GLOBAL ENVIRONMENT FACILITY

1. Identification

Project number:	**PIMS 1584**
Project title:	Conservation of the biodiversity of the Nimba Mountains through integrated and participatory management
Duration:	Nine years
Implementing agency:	UNDP
National executing agency: and Environment	Ministry of Mines, Geology Centre for the Management of the Environment of the Nimba Mountains (CEGEN)
Requesting Country:	Guinea
Eligibility:	Convention on Biological Diversity ratified May 7th, 1993; National Biodiversity Strategy and Action Plan prepared April 2001; National Environmental Action Plan prepared in 1994 in which the conservation of the Nimba Mountains is a priority
GEF Focal Area:	Biodiversity, with links to Land Degradation
GEF Operational Programme:	OP4 - Mountain Ecosystems, with links to OP3 Forest Ecosystems and Land Degradation

2. Summary

This programme will contribute to the protection of the biological diversity of the Nimba Mountains Biosphere Reserve, including the World Heritage Site (officially on the list of Sites in Danger since 1992). The proposed programme will rely on integrated ecosystem management through participatory approaches according to the philosophy of a biosphere reserve in which conservation of globally important biodiversity, and landscape-level sustainable use of natural resources and sustainable development are harmonised. The programme will enhance mainstreaming of biodiversity conservation into local and national level sustainable development planning. The programme will also contribute to the development of a national system of protected areas. The programme consists of (I) support to the protection of three core reserve areas in the Nimba Mountains which cover a range of ecosystem types from high-altitude savannahs to montane, mid-altitude and lowland rainforest formations plus their associated aquatic environments, (II) improving agricultural intensification and revenues in the buffer zone

and transition area of the Reserve (lateritic savannah, lowland rainforest, secondary bush, agricultural land), (III) promoting culturally appropriate animal husbandry and sustainable management and use of wild fauna in the buffer zone and transition area, (IV) improving local health and hygiene conditions, by promoting complementarity between 'modern' and traditional medicines, and sustainable use and management of traditional medicinal plants in the buffer zone and transition area, and (V) strengthening the management authority for the Biosphere Reserve - CEGEN - as well as inter-institutional co-ordination & planning mechanisms for CEGEN and national partners including sectoral line agencies, rural development groupings, development organisations and programmes, and the proposed iron ore mining operation. The programme strategy is to start with building the basic capacity of CEGEN and selected partners to enable them to implement a complex integrated programme for the systematic management of the Reserve's core areas and in harmony with the portions of the Nimba Mountains in Côte d'Ivoire and Liberia (as and when their security situation improves). Specific detailed management plans will be prepared to overcome the barriers to improved park management, improved agricultural practices and revenues, and improved animal husbandry and wildlife management Towards the mid-term of the programme, it will focus on consolidation and sustainability, both in terms of financial mechanisms as well as institutions. Towards the end of the programme, it will develop exit strategies to rural development support, establishing with the mining company an independent structure and sustainable financing mechanism to support integrated conservation and sustainable use of the Nimba Mountains, and completing any remaining needed institutional and legal reforms.

3. Cost and financing (US$)

GEF :	Project	:	3,660,000
	PDF B	:	330,000
	Subtotal	**:**	**3,990,000**
Direct co-financing :			
Government of Guinea	Project in-kind	:	500,000
	Project cash	:	330,500
	PDF B	:	50,000
	Subtotal	**:**	**880,500**
UNDP :	Project	:	1,646,400
	PDF-B	:	37,000
	Subtotal	**:**	**1,683,400**
UNESCO/UNF/FFI :	Project	:	700,000
	PDF-B	:	30,000
	Subtotal	**:**	**730,000**
Mining Consortium:	**Project**	**:**	**4,500,000**
Local Communities :	Project	:	100,000
	PDF B	**:**	5,000

Subtotal : 105,000

Total co-financing *(not incl. PDF B)* **: $ 7,776,900**
(including PDF B): $ 7,898,900

Total for project *(not incl. PDF B)* **: $ 11,436,900**
(including PDF B): $11,888,900

4. Associated financing (equivalent US$):

Project title (and acronym in French)	*Source of financing*	*Budget*
Animal Husbandry Support Programme (PAE)	AFD	5,820,000
Support to Livestock sector	EDF	7,432,000
Guinean Society for Support to Integrated Development of Small Animal Husbandry	Private	To be decided
Project for the Development of Small-scale Forest Inhabitants in Forested Guinea (PRODAD/GF)	IFAD	12,500,000
Project for the Development of Irrigated Rice in Forested Guinea (AFD)	AFD	To be decided
Rural Credit Programme	AFD	9,000,000
Rural and Forest Resources Management Project (PGRR)	GTZ-KfW	9,750,000
TOTAL		*44,502,000*

5. **Operational focal point :** Mrs. Kadiatou N'Diaye, Ministry of Mines, Geology and Environment . Date : Letter of endorsement attached

6. **Contacts :** Maryam Niamir-Fuller : UNDP-GEF Regional Co-ordinator for Africa in Biodiversity and International Waters, and Land Degradation Focal Point; e-mail: maryam.niamir-fuller@undp.org

7. PROGRAMME CONTEXT

7.1 Environmental context and global significance

1. The Nimba Mountains Biosphere Reserve (NMBR - 145,200 ha) corresponds to the Guinean portion of the Upper Cavally River Basin. Following the classic biosphere reserve model, whose objective is to integrate conservation of globally significant biological resources with human activity in an integrated landscape management approach, the NMBR is zoned into three land-use categories, namely a transition area (88,280 ha) where land uses are monitored, a buffer zone where land-uses are strictly controlled (35,140 ha) and of a cluster of three strictly protected core areas: the Bossou ecosystem (320 ha), the Déré ecosystem (8,920 ha) and a section of the Nimba mountain range that is a World Heritage Site (12,540 ha). This last area is contiguous with Côte d'Ivoire and Liberia (see maps, Annex 15). Comprised of a mosaic of forest and savannah ecosystems that cover most of the mountain range, and from which flow many permanent rivers, the massif is unique on earth. Altogether, six plant formations are present: high-altitude savannah, low-altitude savannah, semi-deciduous forest, low altitude per-humid rainforest, montane forest and swamp forest (see Annex 8 for detailed description of the programme site).

2. These ecosystems are home to about 85% of the species that comprise the biological diversity of Guinea, which boasts 2,835 animal species including 107 mammals, 72 bird species, 58 reptile species, 45 amphibians species, 38 fish species, 38 mollusc species, 2408 insect species, 31 myriapod species, 17 scorpions species, 18 acarid species, 17 species of daddy long-legs and 46 species of annelids (Bangoura, 2001). Among these, are high-altitude species living in areas characterised by average temperatures at least 6°C below that of surrounding lowlands, and a rigorous dry season followed by a rainy season with high humidity. The Déré Forest contains climax vegetation types of great botanical diversity that have been relatively well preserved for a long time (Von Droste *et al.*, 1993). One also finds many rare plant and animal species that are endemic or have almost vanished from the Upper Guinean Forest Ecosystem due to forest clearance and hunting, and which have been conserved in the Reserve because of its mountainous nature and, in places, lateritic soils[1]. This is the case for the Nimba otter-shrew *(Micropotamogale lamottei)*, the chimpanzee *(Pan troglodytes verus)* and the viviparous toad *(Nectophrynoïdes occidentalis)*, which are all on the IUCN Red List. This last species, which lives tucked away in clay openings in the rock during the dry season, is a rare case of adaptation to the convex summit of the Nimba Massif, which lacks any standing water or waterways. These chimpanzees use stone tools and, according to oral tradition, live in harmony with the indigenous people of Bossou (the Manons), who consider them as sacred. Despite forest clearance and human population growth, the population of chimpanzees has increased to 27 individuals, as of November 2001.

3. The Nimba Mountains Biosphere Reserve is also unique for its beauty and unusual landscapes. The altitude, the complexity of the climate, the morphology of the mountain

[1] The GEF/UNDP project "Conservation Priority-Setting for the Upper Guinea Forest Ecosystem, West Africa" identified the Nimba Mountain complex as one of the highest priorities for conservation in the region.

peaks which rise more than 1,200 m from the lowlands, the harmonious plant mosaic created by the patchwork of grasslands and forests "which appear to snake up to the summits", the waterways which sink into deep gorges or cascade over the many waterfalls, the sparseness of the undergrowth of the dense forests maintained by natural fires (lightning, discharges of natural static electricity, etc.) that set the mountain ablaze every year, as well as the vast expanses of high-altitude savannah interspersed with jagged rocks – all these combine to form a totally unique natural environment for West Africa (Lamotte, 1993; Pascual, 2001).

4. In addition, the Nimba Mountains Biosphere Reserve is blessed with a highly contrasting set of climatic influences due to a confluence of factors including geographic location, relief and aspect (orientation), which play the dominant roles. The mountain range represents the highest summit at the end of the Guinean Ridge and consequently is located at the crossroads of three important West African climates: the sub-equatorial climate, the south-sudanese climate and the sub-tropical Guinean climate with strong oceanic influence.

5. The patrimonial value of the Nimba Mountains Biosphere Reserve is strengthened by the general widespread degradation of West African forests and particularly those of the region of *Guinée Forestière* or 'Forested Guinea' (Von Droste *et al.*, 1993).

6. Finally, the biological diversity of the Nimba Mountains in the plains, hillsides and forests, provides local populations with food, energy, water, medicine, shelter, agricultural land, oxygen, etc. It is considered the resource that can stimulate economic growth and guarantee the welfare of local people.

7. The preceding factors explain the successive classification of the Nimba range as a Strict Nature Reserve in 1944, a Biosphere Reserve in 1980 and a World Heritage Site in 1981. Annex 8 gives full details of the environmental context of the Nimba Mountains Biosphere Reserve.

7.2. Economic context and anthropogenic pressures in the Upper Cavally Basin

8. In 1984, at the end of the First Republic, Guinea opted for a development model based upon liberal economic policy. This included the formation of farmer co-operatives/groupings, reforms specifying land rights, readjustment of prices, policies aimed at reviving agricultural research, an increase in agricultural production, collaborative management of biodiversity resources, improvement of sanitary conditions and poverty reduction (Letter of Agricultural Development Policy, 1997; Strategy for Poverty Reduction, 2000; Guinea, Vision 2010). To support such policies, the Guinean government has needed significant capital, some of which has been generated from domestic industries such as mining, and some of which has been borrowed internationally. In 1998, the Guinea's debt represented 102% of GNP and its debt-servicing ratio was 19.5% of exports of goods and services (UNDP, 2000). Thus a large portion of the country's budgetary resources and foreign exchange goes directly to servicing the debt. In order to maintain, diversify and increase its sources of hard currency, the Guinean government envisages extraction of the rich iron deposits of the Nimba and Simandou Mountains.

9. Iron mining in the Nimba Mountains could be socially beneficial at the national level, as well as at the local level by providing direct and indirect employment, bringing improvements in infrastructure and social services, and having a positive effect on local and regional governance. However it represents an enormous ecological danger due to its direct effects (physical disturbances at the mine site, air, water and noise pollution, disruptions caused by infrastructure like housing and ore transportation, etc.) and indirect effects (influx of population, increased pressures from agriculture, hunting, water use, etc.). For this reason, any future mining's impacts on the biological diversity of the Reserve will be evaluated in the framework of a detailed Environmental Impact Assessment (EIA). Likewise its social impacts have been considered but need detailed analysis. However these environmental and social effects are unlikely to be felt fully for many years according to current mining plans, since extractive activities are planned to begin in the year 2010 (Camara, 2001a; Pascual, 2001). Within the current programme's time frame, the major elements to put in place regarding mining include establishing sound baseline information on biodiversity, water & air quality, and other biophysical parameters, as well as putting in place scientifically sound, binding and transparent guidelines and monitoring mechanisms for possible future mining.

10. Intense poverty persists in the Upper Cavally Basin whose inhabitants live dispersed in nearly 100 villages, up from 56 in 1992. With an estimated 1992 population of 59,000 inhabitants the average density was approximately 97 inhabitants/km^2 in the zone, considering only the area of habitable land versus areas unsuited to cultivation such as the lateritic savannahs and the Reserve's core areas (Pascual, 1993; Dore, 2001). High infant mortality plagues the region, due to malnutrition and insufficient caloric intake as well as to kwashiorkor, measles, tetanus, yellow fever, malaria, whooping cough, diarrhoea resulting from a variety of parasitic infections, and meningitis. Safe water supply sources are inadequate and prophylactic and hygiene services are insufficient, underscoring the need to maintain healthy vegetative cover in the upper watersheds of rivers supplying the area, especially of the World Heritage Site. Access to education is inadequate, and favours boys over girls.

11. In spite of the preceding, population growth in the Upper Cavally Basin is high, about 4.1% per year, a rate higher than the national average of 3.1%, due mainly to immigration. The population of indigenous inhabitants appears fairly stable, thus it is peoples with less local ecological knowledge who are settling around the Reserve. The agricultural potential of the Upper Cavally Basin with more than 50,000 ha of arable land, its high average rainfall (>2000 mm per year), along with commercial forestry activities and the prospect of iron mining, have sparked the influx of large numbers of immigrants from sahelo-sudanese regions, most of whom are not itinerant and have settled. Between 1990 and 1997, the wars in Liberia and Sierra Leone displaced approximately 40,000 refugees into the Upper Cavally Basin, some of whom still reside there. Recent events in Liberia and Ivory Coast have also resulted in an influx of refugees; statistics show that in a three-week period in December

2002, a total of 8,350 refugees arrived into the Upper Cavally Basin, more than half of them if Ivoirian nationality, and the remainder of Sahelian and Liberian nationalities.[2]

12. The indigenous peoples of the NMBR are the Manons and Konons, living mostly in the west and south of the Reserve along the Liberian border, and in the north and east of the Reserve along the Ivoirian border, respectively. The Manons, the dominant people along both sides of the Guineo-Liberian border. The local communities have agreed a non-aggressions pact among themselves: they will neither engage in hostilities across the political boundary nor harbour rebels that may try to do so. This pact, in effect since early 2001, has succeeded in keeping the local area peaceful at a time when hostilities were plaguing the border zone to the west, and in fact has contributed to reducing the traditional tension that existed between the two groups. The Manons and Konons traditionally protect sacred forests which are used for adolescent initiation rites and for adult initiation into cultural practices related to religion, history and medicine among other topics. To these peoples forests and the Nimba Mountains are also the abodes of ancestors, spirits and deities, too, embodying the ties between and thus the unity of human civilisation, the natural world and the supernatural (Doré 2001). Before large influxes of Guinean immigrants and international refugees in the 1990s, and before the expansion of the commercial forestry industry, these traditions and beliefs helped to preserve large areas of forest in the Reserve.

13. Generally speaking, three principal internal variables characterise the evolution of the Upper Cavally Basin's economy. First is an increasing informal sector of the economy, especially subsistence occupations that have a direct impact on natural resources, with 80% of the resident population depending on agricultural production. Collection of medicinal plants and fuelwood, hunting, and informal services including sale of labour, micro-retail businesses, road services, food and transportation services are also practiced. These activities are characterized by a lack of investment, clientele with low purchasing power and short-term planning horizons. Because of the lack of alternatives, these activities take a heavy toll on the natural resources of the Reserve and its environs.

14. The second and third variables are trade with Côte d'Ivoire, and social networks within Guinea based on kinship, ethnicity or religion. Commercial exchanges are significant in commodities/items such as coffee, cola nut, palm oil, rice, bananas, tools, hardware, cooking utensils, clothes, etc. However local farmers often lose a large part of their harvest by negotiating it at unfavourable prices in order to reimburse debts owed to traders. In turn farmers seek maximum short-term returns and exhaust agricultural lands rapidly, clear new forest (the case of the Déré Forest ecosystem), and over-exploit other natural resources (wildlife, fuelwood, plants, etc.) (Pascual, 2001; Loncény Camara, 2001).

15. A closer look at local production systems shows that traditional food crop cultivation is practised on hillsides and plains by clearing the forest, cultivating it until its fertility declines and then letting it lie fallow for the fertility to regenerate. Over 52% of the surface area of the Upper Cavally Basin is cultivated. The predominant land use is upland, rainfed rice. Irrigated rice production is only recently started in lowlands. Savanna patches are mostly

[2] Information from Red Cross Stations on the border; obtained during a visit by the PDF B team. December 2002.

used for livestock production, hunting, fuelwood, and non-timber and wildlife, harvesting. With 80% of the economically active and rapidly increasing population practicing agriculture, land shortages have led to dramatically reduced fallow times. Consequently rice yields, for example, have dropped 8-fold in the last decades, although the same amount of work is required per hectare. This leads to pressures and attempts to convert core areas of the Reserve to cultivation. (.

16. Traditionally hunting provided most local animal protein. It is practised year-round with snares, shotguns and flushing animals from hiding places. The cane rat *(Thryonomus swinderianus)* is the most prized prey. Game is destined for both household consumption and for sale. In addition to hunting, collecting snails, caterpillars, termites and frogs is common. Presently, in spite of the scarcity of game, only a few domestic animals (sheep, goats, poultry) are raised in intensive, home garden systems for ceremonial purposes. With a low Islamic population, eating pork is not locally taboo and selling it is a source of income for many households. Thus pig farming could be an important factor in reducing dependence on wildlife. The same is true for cane rat breeding, which is being tried in the region. .

17. Wood supplies about 90% of household energy requirements in the country (cooking food, heating and light). It represents a source of income for rural inhabitants and refugees, who gather it from plantations, fallow lands, land being cleared and forest undergrowth. Other than fuelwood cutting, forests are used for construction wood, small-scale village-level and industrial logging and collection of secondary products (raffia, dyes, natural toothbrushes, medicinal plants…). Industrial logging began in 1969 and has increased in recent years. Today, natural dense forests outside the Biosphere Reserve's core areas have nearly disappeared, with the exceptions of a few isolated sacred groves and gallery forests along waterways. Firewood collection is not thought to impact natural forests much in the Reserve; commercial forestry, land-clearance for agriculture and wildfires are the major threats.

18. Eco-tourism, at the World Heritage Site and the Bossou Hills in particular, could eventually play a significant role in raising local incomes and providing a long-term, non-consumptive industry for the Reserve. However given the region's isolation, the infrastructure and facilities for such tourism need to be developed, as would appropriate benefit-sharing formulae.

Policy and legal contexts; and Relevance to National projects and programs

19. The Republic of Guinea is party to conventions and/or international agreements concerning biological diversity, in particular the Convention on Biological Diversity (ratified May 7th, 1993), the World Heritage Convention (1979), the Washington Convention on the International Trade in Endangered Species (CITIES), the Ramsar Convention, the Convention to Combat Desertification and the Framework Convention on Climate Change.

20. The National Environmental Action Plan (NEAP) was adopted by the Government in 1994. It includes a long-range vision, an implementation strategy and an action plan. The basic principle underlying the NEAP is the integration of the environmental dimension in the

country's economic and social development policies. Two major objectives are being pursued, namely sound and sustainable resource management and the definition or strengthening of sectoral policies.

21. The Guinean National Biodiversity Conservation Strategy offers the following vision of biological diversity in the year 2015: "A population, including all its socio-economic components, sufficiently informed of the values of biological diversity and the risks involved with it, and responsible and committed to the conservation and sustainable utilisation of its resources in the national and sub-regional interest, and for the satisfaction of present and future generations." The specific objectives of this programme (see logical framework, Annex 2) aim to realise this vision in the NMBR.

22. The programme follows also the priorities of the NEAP (1994), the 2010 Vision for Guinea (2000), the Poverty Reduction Strategy (2000) and the National Development Plan (2001), all of which cite combating poverty and promoting good governance for sustainable human development as overarching goals. All of these are major concerns of the current programme and of the financial partners of Guinea, such as the World Bank, USAID, the French Development Agency (ADF) and the Canadian Agency for International Development (CIDA). The programme also follows the logic of the Letter of Agricultural Development Policy (LADP, 1997) whose principal objectives are an "increase in animal and crop production (specifically rice [which is the] basis of national food security), the rational utilisation of natural resources (land, forests and water) and protection of biodiversity".

23. From 1958 to 1984, the State was the sole owner of land and of biodiversity resources. Since 1984, land ownership policy has aimed to return land to those who cultivate it, consequently reintroducing the notion of private property into the agricultural economy (Condé, 2001). But in the Upper Cavally Basin access to land is generally governed by customary rights. This system is incompatible with the provisions of the private land and property ownership code instituted in 1992, and therefore individual acquisition of land is a source of conflict and holds back agricultural development. This conflict is intensified by arable land becoming scarce.

24. Thus the recent reforms in policy and law related to biological diversity result from both international and internal factors. Concepts such as 'World Heritage Site', 'participatory management' and 'sustainability of natural resources' remain poorly defined legally which, among other things, makes application of these policies and laws difficult. The precedent for community-based co-management exists in Guinea, where it has been used in the Haut Niger National Park. The legal bases for community participation in Guinean law are found in the Forestry Act, the Wildlife and Hunting Act and the Land Tenure and State Property Act (*Code foncier et domanial*). However these acts are not adequately implemented because the corresponding specific laws and regulations for their execution have never been published (see Annex 9 for lessons learnt on this issue).

25. Unfortunately, conservation of protected areas is not necessarily a top priority in the eyes of government in light of the enormous short term task of satisfying the basic needs of the

population. This is why, in the absence of any motor for economic growth in the Upper Cavally Basin and of international financial assistance, it is difficult to manage the threats to the Nimba Mountains Biosphere Reserve, which are so closely tied to the ways of life of local populations. Financial support from the GEF, UNDP, UNESCO and other donors thus is critical to help build capacity and sustainable financial mechanisms for long-term conservation of the Nimba Mountains' biodiversity.

7.4. Institutional context

26. There exist several institutions established more or less recently that are responsible for the management of natural resources in the Upper Cavally Basin. The comparative advantages of these potential stakeholders in the participatory management of these resources and the eventual benefits they can bring have been assessed for the proposed programme.

27. First and foremost, the Centre for the Management of the Environment of the Nimba Mountains (known by its French acronym 'CEGEN') is the agency with statutory responsibility for managing the NMBR and for co-ordinating the different activities led by specialised sectoral agencies. Although it was formally established in 1995, it did not achieve a functioning mode until 2000. Its official responsibilities and limited present capacity were assessed in detail under the PDF B and are summarised in Annex 13. With regards to communications, the Upper Cavally Basin has only a few computers and these lack internet access. The telecommunications network is limited to Lola, thirty kilometres from the Nimba Mountains. The number of telephone lines is very low. Although they work with computers, CEGEN staff in Conakry and at the Nimba Mountains communicate by radio. Local internet connection and acquisition of a satellite telephone would improve this situation. Radio, community meetings and drama represent effective and frequently used means of communication.

28. Managing forestry is the responsibility of the Directorate of Water & Forests, which is part of the Ministry of Agriculture. A forestry company wishing to obtain a logging concession works with the local Water & Forest agents to identify an area and prepare the technical specifications (*cahier des charges*) the concessionaire must follow in carrying out any logging. All *cahiers des charges* must be consistent with the Forestry Act which specifies general responsibilities, rules and regulations concerning commercial forestry. Guinea has a Tropical Forestry Action Plan which was under implementation in Forested Guinea or *"Guinée Forestière"* at the time of writing. However its impact in the province has not been felt significantly. While the Forestry Act is sound, enforcement of its provisions and of *cahier des charges* by the Directorate of Water & Forests has been seriously undermined by lack of logistical means, low motivation and loopholes allowing loggers to operate outside of normal concession agreements. In 2002, a presidential decree banned all commercial tree-cutting in the province, and the closed the borders with Liberia and Côte d'Ivoire.

29. Rural Development Communes (RDCs) prepare and implement local development plans, for example installing social and economic infrastructure at the community level. Decentralised national services are responsible for implementing sectoral and national government policies and programmes at the local level. Of importance for the management of the NMBR are the

National Directorates for Water and Forests (NDWF), for Scientific and Technical Research (NDSTR), for Livestock (NDL), for Agriculture (NDA), for Environment (NDE) and for Health (NDH). In addition, organisations and institutes under the administrative authority of the above Directorates, such as the Environmental Research Institute of Bossou[3] (ERIB), the Forestry Centre of N'Zérékoré, the Environmental Documentation Centre (N'Zérékoré) and the Cane Rat Breeding Research and Extension Institute of Guinea (CRBREIG), as well as other development partners (IFAD, UNHCR, GTZ and various other projects, etc.), also pursue development activities with the RDCs in the Reserve.

30. Tri-national meetings were held (Sept. 2001 and Feb. 2002) between CEGEN and its partners in Côte d'Ivoire and Liberia, and were promising: they have extended awareness of and opened dialogue on integrated environmental management to the three countries sharing the Nimba Mountains (Guinea, Liberia, Côte d'Ivoire). See Annex 12. Although the Nimba Programme will not be working in the other two countries at this time, however, it is hoped that the security situation in the other two countries will be resolved before the end of the 9 years of this programme, and therefore, measures will be made available for continuation of tri-national coordination towards a greater efficiency and synergy for conservation of the entire Nimba complex. This would include some funding under this programme for promoting transboundary coordination, and helping to develop additional requests at a later time for funding national projects in the other two countries. It is envisaged that each of the three national projects will include funding for transboundary work, with the possible development of a "tri-national coordinating committee". Commencing work in the Guinean side of the complex is essential to maintaining the ecological integrity of this site because : (a) it contains the largest portion of the complex, (b) institutions already exist and require strengthening, whereas they still require development in the Liberian side; (c) the three core areas with biodiversity of global significance are all in Guinea, and (d) work in the Liberian and Ivoirian side designed to enable the environment such that two other complementary projects can be prepared and submitted, will commence as soon as the security situation has improved.

31. The private sector is pursuing intensive activities in the Upper Cavally Basin, exerting strong pressure on elements of the Nimba Mountains' biodiversity. Due to the size of their potential investment, the mining partners will heavily influence the future of the region. Since 2001 a draft Agreement (known as "Nimba Convention") has been developed and is pending signature of the Minister of Environment. Part of the terms of this convention are that the Mining Consortium will undertake to contribute at least $500,000 per year to a Foundation or Fund, and the funds would be used for both strengthening the protected area system in Nimba as well as sustainable development activities. Furthermore, the Convention calls upon the Mining Consortium to provide an advance as soon as signature of the Convention is obtained (see Annex 10-11).

[3] ERIB's mandate overlaps with CEGEN's in that it is responsible for, among other things, managing the 300-hectare Bossou Hills area. However this area has traditionally and for centuries been managed by the residents of Bossou and in essence as a private community reserve due to its chimpanzee population. See Annex 8.

32. Civil society organisations, in particular the Union of Volunteers for the Integrated Development of Zantompiézo (UVIDoZ), the Guinean Society for Support to Integrated Development of Small Animal Husbandry (GSSIDSAH) and the Regional Federation of Livestock Breeders of Forested Guinea (RFLBFG), are also active in the greater Nimba Mountains ecosystem. Through awareness campaigns led by the NMPP, CEGEN and in collaboration with NDWF and other locally based partners, awareness of the significance of the Reserve's core areas and biodiversity is increasing amongst local residents, and of the dependence of the local economy on healthy ecosystems in the Reserve's core areas. Likewise authorities at the levels of the *Guinée Forestière* Province, the Lola Prefecture and the relevant sub-prefectures in the Reserve have shown considerable support for an integrated management approach, although this has yet to be tested on a wide scale.

33. Since the mid-twentieth century, the Nimba Mountains Biosphere Reserve has been the object of many scientific studies, carried out principally by the French Institute for Black Africa (FIBA), and today by the Primate Research Institute of Kyoto (Japan) and by Guinean and international researchers. Amongst these studies, seventeen projects were conducted on the chimpanzees of Bossou under the direction of Professors Y. Sugiyama and T. Matsuzawa, who contributed to the creation of ERIB.

34. In order to strengthen Guinean capacity to manage biodiversity, 32 Guinean students were trained under the NMPP in the fields of biology, sociology and geography. But the public and para-statal sectors have strict limits to the staff they can hire and many technically trained people have sought employment unsuccessfully for years, even when there is so much to be done. In terms of skills available in the region, extension agents from the Directorate of Water and Forests received training through seminars, workshops and symposia organised by projects active in the region: the Forest Resources Management Project (FRMP), the Rural Resources Management Project (RRMP), the Project for the Development of Small-scale Forest Inhabitants in Forested Guinea (PDSFI/FG), the AGIR Programme (Support Programme for Integrated Resource Management) that contributed to training guards at the Dalaba Centre, etc.

35. At the national level, the National Directorate of Environment, under the Ministry of Mines, Geology and Environment, is responsible for the management of the environment and the implementation of the activities conducted within the framework of the international conventions ratified by the Government of the Republic of Guinea, including in particular the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity. The responsible Ministry is the guarantor of these legal instruments which these conventions are. For certain specific aspects, the responsible Ministry shares its responsibilities with the Ministries of Agriculture and Livestock, Fishing and Aquaculture, and the Secretariat of State for Planning and the Secretariat of State for Cooperation. **A** National Environment Council (CNE), an intersectoral coordination entity, had been designed to ensure the sustainability of the development path but was not operationalized due to a lack of information and awareness of the designated members and, mainly, a lack of financial resources.

8. THREATS AND ROOT CAUSES

36. Guinea had an annual deforestation rate of 5% between 1990 and 1995 (World Bank, 1999). Although the numbers are unavailable specifically for the Upper Cavally Basin, local stakeholders agree that it is rapid there (ZOPP, 2001). Species such as the pygmy hippopotamus, the buffalo *(Syncerus caffer nanus)*, the leopard *(Panthera pardus)*, the bushpig *(Potamochoerus porcus)* and many duikers *(Cephalophus niger, C. dorsalis, C. manticola maxwelli, C. zebra,* etc.*)*, are threatened with extinction (Lamotte and Roy, 1998; Hamel, 1999).

37. There are many and self-reinforcing causes for the loss of the biological diversity. Agricultural expansion is the primary cause for forest ecosystem degradation, with population growth at its root cause (Conde, 2001; Camara, 2001b; ZOPP, 2001). Already there is evidence that some parts of the forests classified as core areas, such as the Bossou and Déré ecosystems, have been converted to rainfed agriculture. While the exact state of degradation of cultivated areas has not been systematically researched, much of it is in a state of moderate to advanced degradation, especially around villages adjacent to the core areas (Bossou, N'Zoom etc.) where arable land scarcity tends to be most acute. Considering the annual population growth rate of 4.1%, in theory the population of the Upper Cavally Basin should increase from 59,000 in 2001 to over 83,000 in 2011 (end-date of this programme). If steps are not taken to manage its natural resources rationally, this trend will lead to further overexploitation of agricultural land at the expense of forested areas..

38. Other factors influencing the Nimba Mountains Biosphere Reserve (NMBR) include the limited quantity of arable land, increasingly degraded soils, impoverishment of vegetative cover along the montane gradient (forests, savannahs, bush), differential impoverishment of forests in the uplands, low agricultural yields, inappropriate agricultural techniques, low incomes, abusive logging, institutional weaknesses, poverty and a strong dependence on natural resources (see the problem tree, and threats/root causes matrix Annex 1). Mining constitutes a potential threat (as well as opportunity) to the Reserve. The logical links between problems, threats and their root causes are explained below according to the interpretations given during the PDF B preparatory phase and as presented in Annexes 1 and 2.

8.1. Priority Threats

39. **Rapid expansion and degradation of Arable Land.** Agricultural production per farm is insufficient This results from the relatively modest individual farm's surface area and from low yields. The surface area cultivated per farmer remains small since it is limited by labour intensive techniques, and insufficient availability of arable land. The shortage of arable land is manifested primarily through a reduction in fallow periods, which leads to soil degradation and completes the circle of low yields, which in turn becomes an incentive for expanding cultivation into forests. Development of low-lying zones for irrigated agriculture is jeopardised by the risk of increasingly violent floods as watersheds are cleared of forest cover.

40. Decline in soil fertility and topsoil loss, due to reduced fallow periods, occurs because agricultural practises are not adjusting to this reduction in fallow periods. Yields are further reduced by crop damage from straying free-ranging livestock, bush fires (degrading forests and savannah alike) and several agricultural pests and organisms like stink bugs and invasive plants. Fires are more intense in degraded forest cover, and the ecological changes resulting from deforestation (forest fragmentation, discontinuity of forest patches) favour the propagation of organisms such as the stink bug and invasive plants. Thus land degradation is advancing rapidly in the Reserve as rapid deforestation, irregular hydrological flow, frequent bush fires, diminished soil fertility and related factors reinforce one another, causing encroachment on the biodiversity-rich forests and associated aquatic environments of the core areas.

41. **Over-utilisation of fauna and game**. The local population is malnourished in part because its income and crop production are low, and in part because of the low outputs from domestic animal husbandry. The resulting protein deficiency, for which low incomes cannot compensate by buying domestic animal protein on local markets, is exacerbated by the increasing exhaustion of the main traditional sources of animal protein, namely game, fish and small animals collected in the wild. This spurs hunters to poach in the core areas, where game is more abundant but biological diversity is further threatened. The increasing scarcity of these wildlife resources results from a loss of habitat, and from excessive hunting pressure, due to both low incomes and high population growth, which thus acts both directly and indirectly on malnutrition and health.

42. **Potential Abusive Forestry.** Abusive and excessive tree-cutting is due mainly to industrial timber harvesting, which directly opens up and degrades the forest and facilitates agricultural encroachment into forested areas. Tree-cutting for local purposes, essentially for fuelwood, is thought to have a negligible impact because wood collection occurs principally in fallow land and in areas being cleared for agriculture. Collection of raffia, dyes, natural toothbrushes, medicinal plants, and other non-timber forest products is of relatively limited impact. Due to lack of infrastructure, logging operators have yet to make major advances to this area. Furthermore, the 2002 national decree banning logging has been largely accepted in the province, although some local logging continues, illicitly and with the complicity of some authorities. This logging is not a problem for the Nimba Mountains or the Bossou Hills, but has been damaging to the Déré Forest, and parts of the Buffer Zone and Transition Area. This illicit logging is a potential threat that the programme will address in relation to land use planning, raising farmer income through non-abusive means, and strengthening the capacity of local authorities and communities to control such excesses.

43. **Potential threat from mining activities**. Mining constitutes a potential threat (as well as opportunity) to the Reserve. The prospecting which took place in the 1970s introduced exotic plant species to the site (*Melinis multiflora* and *Dissotis grandiflora)* which are already colonising the northern portion of the massif (Lamotte, cited in Bangoura, 2001). Any further mining would certainly degrade the area set aside for extraction and mining

infrastructure, as well as potentially speed up alien invasive species expansion, and erode fragile slopes and watersheds.

8.2. Root Causes

44. **Low incomes.** Farmers' incomes are low due to insufficient agricultural production, and also because local production is sold at low prices. . Low sales prices are the consequence of inter-linked factors including farmer isolation due to mediocre road infrastructure , the weak management capacity of farmers, who must deal with marketing channels organised against their interests, as well as difficulties in accessing credit leading to farmers becoming over-indebted to loan sharks who compel them to sell their crops prematurely. Non-agricultural sources of revenue are insufficient due to the isolation of the region, the lack of any major economic motor (like iron mining) and to difficulties encountered by women's associations to develop income-generating processing activities.

45. **Rapid population growth**. The increasing population growth results primarily from immigration from other parts of Guinea and from Liberia and now Ivory Coast (refugees). The effect of population growth on land scarcity is reinforced by the high dependency of this population on the land and by damaging, land-intensive production methods, while agricultural methods remain unchanged. Farmers attribute the lack of available arable land to the gazettement of the Reserve's core areas, without recognizing the important environmental services that such protection gives to agricultural land downslope.

46. **Poor health conditions**. The insufficient and poorly diversified diet contributes to the high infant mortality rate in villages. Other reasons for poor health are inappropriate hygiene practises, degradation of water supplies due to watershed degradation, and poor access to potable water. Local populations complain that medicines are given without considering the nature of the disease, and there is poor access to medical care (long distances to the health centres and the relatively high costs of medical care) compared to the local incomes. Furthermore, both traditional medicinal plants, and traditional medicinal lore, are both fast disappearing. Poor health conditions contributes to low labour productivity (further exacerbating low agricultural yields and income generation), more inclination to abusive sustainable use of forest products (impoverishing those near settlements and within easy access) and less regard for long term conservation strategies, as short term health concerns become paramount.

47. **Unmet educational needs**. Access to education was identified along with health as a major social problem of the NMBR. The illiteracy rate is high and results from the low rate of children going to school and weak efforts to teach literacy, in particular among girls. The reasons identified for the low school enrolment rate are the scarcity of schools and Low incomes, which also cause high drop-out rates. This results in less awareness of complex issues such as environmental services of montane forests.

48. **Land Tenure conflicts**. In a situation of scarcity of arable land, tenure conflicts are inevitable. Land competition pits farmers against one another, inciting them to cultivate even

if only minimally in fallow land for fear that it would be taken away from them. Furthermore, it contributes to rapid agricultural expansion in remaining forests since farmers would in effect be in a race for unclaimed land.

49. **Decline in traditional conservation knowledge and techniques**. There is evidence of a decline in traditional systems of forest and wildlife conservation, such as sacred groves, taboos, and rotation strategies. This is due to the increasing competition for resources and poverty of local communities.

50. **Institutional factors** Weak capacity of management organisations such as CEGEN, the inadequate legal framework, and to the lack of synergy among diverse stakeholders and local institutions are all contributing to a lack of capacity to address the threats and root causes mentioned above. For example, this is causing difficulty in achieving harmonious co-management with local residents of the Bossou Hills, and their chimpanzee community, with evidence of threats to the latter.

51. CEGEN suffers in particular from insufficient and from the fact that institutional roles remain poorly or inappropriately defined in law, unknown and not respected .CEGEN and other agencies operating in the NMBR have inadequate information on the state of the environment and biodiversity, as well as a good understanding on the links between healthy biodiversity and human welfare. CEGEN suffers chronically from limited and insecure financial resources, without which it cannot fulfil its mandate at the Reserve.

9. BASELINE SITUATION

52. Several projects have addressed environmental management in the Upper Cavally Basin in the past. The NMPP was financed and executed by the Guinean government, UNDP, UNESCO and the World Bank (with a grant from the Japanese government), and lasted from 1989 to 1993. Originally planned for an initial period of 2 years, this project was later extended to complete a series of protection measures for the Nimba Mountains Reserve, as well as the the Environmental Impact Study of the mining project by the Central Office for Overseas Studies (*Bureau Central des Etudes d'Outre-mer* - BCEOM). The NMPP also supported the National Environmental Action Plan (NEAP) and was in charge of baseline data collection for the environmental impact assessment of the mining project, with World Bank support.

53. These efforts have resulted in:
- an understanding of the human, socio-economic and environmental contexts for the conservation of the Nimba Mountains' biodiversity;
- preparation of a management plan for the Biosphere Reserve, consisting essentially of zoning the Reserve into three core areas, a buffer zone and a transition area;
- the preparation of recommendations aimed at limiting the impact of the mining project on the environment (see next paragraph), and proposing a set of activities at the end of 1993 to help

surrounding populations whose poverty was described in the project's reports UNESCO 1993);
- reaching a consensus on the boundaries of the World Heritage Site;
- installing some basic infrastructure (a network of sign posts for the new zoning, guard stations, a network of meteorological and hydrological monitoring stations); and
- a favourable environment for the creation of CEGEN.

54. However because of the high profile of the Nimba Mountains as a world heritage site, its unique biodiversity and the enormous value of the high-grade iron ore deposits, a debate had emerged more than a decade earlier pitting those favouring total protection of the site against those in favour of mining. This debate did little except to prove to both sides that both mining and conservation would go forward and the parties needed to find a compromise. Therefore in order to prepare recommendation to limit the impacts of a potential mine on the environment, beginning in the 1980s and under official instruction from the Minister responsible for environment, the NMPP and the MIFERGUI-Nimba project (the proposed Nimba mining project) collaborated closely to agree measures to limit the negative impacts of the mining complex and mitigatory measures. These include:

    - reduction of the physical size of the industrial mining complex at the site;
    - leaving the crest of the mountain chain intact rather than mining it, and conservation measures of the walls of the mining pit (successive terracing);
    - giving up mining of the ore deposit of Grands Rochers, which will be maintained in the World Heritage Site;
    - storing the tailings and other mine wastes all in one valley (the upper Zié river valley), equipped with a retaining dam and settling pools;
    - siting of the railway terminal and the loading station 8 km from the boundary of the World Heritage Site, and siting the ore conveyor system from the mine to the loading station in such a way as to minimise disturbance to the World Heritage Site;
    - requiring the signing of an environmental agreement between the Guinean State and the future mining company, in collaboration with all stakeholders, that will be annexed to the main mining contract between the two primary parties;
    - committing the mining investors to contribute annually a portion of profits (see Annexes 10 and 11) for conservation measures and local development, once the mine is operational.

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55. Mining in the Nimba mountains would be subject to the environmental guidelines of the mining companies themselves, within the EuroNimba consortium, in particular of BHP-Billeton who will oversee construction of the mining complex and extractive activities (see

[4] The final report of the Nimba Mountains Pilot Project RG/UNDP/UNESCO GUI/89/004, 1993, entitled "*Results and recommendations of the project*", , indicates among other things: "The analysis of their way of life has highlighted the ever-increasing difficult conditions experienced by the inhabitants of the villages bordering the Reserve", p.10; "...the difficult conditions of these populations who are not self-sufficient in food production and are permanently indebted to traders", p.15; "the [need to] start… pilot activities to modernise agriculture, livestock production and fish-breeding... targeting the local population" p.21; etc.

[5] The President of the Board of EuroNimba, Mr André Papon, stated in November 2002 to the Government that "Expenses related to the environment are an integral part of production costs, as much as extraction of the ore, its processing and transportation."

Annex 11). For all EuroNimba partners, their corporate practices and reputation/share risk-management concerns are far broader than the Nimba Mountains; in today's market, given their exposure and the size of the investors, it is in EuroNimba's business interests to act responsibly with respect to environment (and social issues too).[6] Furthermore, the exploitation of the mineral deposit would be done at a relatively low investment costs, because the iron content is one of the highest in the world (approximately 67% Fe). This in theory frees up resources for environmental and social safeguards and local benefit-sharing. In addition to the initial technical assistance, estimated at US$30,000 in-kind for the year 2003, that BHP-Billeton has committed to the biodiversity conservation programme of the Nimba Mountains, the Convention between EuroNimba and the Government of Guinea, currently awaiting the signature of the Minister of Environment, stipulates that the consortium would grant $500,000 per year to a "Foundation" for promoting environmental conservation and sustainable development in the Mont Nimba area. It also states that the consortium would advance these funds upon signature of the Convention, prior to start up of mining activities, so as to assist in establishing the capacity at the local level.

56. Since the end of the NMPP, there has been no other significant environmental management programme of the resources of the Nimba Mountains Biosphere Reserve. Hydrological and meteorological monitoring are the only on-site activities that have been maintained by local government structures with moderate consistency since the NMPP ended.

57. Until the recent conflicts (2000) in Sierra Leone, Guinea and Liberia, USAID was active in the Upper Cavally Basin through the Natural Resources Management Programme (NRMP). This programme was executed by Winrock International with three areas of intervention: agricultural production and marketing, rural businesses and environmental policy. Within those themes and in close collaboration with local communities, the programme developed village-level natural resources management plans, promoted sustainable management of agricultural lands and supported the creation of micro-enterprises. The project built awareness and disseminated appropriate models that will be built upon by this GEF programme.

58. With respect to providing affordable credit, the Guinean government and its development partners has established several institutions to provide this service such as *'Crédit Rural'*, '*Crédit agricole solidaire'* (Agricultural solidarity credit), '*Crédit agricole contrat villageois'* (Village-contract Agricultural Credit), and *'Crédit commercial'*. These credit institutions finance either strict agriculture (seed purchase, fertilisers/manures, labour, etc.) or income-generating activities. They are granted to groups of at least 5 up to 80 persons, with monthly, bi-annual or annual interest rates, depending upon the individual case. In general a monitoring committee is set up in the beneficiary village(s) that selects group members, determines the amounts to allocate and collects the repayment.

[6] The President of the Board of EuroNimba, Mr André Papon, stated in November 2002 to the Government that "Expenses related to the environment are an integral part of production costs, as much as extraction of the ore, its processing and transportation."

59. Many programmes are underway in *Guinée Forestière*, the province where the Upper Cavally Basin is located, which will be harmonised with this programme. These include:
    - the RRMP financed by the German Financial Aid Co-operation Agency (KfW). It is executed by GTZ in collaboration with the National Directorate for Water and Forests, and has two main components. The first aims at improving management of 3 classified forests (Diécké, Ziama and Mont Béro) through preparing management plans, strengthening capacity of NDWF staff and creating the Forestry Centre of Nzérékoré. Execution of this component will continue until 2003. The second component supports activities directed at the populations living around the selected classified forests, attempting to integrate sustainable use of these forests into the management plans under preparation. This component will continue until 2008. The RRMP could be extended to the Upper Cavally Basin. An agreement is under negotiation with CEGEN to develop agricultural activities in the buffer zone and transition area of the Biosphere Reserve, in particular around the Déré Forest;

    - the PDSFI/FG, an agricultural development programmes financed by IFAD . Since 1999 it has assisted the village of Fanha the Reserve's transition area . These programmes are executed by UNOPS, based in Abidjan but whose headquarters for *Guinée forestière* is in Nzérékoré, sixty kilometres from the Nimba Mountains. They provide technical and financial assistance to the villages including an preliminary socio-economic evaluation, training in new agricultural techniques, small-scale agricultural civil works and financial aid (about US$15,000 per year) to village communes or local co-operatives;

    - the Project for the Development of Irrigated Rice in Forested Guinea (PDIR/FG), in particular via developing low-lying zones for irrigated agriculture, supported by the AFD;

    - the Animal Husbandry Support Project (AHSP), supported by the AFD;

    - National Project for Rural Infrastructure (NPRI) which includes the construction of health centres and schools.

60. Although significant, the accomplishments of the programmes described above are insufficient to guarantee effective preservation of the biodiversity resources of the Nimba Mountains as only the PDSFI/FG has provided any active support recently in the Upper Cavally Basin. Another important, potentially destabilizing factor in the programme zone is the influx of refugees. Between November and December 2002, a total of 8,350 refugees entered the Basin from Ivory Coast. Both the Red Cross and UNHCR have agreed to minimize impact on the core zones of the Biosphere Reserve. There are already various types of support to refugees, including for agriculture and sylviculture, with the assistance of UNHCR, the World Food Programme (WFP), the Belgian branch of Doctors without Borders (*Médecins sans Frontières* - MSF) and the Red Cross. UNHCR has already committed to moving the refugee centers away from the Nimba Reserve, and will complete the operation by the end of 2003. However, this does not necessarily account for the impact of refugees on the buffer and transition zones, as well as the socio-political impacts such as land tenure conflicts. Many refugees apparently prefer to "hide" in the villages in the hopes of being able

to return quickly to their homes and belongings across the border once the situation improves. They fear living in refugee camps will "imprison" them![7] The programme will have to address this issue in a more long term perspective, by building capacity of local government and communities to develop contingency plans for refugees.

10. PROGRAMME RATIONALE AND OBJECTIVES

10.1 Overall Programme Objective and Approach

61. The overall objective of the programme is to promote the conservation of the Nimba Mountains Biosphere Reserve, within the framework of enhancing livelihoods and sustainable development of its buffer zones. This is expected to contribute to strengthening a national protected area system.

62. When confronted with ever-increasing pressures on the Nimba Mountains, combined with population growth and the influx of refugees over the last decade, CEGEN alone cannot guarantee strict protection of the core areas of the NMBR. This is why the participation of all concerned stakeholders, including those in charge of mining, will be sought in order to realise the programme's overall objective. Many measures are envisaged to provide incentives to local peoples to participate in the sustainable management of the Reserve. These include activities in the areas of sustainable harvesting of non-timber forest products, agriculture, animal husbandry, health and strengthening of human and institutional capacities within the framework of a Reserve master-plan. According to the draft mining concession agreement between the Guinean State and the EuroNimba consortium, the investors will be required to take stringent measures to reduce local impacts and to make a financial contribution to biological diversity conservation and development in the surrounding areas from the moment the mine becomes operational, which should be approximately when the GEF programme ends (see Annexes 11-12).

63. The programme will be implemented in a flexible manner, based upon the political, economic, social and environmental baseline contexts, and taking lessons from results of past and current activities in the Upper Cavally Basin, particularly the initial plan developed in 1991 under the NMPP with the support of UNDP and UNESCO. Experience from the NMPP, other development projects in Guinea (e.g. UNHRC's, AFD's GTZ's), other GEF projects (as described in the evaluations of the first and second phases of the GEF) and the international partners involved (like UNDP, FFI, international consultants) argue in favour of a flexible, long-term and sequential strategic approach to adapt to changing circumstances and to take advantage of opportunities as they appear. In order to establish firmly an environment conducive to sustaining its results, the programme will be executed in three progressive sequences over nine years. The nine years coincide with the estimated amount of time that it will require the Mining Consortium to complete its exploratory activities prior to commencing actual excavation.

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[7] Toure, S. 2002. RAPPORT DE MISSION (Du 16 au 25 décembre 2002 aux Monts Nimba); CEGEN.

64. The programme will be operationally sequenced. UNDP will disburse funds according to its standard procedures, using cost-sharing arrangements. However from an operational point of view this sequencing is an essential element of the adaptive, flexible programme planning approach adopted, and specific indicators for each sequence are provided in Annex 2 'Logical Framework Analysis'. The first sequence will focus on the installation of basic infrastructure; acquisition of technical, accounting and monitoring skills; ensuring complementarity and synergies between the activities of rural co-operatives and communes, decentralised sectoral government services, development partners and CEGEN; initiation of processes for legalisation; feasibility studies and analyses of cost, benefits and environmental impacts of innovative sustainable use regimes; and preparation of specific plans for all conservation- and development-related interventions. .

65. Thereafter, in the second sequence, the programme will focus on the launching of almost of the activities of the programme including demarcation of the core areas' boundaries, participation of local populations in the protection of the Reserve, development of management plans for the core areas of the Reserve, promoting the development of local micro-industry, developing the managerial skills of animal husbandry co-operatives or other groupings, raising awareness of those who hunt or collect wildlife of the principles of sustainable management and applicable laws, support to increase NMBR-wide coverage of health dispensaries and clinics, to integration of modern and traditional medicines, monitoring of water quality in relation to environmental changes, improvement of the existing networks of wells, pumps and water supply systems, and creation and management of a geo-referenced database on land-use, botanical and faunal inventories and the overall ecosystem. Community assistance activities will target mostly villages in the buffer zone, which pose the greatest threats to the Reserve's core areas. Towards the end of the nine year programme, in its third sequence, it will focus on expanding activities to the transition area, and on consolidating the sustainability of all activities so they may continue after the programme closes. One element of this will be the formal establishment of the proposed 'Nimba Foundation' or similar institution and a related sustainable financing mechanism, to be supported by contributions from the mining company when extractive activities begin, and possibly from other sources. It will also serve to share lessons learnt on participatory management of the Nimba Mountains' biodiversity resources at national, sub-regional and international levels.

66. Throughout programme execution, field activities will be supported by institutional and legal reforms so that the capacity of the Nimba Mountains' management structures, in particular CEGEN's, will be strengthened. CEGEN was given roles in the Reserve that overlap with other agencies' or institutions', which results in overlapping or conflicting responsibilities. The desired policy/legal reforms will consolidate the authority of CEGEN and allow it to carry out its activities with greater efficiency. It is hoped that coherent actions by donors and the mining company will help these reforms to occur early in the programme's implementation. See Annex 7 for the programme implementation schedule.

67. The total surface area of the site targeted by the programme is 145,200 ha. This site contains nearly 100 villages and three core areas (the Bossou and Déré ecosystems and the World

Heritage Site), a buffer zone and a transition area. During the first two years of the programme, activities will take place in approximately 10% of the villages, a sample chosen according to the threats posed to biological diversity, their proximity to core areas and the willingness of the village to conserve the Reserve. After this, lessons learnt will be progressively transferred to other villages after their adaptation to individual contexts.

68. While the issue of influx of refugees is beyond the control of the current programme to address directly, it will nevertheless work with specialized agencies to minimize this threat. The programme will provide technical assistance to relief agencies active in the area, including UNHCR and WFP, to ensure incorporation of environmental concerns in relief work, including siting of camps as far as possible from ecologically sensitive areas, urging that they are not so large as to provoke serious local environmental degradation, and that environmentally appropriate employment and income-generating activities are offered to refugees so that they do not increase unsustainable natural resource 'mining'. Furthermore, the technical assistant(s) will work with CEGEN and the local communities to prepare a series of guidelines and the outline of a contingency plan in case of future refugee movements in the zone.

10.2 GEF incremental cost

69. The GEF incremental cost calculation is based upon the principle of removing the institutional, inter-institutional, scientific, financial, legal and socio-economic barriers to establishing integrated and participatory conservation of the core areas of the NMBR and to realising global benefits. Some co-financing from the UNF will complement the GEF increment. The remainder of the co-financing will cover the cost of sustainable development activities, mostly in cash but also in kind, especially from the Guinean Government and local communities. Annex 3 shows the incremental cost analysis.

11. JUSTIFICATION FOR GEF FINANCING

70. The current programme is eligible for GEF support under Operational Programme (OP) 4, namely Mountain Ecosystems. However because the programme spans from high-altitude areas to lowland rainforest, it also addresses OP 3, Forest Ecosystems. It will protect globally significant biodiversity found in the core areas of the Nimba Mountains Biosphere Reserve, and manage the biodiversity for sustainable use in their associated buffer zone and transition area. Taken together, this biodiversity consists of high-altitude savannahs and several rivers basins linking these savannahs to high, medium and low altitude forests and to their associated aquatic environments. According to the West African Conservation Priority-Setting Exercise (WAPSE - 1999), supported by GEF and UNDP, these habitats are considered one of the top priority ecosystems for conservation in the world due to their endemism and degree of threat. Appropriate management techniques for all the different

ecosystem niches will be used given their wide diversity, and an ecosystem approach will be used to ensure management of particular niches supports the overall ecosystem[8].

71. The biosphere reserve model to be followed emphasises integrating sustainable use of biodiversity at the landscape level with conservation of globally significant ecosystems. The programme will launch integrated, sustainable and participatory use of the natural resources of the Reserve's largely agricultural and lowland buffer zone and transition area, specifically of their fields, forest, savannah, plants, wildlife, soil and water. By improving land-use, and in particular soil conservation and forest canopy regeneration and conservation in the Upper Cavally River Basin, the programme will contribute to combating land degradation in the Reserve and to providing watershed protection benefits downstream along the Cavally River in Côte d'Ivoire and Liberia. Thus it will realise benefits under the Land Degradation focal area.

72. The programme emphasizedinvolvement of private sector stakeholders, in particular the mining company, who participated fully in programme design and will play key roles during its execution, not as passive recipients but as active planners, implementers and contributors to the initiative (see Annex 5).

73. In order to ensure capacity-building, an enabling policy environment and the sustainability of programme achievements, and to stimulate the integration of conservation objectives into local, regional and national development programmes, the programme will be implemented with a long-term perspective, building on the achievements of the previous and with emphases on training, policy, inter-sectoral planning and continuous M&E (learning lessons and incorporating them into on-going programme implementation). With a carefully structured M&E system focused on continuous self-improvement (see Annex 6), institutional capacity-building of CEGEN will continue beyond the programme.

74. The programme is based upon articles 6, 7, 8, 11, 12, 13, 14 and 18 of the Convention on Biological Diversity. It is based firmly on the Guinean National Biodiversity Conservation Strategy which promotes reinforcing protected area protection and building capacity of the institutions responsible for managing them (sub-objective 1.1 of the National Biodiversity Conservation Strategy), "the creation of a forested corridor between the Bossou and Nimba ecosystems" and "creation of an 'eco-development' village adjacent to the Nimba Mountains Biosphere Reserve" (sub-objectives 1.3 and 3.1 respectively of the National Biodiversity Conservation Strategy). In addition, the National Biodiversity Conservation Strategy and associated Action Plan mention inappropriate agricultural systems, decreased fallow periods without soil improvements, bush fires and excessive exploitation of forest resources as the

[8] For example management of high-altitude forest by controlling fire could help expand such forest, but to the detriment of the high-altitude savannahs. Agricultural and wildlife utilisation interventions will be designed to help protect lowland forest and lowland lateritic savannahs above all.

[9] These objectives are: (a) Conservation and sustainable use of biological diversity, as well as equitable sharing of benefits arising from biodiversity use; (c) Conservation and sustainable use of waterbodies, including watersheds, river basins, and coastal zones; and (d) Prevention of the pollution of globally important terrestrial and aquatic ecosystems.

main threats facing biological diversity (Point IX of the National Biodiversity Conservation Strategy), all factors that this programme will address.

75. Although the programme was developed prior to the identification of Strategic Priorities for the Biodiversity Focal Area of the GEF, it is nevertheless in line with the Strategic Priority 1. The programme contributes to achieving sustainability in the protected areas system, encompassing institutional, social, political and financial sustainability with respect to both the protected areas systems and three individual protected areas. The majority of activities to be funded through the programme are expected to deliver benefits at the local level, in terms of ensuring institutional and socio-economic sustainability of the three core areas. In addition, the programme integrates the sustainable use and development needs of buffer and transition zone residents. At the national level, the programme also envisages additional activities that would strengthen the national protected area system. In collaboration with the National Directorate for Water & Forests, and the National MAB Committee, CEGEN will : contribute to review and possible revision of policies and regulatory frameworks at the national level; create a national coordination structure for national parks; and depending on how CEGEN performs in the next 3-5 years, to expand its mandate to cover other protected areas in the south-western part of the country.

12. DESIGN ALTERNATIVES CONSIDERED AND REJECTED

76. The Guinean Government, UNDP, UNESCO and most recently the team who prepared the programme have considered several major design options and approaches for the programme, adopting and rejecting them as follows:

77. Pursuing an integrated tri-national project between Guinea, Côte d'Ivoire and Liberia, versus pursuing separate conservation initiatives for the Nimba Mountains in each country but with transboundary dialogue and planning. Ecologically, the Nimba Mountains are one ecosystem and need to be managed in a coherent manner. However a tri-national project to conserve their biodiversity was rejected because of (1) the institutional complexity of preparing and implementing such an initiative, (2) the political relations between countries which evolve and could conceivably slow down progress in the field if relations were not optimal, (3) the very different nature of threats in each country and the different ability of each country to address them, and (4) the current security situation in the neighbouring countries. With regard to reason (3), the southern-most part of Guinea is mostly humid, forest, the western-most part of Côte d'Ivoire is isolated, removed from the majority of the nation's economic development, and the northern-most part of Liberia is far from Monrovia, formerly prosperous but now an economic ghost town. Following the International Gorilla Conservation Programme model of Rwanda, Uganda and Democratic Republic of Congo, co-ordinating interventions and working with neutral UN and international NGO partners to facilitate the transboundary dialogue and planning is currently the most appropriate and effective means to ensure conservation is harmonised across borders and builds on realities and success at the field-level. See Annex 12.

78. Pursuing a participatory approach to conservation of the NMBR's biodiversity versus a classic protection-oriented approach. Since the time of the Pilot Project, the threats facing the Nimba Mountains are known to be rooted principally in local, mostly subsistence, economic practices and not merely from the proposed mining venture. Thus addressing protection of the Reserve's 3 core areas without addressing development needs in the surrounding areas was rejected as short-sighted and self-defeating in the medium and long terms. Furthermore given that some of the Reserve's biodiversity exists outside the core areas, and that this biodiversity (wildlife, forests, aquatic habitat) is important to connectivity between the three core areas and thus to their long-term biological viability, it too must be sustainably managed. To do this necessarily implies working with local communities and involving them in programme preparation and execution. Needless to say, the CBD, GEF and most sponsors insist that conservation interventions adopt such participatory approaches.

79. Collaborating with and integrating mining concerns into the programme versus opposing any mining activity in the zone. Experience from the 1980s and early 1990s, in particular the acrimony prior to the Pilot Project between proponents of conservation and of mining, demonstrated that neither mining nor conservation concerns would be allowed to dictate fully what happens in the mountains. The Guinean Government, UNESCO, UNDP, partner NGOs (local and international) and the mining partners have reached a consensus that it is in everyone's long-term interest to work together. For example, mining could provide much-needed non-agricultural employment locally and long-term funding to conservation. The mining company would be severely handicapped locally and internationally if it were disrespectful of social and environmental concerns, and would have its permit revoked by Government. Thus the proposed mining project has been treated as an opportunity that could benefit the Reserve and must be encouraged to do so.

80. Which development activities to include such as supporting health, agriculture, animal husbandry and education. While local residents identified numerous problems during programme preparation, the problem tree (Annex 1) demonstrated clear linkages between agriculture, livestock-animal husbandry and health, on the one hand, and biodiversity conservation or threats on the other. Thus support to these sectors seems critical to achieving the programme's goal. However no clear direct link was evident between formal education – a primary problem identified by local residents – and biodiversity. Thus no support to formal education was included in the programme, although the programme will have awareness raising activities. Support to formal education could be considered associated financing.

13. PROGRAMME INNOVATIVENESS

81. The most remarkable innovative aspect of the programme is how it will engage a major mining company as a key stakeholder, and how it will balance mining operations with biodiversity imperatives. As laid out in Annex 10, the proposed mining project represents an enormous local opportunity, for example a long-term sustainable source of financial support to conservation and local development, a source of non-agricultural employment, and a powerful presence that can improve stability and governance in the region, with all the consequent trickle-down effects. The evaluation will extract and disseminate lessons from

this innovative and experimental programme element, which is the first of its kind in West and Central Africa.

82. The programme is based on the Biosphere Reserve philosophy that includes integrated ecosystem management, sustainable use of biodiversity as well as strict protection of core areas. Establishing sustainable use regimes of non-protected wildlife as well as of local medicinal plants in the buffer zone and transition area are important elements of the local development programme components.

83. The programme is innovative finally in the way it will share the costs and benefits of biodiversity conservation and combating land degradation between governmental authorities, local populations, the main private business interest - in this case the mining company – and donors, filling a niche in the GEF portfolio that has not been adequately explored. Therefore the programme evaluation will extract lessons on costs and benefits sharing from this programme that are relevant to other initiatives, whether GEF-supported or not. It is innovative also in how it will test a largely bottom-up, organic approach to transboundary collaboration as described in Annex 12.

14. COMPONENTS AND EXPECTED RESULTS

84. The programme's logical framework is presented in Annex 2, showing the hierarchy and links between Goal/Purpose, Objectives, Results and Activities. A more detailed description of the results and/or activities appears in the participation plan (Annex 5). For each result, the activities to be undertaken before, during and after this programme are described, as well as the institutions or other entities responsible for their implementation. Programme activities defined during the PDF-B are divided into five components as follows:

Component 1: Ecological integrity assured for the three Core Areas of the Nimba Mountains Biosphere Reserve (GEF: US$ 2,160,000; Co-financing: US$ 2,134,000)

85. Component 1 will directly target the preservation of the ecological integrity of the Nimba Mountains World Heritage Site, the Bossou Hills and the Déré Forest. Component 1 focuses on consolidating protection of biodiversity of global significance. It will complement all other components, and particularly components 2 and 3 that aim at alleviating the pressures exerted on the core areas from outside. The Reserve's protection requires action at two levels: first, its protection must be consolidated and second, the threats facing it must be alleviated. . Therefore the principal expected results and activities are:

Result 1.1 Boundaries of the core areas recognised, legalised and demarcated

Result 1.1 targets implementing the conclusions and recommendations of the inter-disciplinary mission of May 1993 concerning the re-drawing of the boundaries between the mining concession and the World Heritage Site. Consultations will be held at all levels to prepare, finalize and implement a gazettement law and relevant implementation texts. The boundaries of the areas will then be demarcated with beacons and by sign posts in collaboration with the mining partners, and a plan to monitor the new laws will be instituted (see later activities).

Result 1.2. Dynamics of the core areas' biodiversity known, threats precisely described and management actions identified with participation of buffer zone villages.
With the participation of CEGEN, decentralised sectoral services, development partners (esp. GTZ, IFAD and AFD) and NGOs, a series of targeted inventories and studies are critical to obtaining the knowledge of biodiversity dynamics, threats and management measures required for the core areas. Local community traditional knowledge will be extensively used, codified and entered in the ecological monitoring system (Result 5.3). The mining company will play an active role in supporting and collaborating with these activities, especially as it will be legally responsible for preparing a detailed environmental impact assessment. Finally, dialogue with the 2 neighbouring countries sharing the Nimba Mountains with Guinea will be maintained with a view to identifying how to harmonise management and, when possible, initiate joint field activities. This Result 1.2 will include such analyses as : impacts of fire and management requirements; impacts of mining activities including those related to introduced species; and deeper understanding of conservation priorities for the site.

Result 1.3 Decrease in incursions and illegal activities in the core areas
In addition to setting up an effective patrol and monitoring system, these activities will consist of involving local populations, in particular hunters and farmers, in monitoring the Reserve in similar fashion to what has been done in the Haut Niger National Park in the centre-north of Guinea. Involving local hunters and farmers will consist of training and organising them into teams in villages surrounding the core areas and giving them responsibility to patrol clearly delimited zones of the same. Because of local traditions, the Bossou Hills in particular will be co-managed as a community reserve. This protection system will be completed by establishing greater synergy and co-operation with public law enforcement agents from the justice system and public order forces (police, etc.) to enforce penalties and discipline, particularly as they relate to illegal logging operations. This Result will include such activities as equipping and organising a patrol-cum-protection system by involving local populations and public law enforcement agents. It will also feed into refugee contingency plans (result 2.1) in order to minimize the impact of refugees on the core areas.

Result 1. 4 Improved compatibility of planned mining activities, and strengthened cooperation.
Strengthening compatibility of and cooperation with mining partners will consist of preparing precise environmental guidelines, and monitoring the effectiveness of compliance with the recommendations to limit the impacts of mining on the environment. including meeting the conditions of the "Environmental Convention", and making a substantial contribution to the future sustainable financing mechanism for conservation and development in the Reserve. See annexes 11-12.

Result 1.5 Management plan prepared and implemented for the core areas
Result 5 will involve bringing together all the different elements begun in the activities above, plus new ones identified as a consequence of the first activities, into a comprehensive, integrated management plan covering each core area (WHS, Bossou and Déré forests). The management plan will then be implemented. This will very likely include soil conservation and forest

restoration to restore degraded zones in the core areas. They will be developed with expert national and international assistance, based upon sound science and extensive, iterative consultations with relevant local stakeholders, such as the mining project, local populations and local authorities. Where possible, these activities will involve actions co-ordinated across international boundaries via the tri-national process underway.

Although all the management plans will be developed in consultation with local communities, the Bossou Forest will in particular specifically be managed as a Community Reserve. This will include greater reliance on co-management techniques, and a stronger reliance on community-derived decisions on resource allocation, conservation and use. This activity will rely on existing traditional institutions and knowledge systems for conservation, but will also build capacity of both park managers, and leaders of customary institutions, in communication, management and financial skills. The informal committee established at the time of the PDF B will be institutionalised into a stronger mechanism for co-management of the Community Reserve.

Result 1.6 Impacts of refugees do not affect the core areas

A contingency plan for refugees will be developed that avoids impact on the three core areas. This will be done in collaboration with specialized agencies and NGOs working on refugee issues. The contingency plan will include a plan for temporary integration of the refugees into the local master-plan for development in the buffer and transition zones (see Result 5.1).

Component 2: Sustainable land use and Agricultural revenues of local people increased on the basis of more productive practises. (GEF: 20,000; Co-financing: US$2,020,100)

86. The objective of component 2 is to increase farmers' revenues through practises that 'consume' less land and other natural resources. This objective is integrally linked to the core areas' ecological integrity because it will alleviate agricultural encroachment on the core areas. Therefore interventions will first and foremost target the buffer zone villages that threaten the Reserve the most or those for which changes in their agricultural practises are most needed to benefit conservation. Although very little GEF funding is envisaged specifically for this component, it is understood that the programme management unit will monitor these activities to ensure that they are compatible with the other Components of the programme. Thus the principal results expected and the activities are:

Result 2.1 Sustainable land use systems

This Result will be achieved through activities that first clarify exactly how local land-tenure systems are a driving force of encroachment on the core areas, and show ways in which land-use around the core areas can be stabilized and made more appropriate to ecosystem functions and health, thus halting encroachment. It will also include the development of capacity for resolving land tenure conflicts using customary and local government regulations, including developing contingency plans for refugees. It will also involve, with the assistance of partner agencies, the reform of local land tenure and land use systems.

Result 2.2 Increased agricultural yields

Promotion of environmentally sound irrigated rice cultivation in lowland areas (improved rice varieties, water management, salinisation control, etc.), and improvement and intensification of cultivation techniques of upland sites by introducing locally appropriate inputs and soil conservation technologies designed to maintain fertility and reduce erosion. Techniques and methods will be adopted from best practices of other projects in Guinea, through farmer-exchange programmes.

Result 2.3 Improved incomes from agricultural produce sold for higher prices

In order for farmer incomes to increase, the constraints limiting local farmers' marketing abilities must be better understood at the specific localities, and activities must be designed for focused responses for each situation. CEGEN will put in place systems with partner agencies to deliver the appropriate responses, such as appropriate mechanisms to furnish micro-credit, training in negotiation skills of farmers' co-ops/communes/other groupings, improved storage techniques, and improved understanding of how produce is marketed, etc. These will be based on existing farmer groupings (RDCs, specific producer groups like cola nuts producers) that will be strengthened and organised to receive and channel required assistance.

Result 2.4 Diversified income sources enhanced

The Lola Prefecture has almost no medium-sized industry except for a few sawmills. However there are numerous small workshops for artisanal production of masonry, cabinetry, baked goods, paint and dyes, metal-working, sewing, embroidery and more, and micro-service industries like hair-dressing, radio repair, auto and motorcycle mechanics, etc. Local micro-industry remains the most promising sector for employment and diversifying sources of revenue, and the programme will promote this through demonstrations and technical assistance and access to micro-credit. However, similar to local agricultural production, artisanal industry is blocked by similar organisational, technical and financial barriers. Assisting with technical assistance and facilitating credit at affordable rates and in appropriate amounts is thus a necessary response. Another source of income is from the construction of mining infrastructure, which is expected to begin towards the of the programme, and will provide significant employment opportunities for unskilled labour. Most of this is expected to be generated locally. However, because of the risk of increased immigration, the programme will work with local governments (as part of Result 2.1) to establish and enforce land use regulations, with a view to controlling immigration.

Component 3: Local needs for animal protein and non-timber forest products more fully met using practises that do not damage wildlife and forests (GEF: 740,000; Co-financing: US$ 496,000)

87. Increasing the availability of animal protein is crucial to resolving the problems of both malnutrition and increasingly scarce wildlife/loss of biodiversity. Similar to component 2, this component seeks to address human well-being and biodiversity conservation simultaneously through one specific objective linking the two goals. Small animal husbandry will target domesticated animals (pigs, sheep, goats, poultry) and 'wild' animals (cane rats, snails, fish, frogs). Although natural medicinal plants are not currently under threat, sustainable use regimes will be implemented to avoid any over-exploitation linked to

Component 4's integration of modern and traditional medicines. The principal expected results and activities are therefore:

Result 3.1. More productive animal husbandry, integrated with agriculture

Based upon the research carried out under the PDF B and targeted local needs assessments, these activities will facilitate and improve animal husbandry using the same approaches generally as for Results/Activities 2.1 and 2.2. Attention will focus on animal species destined for local consumption and sale, such as pigs, and will draw upon best practices of other interventions in the zone, such as those developed by the Guinean Society for Support to Integrated Development of Small Animal Husbandry (which includes methods for improving feed concentrates, reducing off-site pollution from intensive production). Furthermore, the project will promote the development of farmer-herder associations as a way to ensure integration (marketing; transfer of organic matter) and reducing conflicts.

Result 3.2. Domestication and breeding of wild animals tested and disseminated

Through consultations or possibly contracts with agencies involved in this domain, visits to sites in Guinea where trials have been led like CRBREIG, and reviews of literature on past trials, lessons for raising 'wild' animals will be collated, and technical, economic and social feasibility will be assessed. With expert assistance and after designing a thoughtful monitoring and evaluation plan to ensure that lessons learned are acted on, breeding trials will be launched in buffer zone villages. These will aim not only to breed animals but also market them. Marketing of surplus production will be aided by the assistance provided under Results 2.2 and 3.1. Through surveys, in particular of hunters and meat sellers, the impact of these initiatives on hunting will be assessed.

Result 3.3. Wildlife resources and natural medicinal plants co-managed with local populations in a sustainable manner

As wildlife protection laws are relatively poorly understood locally, and can conflict with traditional practices, locally appropriate messages and materials on laws and regulations will be prepared and disseminated via the activities of this component, and linked to Results 1.3, 5.1 and 5.5. The messages will also focus on principles of sustainable management of target species including harvesting and off-take limits, protecting or even creating breeding/reproduction habitat, periodic bans to permit breeding or population recovery, etc. Local knowledge will be key to defining specific management techniques to institute and refine with local hunter/gatherers. Based on expert advice and local consultations, management regimes will be designed for target species whose collection/hunting in the wild should be managed. The ecological monitoring programme (Result 5.3) will track numerous parameters including species densities for some or all species targeted in this component, both in the core areas and outside, in order to monitor the effectiveness of the activity and refine management techniques through adaptive management.

Component 4: Improved health conditions, in particular among the neighbouring villages subject to constraints from the Nimba Mountains Biosphere Reserve (GEF: US$ 0; Co-financing: US$ 1,518,800)

88. Addressing the critically poor health and sanitary conditions was clearly identified as a top priority by the local population. Consequently it is essential to address them since they reflect real and serious human problems. Although apart from medicinal plant use the links between health and conservation are only indirect (see Annex 8), they are taken into account in this programme in order to enhance local residents co-operate and ownership. Support given under this programme will therefore target those people who are closest to the core areas, without forgetting that the right to health is a universal right. No GEF resources are planned for this Component, however, lifting barriers to sustainable use of medicinal plants is covered as part of Component 3. The principal expected results and activities are:

Result 4.1. Improved medical and para-medical health care

Through partnerships with relevant decentralised sectoral services, aid agencies and NGOs, these activities will consist of training medical and para-medical staff in basic health care provision, improving their services and correcting many erroneous and harmful practices that local residents report have been be recommended at health centres. Sexually transmitted diseases and HIV-AIDS will also be part of the training. These activities consist also of constructing and equipping a medical supply centre and establishing simple, inexpensive cost-recovery procedures for it that are to the extent possible self-sustaining in the local context.

Result 4.2. Increased access to health care

Through the same partnerships as above, health centres and dispensaries will be constructed to ensure more thorough geographic coverage across the Reserve. Through training, sponsorship of those who practice traditional (herbal) medicine, studies of medicinal plants used locally and monitoring of their ecology and population status, traditional medicine will be promoted in the Reserve. Sustainable use of such medicinal plants will be encouraged through setting up guidelines for their collection, and if possible certain plants will be farmed to relieve pressure on wild populations (if relevant) and to generate income.

Result 4.3. Increased access to potable water and improved water hygiene practises

This Result will be achieved by monitoring water quality in light of changes to the environment; identifying sources and causes of pollution and executing the needed corrective measures; and contribute to the existing network of wells, pumps and water supply systems. These actions will be taken after appropriate environmental impact assessments of opening up new water points.

This Result will be overseen by CEGEN and implemented by the partner agencies above, with CEGEN providing the relevant water quality monitoring. Activities will consist of classic water-supply and water quality measures with emphases on information and awareness, prevention rather than correction, simple cost-effective corrective measures and locally appropriate technologies that can be maintained with few inputs and basic skills.

Component 5: Strengthened capacity of the Reserve's management structures, mainstreaming of biodiversity conservation, and contribution to national protected area system (GEF: US$ 740,000; Co-financing: US$ 1,608,000)

89. Programme preparation highlighted CEGEN's weaknesses and the lack of synergy between CEGEN and relevant institutions. Therefore capacity-building is a major emphasis of the proposed programme (See Annex 13). This result will also ensure the sustainability of the programme's accomplishments after it ends by removing key barriers to executing measures in the first four components, and ensuring mainstreaming of biodiversity conservation in local government, community and mining operations. The principal expected results and activities are:

Result 5.1. Synergy and mainstreaming ensured between institutions and between interventions

These activities will put in place unambiguous and detailed legal bases for CEGEN's authority in the Reserve, which remains incomplete in its details, and any policy gaps related to local community participation in protected area and wildlife management will be filled. Participatory forums for dialogue, information exchange and planning will be established and convened between CEGEN and local communities on the one hand, and on the other between CEGEN and all relevant governmental authorities, such as local branches of Ministry of Water and Forestry, development agencies and programmes, private operators and other relevant stakeholders in the Reserve. To ensure all economic activities in the Reserve are planned in a rational manner that supports the overarching Biosphere Reserve philosophy, a master-plan for the development of the Reserve will be prepared based on broad participation and evolving development opportunities. This will have the effect of mainstreaming biodiversity concerns in development planning in the Reserve and the Prefecture of Lola. For example, the issue of continued small scale illicit logging will be openly addressed, negotiated, and plans implemented to reduce their negative impact. The Refugee Contingency plan developed in Result 2.1 will be integrated into this master plan. Finally, this Result will also address the eventuality of transboundary cooperation with counterparts in neighbouring countries, as and when the security situation improves.

Result 5.2. CEGEN's human and material resources strengthened and well managed

A training programme was designed consisting of modest of *ex situ* training targeting key high-level staff skills, and mostly *in situ* training in a learning-by-doing fashion with the aid of national and international TAs. A resource centre with significant training and reference materials will be established in CEGEN's headquarters to permit motivated staff and programme partners to improve their skills continually and seek answers to questions that will arise. Without becoming a bureaucratic end in itself, an internal M&E system for CEGEN will be set up to track individual staff performance on a regular basis, recognise staff performing well, and monitor the effectiveness and efficiency of the overall institution. It will be a regular feed-back mechanism, consisting of individual and institutional performance reviews with a view to identifying problems and bottle-necks, and implementing solutions. See Annex 13 for details. CEGEN will furthermore relocate the bulk of its staff and material goods to the Reserve, building up its infrastructure and equipment there and maintaining only a small liaison office in Conakry with which to communicate with National Government, donors and the international community. Finally, CEGEN will engage additional staff, on government budget, who will work directly with the PMU until they are fully trained and can be relocated into their own ministry.

Result 5.3. An operational ecological monitoring system

Real-time, accurate and spatially referenced information on land-use, demographics, vegetative cover, changes in these parameters, wildlife populations and population dynamics, hydrology, meteorology, other climatic variables, socio-economic variables and much more, will be important to obtain in order to develop management plans, and implement the plans through adaptive management. These activities involve the design of a system to monitor key parameters (bearing in mind the needs to track indicators of success in Annex 2), impacts of mining operations, sustainable use activities, and much more. National and international experts will design a system of data collection, and storage and analysis using GIS techniques. Data from pre-existing sets will be used to constitute the initial database, such as the WAPSE database developed by Conservation International. Guinean technicians will be trained to manage the GIS system and interpret the resulting information. After the end of the programme, CEGEN will have the capacity to continue to update and use the data base, as well as share lessons learnt.

Result 5.4. Guaranteed long-term funding for conservation

The programme is designed to overcome key obstacles to conservation of the NMBR. These include legal, institutional and inter-institutional weaknesses; encroachment on the core areas and land degradation in the buffer zone/transition area largely from poor agricultural practices and inadequate local animal protein; ensuring the negative impacts on biodiversity of the proposed mining operation are minimal while the benefits to the Reserve overall are maximised; and lack of scientific knowledge on which to base biodiversity protection and sustainable use decisions. Once these obstacles are removed or at least greatly reduced, the recurrent costs to continuing effective management of the Reserve will fall dramatically. In spite of the reduced future costs, the Government of Guinea is requiring the mining company (see Annexes 10), to provide an annual contribution to conservation and social development in the Reserve for the period the mine is producing ore. A sustainable financing mechanism will be created to receive these contributions and ensure, along with Governmental support, that post-programme recurrent management costs are met. To ensure transparency and efficiency in the use of these funds, a Nimba Foundation or other institution has been proposed (Annex 11). However, it is too soon to define what type of an institution this would be, and it is foreseen that it will be designed and created during the last sequence of the programme, using some preparatory funding from the project (GEF and co-financing). A fundraising strategy for the institution (beyond that provided by the Mining Consortium) will also be considered by the programme. Furthermore, it is likely that the institution will be overseen by a board including representatives of the mining company, the Guinean government, donors/international institutions like UNDP, GEF and UNESCO, and key representatives of the local communities.

Beyond the sustainable financing mechanism, revenue-generating options will be explored, the foremost of which is tourism whose potential is enormous. This requires attracting tourism operators and improving transportation, communications, quality of hospitality and health care, and more. Many of these improvements would be brought by the mining operation. Rules for controlling tourism to ensure it does not harm the core areas, and for sharing tourism revenues with local communities, will be established during programme implementation. Developing tourism represents a priority because of its potential as a long-term, non-consumptive means to generate sustainable revenue nationally and locally, well after the programme ends.

Result 5.5. Stakeholders better informed and aware of the issues and of resource conservation

An information-education-communications (IEC) programme will be pursued alongside the other programme activities in order to support disseminating information about the programme, the environment and the Reserve. This IEC programme will evolve with the programme as new messages needing dissemination are identified. It will target not only communities but also local officials, decentralised sector government services and development agencies/programmes to raise their awareness of environment and biodiversity, and have these mainstreamed in their normal activities. Relevant lessons learnt will be disseminated at the national level as well, as part of the task of contributing to a national protected area system. Furthermore, specific laws and regulations pertaining to the execution of the Forestry Act, Wildlife and Hunting Act, and the Land Tenure and State Property Act, will be translated into local languages and disseminated to local communities and government authorities. Finally, local communities will be informed about how to conserve traditional knowledge and access rights, for example in relation to traditional medicines. In the event of medicinal plant enterprises developing in the area, the project will build capacity of local institutions and local government on how to ensure prior informed consent and mutually agreed terms of sharing access and benefits from both knowledge and genetic resources.

Result 5.6 Contribution to a national protected area system

These set of activities will extract lessons and experiences from the Nimba programme, and will share these with other projects on protected areas, relevant Ministries, and the wider public. The programme will work with other protected area projects and the Ministry of Environment, to review existing national policies and legislation, and recommend modifications that would not only contribute to a coordinated national system, but also enhance the enabling activity for the sustainability of actions in the Nimba area. In close collaboration with the National MAB Committee and the National Directorate for Water & Forests, it is expected that a national coordination structure for national parks, which until now does not exist in Guinea, will be created. Furthermore, the programme will work to strengthen the capacities of decentralized sectoral services of the central government (Water & Forests, Environment, Agriculture, Health, Decentralization, etc.), rural development communes, local economic groupings and local NGOs, which will contribute in the long run to a strengthened national protected area system. Finally, it is expected that CEGEN will be able to take advantage of the preceding to enlarge its authority, with appropriate legislative action, to the Simandou Mountain region located in an area with similar geographical conditions to those of the Nimba Mountains.

17. SITUATION AT THE END OF THE PROGRAMME

90. By the end of the programme, the GEF alternative will have created a situation in which:

- forest cover and soil integrity in the core areas of the Nimba Mountains Biosphere Reserve will have been restored, their boundaries will have been firmly established, any mine-related activity will have minimal negative direct and indirect impacts on the core areas, and the biodiversity of the core areas will be managed in a participatory and scientifically grounded manner, with a long-term, planned perspective;

- average incomes will have increased in real terms in at least 15 villages adjacent to the Reserve through improved agricultural practices, rationalized land tenure and land use, and the surface area cultivated in these same villages will have been stabilised and residents will have higher real incomes from both agricultural and non-agricultural activities;
- animal protein production for consumption and sale will be significantly higher and widely practiced, the incidence of kwashiorkor will have been reduced by 30% compared to the present indicating improved protein consumption, populations of species indicating over-hunting will be increasing in their natural habitats (monkeys, duikers, large birds) and (legally) non-protected wildlife will be sustainably managed by local residents;
- the geographic and financial accessibility of health services will have improved, as will the services themselves, throughout the Reserve, water supplies and other components of hygiene will have improved leading to a decrease in mortality rates for children under 5 of 20% (measured at the level of the entire population rather than at health centres);
- CEGEN will be functioning effectively and efficiently, in open collaboration with all other sectoral agencies, local authorities and Guinean and international assistance programmes and agencies, with the result by the end of the programme that no project will be undertaken that works against the objectives of the Biosphere Reserve but all fit into the Reserve's development masterplan; and
- a sustainable financial mechanism and possibly a 'Nimba Foundation' or other institution to manage the proceeds of the financial mechanism will have been established, funded by annual contributions from the mining company, possibly earnings of the financing mechanism, other contributions (donors, government, other) and locally generated income earmarked for the mechanism.
- Lessons learnt from the programme will have been incorporated into efforts to strengthen the national system of protected areas.

15. LINKS WITH ON-GOING PROJECTS

91. *Projects within Guinea.* In collaboration with the GEF, UNDP supported the preparation of the National Biodiversity Conservation Strategy and associated Action Plan that lay out the priorities incorporated into this programme. In addition to what it contributed to implementing the PDF-B, UNDP will support the programme by emphasising health and capacity-building of the institutions responsible for managing the Nimba Mountains' biological diversity, and by linking the programme with activities underway to reduce poverty in the Upper Cavally Basin. The programme was conceived also to develop synergies between the activities of rural co-operatives and communes in the Upper Cavally Basin, decentralised governmental sectoral services, other organisations under the administrative authority of National Directorates (particularly ERIB), development partners (IFAD, GTZ/KfW, UNESCO), neighbouring countries (Côte d'Ivoire and Liberia), local NGOs, affected populations and CEGEN. In order to best understand the problems related to sustainable management of the Nimba Mountains ecosystems, the PDF-B allowed the initiation of dialogue and a process of information-sharing between institutions. This work will continue, and synergies between relevant interventions in the Upper Cavally Basin will be achieved through workshops, seminars and/or by these institutions being contracted to

implement certain programme activities. UNEP's project for the Integrated Management of the Fouta-Djallon Highlands can provide technical insights and methodological models to follow for scientific exchanges and addressing land degradation inter-sectorally.

92. Amongst activities currently underway, the programme will collaborate closely with the ERIB, the RRMP, the Village Community Support Programme (VCSP), the Animal Husbandry Support Programme (AHSP), the PDIR-FG and the PDSFI/FG.

93. Several GEF projects under implementation or preparation will provide valuable lessons, information and other inputs to the current programme. Notably the Bamenda Highlands and Mount Mulanje projects will provide valuable lessons to the Nimba programme team on community-based forest resources management, managing threatened montane systems that resemble ecological islands, and possibly on sustainable financing mechanisms. The recently submitted WB/GEF PDF B for the "Community Ecosystem Management Program (CEMP)" is expected to enable and encourage local populations to apply integrated ecosystem management practices for sustainable land management, while maintaining and improving their well-being and livelihoods. The exact project site is expected to be determined during the preparation stage, and this Nimba Mountain project will offer complete collaboration in order build synergies. The programme will collaborate directly with the World Bank's Framework Protected Areas Management Project (PCGAP) project in Côte d'Ivoire, which will protect *inter alia* the Ivoirian Nimba Strict Nature Reserve, and will provide lessons on sustainable financing mechanisms for conservation.

94. The GEF-UNDP project '*In situ* conservation of endemic livestock in West Africa', currently under preparation, could provide appropriate breeding animals for intensive rearing as part of addressing the problems of insufficient local protein in the diet and increasing scarcity of wildlife.

LESSONS LEARNT AND APPLIED

95. Aspects of the programme have been designed based upon the model established in the European Union-supported project supporting the Haut Niger National Park, in particular the method of training and organising village-based teams from around the park to patrol it.

96. Because the cane rat is a local delicacy in the Nimba Mountains region, and it has been successfully raised in captivity in neighbouring countries (Benin, Côte d'Ivoire, Burkina Faso), in 1996 CEGEN tried raising cane rats and snails in three villages adjacent to the Nimba Mountains in collaboration with the Environmental Studies and Research Centre of the Universities of Conakry and Laval (Quebec, Canada). The intended results of these trials were never realised due to the funding being abruptly halted. However many residents in the Reserve requested that the initiative be re-started in their village. In response, the Ministry of Scientific and Technical Research created the Cane Rat Breeding Research and Extension Institute of Guinea in 1999 in Moata, 30 km from the Nimba Mountains. This institute will provide significant technical assistance and advice to relevant parts of the programme.

97. The Nimba programme can benefit from initiatives in Benin and certain Central African countries working with the ECOFAC programme which have considerable experience in raising cane rats, giant snails and other domesticated wildlife. Lessons learned from the many initiatives targeting the so-called 'African bushmeat crisis', including the programme for 'Sustainable Use of Wildlife in the Congo Basin', currently under preparation, would assist this programme to address the same issues.

98. Bishop and Garnett (2000) provide detailed accounts of the environmental impacts of refugee movements in the Guinea-Sierra Leone-Liberia-Côte d'Ivoire border region since the 1990s. Their recommendations will be applied by the those working with relief agencies to ensure environmental concerns are considered in humanitarian aid delivery and in the outline refugee contingency plan.

99. The programme will benefit from several related international initiatives, and be able to provide lessons and benefits to them in turn. Since September 2001, the tri-national initiative to launch tri-national planning and collaboration for transboundary environmental management of the Nimba Mountains has brought together technicians from the three countries sharing the Nimba massif – Guinea, Liberia and Côte d'Ivoire – to share information on the priorities and environmental problems facing the mountains. It has resulted in a series of recommendations and a preliminary action plan for transboundary collaboration, which national initiatives in each country will address. The overall goal of the process has been to initiative planning and collaboration between the three countries, allowing them to harmonise their current and planned interventions.

100. Sharing of lessons will come about through publishing and disseminating progress reports and lessons between GEF projects, contacts between project teams at regional conferences, and exchange visits with these projects. When Nimba team members travel, they will seek to visit other projects. As a World Heritage Site and Biosphere Reserve, two further networks of protected sites will be available to the Nimba team to share lessons and learn from others' experience. Finally, international NGO partners (such as FFI and Conservation International) share lessons and will encourage the project team to do so.

18. RISKS, SUSTAINABILITY AND REPLICABILITY

18.1. Risks

101. The risks related to implementing the programme were identified and responses designed. Industrial logging, if not controlled, can pose a serious potential threat to the Nimba Mountains. However, the President has recently imposed a ban on all log exports from *Guinée Forestière*, showing that the problem of forest loss has reached the President's attention, and it is expected to result in a serious reform of the forestry sector. At the local level, both the Nimba Reserve Management Plan, and the Development Master-Plan for the Upper Cavally Basin will directly address the issue of sustainable logging.

102. A second important risk could result from possible socio-political troubles in the sub-region, as was the case in the last decade. However the Upper Cavally Basin is at peace and

politicians and the countries concerned are making efforts to ensure that this peace lasts. And perhaps more importantly, the local communities have agreed to a principle of pacification.

103. The impacts of mining and of non-mining resource exploitation by the populations adjacent to the Biosphere Reserve must be monitored and channelled in directions that support the sustainability of the Nimba Mountains' biological diversity. Currently mining provides hope for the social and economic development of the Upper Cavally Basin. If mining does not occur, local feelings of "conservation against development" would be reinforced,.

104. The programme could act as a magnet, drawing in people seeking development assistance, or refugees fleeing neighbouring countries. However the likelihood of large-scale immigration is small given that the assistance to be provided will be dispersed and targeted to existing community groupings, and capacity of local communities and government will be enhanced for land use planning, contingency planning for refugees and conflict resolution.

18.2. Sustainability

105. Programme sustainability will be achieved by removing or at least reducing the many barriers to conservation and integrated management of the Biosphere Reserve. Furthermore the programme is designed over 9 years, allowing a favorable time span for testing, refining, replicating and consolidating the material and human elements, as well as for creating the momentum necessary to ensure effective management of the Reserve's core areas, and evntually collaborating with neighbouring populations in support of this.

106. Through information exchanges with other initiatives in Guinea, regular independent and internal evaluations, and participation in international conservation networks and information exchange offered by the GEF, UNESCO and partner INGOs, the programme will nourish and be nourished by other programmes and lessons, increasing its likelihood of success and sustainability.

107. *Institutional sustainability.* As stated previously, a major emphasis is placed on building institutional and inter-institutional capacity. This is a matter of improving the skills of CEGEN's staff, assisting the organisation to acquire the trained staff it needs to carry out its mission, instituting an internal M&E system to improve individual and organisational efficiency, and providing pedagogic and professional resource materials for staff to improve their knowledge and answer operational questions as they arise. It consists also of clarifying the legal roles and responsibilities of CEGEN, and ensuring that these are known and accepted by all stakeholders in the NMBR.

108. Inter-institutional sustainability is expected through establishment of forums for agencies intervening in the NMBR to share information and perspectives, co-ordinate and plan activities, mainstream biodiversity conservation, and realise the synergies that have not been realised to date. The programme will provide not only the opportunity to discuss these issues, but to work out pragmatically how co-ordination will happen in the field and how,

practically speaking, roles and responsibilities will be allocated. Finally, legal action to recognise the zoning of the NMBR in Guinean law is critical to provide the basis on which the programme will intervene and ensure sustainability beyond the life of the programme.

109. *Social sustainability.* The success of the programme will depend also on the beneficiaries internalising its objectives, most particularly the people experiencing constraints due to conservation. The development alternatives are locally accepted, as they were cited by local residents as their primary concerns. Drawing on on-going lessons from past and current projects, these goals will be delivered effectively so they do not create a culture of dependency but rather one of independence. Local communities furthermore must not perceive development support as merely their "right to a cut" of the rent from biological diversity, without changing their practices. This requires a patient and time-consuming approach involving dialogue, incentives for those who grasp and act on the philosophy applied, and strong protection measures for the core areas so that both carrot and stick are unambiguous. The 9-year programme timeframe and the integrated, and iterative approach to programme planning that began with the PDF and will continue throughout the programme's lifetime, should ensure that the programme has the time to communicate the necessary messages, and establish and replicate positive and locally appropriate development models and incentives that will continue beyond the end of the programme and with relatively modest future inputs.

110. Another key aspect of social sustainability is for the appropriate mechanisms to be established for communities to communicate their needs, perspectives and concerns related to the overall Reserve, and for them to be genuinely and recognisably involved in and supportive of Reserve planning and protecting the core areas through village-based patrols. This will be demonstrated at the Bossou Hills which will be co-managed as a community reserve. While established informally during the preparatory phase, these mechanisms will be formalised so that they continue to function after the programme ends.

111. *Biological sustainability.* Ultimately the programme seeks the biological sustainability of the Nimba Mountains' biodiversity. This will be tracked via the ecological monitoring system so that trends, both positive and negative, are identified and appropriate management responses taken. The strong measures and attention dedicated to minimising the negative direct and indirect impacts of the proposed mining operation, and working with the mining partners so they contribute directly and indirectly to biodiversity conservation in the Reserve, will ensure that mining is primarily an asset to biodiversity conservation rather than its adversary. Collaboration with neighbouring Liberia and Côte d'Ivoire will greatly enhance management activities across the full Nimba ecosystem, of which Guinea contains just a portion.

112. *Financial sustainability.* By addressing the numerous barriers to conservation in the NMBR, the programme should have significantly reduced the recurrent costs of conservation and local development support. Thus the GEF-supported programme will allow activities to continue after the programme ends with the more modest support provided by (1) the Government of Guinea (to CEGEN whose staff will triple and be paid by Government, and to

decentralised sectoral services active in the Reserve), (2) the mining company (annual contributions to a fund, possibly complemented by earnings if it is established as an endowment, and managed by a Nimba Foundation or similar mechanism), (3) other donors to the fund (to be identified during implementation) and (4) other revenue sources such as tourist income, which will probably be relatively modest initially. No GEF funds are currently requested to capitalise the fund or financing mechanism.

18.3. Replicability

113. The philosophy of the programme is to design, test, adjust and replicate approaches to all activities. For this a long-term time-frame was chosen specifically to ensure that approaches can be tried, refined and consolidated. For example agricultural, animal husbandry and health-related support will be designed, trials led in the buffer zone, evaluated, adjusted, possibly re-tested and eventually replicated throughout the Reserve. Community management of a forest reserve will be tested in one core area and lessons replicated in the country.

114. Lesson-sharing from this programme will be accomplished through publishing and disseminating progress reports and lessons from its independent evaluations. Project evaluations and efforts through the GEF, UNDP and UNESCO will play active roles in disseminating lessons and establishing contacts with other projects. Contacts between project teams at regional conferences and exchange visits with similar projects will be important means to disseminate lessons, as will using consultants with experience from other projects. The tri-national dialogue and co-ordination process for the Nimba Mountains can potentially provide a regular and tangible means to share experience and replicate good practices across national boundaries but within the same larger ecosystem. Likewise, international NGO partners, such as FFI, will bring their experience from other countries to Guinea and will export lessons from Nimba to other projects in Africa and in other continents.

115. Collaboration with the mining sector is one of the most significant potentially replicable aspects of the programme since it has not yet been tried in Guinea nor in the sub-region. Experiences and lessons will be evaluated and written up in the programme evaluations, and shared through global reviews and exchanges organized by the GEF. The Ministry of Mines, Geology and Environment (MMGE), which is responsible for both Mines and Environment and in which CEGEN is institutionally situated, takes a strong interest in the programme and can apply lessons in other mining regions (CBG at Kamsar, CBK at Débélé, SAG at Siguiri, AREDOR at Kérouané, Rio Tinto at Simandou) and protected areas (Ziama Biosphere Reserve, Haut Niger National Park, Kankan Faunal Reserve, Niokolo-Badiar National Park) with the assistance of the national MAB Committee. However the experience is of great interest also to UNESCO, which has played an active role in harmonising the sometimes competing interests of conservation and mining at Nimba for over a decade, and to FFI, IUCN and other potential NGO partners who have entered into strategic partnerships with major multi-national mining companies. All partners will actively monitor the evolution of

[10] When Nimba team members travel, they will seek to visit other projects.

the partnership with the mining company and draw and apply lessons learned elsewhere in Africa and around the world.

19. STAKEHOLDER PARTICIPATION AND IMPLEMENTATION ARRANGEMENTS

19.1. Programme preparation and planning

116. During the programme's preparation and planning, supported by the PDF-B, UNDP and UNESCO, stakeholder participation was actively sought through consultations, an awareness workshop for local populations, village meetings, consultations with donors (AFD, FFEM, USAID, the European Union, UNESCO's World Heritage Centre, GTZ/KfW, Japan, Canada, the World Bank), mining partners (MIFERGUI, BHP-Billeton, Rio Tinto), RDCs, NDWF, NDE, NDSTR, NDA, NDH, natural resources management projects (RRMP and LISP- Local Initiatives Support Project), local NGOs (UVIDoZ, GSSIDSAH, etc.) and international NGOs (FFI - Fauna & Flora International and CI - Conservation International). In total, more than 500 individuals were involved in the preparation of the PDF B.

117. Thus, first, detailed thematic reports were prepared based on literature reviews, consultations with populations surrounding the Reserve and local authorities, previous studies and in particular those of the NMPP, and consultations with concerned governmental and development agencies. Consultations in the Nimba region included numerous information dissemination meetings with affected populations and local authorities in the Reserve and in the nearby prefectoral capital of Lola. The thematic reports were reviewed by a steering committee composed of relevant agency representatives and formally approved.

118. Then in October 2001, approximately 50 representatives of the relevant RDCs, of local women's organisations, of decentralised sectoral services (NDWF, NDSTR, NDL, NDA, NDE and NDH), of development programmes active in the region, and the PDF B's national and international consultants participated in a ZOPP workshop at the Nimba Mountains to plan the programme in detail, to reinforce consensus, mutual understanding, trust and cohesion, to train and inform all stakeholders of the complexity and inter-relatedness of developmental and environmental considerations, and to construct the logical framework of the full programme.

119. Additional local information meetings were held to disseminate the results of the planning process among affected communities. This led to written commitments from local communities via the RDCs to provide the in-kind contributions worth approximately $100,000.

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19.2. Implementation Arrangements

120. The programme will be nationally executed through UNDP's standard NEX arrangements. The GEF contribution will be handled by the UNDP country office, and executed by the MMGE via CEGEN, which will be responsible for day to day execution of

the programme. UNDP, as the primary implementing agency, will provide administrative and technical assistance to CEGEN. It will advise on recruiting consultants and preparing thematic reports, and will be responsible for opening the programme's bank account and for monitoring expenditures. It is expected that the funds from the Mining Consortium will also be managed through the UNDP in a separate account until such time as the Foundation is established and an appropriate administrative procedure put in place. UNESCO, FFI and CI are expected to provide advise on research, training needs and management of the programme. Furthermore, NGOs such as FFI may be called upon in the first few years, to supplement the capacity of CEGEN.

121. UNDP will hire a National Administrator according to current UNDP/GEF procedures to work alongside CEGEN Director. (S)He will work with all due autonomy and without interference by the Ministry or CEGEN's management, although (s)he will work intimately with CEGEN. UNDP expenditures will be certified by a National Co-ordinator (NC), a senior civil servant named by MMGE from the Minister's Cabinet and with UNDP's approval, to oversee the programme on behalf of government (not a full-time role). CEGEN (for matters relevant to this programme) will report to the NC and receive instructions through the NC on behalf of Government. Full details on programme management, including terms of references and organigram will be developed during the Appraisal stage after GEF Council approval of the Brief.

122. A Programme Steering Committee will provide general supervision to the initiative, acting as the overall decision-making body and approving reports, annual workplans and evaluations. It will be composed of representatives of national directorates and/or decentralised sectoral services (NDWF, NDSTR, NDL, NDA, NDE and NDH), and will include representatives of mining companies, ERIB, the RDCs of Bossou and N'Zoo and local NGOs (especially those involved in protecting the Nimba Mountains), too. The Steering Committee will include donors such as the GEF, UNDP and UNESCO. This Committee will meet two times per year. The National Coordinator will ensure the secretariat of the PSC.

123. As CEGEN does not currently have all the requisite skills needed to carry out its mandate, staff with needed skills will be recruited from elsewhere within as well as outside the public sector. Staff thus brought into CEGEN will be integral members of the programme execution team, and will gradually be made official members of CEGEN as the programme is implemented, until there is full integration with government structures at the end of the programme. Until such time as are made official members of CEGEN, they will be hired by an NGO and seconded to CEGEN. CEGEN will be supported as needed by national and international consultants, as well as UN Volunteers. The Director of CEGEN and National Administrator will be assisted by a Chief Technical Advisor (CTA) for part of the programme. The National Administrator and CTA will effectively transfer all operational responsibilities to CEGEN throughout the programme as part of building CEGEN's capacity so that CEGEN's staff becomes able to continue all activities in the post-programme period.

124. The Guinean government will provide technical support to the programme not only through CEGEN but through its decentralised sectoral services such as the National Directorates for Water and Forests, Scientific and Technical Research, Livestock, Agriculture, Environment and Health, whose interventions will be co-ordinated by CEGEN as specified in Component 5.

20. PROGRAMME FINANCING

20.1 Programme Financing and Incremental Costs

125. The Baseline is estimated to be $5,640,000 and the Alternative proposed is expected to be $17,076,900 (see Annex 3). Anticipated GEF financing, including the PDF-B funds, comes to US$ 3,990,000. The total cost of the programme is estimated at US$ 11,436,900 (excluding the PDF B) of which US$ 7,776,900 will come from sources other than the GEF. The ratio of GEF to other financing is 32% to 68%, and about 5% of the total budget is in-kind contribution. Among the sources of cash co-financing are Government of Guinea, UNDP, UNESCO/UNF, the mining company, and FFI. Other donors have also expressed interest, such as CI and Japan, and if confirmed, these will be negotiated during the Appraisal phase.

126. The Guinean government will provide US$ 330,500 in cash, largely to components 2-4, and approximately US$ 500,000 in kind through staff, office space, transportation and other critical programme infrastructure and services. Because the programme will use a participatory approach, it is estimated that stakeholders who will benefit from rural development support will contribute approximately US$ 100,000 in kind in order to implement the programme (land, labour, small equipment). No GEF funds are requested at this stage to capitalise the sustainable financing mechanism.

127. The original financing plan proposed at the time of PDF B submission expected a GEF contribution of $6 million for a total programme of $ 10 million. These figures have been revised based on actual needs of the protected areas and population (resulting in a slight increase of the total budget), and the strong interest of co-financing partners, particularly the commitments of the Mining Consortium (resulting in a decrease in the GEF contribution).

128. The programme will be operationally linked to achievement of benchmarks, but not phased in terms of GEF allocation. All GEF funds will be secured at the time of Work Program Entry. Operational and actual disbursement of funds by UNDP will be based on achievement of benchmarks that have been identified in the logframe. Details of this operational strategy will be negotiated and developed at the time of Programme Appraisal, and presented for CEO endorsement.

Programme Output Budget (in thousands dollars)

Component	GEF	Government Of Guinea*	UNDP-TRAC	UNESCO, UNF, FFI	Mining Consortium	Local* communities	TOTAL
1. Ecological integrity of Reserve assured	2,160	320	0	500	1,314	0	4,294
2. Agricultural revenues increased	20	82.5	377	0	1520.6	40	2040.1
3. Sustainable harvesting of bushmeat and medicinal plants	740	0	56.6	100	309.4	30	1236
4. Improved health conditions	0	268	876.8	0	344	30	1518.8
5.Strengthened capacities and protected area system	740	160	336	100	1012	0	2348
TOTAL	***3,660***	***830.5***	***1,646.4***	***700***	***4,500***	***100***	***11,436.9***

* Local communities are providing in –kind resources. Government contributions are both cash and in-kind.

20.2 Cost-effectiveness

129. While total programme costs appear relatively substantial for the surface area, this can be explained for several reasons. First as the programme represents a fully integrated conservation and development initiative over nine years. It incorporates interventions across four sectors – environmental conservation, agriculture, animal husbandry and health – all of which are linked to the biodiversity of the Nimba Mountains. To ignore these links and focus on protected area management alone would be technically short-sighted and self-defeating. The resources dedicated strictly to conservation (component 1) are in fact much more modest, totalling approximately $500,000 per year. Much of these costs represent initial investment costs and post-programme recurrent costs are expected to be lower.

130. Second, CEGEN has had almost no presence to date in the Reserve and relatively weak capacity. Once the obstacles of setting it up and equipping it on-site and building key capacity within it are overcome, again, recurrent costs will stabilise at a moderate level.

131. Third, CEGEN's mandate requires it to carry out not only classic protected area management but also to act essentially as a Planning Ministry in miniature for the Reserve. Thus the staff and capacity needed by CEGEN are significantly broader than for standard protected area authorities. Given the multi-disciplinary capacity requirements of CEGEN, and the level and number of staff needed to fulfil its mandate effectively, CEGEN's technical and managerial staff is in fact relatively lean. The modest and declining dependence of the programme on external technical assistance, the use of United Nations Volunteers, and CEGEN's entirely Guinean staffing structure render the programme cost-effective at fulfilling its long-term mission. The cost for a fully integrated conservation and development programme comes to approximately $8.50/hectare-year, and is commensurate with the absorptive capacity of the country

21. MONITORING, EVALUATION AND DISSEMINATION

132. Programme monitoring and evaluation will be both internal and external. Internal monitoring and evaluation will be conducted for each programme component under the supervision of the National Co-ordinator. Each component will be monitored by the appropriate programme personnel and will include information on staff, budget and technical and administrative matters (see Annex 6). This system will involve regular meetings to review progress. Monitoring and evaluation indicators appear in the logical framework (Annex 2). An institutional monitoring & evaluation system for CEGEN and the Technical Support Unit will seek to strengthen CEGEN's capacity throughout the programme, too.

133. During programme implementation, the results for indicators will be transmitted monthly by the managers of programme components to the National Administrator to the National Co-ordinator who will consolidate them in a summary table for the programme. Every semester, the summary table produced will be circulated to programme partners. In addition, once per year a monitoring and evaluation report on the past year's activities will be produced. Measures will be taken during the Steering Committee meetings to resolve problems encountered.

134. Three external independent evaluations are planned (in addition to annual audits); one each after the first and second sequences, and a final evaluation. These will be conducted in line with GEF and UNDP procedures. They will focus on four main objectives:

- Measuring impact on globally significant resources and livelihoods;
- measuring the performance differences between what was planned and what was achieved;
- identifying problems related to executing the planned activities;
- proposing corrective measures and solutions; and
- extracting and documenting any more general lessons for this and other programmes.

135. The project strategy, workplan, and activities may be revised to match expected goals and impacts as a result of the recommendations of the first two independent evaluations. The final evaluation will result in an exhaustive report as the programme ends on its

achievements (programme performance, impact and lessons learnt). The costs of monitoring and evaluation are taken into account in the programme budget, and will be detailed during the Appraisal phase.

136. Results and lessons learnt from the programme will be disseminated both within the Reserve as well as through the national protected area system, the CHM of the CBD, and other relevant national and international networks. Funds will be made available for programme staff and local community leaders to participate in relevant international and regional events to share experiences and analyse impacts and results.