reserve who could also be called upon as experts for conflict resolution at the regional level.

The efforts will concentrate on increasing collaboration between the various institutions and

agencies working in the field of environment and research in each country and at the regional levels.

UNESCO has some positive examples where an investment of initial funding led to sustainable institutions in different regions of the world. This is the case for example in ex-Zaire, where UNESCO helped to create the first Pedagogical National Institute (Institut Pédagogique National). This Institute is presently training university teachers for the sub-region of Central Africa. Another example in Africa is the case of the Institut Congolais pour la Conservation de la Nature (Congolese Institute for the Nature Conservation). This institute was supported by a consortium of UNESCO/IUCN/WWF/Zoological Society of Frankfurt/ European Union and started to implement an ecotourism policy for mountain gorillas. Some marketing activities were initiated, such as the production of guide/manuals and videos, which have generated substantial revenues for the parks in Congo. Such examples have inspired the preparation of the present project, based on the demands of the biosphere reserve staff and local communities. During the PDFB, local community representatives requested the project to provide them training in microenterprise development. The production of guides, manuals for the biosphere reserves, as well as videos is planned in the regional project. The main thematic areas that will be covered by the project, i.e., eco-tourism, hunting, collecting, pastoralism, etc., are crucial socio-economic activities that the countries consider as an essential element of the sustainability of each site. These issues are being addressed because they are perceived by local and national stakeholders as being at the heart of the sustainability of the sites.

**UNEP Response to STAP Comment on Linkage to Other Focal Areas**

The project focus is primarily on the conservation of dryland biodiversity, an overlooked and underfinanced aspect of the GEF biodiversity portfolio. Cooperation with ROSELT and OSS for long term research and building of indicators may, in the medium to long term, provide the opportunity for contributing to the objectives of Convention on Combating Desertification.

**UNEP Response to STAP Comment on Other Benefits and Impacts**

The GEF exists to assist countries to meet the incremental, additional costs to conserve globally significant biodiversity. The proposal seeks funding to assist countries to better manage their Biosphere Reserves, by definition a globally significant resource, through strengthening national and local scientific and technical capacity. The issue of sustainability is addressed above.

**UNEP Response to STAP Comment on Involvement of Stakeholders**

As noted above, exhaustive stakeholder consultation (referenced in numerous places in the proposal including footnote one and Annex L) was conducted during the PDF B. Each country has conducted national consultations and local consultations (biosphere reserve level). A representative of local communities of each site attended the regional meeting. During the regional meeting, these representatives expressed their needs for training, access to micro-credits, and translation of information documents in local languages.

The PDFB started the dialogue amongst the scientific community, the conservation institutions,

local communities as well as NGOs and the private sector. After the regional meeting, local community representatives organized a “restitution” seminar in each biosphere reserve to inform villages about the proposals made during the Dakar regional meeting. Some biosphere reserves have an institutional structure, such as AVIGREF in Pendjari Biosphere Reserve, which aims to represent all local communities. This is not the case of Niokolo Koba for example. Annex E describes the institutional arrangements for each biosphere reserve, at the local level, all of which aim to involve local communities. Study of the existing local institutional arrangements for stakeholder participation will be carried out during the project to evaluate the efficiency and sustainability of these institutions for the management of the biosphere reserve. Local communities, biosphere reserve staff and scientists were very keen to learn about experiences of the other countries. Therefore, one of the first benefits to them is to learn from each other, to have trained people who will stay on the site to assist with them thereafter, and to implement a process for permanent and long term consultation and discussions.

**UNEP Response to STAP Comment on Capacity Building**

This analysis was conducted during the PDF B process. These are preliminary quantitative outputs that we will include in the project document in the logical framework:

2 Phd students per country : 12 PhD
4 master degrees students per countries: 24 master degrees students

National training and regional training: 150 persons directly trained
Identification and training of local mediators: 2 per biosphere reserve

Scientific articles: 6
Popular science articles: 10
Book: 1
Methodological guidelines and case studies papers: 7
Regional internet web site: 1

A summary translation of the capacity building strategy is now included as Annex K.

**UNEP Response to STAP Comment on Innovation**

Legal institutions and practices are being studied in the project and form the basis of Component One. These questions are at the heart of the project and this should be stated more clearly in the document. Community based monitoring of biodiversity is to be developed in the second component (substantiation of traditional knowledge). It is specified in paragraph 51 under Component Three (long term institutional mechanism will include integration of indigenous technical knowledge into the management plan, including knowledge of biodiversity, i.e. sustainable use and monitoring). As mentioned in table 3, studies on local economies (standards of living, incomes, social rules and institutions), on perceptions of local communities on ecosystems and the biosphere reserve, and on local knowledge on biodiversity are planned for the six sites.

The project will be the first group of biosphere reserves in an important biome that will be

supported to jointly develop a common scientific base, harmonized management and capacity building through regional GEF support. This group approach of building a network for exchange of information and experience has not been attempted so far in this region.

**UNEP Response to STAP Recommendations**

**STAP RECOMMENDATION:**

The proposal relates to an area of important biological diversity that is under current threat.

The proposal needs to make a more convincing case that the incremental funding will lead to a substantial and sustained global benefit.

The proposal can be improved to a point where the benefits are obvious. In particular, more attention needs to be given to

- the longer term vision of how all the past and future short-term interventions will lead to a situation where continuous crisis-driven responses are no longer necessary; i.e. how social and economic sustainability is to be achieved;
- a rigorous analysis of what aspects and regional fractions of biodiversity can be protected by a focus on this set of reserves, based on information already available in the open literature;
- more specifics regarding the types of viable land-use strategies that can be developed, based on learning in other parts of Africa, since there is too little time within the project to commence without any idea of what these might be;
- greater leverage of the regional aspects, showing how a regional approach is better than a piecemeal approach;
- a capacity-building plan that is based on a needs analysis and sets quantitative targets.

**UNEP RESPONSE:**

We would like to emphasise that a) this project derives from priorities and needs expressed by the countries, b) the project targeted interventions are complementary to existing on-going investments and projects; c) the targeted nature of the intervention is to systematically increase local and national scientific and technical capacity; d) that the regional nature of the intervention and the existing AfriMAB support network is a sustained and substantial global benefit for the West Africa region, as are other initiatives at the regional level such as transboundary biosphere reserves. The focus of the project on strengthening individual and institutional capacity and on reinforcing the institutional and scientific links between the countries and the biosphere reserve through an established network makes it a long-term investment in capacity development in the region. Sustainability of this project's outcomes will mainly rely on individual and institutional capacity building to guarantee the long term support of local stakeholders for the preservation and sustainable development of the biosphere reserve, and to guarantee the support of national authorities for the use of biosphere reserves as demonstration sites for sustainable development activities and preservation of savanna ecosystem. We have more clearly presented this aspect of

the intervention strategy in the proposal and in particular with the inclusion of Annex K.

Socio-economic sustainability needs to rely on a comprehensive understanding of the interests of all actors involved in the management of the site. Benefits and socio-economic alternatives which will be explored in the project (e.g., creation of a trust fund for the biosphere reserve, development of eco-tourism and game hunting activities, benefits sharing through institutional agreement, etc.) will be derived from this careful analysis. Experience in other biosphere reserves in Africa and elsewhere in the world showed that sustainability starts where a permanent dialogue is made possible through a variety of institutional and individuals arrangements, respected and recognized by all stakeholders involved.

We have included in paragraph four and Table One a more explicit analysis of what aspects of biodiversity can be protected by a focus on this set of reserves.

More specifics regarding the types of viable land-use strategies that can be developed have been specified in the revised logframe.

The added value of the regional approach is discussed in Annex J and in paragraph 32.

A translated summary from the original French version of the capacity building strategy has been included as Annex K and quantitative targets are now included in the logframe.

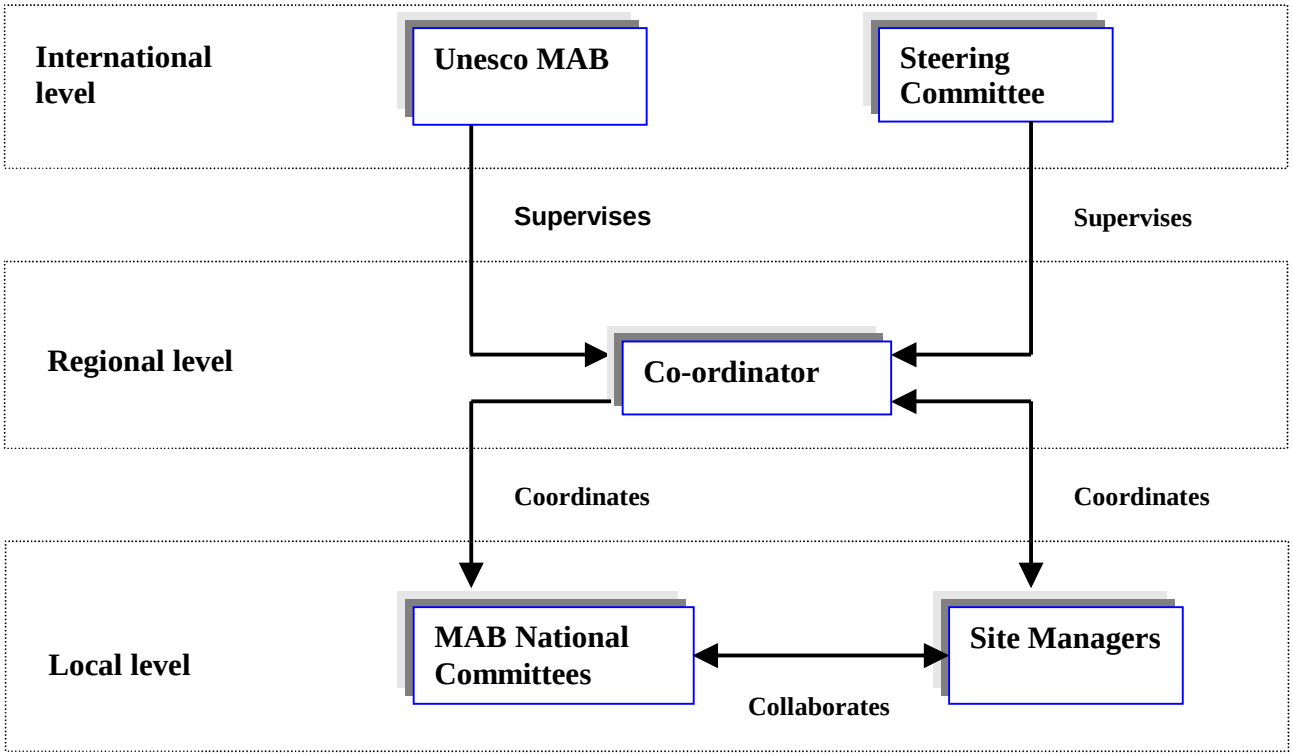
## Annex D

**Letters of Endorsement have been sent as a PDF attachment to the submission.**

## OPTIONAL ANNEXES

**Annex E**
**Public Involvement and Project Coordination Plan Summary**

**Figure E 1. Diagram of Regional Coordination Structure**



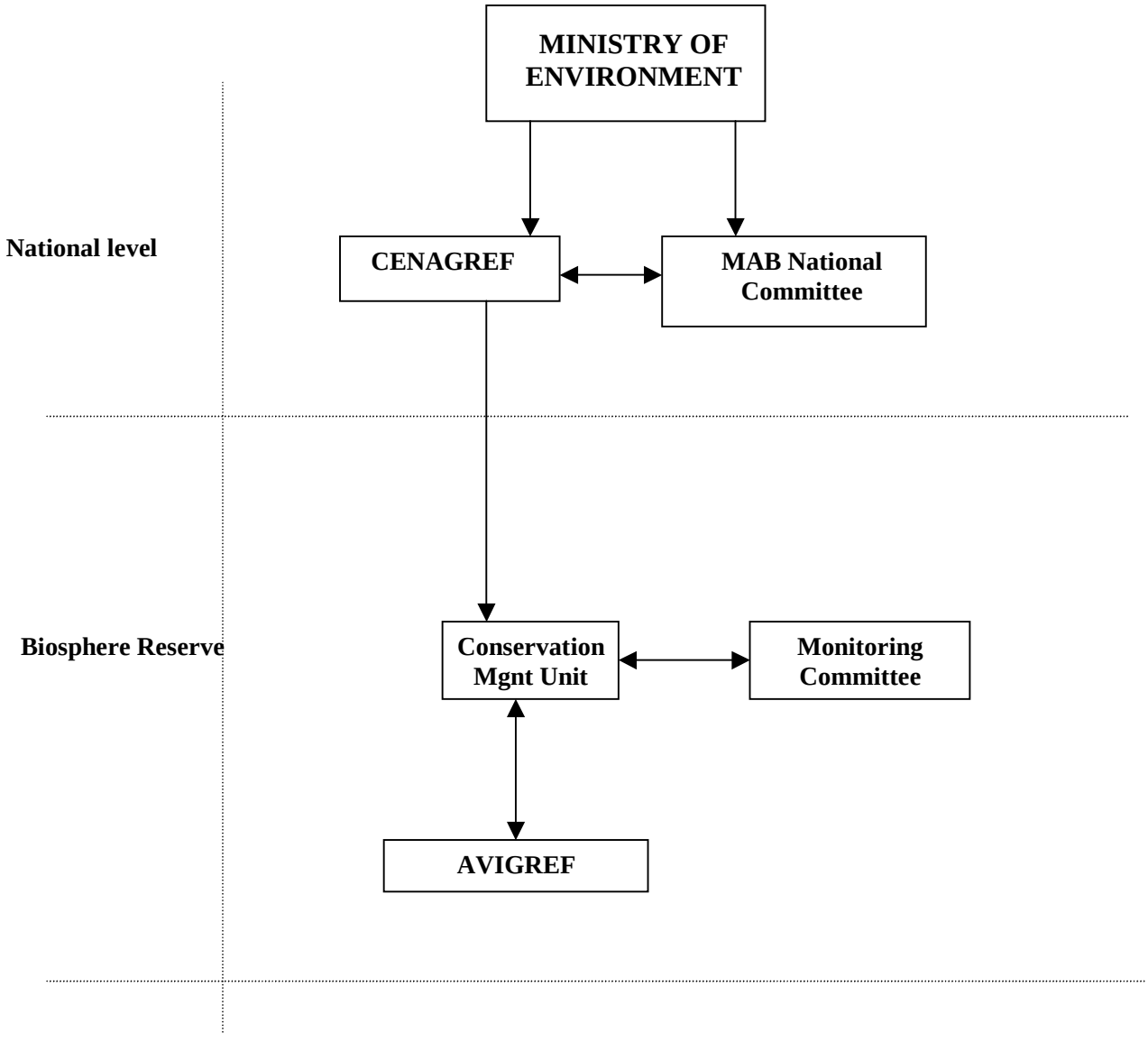

The implementation of the project in each country will rely on MAB National Committees and the institutions responsible for the conservation and management of the biosphere reserve.

In each country, cooperation will be established with national scientific and research institutions in order to implement the applied research workplan.

Building on relationships established during the PDF B, the MAB National Committees, the Regional Coordinator and the site managers will ensure that the implementation of activities is fully coordinated with other projects being implemented in the biosphere reserve.

In each biosphere reserve, institutional arrangements may vary from one country to another. Some countries already have established a coordination structure within the biosphere reserve to improve management of the biosphere reserve and to include the participation of local communities into the decision making process. Some countries are planning to improve the existing management and conservation structures in the biosphere reserve during the project.

**Figure E 2. Diagram of Benin National Coordination Structure for Pendjari Biosphere Reserve**




AVIGREF: Representative of local communities

CENAGREF: National Centre for the Management of Fauna Reserves

**Benin National Coordination Structure**

The central management unit (Direction Générale) of CENAGREF is in charge of the regulations governing fauna reserves and the sustainability of activities in the protected areas of Benin in general and the Pendjari Biosphere Reserve in particular. CENAGREF will serve as the co-ordinating institution for the activities of the project at the national level in collaboration with the MAB National Committee. CENAGREF controls the implementation of activities according to the Annual Work Plan which are elaborated in a participatory manner with the Conservation Management Unit of the Pendjari Biosphere Reserve, the Focal Point of UNESCO-MAB for Benin, research institutions (ABE: Agence Béninoise pour l'Environnement and The Benin National University) and the Representative of Neighbouring Villages (AVIGREF).

The fundamental tasks of CENAGREF will be to:

- Co-ordinate monitoring activities and analyse results
- Contribute to the planning of studies and use of results
- Ensure reporting and internal evaluation initiatives
- Manage the finances of the project.

The Conservation Management Unit of Pendjari Biosphere Reserve main functions are to:

- Co-ordinate field activities on priority sites
- Ensure the participation of local populations in research-development work in the demonstration sites
- Contribute to the selection of target groups for the training programme
- Manage resources put at the disposal of the field research team
- Contribute to the planning of studies and use of results
- Manage funds and equipment in the field
- Ensure reporting and provide accounts to CENAGREF
- Participate in regional meeting with other conservators of biosphere reserves involved in the regional project.

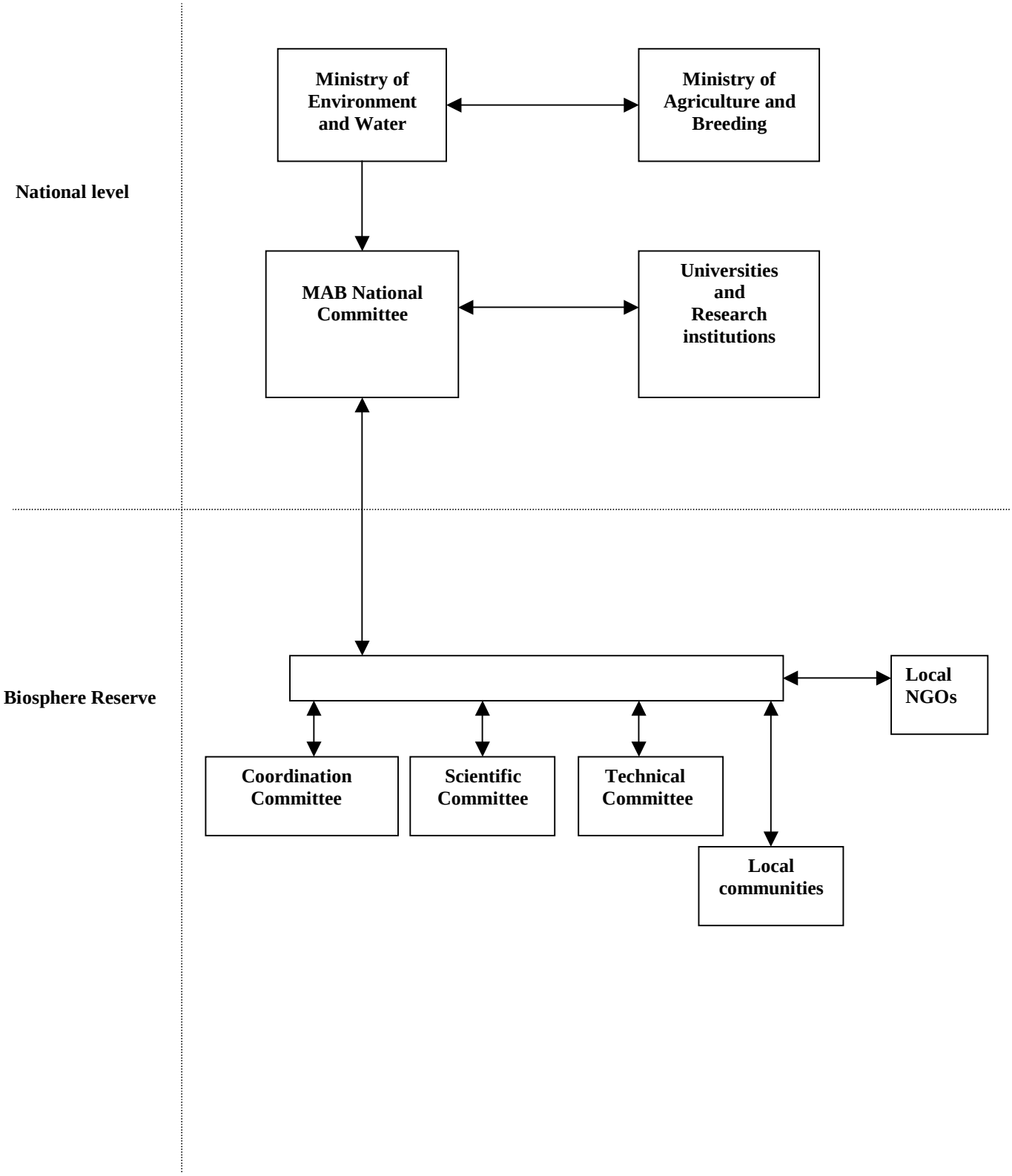
The UNESCO-MAB Focal Point will have the following tasks:

- Contribute to the planning of studies and use of results
- Ensure that the Annual Work Plan is respected
- Undertake an external evaluation of the project
- Facilitate relations between donors and CENAGREF
- Report and provide accounts to UNESCO-MAB
- Participate in regional meetings of exchanges between other UNESCO-MAB focal points involved in the regional project.

The activity and financial reports will be prepared each semester by the scientific team, the Conservation Management Unit of the Pendjari Biosphere Reserve, the CENAGREF and the MAB Focal Point. These reports will be used for internal evaluations and for planning activities at the end of the year.

The CENAGREF, the MAB Focal Point, the Conservation Management Unit of the Pendjari Biosphere Reserve, the Representative of Neighbouring Villages (AVIGREF) and the scientific team will be part of a monitoring committee for the implementation of the project. It will meet twice a year to monitor activity reports and state of progress.

**Figure E 3. Diagram of Burkina Faso National Coordination Structure for Mare aux Hippopotames Biosphere Reserve**



**Burkina Faso National Coordination Structure**

The Ministry of Environment and Water (MEE) is the institution responsible for the MAB National Committee and for other institutions intervening in the biosphere reserve such as National Center for Forest Seeds (CNSF), the National Institute of Water and Forests of Dinderesso at Bobo Dioulasso (ENEF) and the regional Hydraulic Service. These last three institutions are providing support to the Mare aux Hippopotames Biosphere Reserve for conservation and for research and training activities.

During the PDFB, the suggestion was made to create a coordination committee, a scientific committee and a technical committee to oversee the execution of the activities to be implemented at the National level.

The coordination committee would be composed of the MAB National Committee focal point, a scientific consultant, representative of local populations, forest guard, representatives of the private and public sector. The coordination committee will be charged with the implementation of the workplan of the project.

The technical Committee will be composed of:

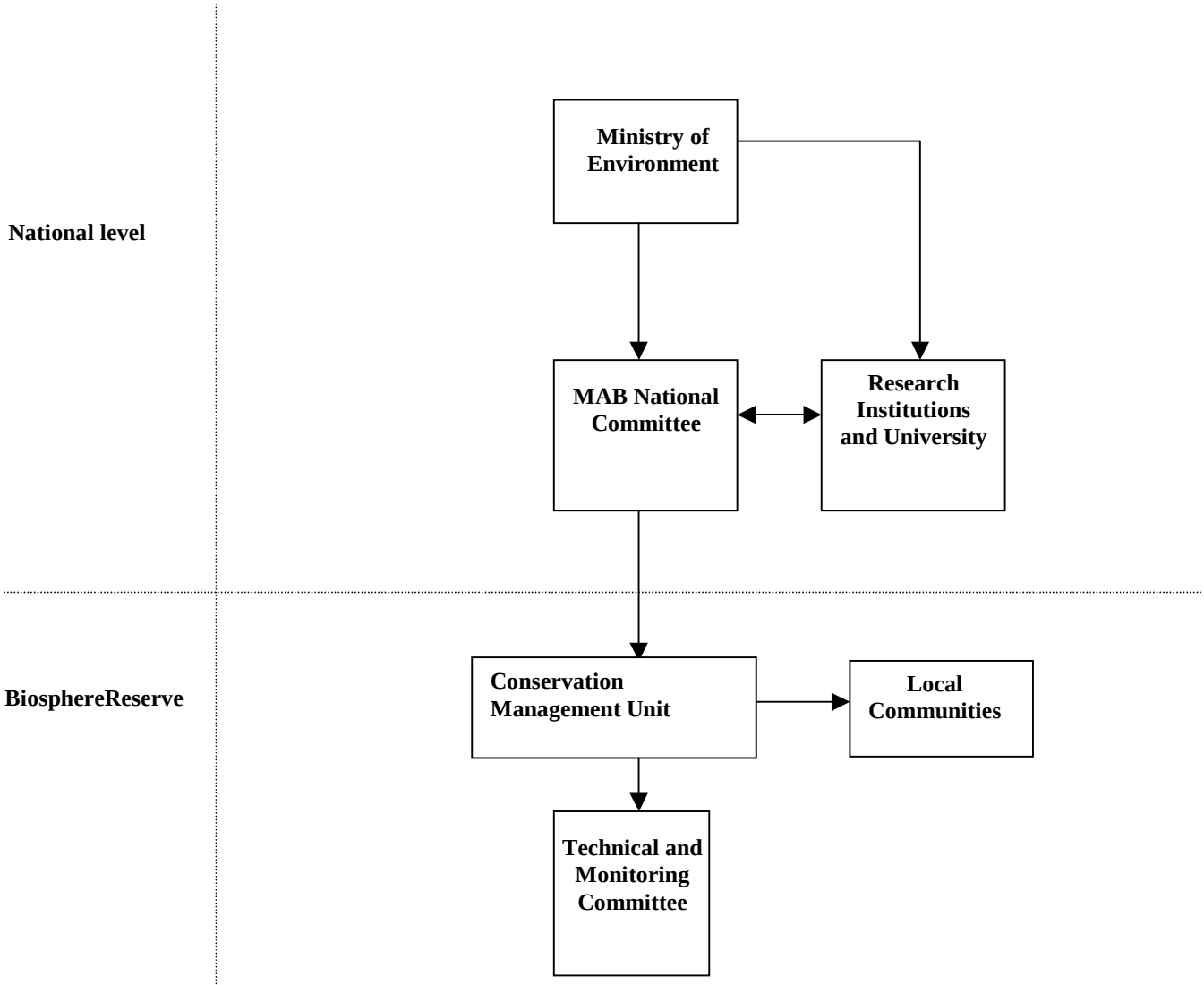
- Representative of MAB National Committee
- Scientific team representative
- Representative of the local communities
- Representatives of other projects intervening in the biosphere reserve such as PAGEN, PNGT, CNSF etc.

The technical committtee will assess, on an ongoing basis, the technical feasibility of the workplan and management plan of the Mare aux Hippopotames, and thus will serve as upstream technical advisor to the coordination committee in charge of the execution of the workplan.

The scientific committee will be charged with the implementation of the scientific programme of the Project and be composed of:

- Representative from Ministry of Secondary, Higher Education and Scientific Research
- Representative of CNRST
- Representatives of The University of Ouagadougou,
- Representatives of the University of Bobo Dioulasso
- MAB National Committee.

**Figure E 4. Diagram of Côte D'Ivoire National Coordination Structure for Comoé Biosphere Reserve**



## Côte d'Ivoire National Coordination Structure

The various departments of the Ministry of Environment provide support for conservation of the Biosphere Reserve and is the institution responsible for the MAB National Committee of Côte d'Ivoire.
The MAB National Committee will co-ordinate the workplan in the Comoé Biosphere Reserve and in particular be responsible for

- Contributing to research planning and use of results
- Controlling the execution of the annual Work Plan
- Carrying out external evaluation of the project activities
- Reporting and providing accounts to UNESCO-MAB Paris

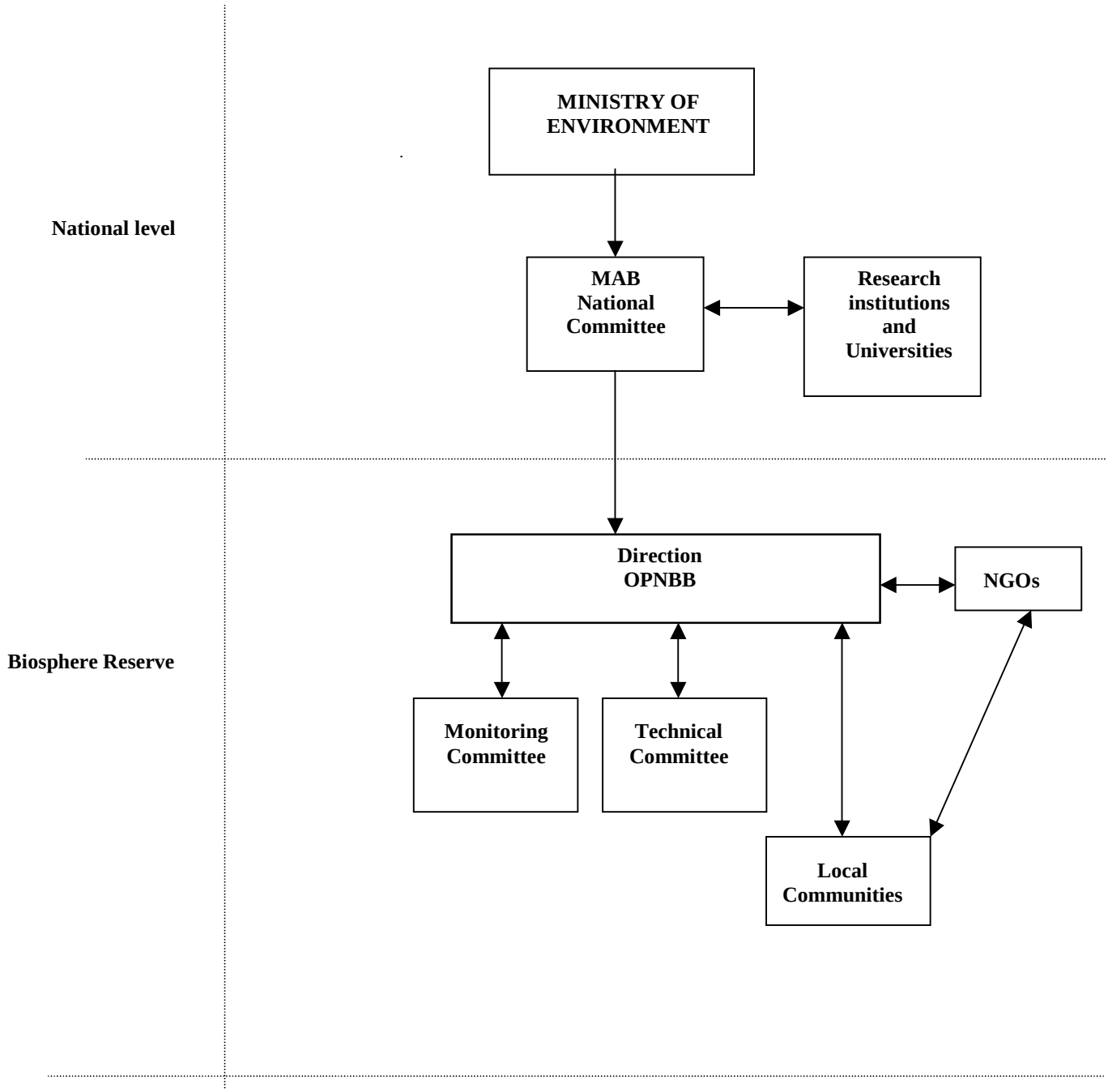
The Conservation Management Unit of Comoé will be charged with :

- Co-ordinating field activities
- Ensuring the participation of local populations in research-development work in the demonstration sites
- Contribute to the selection of target groups for the training programme
- Managing resources put at the disposal of the field research team
- Contributing to the planning of studies and use of results
- Managing funds and equipment in the field
- Reporting
- Participating in regional meeting with other conservators of biosphere reserves involved in the regional project.

At the national level, the University of Abobo-Adjame, the Centre for Tropical Ecology Research (CRE) and the University of Cocody-Abidjan will provide scientific inputs and will participate in the scientific research team.

MAB National Committee will ensure cooperation and coordination with, World Wide Fund for Nature, Abidjan, Conservation International and National Agency for Support of Rural Development (ANADER).

**Figure E. 5 Mali National Coordination Structure for Boucle du Baoulé Biosphere Reserve**




OPNBB : OPERATION PARC NATIONAL DE LA BOUCLE DU BAOULE

## Mali National Coordination Structure

The Ministry of Environment is responsible for the MAB National Committee and for the OPNBB (Opération Parc National de la Boucle du Baoulé), the department in charge of the management of the Boucle du Baoulé Biosphere Reserve.

The MAB National Committee will be responsible for the overall coordination of the project in Mali. The OPNBB will be in charge of the implementation of the activities in the biosphere reserve.

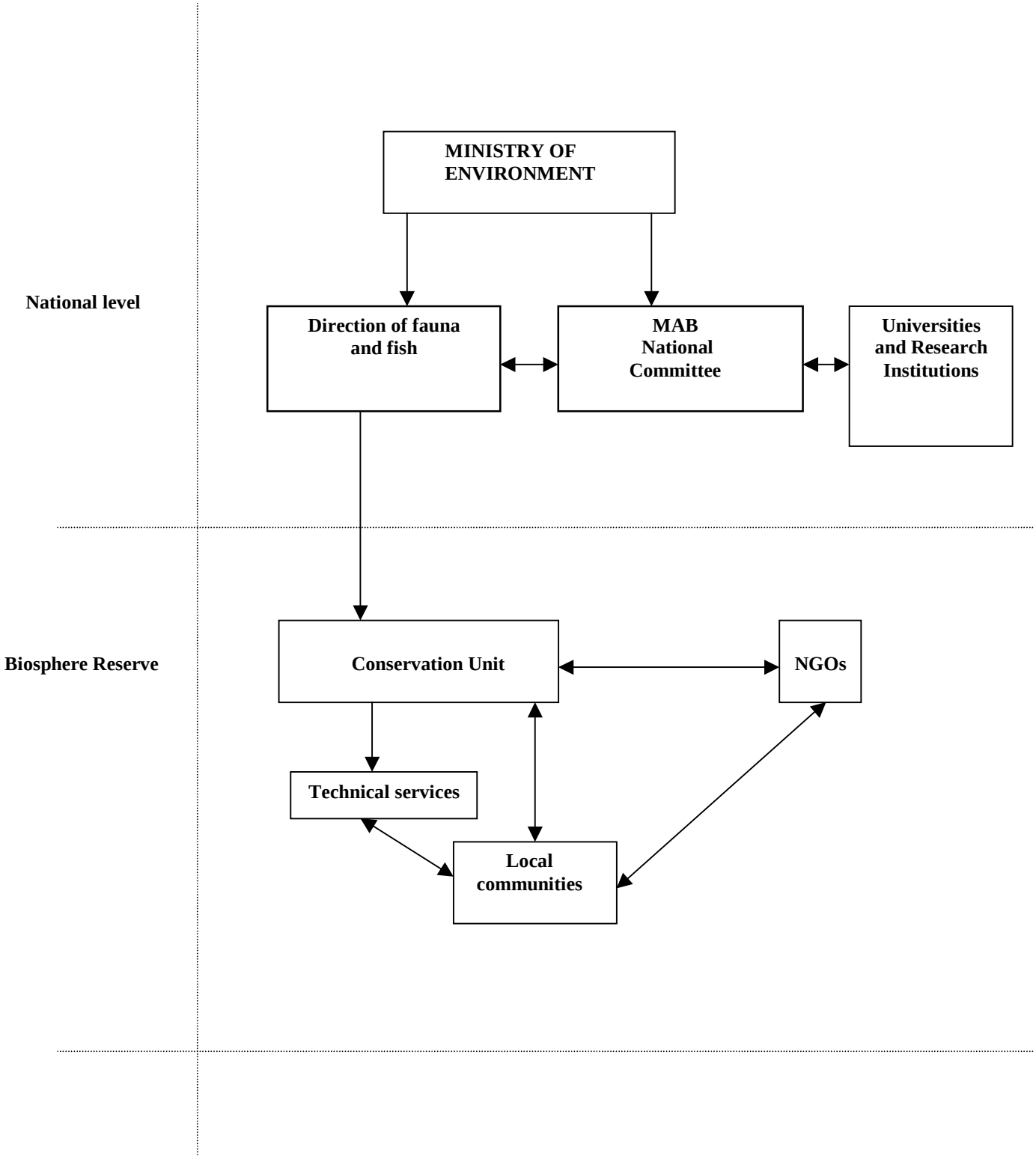
The OPNBB will be assisted by two committees:

a) Monitoring committee. This committee is chaired by the Minister of Environment and composed of representatives of concerned ministerial departments and representatives of local populations. The monitoring committee will be in charge of approving annual programmes and budgets and technical and financial reports elaborated by the director's office of the OPNBB.

b) Technical Committee. This committee will be composed of representatives of organizations and institutions involved in operational activities in the Boucle du Baoulé Biosphere Reserve. The Technical Committee will report on the implementation of the approved work programmes.

On the scientific aspects, the University of Mali, l'IER (Institut d'Economie Rurale) will participate in the implementation of the workplan.

**Figure E. 6 Niger National Coordination Structure for "W"Biosphere Reserve**



## Niger National Coordination Structure

The Ministry of Environment is the institution in charge of the MAB National Committee and of the Direction of Fauna and Fish, which is in charge with the "W" Biosphere Reserve.

The MAB National Committee will be charged with the overall co-ordination of the activities in Niger.

In the field, the Conservation Management Unit of the "W" Biosphere Reserve will:

- Co-ordinate field activities on priority sites
- Ensure the participation of local populations in research-development work in the demonstration sites
- Contribute to the selection of target groups for the training programme
- Manage resources put at the disposal of the field research team
- Manage funds and equipment in the field
- Participate in regional meeting with other conservators of biosphere reserves involved in the regional project.

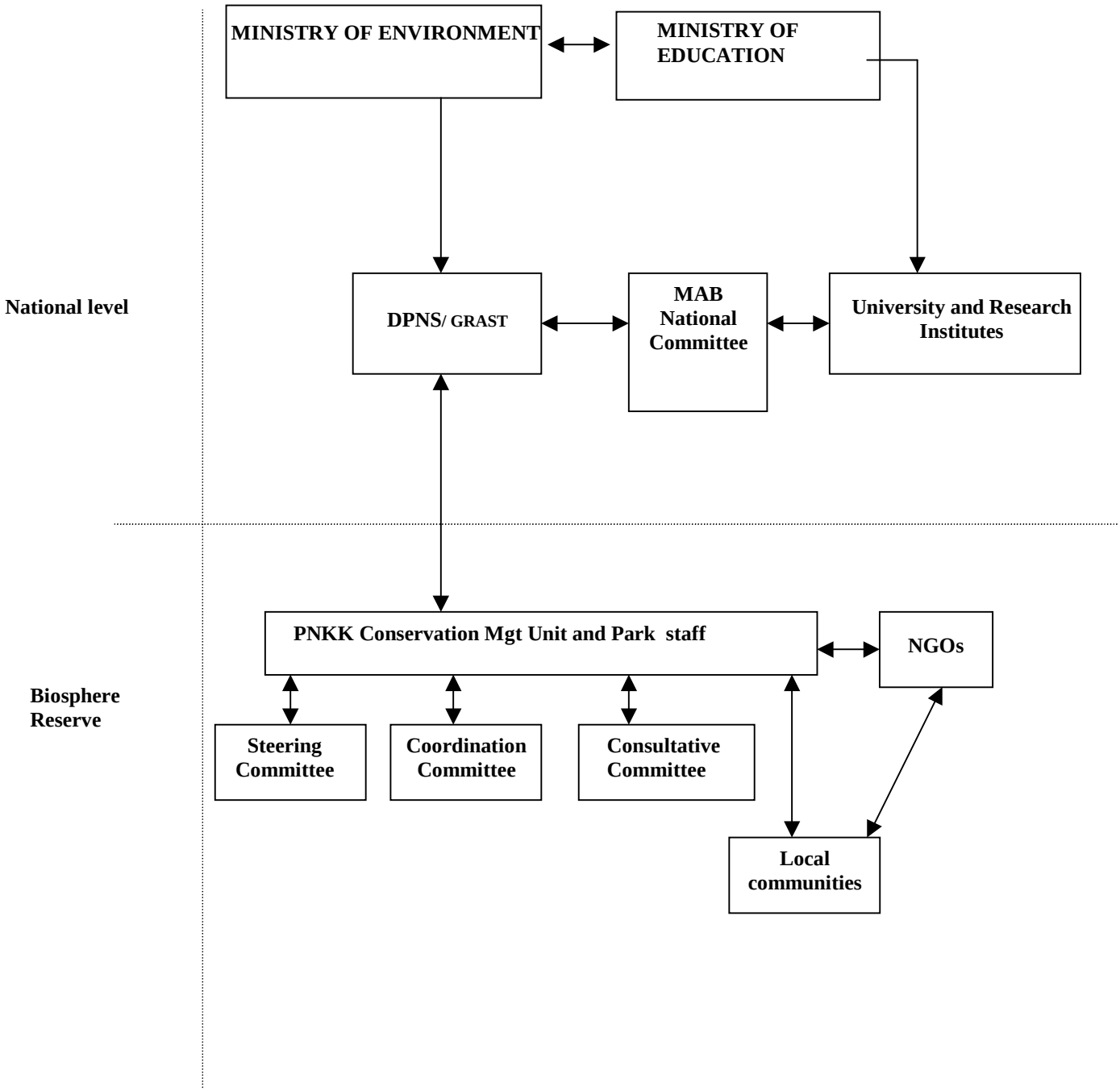
The Conservation Management Unit will receive support from the local partners (Technical Services of districts) in the following fields:

- Agriculture
- Cattle raising
- Water and Forest
- Rural/Agricultural Engineering
- Primary and secondary school
- Literacy Training

The MAB National Committee, in co-operation with the Conservation Management Unit of the "W"Biosphere Reserve, will ensure coordination of activities and exchange of information with the numerous NGOs, projects, associations and research institutes intervening in the "W" Biosphere reserve such as the Domestic Energy Project 2, Management of Natural Resources Project (PGRN), Niger Voluntary Organization for Environmental preservation (ONVPE), World Conservation Union (IUCN), ROSELT, Centre for International Cooperation in Agronomic Research for Development (CIRAD), W Park Regional Programme : Protected Ecosystems of Sahelian Africa (ECOPAS), etc.

The scientific component of the Project will be executed by the MAB National Committee in collaboration with the University of ABDOU MOUNOUNI, Niamey (Department of sciences, Department of Agronomy, Department of Humanity and Social Sciences, Department of economics and law), National Institute of Agronomic Research of Niger, and Polytechnic Institute for Rural Development of Kollo.

**Figure E. 7 Senegal National Coordination Structure for "W"Biosphere Reserve**




GRAST : GROUPE DE REFLEXION ET D'APPUI SCIENTIFIQUE ET TECHNIQUE DES PARCS NATIONAUX
DPSN : DIRECTION DES PARCS NATIONAUX DU SENEGAL
PNNK : PARC NATIONAL DU NIOKOLO KOBA

## Senegal National Coordination Structure

The main national institution partners in the project are the MAB National Committee, the Delegation for Administrative and Scientific Affairs (DAST), and the Ministry of Environment and the Ministry of Education (MEN, responsible for the MAB National Committee).

The Niokolo Koba Biosphere Reserve is under the responsibility of the Office of National Parks of Senegal (DPNS). The DPNS and the MAB National Committee will be responsible for the overall co-ordination of the activities in Senegal.

The DPNS is assisted by a Think Tank and Scientific and Technical Support Group of National Parks (GRAST). GRAST was created in 2001 and is a consulting body in charge of formulating scientific and technical advice to the DPNS on the following items:

1) Identification, organisation and planning of research programmes on ecosystems and species;
2) Elaboration, co-ordination, supervision and evaluation of research protocols in connection with DPNS and the managing bodies of the protected areas in Senegal;
3) Implementation and follow-up of international conventions of which DPNS is the operational focal point; and
4) Elaboration of development and management plan which DPNS would like to establish in protected areas in Senegal.

At Niokolo Koba Biosphere Reserve, a collaboration and facilitation framework has been created to facilitate implementation of the management plan finalized in 2000. A steering committee, a coordination and a consultative committee have been officially established and will be operational during the implementation of the project. The MAB National Committee will participate in the coordination and steering committee of the Niokolo Koba Biosphere Reserve in order to ensure the links with the scientific aspects of the Project.

At the national level, the following University and Research Institutions have been identified to participate in the scientific team:

- University of Gaston Berger of Saint Louis (UGB)
- Ecological Monitoring Centre (CSE)
- Institute of Agricultural Research of Senegal (ISRA)
- Development Research Institute (IRD).

Collaboration with private companies, NGO's will be ensured through the work of the Coordination Committee of the Niokolo Koba Biosphere Reserve.

## E8 : Stakeholder participation plan in each biosphere reserve and at the regional level

During the PDFB phase, the project facilitated the organization of local and national seminars in order to inform the various stakeholders of the beginning of a new project in each biosphere reserve. This process allowed the participation at the national levels of key stakeholders in each country: local communities; private sector, local and national administrations, universities and research institutions and conservation managers.

Local community representatives participated in the Dakar technical regional meeting, which was held in the UNESCO-Dakar Regional Office from 11 to 15 February 2001. The representatives of the local communities expressed their needs and interests within the global phase of the project and presented the main conflictual issues they were facing in each biosphere reserve. It was therefore decided that one aspect of the project will be to work on institutional structures within each biosphere reserve in order to manage and solve conflicts and to facilitate the internal dialogue between the various stakeholders in each biosphere reserve.

As described in Annex E, each country and each biosphere reserve has its own institutional arrangements to consult and inform various stakeholders, including local community representatives. The project will study the sustainability of these local institutional structures for allowing effective participation and articulation with decision making for the management of the biosphere reserve.

In each biosphere reserve, the following stakeholders have been identified as key stakeholders during the PDFB phase:

- Staff of the Biosphere Reserve
- Local and national administration in the field of environment
- Local community representatives
- Scientists
- MAB national committees representing various ministries and environmental institutions
- Private sector (tourism)
- NGO’s

The following objectives will be addressed:

a) to facilitate communication and exchange of information between the various stakeholders about the objectives of a biosphere reserve and the implementation of the activities of the project;
b) to support to local structures and institutions facilitating conflict resolution and dialogue between the various stakeholders;
c) to facilitate the creation of a coordination structure in each site where stakeholders are represented and participating in the decision-making process leading to the elaboration of the management plan, through such means as scientific, technical committee, and coordinating committee.

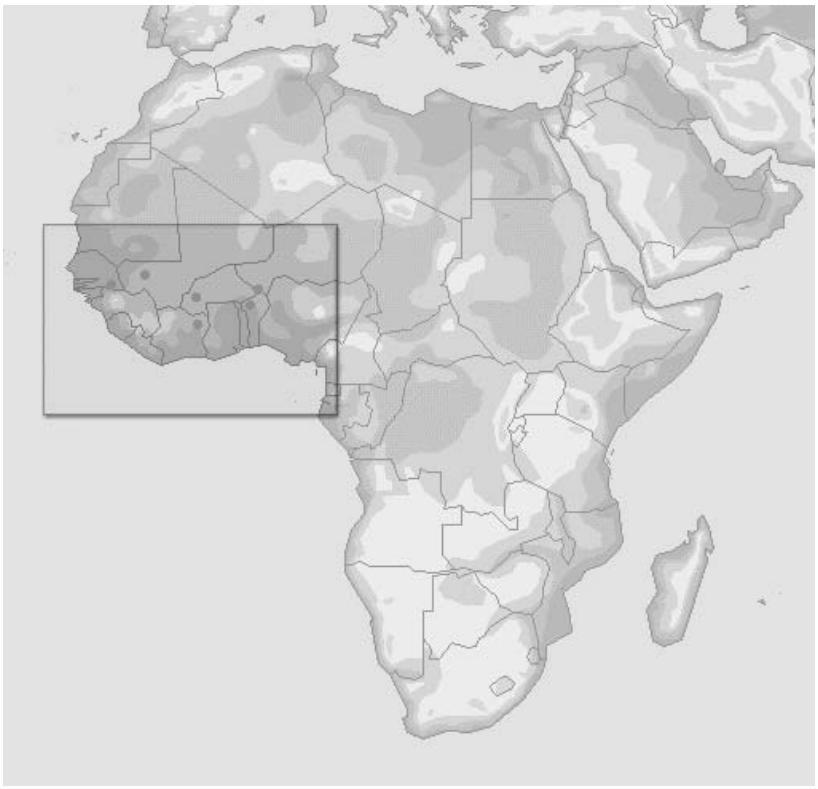
In each biosphere reserve, the following activities will be planned in order to facilitate the participation of the various stakeholders, based on the existing mechanisms described for each site in the same Annex:

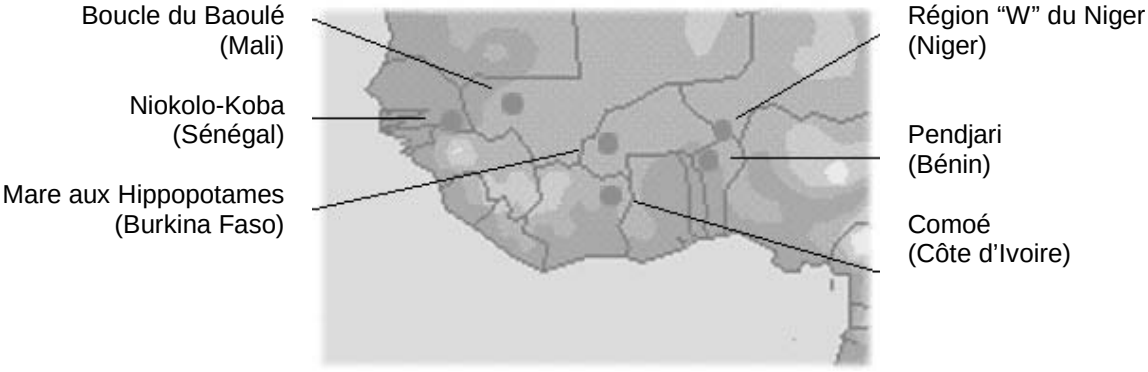
a) support to existing sustainable consultative and decision making structures (scientific committee, and such as AVIGREF in Bénin);
b) support to the organization of local consultations and national meetings in each country, each year, for the implementation of the activities in each site;
c) support to access to information (via internet for example) concerning the biosphere reserve and the other countries participating in the regional project;
d) support to participation of key stakeholders (local community representatives; staff of the biosphere reserve; representatives of local and national environmental institutions, representatives of scientific community; representative of local and national NGOs) in the regional meetings and regional training courses on conflict resolution planned within the project;
e) support to the creation of local and national structures (coordination committee, where it does not exist) for the participation of key stakeholders in discussions on the management plan and activities in each site.

The regional coordinating team will supervise the above activities, under the monitoring of UNESCO-MAB Secretariat and the Steering Committee of the regional project.

## Annex F

## Location Map of Dryland Biosphere Reserves





## Annex G
## List of MAB National Committee Contacts

**BENIN:**
**National MAB contact:** Dr B. Guedegbe
Comité national du MAB de Bénin
Centre béninois de la Recherche scientifique et technique
Ministère de l'Education Nationale
B.P. 03-1665
Cotonou
Bénin

**Pendjari Biosphere Reserve:**
Djaffarou Tiomoko
Direction des Parcs Nationaux et Réserves de Faune
Bénin

**BURKINA FASO:**
**National MAB contact:** Mr. Jean Noel PODA
Comité national du MAB burkinabé
IRBET/DGRST
B.P. 7047
Ougadougou
Burkina Faso

**Mare aux Hippopotames Biosphere Reserve:**
IRBET/DGRST
B.P. 7047
Ougadougou
Burkina Faso

**COTE D'IVOIRE:**
**National MAB contact**: Mme Martine Tahoux Touao
Comité national du MAB
08 BP 109
Abidjan 08
Côte d'Ivoire

**Comoé Biosphere Reserve:**Pierre Koffi
Chef d'Inspection
Conservateur du Parc National de la Comoé
Bouna
Côte d'Ivoire

**MALI:**

**National MAB contact:** M. Tamboura
Président Comité MAB Mali
Direction Nationale des Eaux et Forêts
B.P. 275
Bamako, Mali

**Boucle du Baoulé Biosphere Reserve:**
M. Baikoro Fofana
Directeur du projet
Opération Parc National de la Boucle du Baoulé
Testard
B.P. 275
Bamako, Mali

**NIGER:**

**National MAB contact**: Seyni Seydou
Président du Comité national du MAB Niger
Directeur de la Recherche et de la Technologie
Ministère de l'Enseignement Supérieur, de la Recherche et de la Technologie
B.P. 628
Niamey, Niger

**"W" Biosphere Reserve:**
M. Amadou Seydou
Parc National du W du Niger
D.F.P.P. (Direction Faune, Pêche et Pisciculture)
B.P. 721
Niamey, Niger

**SENEGAL:**

**National MAB contact:** M. Boubacar TRAORE
Coordonnateur national du Comité MAB du Sénégal
Délégation aux Affaires scientifiques et techniques
Ministère de la Modernisation de l'Etat et de la Technologie
23, rue Calmette
B.P. 218
Dakar, Senegal
Tel: (221) 825.83.49

**Niokolo-Koba Biosphere Reserve:** Jacques Rigoulot
Parc Conservateur
Parc National Niokolo-Koba
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Tambacounda, Senegal

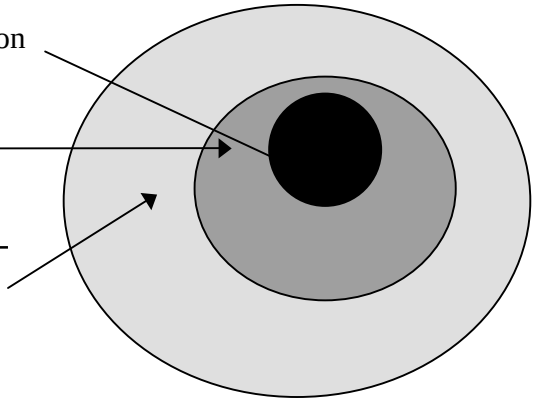
**Annex H**
**Biosphere Reserve Schematic Zonation**

Biosphere Reserves go beyond the classical protection concept and promote a wider spatial and conceptual approach. This approach includes a special zoning system: a legally protected central ***core area*** aims at conserving the world's major ecosystems where an only minimal human disturbance is allowed (e.g. for species inventorying and monitoring). The core area is surrounded by a ***buffer zone*** (or ***management zone***) which helps to protect the core area and which can accommodate a greater degree of human use and experimental manipulation for scientific and development research. A ***transition zone*** (or ***development zone***) surrounds the other two areas: here co-operation with local people and sustainable resource management practices are developed. It is the combined presence of conservation, research and development that characterise Biosphere Reserves.

(a) **core area**: legally protected for conservation

(b) **buffer zone**: research and conservation compatible activities

(c) **transition area**: sustainable resource management



Biosphere Reserves, initiated under UNESCO's intergovernmental "Programme on Man and the Biosphere (MAB)" in the early 1970s, form a network for international collaboration. As of June 2002, the total number of Biosphere Reserves is 408 in 94 countries. All Biosphere Reserves are nominated for international recognition in the international network by the government authorities of the country concerned. In doing so, countries commit themselves to cooperating with other countries in promoting the Biosphere Reserve objectives for learning and sharing of knowledge and experience. Hence, collectively, all Biosphere Reserves are linked with this common understanding of purpose within the Global Network of Biosphere Reserves. It is this co-operative dimension, at the intergovernmental level, co-ordinated by UNESCO, which makes the Biosphere Reserve network unique.

## Annex I
## Implementation Indicators of Seville Strategy for Biosphere reserve (with cross reference to the Statutory Framework of the World Network of Biosphere Reserves)[1]

| Implementation Indicators | Cross Reference |
|---|---|
| **INTERNATIONAL LEVEL** | |
| Biosphere reserves included in implementation of the Convention on Biological Diversity | I.1.1 |
| Improved biogeographical system developed | I.1.2 |
| Guidelines developed and published | II.1.1; IV.1.4; IV.1.5 |
| Network-wide research programmes implemented | III.1.1 |
| Biosphere reserves incorporated into international research programmes | III.1.2 |
| Regional and inter-regional research programmes developed | III.1.3 |
| Interdisciplinary research tools developed | III.1.4 |
| Clearing house for research tools and methodologies developed | III.1.5 |
| Interactions developed with other research and education networks | III.1.6 |
| Biosphere reserves incorporated into international monitoring programmes | III.2.1 |
| Standardized protocols and methodologies adopted for data and for data exchange | III.2.2; IV.2.10 |
| Mechanism developed for exchanging experiences and information between biosphere reserves | III.3.1 |
| Biosphere reserve communication system implemented | III.3.2; IV.2.4; IV.2.7 |
| International training opportunities and programmes developed | III.4.1 |
| Demonstration biosphere reserves identified and publicized | IV.1.1 |
| Guidance provided on elaboration and review of strategies and national action plans for biosphere reserves | IV.1.2 |
| Mechanisms developed for information exchange among reserve managers | IV.1.3 |
| Statutory Framework of the World Network of Biosphere Reserves are implemented at the international and national levels | IV.2.1;IV.2.2 |
| Regional or thematic networks developed or strengthened | IV.2.4 |
| Interactions developed between biosphere reserves and similar managed areas and organizations | IV.2.5 |
| Information and promotional materials developed for the Biosphere Reserve Network | IV.2.7 |

[1] http://www.unesco.org/mab/docs/statframe.htm

| | |
|---|---|
| Strategies developed for including biosphere reserves in bilateral and multilateral aid projects | IV.2.8 |
| Strategies developed for mobilizing funds from businesses, NGOs and foundations | IV.2.9 |
| Data standards and methodologies applied across the World Network | IV.2.10 |

**NATIONAL LEVEL**

| | |
|---|---|
| Biogeographical analysis prepared | I.1.3 |
| Biosphere reserves included in national strategies and other responses to the Convention on Biological Diversity and other conventions | I.2.2; I.1. 3 |
| Links developed between biosphere reserves | I.2.4 |
| In situ conservation plans for genetic resources in biosphere reserves | I.2.5 |
| Biosphere reserves incorporated into sustainable development plans | II.1.2 |
| Biosphere reserves developed or strengthened to include traditional life styles and in areas of critical people-environment interactions | 1.3 |
| Conservation and sustainable use activities identified and promoted | II.1.4 |
| Effective management plans or policies in place at all reserves | II.2.1; IV.1.6 |
| Mechanisms developed for identifying incompatibilities between conservation and sustainable use functions and to insure an appropriate balance between these functions | II.2.2 |
| Biosphere reserves included in regional development and land-use planning projects | II.3.1 |
| Land-use sectors near biosphere reserves are encouraged to adopt sustainable practices | II.3.2; IV.1.7 |
| Biosphere reserves are integrated into national and regional research programmes which are linked to conservation and development policies | III.1.7 |
| Biosphere reserves are integrated into national monitoring programmes and are linked to similar monitoring sites and networks | II.2.3 |
| Principles of conservation and sustainable use, as practiced in biosphere reserves, integrated into school programmes | III.3.3 |
| Biosphere reserves participate in international education networks and programmes | III.3.4 |
| Model training programmes for biosphere reserve managers are developed | III.4.3 |
| Mechanisms developed to review national strategies and action plans for biosphere reserves | IV.1.8 |
| Mechanisms developed for information exchange among reserve managers | IV.1.9 |
| Statutory Framework of the World Network of Biosphere Reserves are implemented at the national level | IV.2.12; IV.2.14 |
| National-level mechanism developed to advise and coordinate biosphere reserves | IV.2.13 |
| Interactions developed between biosphere reserves and similar managed areas and organizations with congruent goals | IV.2.15 |

| | |
|---|---|
| Information and promotional materials developed for the Biosphere Reserve Network | IV.2.17 |
| Strategies developed for including biosphere reserves in bilateral and multilateral aid projects | IV.2.18 |
| Strategies developed for mobilizing funds from businesses, NGOs and foundations | IV.2.19 |
| Mechanisms developed for monitoring and assessing the implementation of the Seville Strategy | IV.2.20 |
| **INDIVIDUAL RESERVE LEVEL** | |
| Survey made of stakeholders interests | II.1.5 |
| Factors leading to environmental degradation and unsustainable use are identified | II.1.6 |
| Survey made of the natural products and services of the biosphere reserve | II.1.7 |
| Incentives identified for sustainable use by local populations | II.1.8 |
| Mechanisms developed to manage, coordinate and integrate the reserves programs and activities | II.2.3; IV.1.10; IV.1.12 |
| Local consultative framework implemented | II.2.4 |
| Regional demonstration sites developed | II.3.3 |
| Coordinated research and monitoring plan implemented | III.1.8; III.2.4 |
| Functional data management system implemented | III.1.9; III.2.7 |
| Reserve is used for developing and testing of monitoring methods | III.2.5 |
| Reserve is used for developing indicators of sustainability relevant to local populations | III.2.5 ; II.2.6 |
| Local stakeholders are included in education, training, research and monitoring programs | III.3.5; III.4.5 |
| Information for visitors to the reserve developed | III.3.6 |
| Ecology field centre developed at the reserve | III.3.7 |
| Reserve is used for on-site training activities | III.4.4 |
| A local educational and training programme is in place | III.4.6 |
| Different zones of biosphere reserves identified and mapped | IV.1.10 |
| Buffer and transitions reformulated to promote sustainable development and preserve the core area | IV.1.12 |
| Local community involved in planning and managing reserve | IV.1.14 |
| Private-sector initiatives to establish and maintain environmentally and socially sustainable activities are encouraged | IV.1.15 |
| Information and promotional materials developed for the Biosphere Reserve Network | IV.2.21 |
| Strategies developed for mobilizing funds from businesses, NGOs and foundations | IV.2.22 |
| Mechanisms developed for monitoring and assessing the implementation of the Seville Strategy | IV.2.23 |

## Annex J. Relationship of Regional Project to Ongoing Projects at the Biosphere Reserves Demonstrating Added-value of Regional Project and Linkage with NBSAPs of the Participating Countries

During the PDF B project planning phase contacts were established with the Project leaders in each country by the MAB National Committee's focal point in each country and during the national seminars, which were held in all the six countries at the start of the PDF B project planning phase. This was a concerted effort to avoid duplication and to facilitate communication and exchange with ongoing projects. The concerns and priorities of the project leaders involved in the ongoing projects within each Biosphere Reserve and the priorities expressed by the countries themselves stemmed from what the ongoing projects were not taking into account hence, the added value of the activities proposed within the regional project were validated. During the implementation of the full project, the same process will be developed in each country. National seminars will be organized on thematic components of the Regional Project and all other project officers from existing projects will be invited to participate to ensure that complementarity is maintained during project execution and value is added to ongoing initiatives. Project coordination at the biosphere reserve level and at the national level will be the responsibility of the MAB national Committee. The Committee will be charged with convening national consultations and information seminars with the resource persons and national institutions in charge of the ongoing projects and the proposed regional project.

At the regional level, the project will create a shared biodiversity information system and regional biodiversity expertise network. A strengthened and more effective AfriMAB network will improve cooperation in the management of West African savanna ecosystems and raise awareness of the importance of savanna ecosystems in the region. In addition, thematic collaboration will be sought at the regional level with the work of Conservation International and the Critical Ecosystem Partnership Fund (CEPF). CEPF is working in the Guinean Forest of West Africa and although there is no geographical overlap with the UNEP GEF project there may be opportunities for sharing lessons and cooperating on thematic issues such as conservation finance mechanisms for protected areas and on the strengthening of the role of universities in biodiversity conservation in West Africa. During the project appraisal phase formal mechanisms will be established to facilitate this cooperation.

The table that follows outlines the added value of the regional project to ongoing interventions.

**Annex J. Table One. Relationship of Regional Project to Ongoing Projects at the Biosphere Reserves and NBSAPs**

| Biosphere Reserve | Ongoing Projects | Added-value of Regional Project | Regional Project's Consistence with NBSAP |
|---|---|---|---|
| Pendjari | Project GTZ-Pendjari This project concerns Pendjari National Park as well as two hunting zones (zone cynégétique de l'Atacora et de la Pendjari The Pendjari project has the following objectives: a) elaborate a management plan for Pendjari National Park and its adjacent hunting zones for conservation and sustainable use of resources; b) optimise the economic gains generated by protected areas (particularly through tourism) for the benefit of government, local populations and private sector. The programme will enable the building or rehabilitation of infrastructure within the Park (access roads, patrol roads, tourist trails, water points, information panels, offices and housing for park staff, information centre for visitors) and for logistic support (cars and maintenance equipment for the roads).<br><br>"Community-based Conservation of Biodiversity in the Transborder Buffer Zones of the W, Arly and Pendjari National Parks" is a PDFB under preparation by UNDP GEF. This PDFB is implemented by IUCN Regional Office with which MAB National Committees are in contact as well as the MAB Secretariat. Co-operation will be established during the implementation of the project through Biosphere Reserve managers of the three parks involved and the MAB National Committee focal points. | Scientific research has been identified as an essential activity to complement conservation initiatives on-going in Pendjari BR. Research on conflictual relationships between the sites and local communities, including co-ordination aspects of the different stakeholders in the management of the biosphere reserve in an integrated matter.<br><br>Training provided to the BR staff and local communities.<br><br>The study of traditional practices of local hunters in collaboration with the GEF/UNDP project as well as the design of impact indicators on biodiversity will be a useful complement to the conservation activities being implemented by other partners. Training for the biosphere reserve staff and local communities in conflict management would also be of added value.<br><br>The Pendjari Biosphere Reserve is presently studying the possibility of creating a trust fund for the Pendjari Biosphere Reserve. This study will be shared with and explored in the five other biosphere reserves.<br><br>Use of common monitoring and interaction indicators for comparison of the sites and tested at the regional level and used in other MAB regional networks.<br>Improved communication and information-sharing occurring between the six sites and the six MAB National committees. | Promoting research, local knowledge, training of local communities and regional co-operation are a strategic focus for the conservation of biodiversity as described in Benin National Biodiversity Plan and Strategy (p. 41, March 2002). |

| Biosphere Reserve | Ongoing Projects | Added-value of Regional Project | Regional Project's Consistence with NBSAP |
|---|---|---|---|
| Mare aux Hippotames | Mare aux Hippopotames receives support from a GEF/World Bank project entitled PAGEN (Partenariat pour l'Amélioration de la Gestion des Ecosystemes Naturels/Partnership for Natural Ecosystem Management Programme). This project focuses on protected areas for wildlife in Burkina Faso and aims to enhance the capacity of the forestry department and institutions to manage the sites and to improve local communities' capacities to conserve biodiversity in these protected areas. Mare aux Hippopotames Biosphere Reserve is located in the Hauts Bassin Conservation Unit and will thus benefit from project activities within the next five years. Mare aux Hippopotames Biosphere Reserve is an associated site to the ROSELT network, (Réseau d'Observatoire et de Surveillance Ecologique à Long Terme), a network for Long Term Ecological Monitoring managed by the OSS (Observatoire du Sahara et du Sahel). Burkina Faso also benefits from a World Bank project on "Sahel Integrated Lowland Ecosystem Management SILEM" which has identified livelihood strategies to combat land degradation and increase agricultural production. | Information gap at Mare aux Hippopotames Biosphere Reserve will be filled regarding scientific data on human and ecosystems relationships, indicators and baseline information for understanding impacts of local communities on biodiversity caused by resource use.<br><br>Training for local communities and staff of the BR will be a complementary activity to on-going initiatives.<br><br>Use of common monitoring and interaction indicators for comparison of the sites and tested at the regional level and used in other MAB regional networks.<br><br>Improved communication and information-sharing occurring between the six sites and the six MAB National committees. | Objective 1 of Burkina Faso National Biodiversity Strategy Action Plan (December 1999) prioritises the involvement of local communities in the management of natural resources and the satisfaction of their needs and livelihoods (pp 46,47 and 67) as an essential condition for conserving biodiversity. The training of local communities is one condition to reach this main objective (p. 67). Enhancing institutional co-ordination for better management of the biosphere reserves is also a priority. |

| Biosphere Reserve | Ongoing Projects | Added-value of Regional Project | Regional Project's Consistence with NBSAP |
|---|---|---|---|
| Comoe | Since 1996, Côte d'Ivoire has received support from a WB/GEF project entitled GEPRENAF (Gestion Participative des Ressources Naturelles et de la Faune). This project is scheduled to terminate in 2003 and has activities in areas close to the biosphere reserve. A management plan has been elaborated by the WWF and the European Commission in 2001. | Support for research on impact of human uses on biodiversity, on co-ordination and institutional issues, in building indicators to better understand relationships between stakeholders and the ecosystems, and provide training for biosphere reserve staff and local communities.<br><br>Use of common monitoring and interaction indicators for comparison of the sites and tested at the regional level and used in other MAB regional networks.<br><br>Improved communication and information-sharing occurring between the six sites and the six MAB National committees. | The national biodiversity report of Côte d'Ivoire on Biodiversity (1999) mentions national parks such as Comoé as priority for in-situ conservation of biodiversity. This action plan is based on five main objectives, of which objectives 1, 2, 3 and 5 are particularly linked to the objectives of the present project: 1) increase knowledge about biodiversity where research and training should play an essential role; 2) reinforcement of measures for conserving biological diversity, including the preservation of national parks and biosphere reserves; 3) reduce pressure on biological diversity and 5) education and environmental awareness of local communities (pp. 237, 238, 239). |

| Biosphere Reserve | Ongoing Projects | Added-value of Regional Project | Regional Project's Consistence with NBSAP |
|---|---|---|---|
| Boucle du Baoule | The Boucle du Baoulé received support from UNESCO and UNDP for the establishment of an integrated management plan that was elaborated in 1998. UNDP is presently developing a MSP on the pastoralism issue in the biosphere reserve that will be complementary to the UNEP GEF Regional Project. | The Mali National MAB Committee held consultations and information was exchanged during the PDF B phase with the different projects intervening in the area. The present project will therefore focus on scientific surveys, particularly on building impact indicators, providing training on conflict management and exchanging experience with other biosphere reserves.<br><br>Use of common monitoring and interaction indicators for comparison of the sites and tested at the regional level and used in other MAB regional networks.<br><br>Improved communication and information-sharing occurring between the six sites and the six MAB National committees. | Training and research have been identified as main priorities for Mali Second National Report on Biodiversity Strategy and Action plan (p. 93, May 2001) as well as the protection of parks, including Boucle du Baoulé Biosphere Reserve (Interim report on Conservation of Biological Diversity March 1998, pp 10,11,12). |

| Biosphere Reserve | Ongoing Projects | Added-value of Regional Project | Regional Project's Consistence with NBSAP |
|---|---|---|---|
| "W" | "W" Niger Biosphere Reserve receives support from a regional project of the European Commission (ECOPAS) which focuses on Burkina Faso ("W" and Arly Parks) and Bénin ("W" Park) and Niger ("W" Biosphere Reserve). This project will support the building of roads in the park as well as infrastructures and materials for the Park staff. The three countries are planning a regional research programme and UNESCO-MAB as well as Niger MAB National Committee are members of the Scientific and Technical Committee of ECOPAS. In November 2002, the nomination of W Region transboundary Biosphere Reserve (Bénin, Burkina Faso and Niger) was approved by the MAB Bureau. This is the first transboundary Biosphere Reserve in Africa. | The Project will collaborate with the scientific research programme being designed in the "W" Niger Biosphere Reserve, and will particularly contribute to the building of long term interaction indicators on human uses. These indicators will be designed in order to be tested as well for the newly established transboundary biosphere reserve. Scientific support will be given to co-ordination and institutional issues for an integrated management of the Biosphere Reserve.<br>Training for national scientists on interdisciplinary work will be a priority as well as training for local communities in conflict management, in collaboration with the Biosphere Reserve staff.<br><br>Use of common monitoring and interaction indicators for comparison of the sites and tested at the regional level and used in other MAB regional networks.<br><br>Improved communication and information-sharing occurring between the six sites and the six MAB National committees. | Niger National Biodiversity Strategy and Action plan highlights the building of a research programme as a priority for conservation of biodiversity as well as training of national stakeholders. |

| Biosphere Reserve | Ongoing Projects | Added-value of Regional Project | Regional Project's Consistence with NBSAP |
|---|---|---|---|
| Niokolo Koba | A management plan of Niokolo-Koba (completed in 2000) aims to resolve the conflicts with local communities concerning access to lands and resources. A co-ordination structure for the integrated management of the biosphere reserve is being planned. It is based on the National Biodiversity Strategic Plan elaborated in Senegal in 1998. Among the priorities are the delimitation of the boundaries of the biosphere reserve and their materialisation. Niokolo Koba Biosphere Reserve receives support from the European Commission for the next four years, through a regional programme entitled AGIR.<br><br>A UNDP/ GEF project on "Integrated Ecosystem Management in Four Representative Landscapes of Senegal, Phase 1" is also underway for the next five years, with activities targeted on increasing livelihoods for certain villages in the transition zone. | Support will be mainly given to training of the Biosphere Reserve staff and local communities for conflict management. This is a crucial issue in Niokolo Koba Biosphere Reserve. At the scientific level, the building of indicators on human uses will be one main objective of the research component. The project will rely on the important scientific human resources existing in Senegal to undertake the scientific and applied research components of the Project<br>Use of common monitoring and interaction indicators for comparison of the sites and tested at the regional level and used in other MAB regional networks.<br><br>Improved communication and information-sharing occurring between the six sites and the six MAB National committees. | Biosphere reserves are mentioned as strategic tools for in-situ conservation of biodiversity in Senegal (Senegal National Report on Biodiversity, December 1997,p.42). Reinforcement of parks and reserves in Senegal as well as training of local and national institutions and communities involved in the management of natural resources and ecosystems are priorities for Senegal. |

## Annex K
## Summary Strategy for Capacity Building at the Biosphere Reserve and National and Regional Levels and Training Plan

The project aims to build sustainable links, and connections between the various stakeholders involved in the management of the site by facilitating dialogue between the local communities and the managers, through sound and applied research taking into account their knowledge and needs concerning biodiversity, their livelihood options and future perspectives. The project aims to involve local communities and other key stakeholders in management discussions and negotiations, through detailed analysis of local structures and institutions for managing resources, through providing training in conflict prevention and resolution in each biosphere reserve and at the regional level, through interdisciplinary work and research, involving existing national research and environment institutions and the MAB National Committees.

The strategy at the biosphere reserve level will concentrate on three main categories of stakeholders, as decided in the Dakar technical regional meeting in February 2002:

- staff of each biosphere reserve
- local communities
- local and national scientists.

Training will be provided to the three main categories in the following thematic areas:

- For local communities: micro-enterprise; initiation to informatics; eco-tourism and conflict resolution and management.
- For BR staff: use of informatics tools for management purposes (GIS, GPS) ecotourism; conflict resolution and management, use of monitoring indicators.
- For local and national scientists: social sciences; resolution and conflict management; execution of applied field studies in the biosphere reserve.

A key to sustainable functioning of a biosphere reserve is the continued support of all stakeholders. This requires a coordination mechanism which involves credible and legitimate institutions and provide tangible benefits to local people. The project aims to support existing local and national institutions, to facilitate a permanent dialogue between the different stakeholders in each biosphere reserve by building on local existing rules, customs, institutions to manage the resources, access and control of resources in each biosphere reserve.

Study of the existing local institutional arrangements for stakeholder participation will be carried out during the project to evaluate the efficiency and sustainability of these institutions for the management of the biosphere reserve. Local communities, biosphere reserve staff and scientists were very keen to learn about experiences of the other countries. Therefore, one of the first benefits to them is to learn from each other, to have trained people who will stay on the site to assist them thereafter, and to implement a process for permanent and long term consultation and discussions.

The organization of training for conflict resolution in each site and at the regional level will also facilitate the identification of local and national mediators. In each biosphere reserve, individuals will be called upon for solving conflicts between groups of villagers or between the villagers and the staff of the biosphere reserve. The projects intend to identify these local mediators, to train them and to use them as trainers in a second step of training others. This process will allow for legitimisation of local mediators in each biosphere reserve at the end of the project, who will be acknowledged by each country. One concrete output of the regional project will be a list of recognized mediators for each biosphere reserve who could also be called upon as experts for conflict resolution at the regional level.

MAB National committees will be charged with the dissemination of the information and experience at the national level and to raise the visibility of biosphere reserve to be used as demonstration site for sustainable use strategies and conservation of savanna ecosystems. MAB National committees will be charged with the production of support material for diffusing the data and information, including school materials for environmental awareness raising. The development of indicators and sound socio-economic applied research will be a contribution to the development of institutional capacity building. This will strengthen existing institutional structures for managing resources at the local level (local communities institutions, coordination and management structure in the biosphere reserve) and at the national level (support to MAB National Committees, establishment of official linkages between research and training institutions and biosphere reserves as demonstration sites).

Efforts will concentrate on increasing collaboration between the various institutions and agencies working in the field of environment and research in each country. The establishment of permanent and official links between national universities and the staff of the biosphere reserve will be explored. National PhD students and Masters students that will work in the biosphere reserve will be called upon as experts or consultants for scientific issues to be solved for management purposes and could contribute to the elaboration of management plans on a regular basis.

The project will serve to demonstrate and establish the role of biosphere reserves as field sites for monitoring, environmental education and scientific research at the national level. This will be achieved by initiating formal procedures between national scientific research and training institutions and the management authorities of the biosphere reserves and by strengthening local and national institutions for sustainably managing resources in the sites over a long term period.

<u>At the regional level:</u>

Regional training on conflict resolution and management will be designed to facilitate the exchange of experiences between the six countries and to learn about other methods for resolving conflicts. Exchange of BR staff and local communities representatives will be organised and joint publications will be issued.

PhD and Masters students will work on common thematic issues in several biosphere reserves for comparison and exchange of information. The six countries will use common interaction indicators for comparison of the sites that will be tested at the regional level and used in other MAB regional networks. The national scientific experts trained during the project will be available to share their expertise at the regional level on savanna ecosystems and biodiversity management issues.

The national mediators identified during the project will be used as experts in a regional roster and will be available for training and assistance in other biosphere reserves in the region.

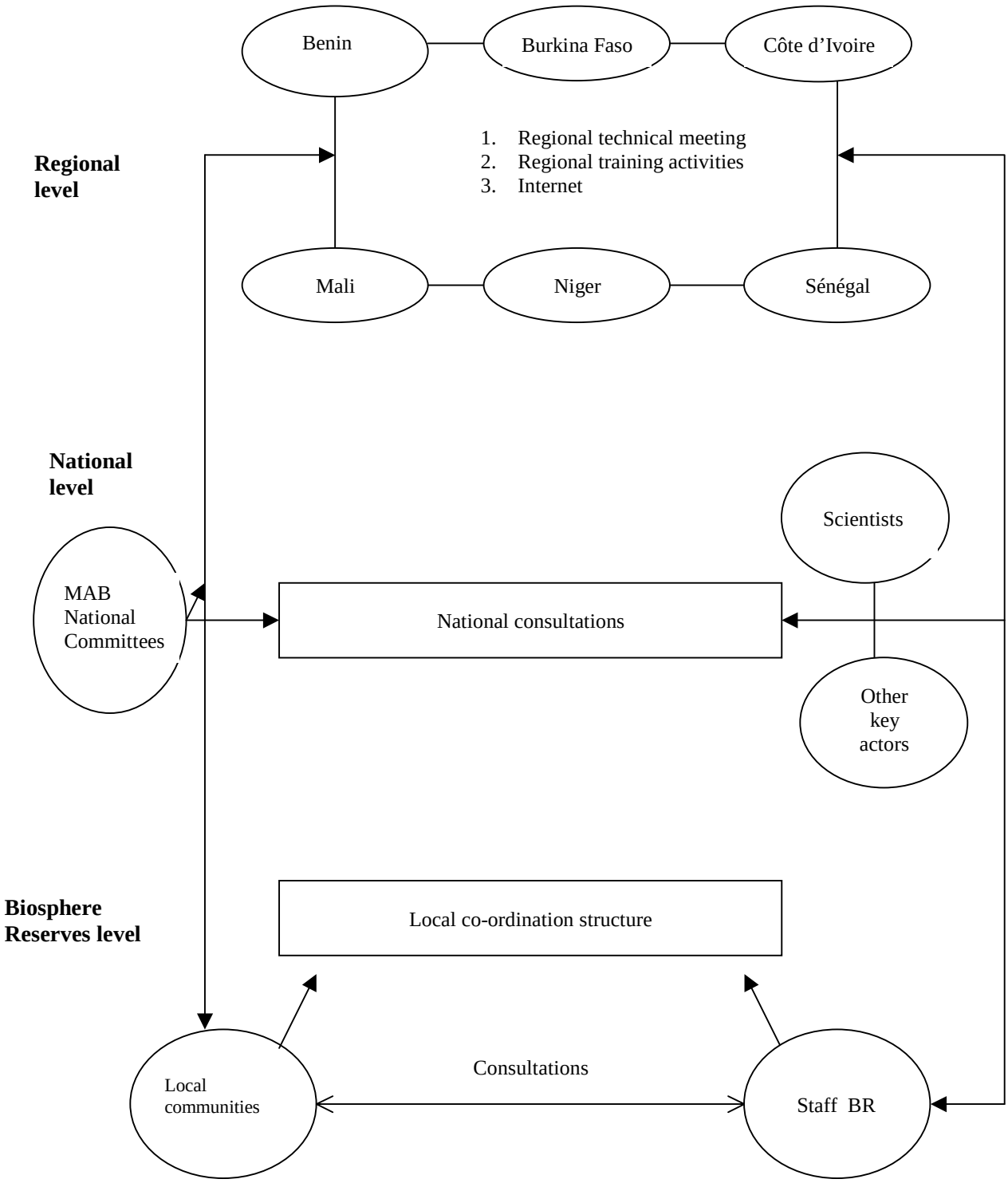
The reinforcement of the human resources of the AfriMAB network will facilitate exchange of learning, skills and experience in similar ecosystems and structures similar as biosphere reserves and will improve communication and information-sharing occurring between the six sites and the six MAB national committees.

The institutions and individuals will communicate and exchange data sets and information within and outside the region. A strengthened and more effective AfriMAB network will improve cooperation in the management of West African savanna and raises awareness of the importance of savanna ecosystems in the region, and become more self-sustaining as a result.

The table on the next page summarizes the project training plan.

| Training and Capacity Building Courses/Themes | Frequency/Extent | Beneficiary Group | Where Conducted |
|---|---|---|---|
| Enhancing capacity to access existing microcredit programs to create microenterprises, training in microenterprise development as appropriate for each BR (e.g., ecotourism, training of guides, development of ecovillages, handicraft production, etc.) | 4 national training workshops = a total of 24 training workshops | Local communities | At each biosphere reserve |
| Application of GIS and database management in resource use planning | 2 national training workshops per reserve for a total of 12 workshops<br>1 regional training workshop<br>National workshops are intended to train staff of the six BR. A regional workshop will be convened for selected staff of all the six biosphere reserves to work on the development of a common database and common indicators for the long term. | Reserve managers | At each biosphere reserve |
| National PhD students will be members of the scientific team responsible for the implementation of Component One and will conduct their field surveys and research in the biosphere reserve | Ongoing throughout the project | University personnel | At each biosphere reserve |
| Education and awareness-raising programmes | 2 national training workshops per reserve for a total of 12 training workshops | All biosphere reserve stakeholders, particularly local communities, Government ministries | At each biosphere reserve |
| Conflict management and mediation | 3 regional training workshops and one national training workshop in each BR for a total of 9 training workshops<br>National workshops will allow biosphere reserve stakeholders to work on specific biodiversity conflict issues in each site. Regional workshops will be attended by representatives of key stakeholder groups and will work on common tools and experiences for conflict resolution. | All biosphere reserve stakeholders, particularly local communities, Government ministries | At each biosphere and regionally |
| Multidisciplinary research and diagnosis and informatics | 1 national training workshop in each reserve for a total of 6 training workshops<br>1 regional training workshop at project initiation<br><br>National workshop will be attended by national and local scientists working in each biosphere reserve and thus will be specific in the terms of gaps to be fulfilled between natural and social sciences in each biosphere reserve and for the construction of interaction indicators. A regional workshop will convene the heads of each national scientific team to adopt common indicators and common research protocols at the beginning of the project. | Biosphere reserve staff and local communities at each biosphere reserve | At each biosphere reserve and regionally |

## Annex L. Schematic Summary of Consultative Project Design Process



## Annex M. Supporting Documents Available in French

### Benin

Renforcement des capacités techniques et de recherche scientifique pour une conservation durable de la biodiversité dans la réserve de biosphère de la Pendjari. Dr. Brice Sinsin. Avril 2002. 54 pages.

Projet de Renforcement des capacités techniques et de recherche scientifique pour une conservation durable de la biodiversité dans la réserve de biosphère de la Pendjari. Rapport du point focal du Comité national MAB. Dr. Bonaventure Guedegbe. Avril 2002. 26 pages.

### Burkina Faso

Le programme de l'UNESCO sur l'Homme et la Biosphère (MAB) a 30 ans : quelle est la situation et les perspectives au Burkina Faso. Comité national MAB Burkina Faso. Septembre 2001. 36 pages.

Rapport technique de mise en œuvre du projet sur le Renforcement des capacités techniques et de recherche scientifique pour une conservation durable de la biodiversité dans la réserve de biosphère de la Mare aux Hippopotames. Conservateur de la Mare aux Hippopotames. Août 2002. 15 pages.

Projet Régional sur le Renforcement des capacités scientifiques et techniques pour une gestion effective et une utilisation durable de la diversité biologique dans les réserves de biosphère des zones arides d'Afrique de l'Ouest. Cas de la Réserve de la Biosphère de la Mare aux Hippopotames au Burkina Faso. Dr. Mamounata Belem. Mars 2002. 129 pages.

### Côte d'Ivoire

Projet Régional sur le Renforcement des capacités scientifiques et techniques pour une gestion effective et une utilisation durable de la diversité biologique dans les réserves de biosphère des zones arides d'Afrique de l'Ouest. Cas de la Réserve de la Biosphère de la Comoé. Professeur ASSA Ayémou. Mars 2002. 157 pages.

### Mali

Projet Régional sur le Renforcement des capacités scientifiques et techniques pour une gestion effective et une utilisation durable de la diversité biologique dans les réserves de biosphère des zones arides d'Afrique de l'Ouest. Cas de la Réserve de la Biosphère de la boucle du Baoulé. Dr. Malick Sylla. Mars 2002. 98 pages.

### Niger

Projet Régional sur le Renforcement des capacités scientifiques et techniques pour une gestion effective et une utilisation durable de la diversité biologique dans les réserves de biosphère des zones arides d'Afrique de l'Ouest. Cas de la Réserve de la Biosphère du « W ». Prof. Ambouta Karimou. Mars 2002. 59 pages.

**Senegal**

Projet Régional sur le Renforcement des capacités scientifiques et techniques pour une gestion effective et une utilisation durable de la diversité biologique dans les réserves de biosphère des zones arides d'Afrique de l'Ouest. Cas de la Réserve de  la Biosphère du Niokolo Koba. Prof. Paul Ndiaye, Jacques Rigoulot, Boubacar Traoré, Comité national MAB Sénégal. Mars 2002. 48 pages.

Plan de gestion du par cet de sa périphérie. Parc National du Niokolo Koba. Ministère de l'Environnement/Direction des Parcs Nationaux. Octobre 2000. 219 pages.

**Regional**

Rapport final de la première réunion du comité international de supervision, phase PDF-B du projet. UNESCO-Paris, 11-12 septembre 2001.11 pages.

Rapport final de la seconde réunion du comité international de supervision, phase PDF-B du projet. UNESCO-Paris, 24-25 avril 2002. 13 pages.

Rapport final atelier technique de Dakar, Bureau régional de l'UNESCO-Dakar, 11-15 février 2002.  16 pages + Annexes.

Projet Régional sur le renforcement des capacités scientifiques et techniques pour une gestion effective et une utilisation durable de la diversité biologique dans les réserves de biosphère des zones arides d'Afrique de l'Ouest. Proposition de programme de recherche scientifique pour les quatre années du projet global (2003-2006) pour les six sites concernés par le projet. Prof. Jacques Weber. Octobre 2002. 17 pages.