PROPOSAL FOR REVIEW

PROJECT TITLE: **CENTRAL AFRICA REGION (CAMEROON, CAR, CONGO, EQUATORIAL GUINEA, GABON, ZAIRE): REGIONAL ENVIRONMENTAL INFORMATION MANAGEMENT PROJECT (REIMP-CA)**

GEF FOCAL AREA: Biodiversity

GEF ELIGIBILITY: Cameroon, CAR, Congo, Eq. Guinea and Zaire have ratified the Biodiversity Convention. Gabon in the process of doing so.

TOTAL PROJECT COST: $15.3 million

GEF GRAND TOTAL: $4.3525 million

GOVERNMENT AND BILATERAL COFINANCING: (see financing table below)

GEF IMPLEMENTING AGENCY: World Bank

EXECUTING AGENCIES:

Ministries of Environment and Forests, Territorial Administration and Research in Cameroon

Ministry of Environment and Tourism in CAR

Ministry of Agriculture, Waters and Forests, Fisheries and Ministry of Livestock and Ministry of Research in Congo

Ministries of Health and Environment; Fisheries and Forest: and Agriculture and Livestock in Equatorial Guinea

Ministries of Finance; Water and Forests; Environment in Gabon

Ministry of Environment and Tourism and IUCN in Zaire

PLANNED EFFECTIVENESS DATE AND DURATION: November 1997; five years

GEF PREPARATION COSTS: PDF A $25,000; PDF B: $347,500

FINANCING PLAN:

('000 US$ equivalent)	The Government	Global Environment Facility	Other donors	Self-financing	Total
1. Cameroon	432	527	1,443	137	2,538
2. Central African Republic	363	241	1,342	62	2,008
3. Congo	395	247	1,513	93	2,247
4. Equatorial Guinea	187	88	623	39	937
5. Gabon	578	225	1,630	110	2,542
6. Zaire	500	465	1,682	145	2,793
7. Regional Coordination	40	2,213	0	0	2,253
Total	**2,495**	**4,005**	**8,232**	**586**	**15,319**

CENTRAL AFRICAN REGION:

REGIONAL ENVIRONMENTAL INFORMATION MANAGEMENT PROJECT (REIMP-CA)

COUNTRY AND SECTOR BACKGROUND

1.   *Socio-economic Background*. The Central Africa Region covers 4.0 million km^2 and has a population of 62.6 million unevenly distributed among the six countries of the region: Cameroon, Central Africa Republic (C.A.R.), Congo, Gabon, Equatorial Guinea and Zaire. Zaire accounts for 57% of the total area and 67% of the population. Population densities are generally low (less than 20 persons per km^2, except in Cameroon), and the average regional population growth is 3.2% per year. In 1994, the annual income per capita ranged from US$130 in Zaire to US$3,550 in Gabon. On average, agriculture, including forestry, accounts for 23 % of GNP and employs 58% of the working population. Mineral extraction is another significant source of national income (19%) although it accounts for only 4% of employment. The service sector employs 28% of the working population and accounts for 45% of GNP.

2.   *The Congo Basin Rainforest*. The Congo Basin Rainforest, which covers just over half the region, is the second largest of the three remaining major blocks of intact tropical rainforests in the world, the others being the Amazonian and Melanesian rainforests. It covers 2.1 million sq. km and constitutes 26% of the world's remaining rainforest and 70% of the remaining African rainforest. Protected areas cover 111,000 sq. km or 5 % of the Basin. It has a unique biodiversity capital of great global significance and enormous carbon sequestration capacity. Endemicity is the highest of all the African forests and the diversity of species in the lowland equatorial rainforest is by far the highest on the continent. As far as biodiversity is concerned, there are identified hot spots (Garamba, Epulu, Virunga, Salonga, Kahuzi-Biega in Zaire for instance) but also potential hot spots

3.   *Importance of Biodiversity for National Economies*. The Convention on Biological Diversity acknowledges that countries which are heavily dependent on natural resources and their biodiversity cannot afford the economic, ecological and social costs which would result from the destruction or serious impairment of these resources. The conservation of biodiversity is recognized to be crucial for the sustainability of sectors as important and diverse as forestry, agriculture, fisheries, health and tourism. Biological resources support human livelihoods from the subsistence level to commercial income-generation. The irreversibility of species extinction and the loss of genetic strains and ecosystem types through habitat degradation and over-exploitation would also compromise the options for present and future generations and thus the very sustainability of development.

4.   *Threats to Biodiversity*. The major threats to the ecosystems of the Central Africa Region are: (i) the encroachment of destructive agricultural and subsistence practices around the agglomerations and into the species-rich areas cleared by forestry operations or made accessible by improved transport systems, (ii) the destruction of entire forest areas by the felling of both high and lower-value timber, (iii) the selective logging of high-value tree species, (iv) intensive industrial activities in the coastal zone, such as oil and mineral extraction, which increase pollution risks to such rich ecosystems as mangroves, lagoons and wetlands traditionally dedicated to fishery activities, (v) the hunting of endangered species, even in wildlife reserves, whether it is for subsistence, commercial, or sporting purposes, (vi) ongoing

or potential crisis situation -- the current mass arrival of refugees in the eastern part of the Zaire caused severe environmental damages. In the forest sector, these threats are accentuated by weak or inadequate management policies, such as short-term logging concessions that discourage responsible timber management. As a result of them, the rain forest is shrinking at a rate of 0.6% pa.

5.   *Weaknesses of the Current System of Protected Areas.* To limit the biological consequences of these degradations, most countries have formulated a protected area network. However, these protected areas are plagued with the following problems:

- They do not include a representative sample of the range of species and ecosystems that are consistent with ensuring the long-term viability of species or natural processes. For instance, protected water-shed forests, which are under-represented in the region, nonetheless fulfill essential regulatory functions within the Congo Basin;

- Legislative frameworks are inadequate and inappropriate. In many cases, the degree of legal protection does not preclude exploitive activities such as hunting and logging.

- In many areas, the legislation has been forced upon local people without their participation and has failed to consider their cultural values and short- and long-term needs. Inherent conflicts between protection and activities of traditional hunters and farmers are exacerbated by growing populations. As a result, the pressure to exploit the land and wildlife resources of the protected areas has increased;

- Although certain isolated protected areas remain intact, habitat alteration in surrounding areas threatens the viability of migrating species that require large ranges, and finally

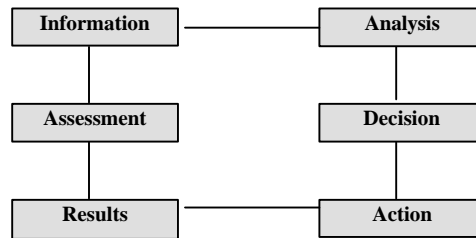- Enforcement capacity and political will are generally weak.

6.   *Political Background.* Some of the Congo Basin countries lack political stability and are suffering from refugee incursions. Such political crisis situations amplify environmental threats. In that context, the availability of adequate environmental information is even more critical for the tasks of environmental monitoring, planning and damage control.

Role of the Project in Addressing the Threats to Conservation and Forest Management

7.   *Key Role of Information for Conservation and Forest Management.* The availability and use of accurate and comprehensive environmental information and knowledge are vital for effective management of natural resources and for biodiversity conservation. Information is the foundation upon which resource analysis, management planning and decision-making processes are based, which in turn are the precursors for effective action. The monitoring of results then provides new information on the status of resources for the subsequent cycle of decision-making and action (See Exhibit 1). The more reliable the information and the more widely it is shared among the key stakeholders, the more likely it is that the individuals and

institutions responsible for decision-making will agree on the definition of problems and solutions and act on them. Information that is in the public domain is particularly powerful, because decision-makers are then publicly accountable for their actions. The provision and use of information is therefore essential for effective conservation management at all levels.

Exhibit 1: The Information, Decision-making, Action, and Result Cycle in support of Biodiversity and Environmental Management

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┌──────────────┐          ┌──────────────┐
│ Information   │──────────│  Analysis    │
└──────────────┘          └──────────────┘
       │                         │
┌──────────────┐          ┌──────────────┐
│ Assessment   │          │  Decision    │
└──────────────┘          └──────────────┘
       │                         │
┌──────────────┐          ┌──────────────┐
│   Results    │──────────│   Action     │
└──────────────┘          └──────────────┘
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8.   *Role of the Project in Addressing the Threats to Conservation.*   The project will help to address many of the threats to biodiversity conservation and protected area planning and management in the Congo Basin. It will provide a mechanism for monitoring agricultural activity at the forest margin and identifying areas where encroachment is occurring and is a threat to priority conservation areas and where action is needed to control the problem. It will provide local and national officials with the means to monitor the conformity of extractive activities, such logging, oil and mineral exploration and oil production, with the geographic scope and terms of the permits granted for those purposes; to identify any damaging environmental impacts of those activities and react to them; and will enhance national capacities to capture economic rents. It will facilitate accurate demarcation of existing protected areas and the redesign of protected area systems to ensure they are representative of all the critical ecosystems. It will bring information on the condition of protected areas and conformity with the terms of logging concession agreements and mineral exploration permits into the public domain, which will strengthen currently weak incentives for legally sound and environmentally responsible behavior by commercial operators and their government overseers.

9.   The project will complement and thus reinforce the largely site-specific biodiversity conservation projects that the GEF is already supporting in several of the participating countries (Cameroon, the CAR, Congo and Gabon) by developing a comprehensive national and region-wide environmental information system and the tools with which to apply that information to the ecosystem planning and to the monitoring of both forestry and conservation initiatives which these projects are undertaking. The project will also complement the biodiversity enabling activities that are just getting underway in the region by improving and updating the environmental information on which their initial biodiversity strategy work is based and identifying trends over time in the condition of the ecosystems. This improved information base will facilitate both the monitoring and quality enhancement of those strategies, and thus increase the capacity of the participating countries to meet their obligations under the Biodiversity Convention.

10.   *Contribution to National Strategies for Forest Sector Management*. Tropical Forestry Action Plans (TFAPs) are in preparation or completed in all the Congo Basin countries. Without exception, these recognize that there is a lack of adequate and reliable information on the region's forest and biological resources. As a result, the REIMP project is also designed to assist governments to "improve and disseminate forest-related knowledge and technology" as recommended by the 1994 *World Bank Strategy for the Forest Sector in Sub-Saharan Africa*[1]. The other management needs are: (i) a sound forestry policy, legal and regulatory framework that provides incentives for sustainable forestry management while increasing national revenues and community benefits from logging activity, and facilitates the establishment of local wood processing activities to increase domestic value added; (ii) introducing both long-term logging concessions and eventually logging certification arrangements to encourage sustainable logging practices; (iii) strengthening of forest management capacity through training and the introduction of more effective concession monitoring systems; and (iv) introducing environmentally and economically sound forest zoning practices to maximize the returns to sustainable forest resources management. Bank assistance in achieving these objectives is being channeled through direct support to forest policy reform in individual countries and through support to the regional, multi-donor "Congo Basin Initiative".

Specific Information Supply and Utilization Issues Addressed by the Project

11.   *Identification of specific information needs*. The participating governments have identified a set of environmental information issues and needs which have inspired the REIMP's specific objectives. These are:

- Issue no.1: existing information on the environment is not effectively disseminated to or shared between the various stakeholders involved in natural resource management and biodiversity conservation. Collaboration among partners in the fields of data collection and integration standards is insufficient.

- Issue no.2: poorly informed decisions are made in the forest and environment sectors because of the low level of knowledge and confidence in information among the decision-making community.

- Issue no.3: some relevant information for effective planning and monitoring of natural resources and biodiversity is still missing or outdated;

- Issue no.4: national capacities for generating and managing this information are limited.

12.   *Lack of Information Dissemination*. Information on the environment either does not reach decision-makers or does not reach them in a user-friendly form, and thus remains seriously underutilized. For example, the NEAP in Cameroon explicitly demands the development of "a major information dissemination effort, enabling harmonization of policies

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[1] by N. Sharman, S. Rietbergen, C. Heimo and J. Patel

and strategies related to shared resources management"[2]. This lack of dissemination is the result of:

- Limited availability of information and weak dissemination structures. This gap is a result of tremendous efforts being put into research activities without adequate attention to communication and reporting activities. For instance ECOFAC has contributed to enhancing in-situ conservation procedures in the Congo Basin by promoting innovative and participative activities. However, ECOFAC experiences difficulties in synthesizing and sharing its results and findings with the various stakeholders, especially at the national level.

- The lack of standard methods to collect data and a framework to integrate and promote the results of environmental information analysis and natural resource management experiences. This gap is a consequence of the multiplicity of actors involved in natural resource management and biodiversity conservation. This has led to the loss of information as well as a decrease in the credibility in the data produced. For instance, the methods to elaborate management plans differ among countries and agencies.

- Poor communication facilities. Central Africa has one of the world's lowest level of development for communication infrastructure, including basic telephone facilities and Internet connectivity. For instance, where Internet abilities exist, they are generally restricted to e-mail connections and allow the exchange of limited data only. Despite the fact that sharing information at local, national, and regional levels is essential to the planning and carrying out of coherent actions by different regional agencies, the problem has not been effectively addressed.

13. *Lack of Informed Decision-Making*. Reliable information on natural resources and biodiversity status and trends, as well as appropriate tools that present this information in a synthetic and action-oriented form, are essential building blocks in decision-making processes in the fields of natural resource management and biodiversity conservation. For the forestry sector, such tools have been explicitly required by most TFAPs in the region. So far, only Cameroon and Gabon have developed planning and monitoring tools such as zoning plans and concession monitoring systems and applied them on an experimental basis. Equatorial Guinea has no experience at all in rational natural resource planning. All of the Congo Basin countries are preparing revised forest codes that highlight the role of information for planning and monitoring. Decision-makers involved in the REIMP preparation process expressed their desire to learn about the opportunities offered by information technologies to improve decision making in relation to their specific tasks, as well as their willingness to share experiences of decision-making processes with their regional counterparts.

14. Among these decision-making processes, the REIMP will target those processes needing urgent assistance to improve sustainable natural resources management and biodiversity conservation. They include:

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[2] Programme National de Gestion de l'Environnement, Volume I, 1996, p.29

- Identifying and cataloging biologically sensitive areas to help make the protected area network more representative of the ecosystem richness in Central Africa.

- Planning to mitigate the impacts of environmental risks along the coastal zone, such as oil pollution of marine ecosystems, coastal erosion, mangrove degradation, and floods.

- Planning of natural resource utilization at both national and local levels.

- Issuance of exploration or exploitation permits.

- Attributing permits to local managers.

- Planning investments within the area boundaries of a permit.

- Taxing and regulating local exploitation of natural resources.

The REIMP will improve the quality of decision-making by both improving the information that decision-makers themselves have and making publicly available reliable, regularly reported data on key site-specific indicators of environmental conditions and trends.

15.   *Essential Information on Natural Resources and Biodiversity is Missing or Outdated*. There is a real demand for basic and thematic information including: (i) topographical and land cover maps, which are generally 30-years-old, (ii) remote sensing products, such as aerial photographs and satellite images, (iii) thematic maps such as vegetation, geological or soil maps, and (iv) inventories focusing on forest, biological and socio-economical resources as well as environmental regulations. Nevertheless, few on-going projects can bear the costs of intensive information production activities since:

- data production activities, which NRM project designers want to keep small to free resources for "action components", are in fact time consuming and expensive. They threaten to divert project resources from planning and development, and consequently are scaled back; and

- many projects, particularly those devoted to site-specific biodiversity conservation, would benefit but can rarely justify or afford data collection activities in critical adjoining areas, such as protected area buffer zones.

As a result, resource management projects in the region often could not justify the incremental cost of adequate data collection and their designs and implementation monitoring suffer from this shortcoming. The REIMP will help to overcome this.

16.   *National Capacities to Generate and Manage Information are Limited*. The REIMP aims to enhance limited national capacities to manage information through training, technical assistance and transfer of technology. A few national agencies are already attempting to improve their information systems, but lack of equipment and experience has limited the results. For instance:

- In most projects, local technical staff are strongly dependent on technical assistance. As a result, their skills remain weak and their autonomy is not ensured even after three to five years of project implementation. The failure to achieve such a transfer of technology and know-how is unfortunately a frequent occurrence in Central Africa. The REIMP aims to bridge these gaps.

- GEF operations in Congo and Cameroon are striving to enhance existing capacities to store and maintain information. However, these activities are inadequate and weakly supported in the other countries. The REIMP aims to empower existing national institutions and to assist these institutions in providing information services and ensuring their linkage to ongoing biodiversity conservation and forest resource management initiatives.

PROJECT OBJECTIVES

17.   *Overarching Objective*. The main goal of the project is to improve the planning and management of natural resources in the Congo Basin, with a specific focus on biodiversity conservation, by providing the various stakeholders with appropriate information on the environment in response to the information needs they have identified and will identify.

18.   *Specific Objectives*. The project has the following four specific objectives:

- Improve the dissemination of existing environmental information and add value to national GEF biodiversity information initiatives to enhance the quality of information currently provided to decision-makers, stakeholders and observers;

- Foster decision-makers' understanding of the potential and the benefits of better environmental information and thereby facilitate sustainable land use planning, conservation and resource management in the Congo Basin;

- Provide users with new environmental information services to meet their emerging needs as they gain experience with using information; and

- Strengthen national capacities for environmental information management and thereby increase national self-reliance and revenue generation capacity.

These objectives will be achieved through implementation of the four components described below.

PROJECT DESCRIPTION

19.   *Network Creation and Services Component* (Total cost: $3.036 million, GEF financing requested: $1.624 million). The parties involved in natural resource management in the Congo Basin have agreed that more effective dissemination of existing information is the most critical environmental information need. Extensive data have already been collected and compiled. However, these data are not being used because projects have not emphasized dissemination mechanisms and have failed to foster participative and networking approaches, the development of information services and the elaboration of data quality standards. The REIMP

will enable users and decision-makers to utilize more effectively the environmental information that is already available. In order to reach this objective, the following activities will be implemented:

- Establishment of a primary information dissemination and exchange network.

- Developing user-friendly information services (newsletters, documentation centers, information on market prices, trades, etc., using existing information sources).

- Establishing e-mail servers and Web servers so as to widely and easily disseminate available information and data sets. (Internet service is available in C.A.R, Gabon and will soon be available in Cameroon and Congo. Basic e-mail servers will be used in the meantime and will be available in all 6 countries in April 1997).

- Harmonizing standards for data collection, processing and integration; and

- Involving the local private sector in information production and dissemination activities.

20.   *The Decision-Makers Component* (Total cost: $0.962 million, GEF financing requested: $0.293 million).   The involvement of decision-makers in using environmental information was identified by the major stakeholders as the second most important component to be carried out by the REIMP. Its aim is to assist decision-makers, mainly at the national and regional levels, to use information on natural resources in their planning and monitoring tasks. The following activities have been identified as necessary to reach this objective:

- Organizing national and regional workshops to promote the use of information in resource planning and monitoring processes, in collaboration with EDI; and

- Developing user-friendly information tools such as regular monitoring reports, decision-making tools, a regional environmental report on natural resource status and trends.

21.   *User-Oriented Production Component* (Total cost: $6.035 million, GEF financing requested: $1.618 million). Although information on natural resources, such as inventories, maps, aerial photographs and satellite images, is available, most information products are outdated or not in user-friendly form. To address these problems, the REIMP will:

- Implement and maintain a meta-database (i.e. a set of catalogs, references and indicators).

- Implement and maintain an archive database.

- Produce and update basic information (topographical and land cover maps) using satellite imagery and/or aerial photographs on specific areas required by users.

- Collect, integrate and analyze available information on biodiversity.

- Document national and local natural resources zoning.

- Implement resource exploitation monitoring systems; and

- Implement a coastal zone monitoring system.

22.   *Capacity Building Component* (Total cost: $5.286 million, GEF financing requested: $0.470 million). The components briefly described above cannot be properly implemented without appropriate equipment, technical assistance and training of local staff. Such activities will include:

- Basic information processing and dissemination equipment for national agencies.

- Institutional strengthening through technical assistance and training of national staff; and

- Assistance in marketing the information services of local agencies and national experts, especially to the private sector.

Those activities will be developed with national and local NGOs and will take advantage of the network insofar as network members will share their knowledge and their skills.

RATIONALE FOR GEF INVOLVEMENT

23.   Global Significance of the Congo Basin. The Congo Basin includes the world's second most important rainforest after the Amazon forest. This forest is currently shrinking at about 0.6% per year and is under increasing human pressure. Natural resource and biodiversity conservation monitoring and planning actions in the Basin are hampered by inadequate use of environmental information and by gaps in environmental data concerning the forest's extent, composition and characteristics at local, national and regional level. The project will disseminate basic, action-oriented information and develop a knowledge-based information system that will help policy makers to more sustainably manage the valuable natural resources and more effectively conserve the unique biodiversity of the Congo Basin.

24.   *Consistency with Guidance from the Convention on Biological Diversity (CBD)*. Article 7 (a) of the Convention on Biological Diversity (CBD) calls for each contracting party to identify components of biological diversity important for its conservation and sustainable use; Articles 7 (b), (c) and (d) propose the identification of activities likely to have adverse impacts, the monitoring of the status of threats to biodiversity, and the organization and maintenance of biodiversity data. Chapters 15 and 17 of Agenda 21 highlight the need for better information as the basis for sustainable development and conservation of natural resources. The project will serve all of these needs.

25.   *Rationale for GEF Financing*. The project will be a component of the GEF Forest Ecosystem Operational Program. Its objectives and design are consistent with this program, which calls specifically for these key features of the REIMP: (i) support to regional projects involving international cooperation; (ii) assistance in designing and implementing cohesive

programmatic approaches to conservation; and (iii) promotion of integrated land management in tropical forest ecosystems that are at risk. The project will complement the largely site-specific biodiversity conservation projects that the GEF is supporting in several of the participating countries (Cameroon, the CAR, Congo and Gabon) by developing a comprehensive national and region-wide environmental information system and the tools with which to apply that information to ecosystem planning and to the monitoring of both forestry and conservation initiatives. The project will also complement the biodiversity-enabling activities that are just getting underway in the region by improving and updating the environmental information on which their initial biodiversity strategy work is based and identifying trends over time in the condition of the ecosystem. This improved information base will facilitate both the monitoring and quality enhancement of those strategies, and thus increase the capacity of the participating countries to meet their obligations under the Biodiversity Convention.

26.   GEF financing would play a catalytic role in the project by supporting the regional, forest ecosystem-oriented components of the environmental information program. These regional components will produce the information outputs that will be in the public domain, which will serve as powerful environmental monitoring tools for both regional and international observers. They will also promote the harmonization of information-gathering standards and outputs and thereby facilitate ecosystem-wide conservation planning and monitoring of the Basin, which otherwise will not be feasible.

RATIONALE FOR A REGIONAL APPROACH

27.   *The Regional Approach*. The regional approach of the project would:

- address the Congo Basin biome as a whole;

- ensure compatibility and integration of the various national outputs;

- provide information on cross-border issues such as migration and "transhumance";

- realize economies of scale in investments, production costs and technical preparation expenses;

- facilitate relationships with existing global information networks;

- assist the formation of common policies on forestry and natural resources within the region; and

- establish a technical and institutional framework which can help to identify and implement regional projects and programs in biodiversity, forestry and environmental management.

28.   The REIMP will be a sub-regional collaboration platform between the six countries of Central Africa and aims at maintaining and reinforcing exchanges between these six countries in order to have an improved cross-border resource management. This will promote solidarity in the Region, and this solidarity would help national agencies to bypass political crisis.

SUSTAINABILITY AND PARTICIPATION

29.   *Financial Sustainability*. The project is expected to generate revenues for the data producing and disseminating members of the REIMP Network. These are currently estimated at $ 0.45 million in the base year (year 1 after the project completion) and to increase by an average of 2% per year. The associated recurrent costs of the member organizations are estimated at $0.66 million for the first year, and to decrease to finally reach a level of $0.35 million after ten years[3]. There will be additional recurrent costs of $0.5 million per year over four years.   The commitment of the governments and stakeholders to absorb these costs is a requirement for the sustainability of the system. In the long-run, revenues are expected to exceed the recurrent costs and constitute a source of additional financing for project-related activities.

30.   *Institutional Sustainability*. Project objectives can be achieved if existing national agencies are institutionally and technically linked to one another within a network. Each of them will be responsible for specific tasks within this network. The creation of a small regional network management unit is, however, necessary to ensure coordination and to offer such specific regional services as: (i) the promotion and dissemination of products and services, (ii) the maintenance of various regional databases, (iii) the elaboration of a regional report on the environment, and (iv) the harmonization and promotion of standards of data collection and integration. This unit will function for the duration of the project and will only continue to function after that if it becomes financially viable.

31.   *Participation.* The process of project development followed a participatory and demand driven approach. A set of national agencies willing to work together and prepare the national components of the project, were first identified in each country. Representatives of these agencies gathered into officially recognized National Working Groups (NWG) in each of the six countries. NWGs started by assessing users needs for geo-referenced information and tools dedicated to manage natural resources. This assessment was followed by an inventory of existing capacities. During the first regional meeting, February 5-7, 1996, in Yaounde-- co-financed by the GEF and various other bilateral donors--the NWGs presented their first results, and their coordinators discussed regional coordination issues for the first time. The preparation team included specialists from the World Bank, NASA specialists (working on the Pathfinder and Carpe programs), FAO specialists (working on AFRICOVER) and ECOFAC specialists (EU Biodiversity Regional Project). The technical and institutional experience of these specialists provides a guarantee that the project will complement other regional initiatives and will help to ensure institutional sustainability.

LESSONS LEARNED AND TECHNICAL REVIEW

32.   *Relying on Information Technologies*. Information technologies, such as those to employed by the REIMP have been *successfully* used to improve natural resource planning and management in the Tropical Forest Project in the Amazon[4]. Remote sensing techniques

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[3] This is due to depreciation of equipment.

[4] Skole, D., Tucker C. J, 1993, Tropical deforestation and habitat fragmentation in the Amazon: Satellite data from 1978 to 1988, Science, 260,1849-2024.

enabled various organizations such as FAO, NASA[5], NASDA, and JRC[6] to acquire regional satellite image coverage and implement cost-effective tools to map and monitor issues of global concern for the environment (deforestation, degradation of different types of habitat). Pilot initiatives have demonstrated that these images could also provide basic spatial data for biodiversity localization at a relatively low cost, since emerging competition and technical improvements have helped decrease their cost[7]. Moreover, the Geographic Information Systems (GIS), which make it possible to integrate and correlate data from various sources, and the Global Positioning Systems (GPS), that enable quick positioning of information surveyed in the field and easy updating of the database, are now mastered by a wide of range of users. It has bee proven that some of these tools can be efficiently transferred and used by the clients to acquire, process, store and disseminate efficiently information REIMP will make available technologies proven to be transferable and efficient.

33.   _The Capacity Building Challenge_. Recent experience also shows that, for such projects, the major constraints and issues are less technical than institutional. Most African conservation projects are carried out by international NGOs such as the World Conservation Society (WCS), the World Wildlife Fund (WWF), or the International Union for the Conservation of Nature (IUCN) in collaboration with local institutions. The weakness of local institutions often gives the international organizations considerable autonomy in managing the projects. Experience has shown that this weakness limits the government commitment to the project. Strengthening local institutions to participate in the project design and implementation is necessary in order to ensure local commitment and sustainability. Such strengthening is also often essential to the process of inter-agency coordination and collaboration which should ensure both the follow-up needed during and after the project implementation and avoid the duplication and incompatibility.

34.   _Linking public agencies, the private sector, and the NGO community through_ _national information networks and a regional information network_. Sustainable management of natural resources involves not only public agencies but also private companies and NGOs. So far, the dialogue between these actors has been generally weak and has sometimes led to tense situations where distrust and misunderstanding prevailed. Such are lessons learned from the new forest legislation in Cameroon, which has been developed without taking logging companies' opinion into account. Linking these institutions through an information network may contribute to increase the dialogue and the understanding of everyone's needs, desires and fears. At the national level, communication between public agencies, private companies and NGOs may lead to a better definition of products and services related to environmental information, as well as sharing financial, human, and logistical resources to implement new products or services. At the regional level such a network may act, through workshops and its

5 Lawrence B., 1992, The NASA Landsat Pathfinder Tropical Deforestation Project. ISY-World Forest Watch Conference - (8) June 1992, 55-59.
Laporte N, Justice C., Kendall J.,1995 Mapping the Dense Humid Forest of Cameroon and Zaire Using AVHRR Satellite Data. IJRS, 1995, vol. 16, No., 1127-1145.

6 NASDA: Japanese Space Agency; JRC: Joint Research Center, European Commission

7 The price of the unprocessed high resolution satellite image ranges from US $ 0.2 (radar) to US $ 1 (Spot) per Sq. Km. for unprocessed satellite images. The price of the processing for making space-maps at scale 1:200.000 range from US $ 0.5 to 1 US $ per Sq. Km. depending on the quality of geometric requirements. Thus, on a classical commercial basis (which must be lowered for a big area) the price for a space map at 1:200.000 scale range from US $ 0.7 to US $ 2 per Sq. Km. The price of a classical topographic map at the same scale including aerial photographs and their restitution would be US $ 100 per Sq. Km.

steering committee, as a discussion platform where private sector representatives and governments may decide and agree upon the NRM policies to be enforced.

35.   *Technical review*. The STAP Technical Review identified the major technical issues raised by this type of information project as:

        (i)   data storage and dissemination policy;.

        (ii)   transfer of technology within the region:

        (iii)   technical sustainability; and

        (iv)   technical linkage to other projects.

The review concludes that each of these issues will be satisfactorily addressed by the project. Data storage and dissemination policy have already been addressed through the regional workshops held during project preparation and the appraisal workshop to held in Brazzaville will finalize those aspects. Information circulation through the network will be ruled by a clear Data Exchange Policy (DEP) that will define conditions of accessing information for each user. Few problems are anticipated with the transfer of technology within the region as the technologies selected have already been successfully used in similar contexts. The project will enhance local expertise through intensive training and technical assistance which will ensure technical sustainability. Finally, the review noted that the project will respond to issue (iv) by developing a regional information network in which both data producers and users -- including public, private, and non governmental agencies involved in natural resource management and biodiversity conservation -- are associated and can define together the specifications of data to be collected or updated and products to be developed.

PROJECT FINANCING AND BUDGET

36.   *Total Cost*. The total cost of the project is estimated at US$15.3 million equivalent, including physical and price contingencies, of which US$8.3 million equivalent in foreign currency and US$7 million equivalent in local currencies (Cameroon, CAR, Congo, Equatorial Guinea, Gabon and Zaire). A summary of project costs is given below.

Exhibit 2. Components Project Cost Summary

Regional Environmental Information Management Project
Components Project Cost Summary

	(FCFA '000)			(US$ '000)		
	Local	Foreign	Total	Local	Foreign	Total
1. Cameroon	492,725	725,745	1,218,470	930	1,369	2,299
2. Central African Republic	354,289	611,901	966,190	668	1,155	1,823
3. Congo	430,079	639,461	1,069,540	811	1,207	2,018
4. Equatorial Guinea	173,029	275,351	448,380	326	520	846
5. Gabon	614,986	590,659	1,205,644	1,160	1,114	2,275
6. Zaire	456,765	880,955	1,337,720	862	1,662	2,524
7. Regional Coordination* (PMU ; PSG)	789,605	253,541	1,043,146	1,490	478	1,968
Base Costs	**3,311,477**	**3,977,613**	**7,289,090**	**6,248**	**7,505**	**13,753**
Physical Contingencies	165,574	198,881	364,455	312	375	688
Price Contingencies	755,489	656,788	1,412,277	466	412	878
Total Project Costs	**4,232,540**	**4,833,282**	**9,065,821**	**7,027**	**8,292**	**15,319**

*Regional coordination covers the supports to the Project Management Unit (staff, Regional Consultant, operating costs, and monitoring system) and the Project Steering Group.

INCREMENTAL COSTS AND GLOBAL ENVIRONMENTAL BENEFITS

37.   *Baseline Scenario*. Within the baseline scenario, the major activities that have been designated by the six countries as national economic priorities concern the development and maintenance of comprehensive national environmental and geographical information systems and the effective and reliable internal dissemination of that information to key decision-makers. These components are identified in the Incremental Cost Annex. The improved national information systems will allow monitoring of activities such as logging or concessions, in order to better oversee these activities and collect appropriate fees from the timber companies. The participation of the governments would cover the local taxes and the salaries of the National Working Groups. Each of the six countries would provide all local funds needed to implement, operate and maintain the project. These amounts are as follows: (i) Cameroon: US$ 0.5 million equivalent; (ii) Central Africa: US$ 0.2 million equivalent; (iii) Congo: US$ 0.2 million equivalent; (iv) Equatorial Guinea: US$ 0.1 million equivalent; (v) Gabon: US$ 0.2 million equivalent; and (vi) Zaire: US$ 0.5 million equivalent. The governments would also finance local taxes and local salaries totaling about US$2.5 million. Derived products sales are assumed to cover US$0.5 million. Other donors would contribute US$ 8.2 million. Several multilateral and bilateral donors have been contacted, and expressed serious interest i.e. the EU, IFAD, UNDP, USAID, Belgian Cooperation, French Cooperation, French GEF, Japanese, Italian and Dutch Cooperation Agencies, GTZ and BMZ, and CIDA. The final financing plan and donor commitments will be agreed during the appraisal and the negotiations of the project. Nevertheless IFAD, EU, French Cooperation, USAID, French private sector sent representatives to take part in the appraisal mission and this clearly show their willingness to participate in the REIMP.

38.   *Global Environmental Benefits of the GEF Alternative*. The GEF Alternative will achieve global environmental benefits to complement the national benefits realized under the baseline scenario. It will improve scientific and public knowledge on the Congo Basin ecosystem and assist national policy makers in developing a knowledge-based information network to facilitate the conservation of biodiversity. Global environmental benefits will be generated by the international sharing of information goods and development of improved conservation-oriented national information services. The project will help strengthen public environmental policy and help optimize biodiversity management and planning. For instance, the project will help to identify relevant new protected areas, monitor their status and management and enhance national capacities for biodiversity conservation planning and decision-making. In doing so, the project will contribute to the objectives of the Convention on Biological Diversity (CBD), the GEF and Agenda 21.

39.   *Incremental Cost*. The requested GEF contribution to cover the project's agreed incremental costs is US$4.005 million or 26% of total costs. This would finance the components that are outside the baseline and would produce additional global benefits. These components are: (i) regional harmonization of the primary network and the operation of the regional unit (US$1.624 million); (ii) regional workshops, the regional database, and regional environment reports of the decision-makers component (US$0.293 million); (iii) regional shared data [images, archives] and ecosystem wide information [biodiversity analysis, metadatabase] ($1.618 million), (iv) for the regional information unit (US$0.470 million).

Exhibit 3. Components by Financiers

Regional Environmental Information Management Project
Components by Financiers
(US$ '000)

	The Government	**Global Environmental Facility**	**Other donors**	**Self-financing**	**Total**
1. Cameroon	432	527	1,443	137	2,538
2. Central African Republic	363	241	1,342	62	2,008
3. Congo	395	247	1,513	93	2,247
4. Equatorial Guinea	187	88	623	39	937
5. Gabon	578	225	1,630	110	2,542
6. Zaire	500	465	1,682	145	2,793
7. Regional Coordination	40	2,213	0	0	2,253
Total	**2,495**	**4,005**	**8,232**	**586**	**15,319**

GEF partially or totally funded activities ('000 US$ eqivalent)	Cameroon			C.A.R.			Congo			Equ. Guinea			Gabon			Zaire			Regional Unit			Total		
	Gov.	GEF.	Oth.	Gov.	GEF.	Oth.	Gov.	GEF.	Oth.	Gov.	GEF.	Oth.	Gov.	GEF.	Oth.	Gov.	GEF.	Oth.	Gov.	GEF	Oth.	Gov.	GEF	Oth.
Network and Service																								
Setting-up the primary network	6	2	15	6	2	15	6	2	15	3	1	8	6	2	15	7	3	19	40	91		74	103	87
Coordination																				343		0	343	0
Development of new/pilot services																				383		0	383	0
Regional unit running costs																				475		0	475	0
Project Steering Group																				160		0	160	0
Monitoring system development and set-up																				53		0	53	0
Monitoring system maintenance																				23		0	23	0
Harmonizing and promoting standards		14			14			14			14			14			14					0	84	0
																						74	**1624**	**87**
Decision-Makers																								
Report on environment in the region																				101		0	101	0
Specific studies (study cases in endangered areas: multi-layer analysis)																				173		0	173	0
Workshop organization	2	10											2	9								4	19	0
																						4	**293**	**0**
User-oriented products																								
Meta-data base		21			21			21			21			21			21					0	126	0
Archive database	4	24		4	24		3	19		0	3		3	19		6	33					20	122	0
Satellite imagery	43	87	87	43	87	87	62	123	123	5	10	10	52	105	105	147	294	294				352	706	706
Information on Biodiversity (National guide, specific studies)		276																		389		0	665	0
																						372	**1619**	**706**
Capacity Building																								
Equipment of local agencies and training	171	93	333	171	93	333	131	68	238	85	39	129	144	76	270	190	100	355				**892**	**469**	**1658**

Please note that the above mentioned activities are partly or totally funded by the GEF. The other project activities are not mentioned here.

GRAND TOTAL   1342   4005   2451

IMPLEMENTATION ARRANGEMENTS

40.   *Institutional Design*. The experience of sub-regional African institutions has been disappointing in the past, especially in Central Africa, where governments are facing political and economic difficulties. Hence a major effort has been made to build cost-effective institutional arrangements to coordinate the REIMP. Close supervision will also be required during implementation. The REIMP will include a number of national sub-projects that are financed by different donors. These sub-projects will be entrusted to the national partners of the primary network

41.   *Regional Project Coordination*. As a regional project, the REIMP intends to foster the coordination of information activities and environmental monitoring at the regional level. Experience from other projects shows that coordination structures should be minimal in order to allow an effective implementation. In this regard, the following has been agreed by the REIMP partners:

- The establishment of a Project Steering Group (PSG) to ensure a global coordination and overview of the project at the regional level. The PSG will provide the direction and policy for project execution and decide the composition and valuation of the Primary Network. The PSG will include representatives of the six beneficiary countries primary networks and will meet on a regular basis. The meetings will be prepared by the Project Management Unit (PMU) which will implement PSG recommendations.

- The PMU will: (i) supervise, monitor and evaluate the sub-projects; (ii) provide regional services, such as the loading of data for the regional database; (iii) report to the PSG. The PMU, whose legal existence and status have been described in a draft Memorandum of Understanding, will be housed in one of the participating national agencies. (During the Libreville Workshop in October 1996, REIMP partners agreed that Libreville would house the PMU.

42.   *The Network Organization*. The REIMP has adopted a network organization that fosters information sharing, cross-fertilization, and improves database production. During project preparation, each national preparation team identified competent agencies that would be actively involved in the project implementation. These agencies will be responsible for the REIMP database production and the update, and dissemination of data which represent the major components of the primary network. This network is composed of governmental agencies, private sector entities, and NGOs involved in environmental information management. Participating stakeholders in the primary network will be strengthened by the project. For instance, the stakeholders will benefit from the products, i.e. they will acquire them at a very low cost in exchange for the value added to the product and information. The mechanism for entering and belonging to the network will be defined by the Project Steering Group (PSG). Each member will sign an agreement detailing its rights, benefits and obligations within the network. The national network will be coordinated by a secretariat to be called the National Focal Point (NFP). The head of the NFP will be a member of the Regional Project Management Unit (PMU). The six NFPs will be responsible for the national

component implementation. They will be the focal point to deliver services at the national and regional levels.

43.	*Lead Implementing Agencies*. The REIMP will be hosted in each country by the national lead implementing agency. These are:

- Ministry of Environment and Forests in Cameroon;

- Ministry of Environment, Waters and Forests, Livestock and Fishery in CAR;

- Ministry of Education, Technology and Scientific Research in Congo;

- Ministry of Health and Environment in Equatorial Guinea;

- Ministry of Finance, Economy, Budget and Participation in Gabon; and

- Ministry of Environment, Nature, Conservation, and Tourism in Zaire.

These national implementing agencies will designate a national coordinator and a small management unit to perform the tasks of administering and coordinating the national primary network. They will also be the contact point for the coordinating mechanism at the regional level. National Focal Points (NFP) will be designated by the lead implementing agency in each country. Each NFP, which is expected to be a network member, will act as a secretariat for the national sub-network and will be responsible for preparing the annual work program and budget based on the inputs from other national network members. If the political situation gets bad, temporary solutions will be found to maintain a minimal activity. As an example we may mention the Zairian case during the project preparation phase. Though a very unstable situation, preparation has been completed and national project document has been issued. This has been made possible thank to IUCN which has served as a relay to the Zairian agencies and NGOs.

44.	*The Data Exchange Policy (DEP).* Effective management and implementation of the REIMP would be facilitated by the adoption of a clear data policy by the network institutions. This policy would provide network members with general principles and guidelines to govern formats, accessibility, archive and distribution of data collected and produced under the REIMP. Network members should agree on data collection and exchange standards that would make it possible to assess project impacts, identify information gaps, avoid duplication, and facilitate cooperation between institutions and information circulation.

45.	*Monitoring Indicators.* The project performance will be measured in terms of quantity and quality of output as well as the number of system users. The impact would be measured in terms of changes in decision-makers' behavior. Status, performance, and impact indicators are being defined during the preparation phase. Each expected result and activity has at least one indicator of performance or impact. Each indicator, its source of measure and annual target values will be described in a specific manual. For instance, to assess the completion of the first objective (ensuring information circulation and adding value to existing initiative), the number

of agencies connected to the network (target value 30), the maximum delay before an information request is satisfied (target value 3 days), the number of information requests per month (target value 100) will be used as indicators.

46.   *Monitoring System*. A specific project monitoring system is being designed to manage the above mentioned indicators in relation to financial and disbursement indicators. This monitoring system will use existing commercial software packages, has GIS capabilities, and will be compatible with the Regional Information System. It will be implemented in the six NFP as well as in the PMU. Direct integration of the various data in the PMU system using e-mail facilities is under study and might be implemented during the project implementation.

47.   *A Multi-donor Mid-Term Review*. During negotiations it will be agreed that: (a) the Grantees and the donors will conduct, not later than March 31, 2001, a mid-term Project Implementation Review to assess the progress of the project; (b) no later than six weeks prior to this review, the Grantees will provide a report that includes an evaluation of progress achieved during the project implementation by the Grantees, an analysis of the key problems that have emerged during the implementation, and a draft action program to be carried out through the completion of the project; and (c) the Grantees will carry out promptly the recommendations of the review.

ISSUES, ACTIONS AND RISKS

47.   *Commitment of the Decision-makers to Use the Information System*. The project focuses on setting up a monitoring system to improve the knowledge on natural resources and the status and evolution of biodiversity. The monitoring network and associated project outputs will provide the keys for managing national priorities and strengthening national capacities. From the donors' point of view, this information can also be seen as an opportunity to discuss a global policy and respective portfolios of projects in a more transparent way with the governments of the Region. The project cannot succeed without the willingness and commitment of the decision makers to use the system. For this reason decision makers have been involved in the REIMP preparation process in order to design useful outputs and ensure their commitment to the success of the project. They will continue to be involved during the implementation phase.

48.   *Capacity of the Governments to Undertake the Project.* Several countries in the region are facing difficult economic and political situations. Consequently, there is a risk that national capacities and political stability might not be sufficient for each country to participate fully in the project. To minimize this risk, the project has been designed in a "modular" way so that it can be implemented with all or a combination of the participating countries. Also, in addition to involving governments, the project will also information networking between NGOs and private companies, which will provide alternative means to develop and apply the information products. The activities and mechanisms will include the use of workshops, newsletters, bulletin boards, and E-mail. Twinning agreements with private companies from developed countries will be used to assist the development of local NGOs and consulting firms to develop national capacities outside the public sector.

49.   *Relationships with Other Regional and National Projects*. The contribution would also be minimized without coordination with other existing projects, such as those supporting: (i)

the development of national natural resources management capacities using education, training, and communication; (ii) the creation of legal, regulatory, and policy frameworks; and (iii) the testing and implementation of activities involving local populations and NGOs, i.e. GEF Cameroon, GEF Congo, WB PARN in CAR, EU ECOFAC, USAID CARPE. To be efficient, the REIMP must collaborate closely with the other projects and make sure that outputs are useful to them. The above mentioned project management teams have been contacted, and collaboration arrangements have been proposed to them during the preparation stage. For instance, PARN will be geographically extended thanks to the REIMP, ECOFAC will be able to disseminate its information through the REIMP and will be a source of information for the network members.

50.   _Coordination_. There is a further risk associated with a lack of effective coordination: (i) among different national agencies involved in environmental data generation and natural resources management through the National Working Groups (NWGs), and (ii) among the different NWGs through the regional project management unit (PMU). Extensive preparation workshops have been carried out and well-developed communication networks have been put in place in order to mitigate this risk. The NWGs have already demonstrated ability to carry out project activities and to coordinate among themselves.

51.   _Administrative and Technical Complexity._ Administratively, the project involves six different countries collaborating in a common endeavour. On the one hand, this adds complexity, but on the other hand, it creates the potential to develop common approaches to similar problems and allows the national staff to learn from each other and build on their respective comparative advantages. The project has been designed to take full advantage of these learning and systems harmonization possibilities. Regional collaboration is therefore a strength as well as a weakness. Technically, great care has been taken to use standard information technologies that are simple, effective and have been widely tested and applied in other similar contexts, such as Madagascar. Extensive technical training has been undertaken during the preparatory phase and will continue throughout implementation.