Bosque Nacional Guinea Ecuatorial
Strategy Document

A Consortium
to Improve Natural Resource Governance and Management
in the Monte Alen-Monts de Cristal CBFP Landscape

Bosque Nacional de Guinea Ecuatorial Strategy Document

I. Members and Roles of Planning Team

Name	Title & Organization	Role
Francisca Eneme	Directora, INDEFOR	Director of the government agency with the former legal responsibility and the current technical capacity to manage the national system of protected areas.
Santiago Biyane Mba	Jefe, Sección de Medio Ambiente, Delegaron nacional del Ministerio de Pesca y Medio Ambiente	Local representative of the Ministerio de Pesca y Medio Ambiente which has current legal responsibility for managing the national system of protected areas.
Juan Njamba	Director Nacional de Bosques, Ministerio de Agricultura y Bosques	National Director of Forestry Section within the Ministry of Agriculture and Forests.
Roberto Ncogo	Jefe, Departamento Cartográfico, INDEFOR	Chief of INDEFOR's GIS lab and responsible for developing coverages of the national system of protected areas and managing all spatial data.
Diodado Obiang	IUCN/CARPE, Jefe Departamento Forestal, INDEFOR	IUCN/CARPE focal point for EG
Unamed	Mongomo Veneer Mill	Representative of the largest wood processing plant using timber resources within BNGE
Unamed	Presidente/Vice-Presidente de Miserje	Representative of village within BNGE
Unamed	Presidente/Vice-Presidente de Midjobo	Representative of village within BNGE
Christopher Kernan	Country Director, Conservación Internacional	Responsible for developing and implementing CI's program of conservation activities in EG; providing technical advice to INDEFOR, ECOFAC, and the Ministry of Pesca y Medio Ambiente

II. Information/Data Gathering

a. Physical

Category	Existing	Needed	Strategy for acquisition
BNGE boundaries	Rough draft exists within GIS developed without participation of local communities or stakeholders, unverified in the field, unmarked in the field	Final boundaries developed with public participation and consensus, in GIS, verified and adjusted in the field to minimize conflict, Surveyed and legalized by the government decree;	In 2008 INDEFOR Cartography Department maps draft BNGE to create large forest blocks that exclude transportation corridors and larger settlements; In 2009, INDEFOR/ANDEGE holds public sensitization meetings with local communities and stakeholders to present and adjust draft boundaries; In 2010 final boundaries are established by government decree with a provision for adjustment through CONAMA. In 2010-1012 INDEFOR Cartography Department GPS's boundaries in the field;
Satellite imagery	2004 Landsat image available, heavily clouded	Recent imagery of higher quality	Include purchase of recent imagery in 2009 INDEFOR project funding request to GoEG.
Rivers, streams, lakes, water courses	Mapped in GIS, partially verified in the field	Verify water bodies and watercourses in the field.	
Roads	Mapped in GIS, verified in the field	Update reflecting recent road construction	Field verification with handheld GPS as part of 2008 INDEFOR field missions plan.
Foot trails	Lacking	Map in GIS of currently used foot trails within BNGE;	In 2009 INDEFOR maps major foot trails in BNGE with handheld GPS.
Buffer zone	Lacking	Buffer zone formally defined and its location mapped in GIS.	In 2010 INDEFOR Cartography Department maps buffer zone in GIS
Buffer zone villages	Mapped in GIS, verified in the field		

b. Biological

Category	Existing	Needed	Strategy for acquisition
Terrestrial animal biodiversity	Few studies; little synthesis applicable to applied conservation; many areas with no data	Current status surveys of keystone and IUCN Red List species: estimates of population sizes, structure, and locations; identification of keystone species;	Implement the EG national biodiversity research program called for in NBS; Implement National Biodiversity Institute to coordinate and organize biodiversity data; MIKE establishes a field program in EG that includes monitoring in BNGE; IUCN/CARPE continues to fund status surveys by ANDEGE
Terrestrial plant biodiversity	CUREF completed some botanical studies of BNGE; many inselbergs remain unsampled; little synthesis useful for management; MBG work on climatic and geographic patterns in floristics has indirectly mapped BNGE as an area with likely high plant biodiversity, but MBG has not done any field expediton to the area; no vegetation map	Completion of basic botanical surveys and a synthesis that identifies concentrations of endemics, a first plant community description and mapping, a plant identification field guide with field keys; identification and mapping of phytogeographic patterns in floristic diversity	Implement the EG national biodiversity research program called for in NBS; Implement National Biodiversity Institute to coordinate and organize biodiversity data; MBG expands botanical exploration to BNGE; ANDEGE carries out botanical studies with IUCN/CARPE funding
Freshwater biodiversity	Almost no data;	Basic taxonomic freshwater survey; identification of critical and keystone species, ecological characterization of freshwater communities	Implement the EG national biodiversity research program called for in NBS; Implement National Biodiversity Institute to coordinate and organize biodiversity data; ANDEGE carries out basic surveys with IUCN/CARPE funding
Landscape ecological processes	Migratory movements of many large vertebrates take place (elephants, buffalo, etc.) but their routes are undocumented, Raffia palm forests are know to be critically important for elephants	Map of the landscape movements of elephants and other large vertebrates; Seasonal and spatial hydrological patterns; Identification of key processes of forest dynamics; Identification and mapping of key ecotones; mapping of Raffia swamps	Implement the EG national biodiversity research program called for in NBS; Implement National Biodiversity Institute to coordinate and organize biodiversity data; MIKE establishes a field program in EG that includes surveys of BNGE;
Threats to biodiversity	Some threats well known and acknowledged (unsustainable hunting, agriculture, timber harvesting), no systematic analysis and/or mapping of threats	Identification of key ecological attributes of BNGE conservation targets; Systematic identification and prioritization of the most important disruptions to the ecological factors maintaining biodiversity	Implement CAP analysis with public participation in BNGE to identify conservation targets, identify key ecological attributes, determine indicators

c. Socio-economic

Category	Existing	Needed	Strategy for acquisition
Stakeholder identification and characterization	Considerable anecdotal socio-economic knowledge exists among Guinean technical staff; but little quantitative data and little analysis of stakeholder dynamics or socio-economic linkages to biodiversity status	Identification of the stakeholder groups with key roles in influencing natural resource use activity	CI, INDEFOR, and ANDEGE collaborate on completing CAP situation-stakeholder analysis for BNGE including facilitated community workshops in BNGE buffer zone
Economic activity mapping	No systematic mapping of current economic activity; timber concessions boundaries are out-of-date and current timber harvesting activity is undocumented; no village resource mapping	Industrial resource mapping particularly updated timber harvesting maps, agriculture activity maps; village resource use maps	CI, INDEFOR, and ANDEGE collaborate on completing GIS verified village resource mapping in BNGE buffer zone communities; INDEFOR Cartography Department complete an update of timber concession maps; ANDEGE GIS maps the location of agriculture activity and trends in the BNGE buffer
Identification of threats to biodiversity	Some threats well known and acknowledged (unsustainable hunting, agriculture, timber harvesting), no systematic analysis and/or mapping of threats	Analysis of human activities leading to disruption to ecological health of biodiversity; identification of stakeholder groups involved in threat activity; analysis of socio-economic context of key stakeholder activities	CI, INDEFOR, and ANDEGE collaborate on completing CAP analysis for BNGE including identifying conservation targets, stresses, and sources of stress
Institutions	Roles of MdePyMA MdeAyB; INDEFOR MdeAyB, INAP, UNGE, exist with unclear roles in the environmental sector	Clear listing and characterization of all institutions and organizations in the government sector, private sector and non-profit sector with activities bearing on biodiversity in BNGE	CI, INDEFOR, and ANDEGE collaborate on completing CAP situation diagramming analysis for BNGE including identifying institutional actors with influence on source of stress activity or conservation strategies
Legal	National Biodiversity Strategy, Forestry Law, Environmental Law exist;	Compilation of all existing environmental laws in electronic and printed forms; Analysis and clarification of laws and clauses in force; Identification of conflicts; Recommendations for resolving conflicts	CI contracts with ANDEGE and individual consultants to compile laws, provide an analysis of conflicts, provide recommendations to resolve conflicts; Technical workshop with all ministries and agencies participating to review existing laws, present conflicts, present recommendations for resolution, prepare legal documents for decrees creating key coordinating mechanisms

III. Creating a Public Participation Strategy

The BNGE public participation strategy will engage with stakeholders in two ways: 1) engagement by participation in the analysis of conservation targets, current ecological disruptions stressing those targets, and the identification of the human activities that cause such stresses, and the analysis and identification of the human socio-economic groups that carry out these stress-causing activities; and 2) engagement with the human socio-economic groups carrying out stress-causing activities through a conservation strategy to lessen the ecological stress by modifying their behavior.

The first category of engagement seeks participation from the public as a source of information, knowledge, analysis, and consensus. For example, facilitated workshops with technical participants – biological researchers, ministry technical staff, park guards - are often the best source of detailed information about conservation targets and their current ecological status and the most critical group in reaching a technical consensus on the optimal conservation management focus. Community workshops are useful for collecting and analyzing information about the human socio-economic activities that are causing ecological stresses on biodiversity and as part of developing a consensus among stakeholders about the need and the nature of an intervention. Both can be usefully involved in analyzing potential conservation strategies to modify stress-causing human activities.

Planificación para Áreas de Conservación (CAP) methodology, developed by The Nature Conservancy and widely accepted in Latin America as a standard for site-level conservation planning, will be the methodological framework for public engagement. Through CAP, the Planning team will systematically gather information from various sources including documents, expert interviews, and public meetings. The planning team will follow the CAP stepwise analysis: 1) information will be gathered, organized, and synthesized to identify a limited number of conservation targets that represent a conservation area's biodiversity; 2) the ecological health of these conservation targets will be assessed in terms of the current status of their key ecological attributes and field measurable quantitative indicators of the status of these attributes will be defined; 3) the current ecological health of all targets at a site will be combined for an estimate of the overall ecological health of BNGE; 4) human activities that contribute to the degradation to one or another key ecological attribute will be defined as "sources of stress" and will be assessed for their contribution to ecological stress faced by the conservation targets and the irreversibility of their impact; 5) the rankings of all sources of stress will be combined across all conservation targets to give a ranking of sources of stress for BNGE; 6) the socio-economic context of the sources of stress human activities will be analyzed using situation diagrams and discussed in public participatory workshops to identify key socio-economic groups and key activities influencing the source of stress; and 7) potential conservation strategies will be identified and analyzed for the location of the intervention and their potential to influence the pathways, socio-economic groups, and activities represented in the situation diagram.

The Planning Team's use of CAP will be an iterative process. The Planning Team accepts that method will yield conservation hypotheses that must be tested by application and field monitoring of the key ecological attribute indicators, and refined by iteration

and adjustment. The Planning Team will emphasize the role of socio-economic analysis as an integral part of the methodology and will use situation-stakeholder diagrams elaborated with the participation of the stakeholders themselves. The Planning Team will develop the situation diagrams through facilitated discussions in public meetings and through individual interviews where more appropriate. The Planning Team accepts that participatory development of a graphical representation of the socio-economic context creating impacts on biodiversity creates a common understanding useful for reaching a consensus and agreement on conservation interventions. High priority conservation interventions, the human and non-human resources necessary to implement them, and a schedule of implementation are the foundation of a management plan.

The BNGE public participation strategy includes the involvement of local communities, stakeholder groups, the private sector, the NGO community and the government in management plan implementation. The nature of each group's involvement will be developed in part using CAP situation diagramming carried out in community meetings and with stakeholders. These diagramming sessions will be important in explaining the interventions to affected groups, establishing an understanding about the reasons for the interventions, and recruiting participation in their implementation.

IV. Creation of Strategy for Formal Recognition of Plan

- The concept of a BNGE was first proposed by EG's President Obiang.
- This concept was formally agreed to by the GoEG in an agreement between the GoEG and CI signed in 2006.
- The creation of BNGE must be formally presented to the GoEG by the MdePyMA and/or MdeAyB in the form of a technical proposal that includes elements of a management plan (e.g., BNGE boundaries, management goals and objectives, an analysis of the impact on local communities, etc.).
- This proposal is reviewed by the cabinet, parliament, and president.
- If the proposal is approved, BNGE is created by presidential decree.
- Once BNGE exists, the MdePyMA and MdeAyB have joint responsibility to develop and implement a management plan for BNGE.
- MdePyMA has the legal authority to approve protected areas management plans. MdeAyB has the authority to approve any forest resource use plans that are elements of a BNGE management plan.
- CI and Guinean NGOs such as ANDEGE can play a catalyzing role in this sequence by preparing the necessary technical proposal for MdePyMA and MdeAyB, and by publicizing the concept to BNGE communities and local governments.
- The strategy to gain formal recognition of a BNGE management plan is: 1) provide technical support for the creation of BNGE; 2) carry out a public education/sensitization campaign to introduce the concept of BNGE and its objectives to a broad range of stakeholders; 3) continue field research activities in BNGE so that a management plan can be based on credible and current biological and socio-economic data; 4) hold stakeholder workshops in the communities of BNGE to understand their interests and elicit their management suggestions; 5) prepare a final BNGE management plan in collaboration with technical staff of MdePyMA and MdeAyB; 6) support formal ministerial approval of the BNGE management plan.
- FY09 tasks in support of this strategy include: 1) frequent contacts with MdePyMA, MdeAyB, and other ministries to support the process of creating BNGE; 2)

preparation of the technical documents to create BNGE including elements of a management plan; 3) biological and socio-economic field research to establish the information needed to develop a credible BNGE management plan; 4) a public sensitization campaign to introduce and explain the concept of BNGE; and 5) livelihood support activities with local communities.

- The 5-year benchmark for formal recognition of a BNGE management plan is to have a BNGE management plan fully developed through collaboration with the technical staff of MdePyMA and MdeAyB. Formal recognition of the BNGE is dependent on a decree creating BNGE and this is a political process beyond the control of the consortium.

V. Creation of Vision and Objectives for BNGE

Desired state for the Bosque Nacional de Guinea Ecuatorial	
Biodiversity	1) No species native to BNGE go extinct
	2) All natural habitats/ecological communities within BNGE are identified and protected/maintained
	3) All BNGE ecological processes are identified and protected/maintained
	4) BNGE has an active program of field research in biodiversity
	5) BNGE biodiversity information is accurate, current, and accessible in a GIS and other appropriate formats
	6) BNGE conservation and management priorities are identified through a scientifically informed analysis
Socio-economic	1) BNGE has accurate, current, and accessible socio-economic information available about human communities in its periphery and other stakeholders
	2) BNGE makes a contribution to traditional and artisanal livelihoods and to small-scale local industry.
	3) All exploitation of natural resources within BNGE is environmentally sustainable.
	4) the economic benefits from the exploitation of natural resources within BNGE is equitably distributed among appropriate local communities ans stakeholders.
	5) The local, national, and global public is aware of the biodiversity, economic, and social values of BNGE
	6) BNGE management proactively addresses the impact of wildlife on BNGE agriculture
	7) BNGE management planning and implementation involves extensive participation of local communities and stakeholders
Governance	1) BNGE is supported by clear national biodiversity policy
	2) BNGE is supported by a legislatively established streamlined administrative structure, with clearly defined and accepted ministerial and agency responsibilities
	3) Local communities and key stakeholders are actively and meaningfully involved in BNGE governance
Natural resource management	4) BNGE has reliable access to sufficient financial resources to maintain effective management and protection
	1) BNGE management is guided by a scientifically based, focused, pragmatic, and adaptively flexible plan
	2) BNGE has the appropriate number of well-trained staff to implement effective management
	3) BNGE has appropriate infrastructure to implement effective management
	4) BNGE staff are adequately and appropriately equipped to implement effective management
	5) BNGE carries out is a systematic and clear monitoring program to enable adaptive management

Objectives for Bosque Nacional de Guinea Ecuatorial
1) To establish an accessible body of accurate and current biodiversity information immediately useful to protect and manage BNGE biodiversity
2) To establish an accessible body of accurate and current socio-economic knowledge to effectively manage human activities negatively impinging on BNGE biodiversity
3) To recruit, train, equip, and support staff capable of implementing BNGE biodiversity protection activities
4) To build a program of public awareness and education about the landscape's biodiversity, economic, and social values that reaches local, national, and global audiences
5) To acquire planned BNGE infrastructure and major equipment.
6) To establish a legal and policy environment for BNGE that is clear and supportive of protecting BNGE biodiversity
7) To establish stable and sufficient sources of funding for BNGE
8) To help establish and participate in streamlined government administrative structures for protected areas management.
9) To regularly revise and update the BNGE management plan based on biological and socio-economic monitoring programs, with the participation of local communities and stakeholders, and meeting high international standards.
10) To implement a program of support and participation in private sector and NGO activities that encourage biodiversity-compatible alternative livelihoods that benefit local communities

VI. Elaboration of a Implementation Plan for BNGE

- The Guinean NGO ANDEGE will take the lead in developing an implementation plan for BNGE. BNGE does not have a legal existence as a protected area yet so it is inappropriate and difficult for either INDEFOR (MdeAyB) or MdePyMA to take this role. ANDEGE will develop an implementation plan under contract to CI.
- a clear legal mandate to develop the idea of a national forest created from former timber concessions. This proposal, originally suggested by President Obiang and now promoted by CI, is appropriately developed by a Guinean NGO such as ANDEGE, working closely with government ministries, but also having close ties to the communities lying within or near the proposed boundaries of BNGE.
- The key concepts for BNGE are that it: 1) supports traditional and artisanal uses of forest resources; and 2) allows the forest to "rest and recover".
- The first feature requires gathering information about the current and potential traditional and artisanal uses of the forest in enough detail to support such activities in a genuinely sustainable and economically viable way. ANDEGE's FY09 contract with CI includes as deliverables socio-economic studies focused on providing such information.
- The second feature implies micro-zones within BNGE with appropriately defined boundaries and management objectives based on biodiversity values, the extent and quality of timber exploitation, or reasonable levels of sustainable harvest. ANDEGE's FY09 contract with CI includes as a deliverable an analysis of current forest condition within BNGE.
- An implementation plan based on credible information and elaborated by ANDEGE with participation from local communities and government agencies, will be a benchmark for FY10.

VII. Creation of Monitoring Plan for BNGE

<u>Biological monitoring of indicator species</u>

- The currently available biological information for BNGE does not allow credible conservation planning at a micro-zone scale within BNGE. Because there is no baseline reference, adaptive management is not possible. An early objective in

creating a monitoring plan for BNGE is to collect baseline data to establish a monitoring reference.

- The strategy for accomplishing this is to carry out biological field research focused on the population abundances and distributions of indicator species: gorilla, chimpanzee, elephant, Goliath frog, and manatee.
- FY09 tasks include biological field studies of all these species. This field work will be accomplished by a collaboration led by CI that includes ANDEGE, UNGE, MdeAyB, and the MdePyMA. CI expects to start in FY09 a year-long conservation survey of great apes and elephants in Río Muní. ANDEGE will begin a conservation survey of Goliath frog with funding from a CI grant and from its CARPE sub-contract with CI. In FY09 ANDEGE and the MdePyMA will receive training in manatee survey techniques in Ghana with funding from Earthwatch.
- The 5-year benchmark is to have in place in BNGE a monitoring program enabling adaptive management for all five indicator species based on a credible baseline reference.

Vegetation monitoring

- As with indicator species, currently available vegetation information for BNGE does not allow credible conservation planning at a micro-zone scale. The last forest inventory was done in the late 1980s, the last vegetation maps were done in the mid-1990s; there is no record of the forest and vegetation changes that have taken place in the last ten years. No maps of vegetation cover or deforestation derived from remote-sensed data have been credibly ground-truthed. Because there is no baseline reference, adaptive management of the forest and forest resources is not possible. An early objective in creating a monitoring plan for BNGE is to collect baseline data to establish a vegetation monitoring reference.
- The strategy for accomplishing this is to: 1) carry out vegetation field research focused on establishing reference plots to ground-truth remote-sensed data; 2) establish forest inventory plots to establish the species composition and structure of the forest in logged and unlogged areas; 3) use these data to update the mid-1990s vegetation maps with current information on the extent and location of deforestation and forest degradation. These maps will establish a baseline for forest and vegetation monitoring and adaptive management.
- FY09 plans include a field study conducted by ANDEGE to collect data from vegetation plots located within BNGE.
- The 5-year benchmark is to establish within BNGE a network of permanently located vegetation plots distributed to provide ground-truthing for remote-sensed data at a resolution useful for credible adaptive management of BNGE vegetation and forests.

Socio-economic monitoring

- As with monitoring, BNGE suffers from having been neglected by past studies the most recent of which mostly were in the late 1990s. With the rapid growth and transformation of EG's economy in the last 10 years, such socio-economic information is out-of-date and consequently unreliable for current planning that affects people and communities within BNGE.
- A first objective for creating a monitoring plan for BNGE that includes socio-economic monitoring is to establish a credible baseline of information about the current socio-economic status of communities, people, and economic sectors in BNGE.

- After establishing a socio-economic baseline, the objective will be to develop a program of routine data collection to detect socio-economic changes, particularly the positive or negative impacts of natural resource management activities in BNGE.
- The strategy to accomplish these two objectives is: 1) train technical staff within the appropriate ministries and Guinean organizations to design and carry out socio-economic field research; 2) support these trained technical staff in carrying out socio-economic field studies focused on establishing simple quantitative measures of the current socio-economic status of BNGE communities, people, and economic sectors, particularly as it relates to the use of forest resources; 3) continue socio-economic field studies to remeasure quantitative measures of the socio-economic status of BNGE communities, people, and economic sectors as part of adaptive management.
- In FY08 MdeAyB technical staff and ANDEGE received training in socio-economic field methods from Dr. Josefin Demmer, a consultant to ECOFAC. In FY09 ANDEGE will continue socio-economic field studies in BNGE as one of the activities in their CARPE sub-contract with CI, benefiting from their recent training. These socio-economic field studies will continue until a credible socio-economic baseline is established.
- In FY09 ANDEGE, under contract to CI, will also begin a more intensive work with at least one BNGE community to improve the management of its communal forest. This work will involve an analysis of artisanal timber and NTFP extraction activities that will yield baseline measures of socio-economic status relevant to this individual community and economic activity (e.g., volume, prices, income, costs, productivity, etc). These measures will allow monitoring the socio-economic success of management interventions to improve livelihoods based on these extractive activities.
- The 5-year benchmarks are: 1) to establish a credible socio-economic baseline for BNGE with appropriate quantitative measures of the socio-economic status of BNGE communities, people, and economic sectors; 2) to establish an active program of socio-economic monitoring that is producing data for adaptive management in BNGE.