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Sustainable Use of Wild Species

SUWS/VALEURS Project

Evaluation of phase I

Report by evalution mission (4 – 14 November 2001).

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1. INTRODUCTION

1.1 Following the preparation of a project document containing the rational for the program and its implementation plan, IUCN launched the VALEURS Project, completely funded by the Netherlands Ministry for Development Cooperation. It aims at promoting the sustainable use of wild species of flora, fauna and inland water bodies through appropriate national policies, planning and investment. In the field, the program is implemented by IUCN in collaboration with local partners, principally 2 agencies of ISRA (BEME and CRODT), and IIED. VALEURS was conceived as a 5-year project in two phases, the first 3-year phase focused on information gathering to be followed by a 2-year second phase with demonstration projects and policy initiatives. The first phase of the program was subsequently extended to include a fourth year to allow the completion of the Phase I work-program.

1.2 By-and-large, the first phase of the program has been very successful. Progress has mostly followed the original schedule with only modest delays and minor alterations, and more than 40 reports on methods and field investigations have been produced. The first phase of the program has already achieved many of the expectations.

1.3 Between the two phases of the project there is a period for review, assessment and planning. This report is the external review of Phase I. The review was carried out by a team of three consultants: an expert in resources and environmental economics surveys (Prof. Drs. Rudo Niemeijer), an expert in policy and institutional analysis of natural resource management (Mme Oumy Khaïry Ndiaye), and an expert in bio-diversity assessment (Dr. Duncan Thomas). Two main constraints on the review were time and incomplete products. The time allowed for the review was insufficient given the large number of documents to review and the large number of meetings. The scheduled field trip was canceled to try to accommodate this deficiency, but even so some of the meetings have been scheduled to take place after the presentation of the draft report. Second, the first phase of the program has not yet finished, and two of the most important parts, the synthesis of results and the database and GIS products from CSE are still being developed. As a result the review team was unable to get a full picture of how the project participants view the relevance of their findings, or to see the products that will be the main vehicle of communication, an important project objective.

1.4 **Annex 1** presents a summary of the TOR for the evaluation mission. The mission used he following means to complete its evaluation:

ecoming aware of information produced by the project (reading and analyzing text documents: study reports, progress reports, research reports; looking at data in different formats: quantitative, spatial and other stored in databases and GIS prototype) in addition to any relevant information on the project (proposal, list of partners, list of sites, etc)

- briefing (IUCN staff, the Netherlands Embassy Representative, and project implementing partners)
- interviews
- because of time constraints the mission could not include field trips in the program
- visits to partners

- debriefing (IUCN staff, the Netherlands Embassy Representative and implementing partners).

Annex 2 gives an overview of the program of the mission, detailing all meetings and interviews held. **Annex 3** contains a list of program documents and data sets consulted by the members of the evaluation mission. **Annex 4** presents a short list of additional documents consulted by the mission.

2. THE PROGRAM

2.1 In 1998, UICN launched the VALEURS Project (*Valorisation des Espèces pour une Utilisation Durable des Ressources Sauvages au Senegal*) with funding support of the Netherlands Ministry for Development Cooperation. It aims at promoting the sustainable use of wild species of flora, fauna and inland water bodies through appropriate national policies, planning and investment. The project approach is based on the assumption that wild resources fare far less than agricultural production in the making of policy and decisions, whereas they form the basis of bio-diversity. The current status devolved to wild resources is due mainly to a gap in the available information about wild resources biology, ecology and above all about their economics.

At first, the approach strives to establish the importance of wild resources in relation to the household, community and country economy and to integrate the assessed value in the relevant land-use options, allocation of production inputs and investment decisions. A two-part integrated strategy was designed with local and international partners to fulfil the project's specific objectives over a five-year period. Phase I, which is due for completion in December 2001 is devoted to data collection and analysis as well as development of concepts and tools.

2.2 As stated in the **Project Document (Nov. 1997 and August 1998)** the overall goal of the VALEURS project is to enhance the sustainability of uses of wild species in Senegal. Its purpose is to enable local communities, NGO's, government and research institutions to develop and adopt national and local policies and plans for the sustainable use of wild species. In more detail four objectives are mentioned:

Objective 1:

To assess rural peoples' dependence on wild harvests and the economic value of wild resources relative to other activities and resources in Senegal;

Objective 2:

To demonstrate methods to enhance the sustainability of wild resources for the benefit of rural people in Senegal;

Objective 3:

To provide policy development for sustainable management of wild resources to government, donors, NGO's, communities and the private sector in Senegal;

Objective 4:

To communicate the lessons learned in Senegal and other West African countries.

A number of specific achievements from the program are mentioned in the program documents:

- increased capacity of local research institutions in the area of wild species management;
- increased capacity of local leaders' skills in the management of wild species;
- increased capacity of Senegalese government authorities in the formulation and implementation of natural policies and plans for wild species management,
- development of national policy recommendations for wild species;
- development of wild species management plans by local communities;
- increased benefits in target areas from wild species utilization and management;
- development of research and project tools, methods, and processes for the sustainable use of wild species in Senegal.

The documents furthermore define the target species concerned as:

- non-timber plant species including grasses, shrubs and small plants and trees;
- non-timber products from timber species including leaves, fruits, nuts, etc.;
- small animals and medium game such as birds, reptiles, rodents, warthogs, etc;
- continental fisheries.

3.1.2 In its approach the program concentrates on a number of specific activities. A first phase was to consist of a situation analysis of 12 months, to be followed by a series of field assessments of 24 months. Following this first phase a period of 24 months should focus on demonstration projects and policy development. Most activities during the first phase were to be focussed on data collection at different levels. The second phase was planned to have a strong community management focus aiming at achieving increased income from sustainable management and use of wild resources and improved conservation of bio-diversity in vicinity of villages.

3. PROJECT SUITABILITY

3.1 Project suitability – social and political aspects

3.1.1 The following sections give a short overview of the social and political context of the VALEURS program in Senegal, followed by a discussion of the ecological aspects of the programs objectives and its specific targets.

3.1.2 The aim of the *9th Plan d'Orientation de Développement Economique et Social du Sénégal*[1] (PODES, 1996 – 2001), which covers the entire sector planning domain, is sustained development.

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1 Social and Economic Development Orientation Plan of Senegal

The 10th PODES orientation seeks to ensure a healthy management of environmental resources for sustained development by, among other things:

- rationalizing natural resource management;
- developing environmental education ;
- drafting and implementing environmental plans of action at national, regional and local levels.

3.1.3 In the area of spatial planning, the *Plan National d'Aménagement du Territoire*[2] (PNAT) is the framework of conception for a decentralized implementation of economic planning and management policies and strategies.

In the 10 regions, the *Schémas Régionaux d'Aménagement du Territoire*[3] (SRAT) made it possible to identify the operational tools likely to give a territorial dimension to national planning. This mechanism contributes in creating the conditions necessary for taking charge of the new areas of competence transferred to the Local Authorities within the framework of regionalization.

Moreover, regionalization provides that the Local Authorities should institute development plans taking local priorities into account while respecting the national and regional economic and social development trends:

3.1.4 In the environmental field, Senegal adopted a *Plan National d'Action pour l'Environnement*[4] (PNAE) in September 1997, designed as a tool for the concrete affirmation of the PODES environmental policy.

At present, Senegal is trying to implement the priority programs selected after the PNAE.

3.1.5 In accordance with the provisions of the Convention on Bio-diversity, a national strategy for bio-diversity conservation was prepared and adopted in 2000 (to be verified). This process was carried out by requesting all the concerned actors to contribute: State structures, education and research institutions, NGO's, associations, local authorities, various categories of grass root producers: men, women, youths.

3.1.6 Senegal's forestry policy is formulated in the *Plan d'Action Forestier du Sénégal*[5] (PAFS) adopted in 1993. It essentially aims, on the one hand, to preserve the forestry potential and socio-ecological balance and, on the other, to satisfy the needs of the populations in ligneous and non-ligneous forestry products.

Its implementation is based particularly on the substantial increase in the rural populations' responsibility in the management of the forestry resources of their localities and on the full participation of local organizations and other partners. The groundwork and actions should spread over a period of time.

Thus, the strategy for the implementation of the national forest policy is based on the following principles:

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2 National Town and Country Planning

3 Regional Development Plans

4 National Plan of Action for the Environment

5 Forestry Action Plan of Senegal

- involving the populations using the participative approach as an implementation strategy
- integrating forestry in a system geared towards the lasting development of the agricultural, pastoral and forestry production potentials;
- decentralizing forestry planning, by relying on an increased collaboration between the *Inspection Régionale des Eaux et Forêts*[6] and the Regional Council.

The PAFS Program of Action is structured around seven priority themes:

- improving the institutional framework;
- developing and protection natural forests and forestry production;
- developing soil restoration and preservation actions and agro-forestry actions;
- preserving the fauna habitat and developing traditional hunting;
- improving knowledge;
- developing urban forestry.

3.1.7 At the international level, Senegal has subscribed to various treaties and conventions relative to natural resource management:

- the UNCED Outline-Convention on Climatic Changes adopted in Rio de Janeiro in June 1992 and ratified in June 1994 ;
- the Convention on the Marine Environment and Coastal Zones of West and Central Africa, of March 1981, which entered into force in August 1984 ;
- the Washington Convention on the International Trade of Endangered Fauna and Flora Species (CITES), of March 1973, which entered into force in November 1977 ;
- the Convention relative to humid zones of international importance used as wildfowl habitat (UNESCO Ramsar Convention) of December 1975, which entered into force in November 1977 ;
- the Convention on the Conservation of Migrant Species (Bonn Convention) of June 1979, ratified in March 1988 ;
- the Convention on the Cultural and Natural Heritage (UNESCO, Paris) of November 1972, ratified in February 1976 ;
- the African Convention on the Protection of Nature and Natural Resources (OAU Algiers Convention), of June 1969, which entered into force in March 1972 ;
- the UNCED Convention on Biological Diversity adopted in Rio de Janeiro in June 1992 and ratified in June 1994;

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6 Regional Forestry Inspection

- the International Desertification Convention adopted in Paris in October 1994 and ratified in March 1995.

- The Outline-Convention on climatic changes.

As a follow-up on the Rio de Janeiro recommendations, Senegal set up a *Commission Nationale pour le Développement Durable*[7] (CNDD), in charge of preparing a global plan of action and following up and implementing Agenda 21. A *Commission Nationale de l'Urbanisme et de l'environnement*[8] was also instituted.

3.1.8 Senegal is also a member of several sub-regional and regional organizations, including:

- the Inter-State Committee for Drought Control in the Sahel (CILSS, Ouagadougou Convention of September 1973) ;

- Organization for the Development of the Senegal River Basin (OMVS) ;

- Organization for the Development of the Gambia River Basin (OMVG).

3.1.9 The Direction de la Prévision et de la Statistique[9] currently is preparing for a new system of the National Accounts to cover the period of 1997-2000 that should include the contribution by wild resources to the national economy. This is completely in line with the efforts in several African countries to value the economic contribution of wild resources to national economies. Reliable estimates however depend on good data that in most cases are not available.

3.1.10 **Conclusion on project suitability from the social and political perspective.** When the VALEURS program was first formulated, environmental issues received far less attention than today. The positioning of the VALEURS program in the political and social context proved justified, and by itself will have contributed to the greater attention that environmental issues receive currently.

Being in line with currently policy, the program's efforts are likely to find a receptive social and political environment, be it with regard to a proper understanding of the economic contribution of wild resources or with regard to attempts to achieve sustainable exploitation of such resources. It is further expected that the program will contribute to a more focussed and well-informed policy creation in the future.

3.1.11 During Phase I, the program mainly concentrated on **Objective 1**, or more specifically on:

- Developing a valuation methodology applicable to all of wild resources, so as to apprehend the full extent of their contribution to the economy and identify constraints and opportunities arising from a more sustainable use;

- Set up and feed an information system through the collection and processing of valuable data. Data gathered during phase I should provide information about the sustainability of the current use of wild resources and their economic contribution. This information will come in useful in shaping policy and institutional proposals for change.

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7 National Commission for Sustained Development

8 National Urbanization and Environmental Commission

9 National Bureau of Statistics

As mentioned above, the Direction de la *Prévision et de la Statistique*[10] currently is preparing for a new system of the National Accounts to cover the period of 1997-2000, which ideally should cover the type of products and activities on which the project VALEURS is collecting data. It can be concluded that the results of Phase I are very relevant within the context of current policy.

3.2 Project suitability – ecological perspective

3.2.1 The overall purpose and goal of the project are appropriate in terms of ecology. The importance of natural ecosystems in development at national and community levels is increasingly recognized throughout tropical Africa. In Senegal, the natural (and semi-natural) vegetation supplies a whole range of benefits from grazing, soil fertility, wildlife habitat and water catchment, through timber and fuels, to a diversity of non-timber products. The ecosystems of Senegal are threatened by unsustainable use and by short-term climate change, which threatens the economic well being of the local population and food security. There are clear benefits from managing the land in a way that does not deplete its resources, and which leaves it more resilient to resist adverse ecological effects of climate change. The narrow focus on non-timber products places some constraints on the program's capacity to implement more sustainable natural resource management, and these constraints are not adequately dealt with in the document.

3.2.2 **Objective 1** (to assess rural peoples' dependence on wild harvests and the economic value of wild resources relative to other activities and resources in Senegal) and **objective 2** (to demonstrate methods to enhance the sustainability of wild resources for the benefit of rural people in Senegal) do not offer a clear pathway to the design of the Phases I and II. Since the demonstration projects are only mentioned in Phase II of the program, one would assume that only **objective 1** applied to Phase I. This objective falls short of achieving the information base needed to launch demonstration projects in Phase II.

3.2.3 In the expected achievements section, there is an expectation of results in the area of sustainable management. In a number of respects the approach to sustainability is very detailed. For instance, the project document presents a detailed list of the items to be included in community wild resource management plans). But in relation to the design of Phase I, the concept of sustainable management appears very unfocused, suggesting that no specialist in this area was involved in its preparation or review. The target species list further removes the program from its goal of sustainability, since by limiting the program (other than policy) to a very narrow group to products, it largely excludes the possibility of managing the resources in the landscape, where the resources and uses need to be considered in interaction with each other.

3.2.4 In the Activities plan for Phase I, there should have been a strong focus on ecology in both the "literature search" and the "field studies". However, this focus was not followed in the implementation, and ecology and landscape aspects of natural products hardly figure at all in the outputs of Phase I.

3.2.5 **Conclusion on project suitability from the ecological perspective.** In terms of its general objectives the project are appropriate. The way the project has been divided into a three year Phase I and a two year Phase II however appears problematic. That is, Phase I appears to be insufficient as a preparation for Phase II. This particularly concerns the shift from a "vertical" (or product-oriented approach) to a more "horizontal" approach, when resource exploitation needs to be seen in the context from integrated resource management at community level.

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[10] National Bureau of Statistics

4. INSTITUTIONAL FRAMEWORK

4.1 The *Ministère de la Jeunesse, de l'Environnement et de l'Hygiène Publique*[11], MJEHP, has been entrusted with the task of implementing the national policy on the Environment. MJEHP is also responsible for environmental impact studies and the management of protected areas. The two major priorities of MJEHP are:

- The sustainable management of renewable natural resources
- Bio-diversity preservation

MJEHP comprises three national Departments:

- The Direction des Eaux, Forêts, Chasses et de la Conservation des Sols[12], DEFCCS
- Direction des Parcs Nationaux[13], DPN
- Direction de l'Environnement et des Etablissements classés[14], DEEC.

The DEFCCS and DPN are represented in the 10 regions. The DEFCCS has the most extensive institutional representation (officials at regional, departmental, district, and rural community levels). Forestry workers are members of the multi-disciplinary team of the *Centre d'Expansion Rurale Polyvalent* (CERP).

The *Conseil Supérieur des Ressources Naturelles et de l'Environnement*[15], CONSERE, set up in 1993, is responsible for planing, coordinating and following up natural resources and environment management activities for lasting development.

4.2 ISRA is responsible for research of fisheries and agriculture. The *Direction de la Prévision et de la Statistique*[16] is responsible for data collection and statistical analysis outside the competence of ISRA. They are also responsible for data collection regarding the System of National Accounts.

4.3 From the operational viewpoint, in addition to the regular activities of national departments under MJEHP purview, the support of various international cooperation partners has made it possible to implement many projects whose activities are in keeping with the VALEURS project. These include:

- The *Gestion intégrée des Ecosystèmes*[17] project in four typical Senegalese landscapes (GDS, PNUD-FEM, UE, Japan, ACDI, FENU, FIDA, Netherlands)

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11 Youth, Environment and Public Hygiene Ministry

12 Department of Forestry, Hunting and Soil Conservation

13 Department of National Parks

14 Department of Environment and Classified Territories

15 Supreme Council for Natural Resources and the Environment

16 National Bureau of Statistics

17 Integrated Management of Ecosystems

- The *Programme de Gestion Durable et Participative des Energies Traditionnelles et de Substitution*[18], PROGEDE (GDS, World Bank, Netherlands, FEM)

- The *Projet Promotion de la Micro-entreprise Rurale*[19], PROMER, (GDS- ?)

- The *Projet Appui à l'Entreprenariat Paysan*[20] in the Kolda region, PAEPK, (GDS, ACDI)

- The *Système Intégré de Production en Moyenne Casamance*[21] project in Casamance, PSPI, (GDS –GTZ)

- The *Projet de Gestion Communautaire des Ressources Naturelles*[22] , PGCRN, (GDS – USAID)

- The project for the *Conservation de Diversité Biologique*[23] through the participative rehabilitation of deteriorated soils in the cross-border zones of Mauritania and Senegal (GDS, PNUD)

Other NGO's, such as ENDA also carry out programs in related fields.

4.4 In the University of Dakar a number of faculties have specialists in fields related to the use of wild resources. ISRA has strong research departments with representatives in the field and capabilities to handle data collection and analysis on a national scale.

4.5 At the national level, the *Institut des Sciences de l'Environnemen*[24]*t* (ISE), the *Centre de Suivi Ecologique*[25] (CSE), ISRA, the *Institut Sénégalais de Recherches Agronomes*[26] and the University of Dakar *Ecole Inter Etat des Sciences et Médecines Vétérinaires*[27] (EISMV) have signed an agreement with UICN.

4.6 At the international level, a Memorandum of Understanding was signed with IIED, and the Socioeconomic Program (SEP) of the UICN head office.

These formal co-operation documents have made it possible to specify the conditions of implementation of the various activities on a contractual basis with regard to partner national institutions.

Concerning international institutions, the documents signed specify a long-term involvement in terms of backstopping and short-term assistance essentially focussed on the training of local experts.

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18 Program for the Sustainable and Participatory Management of Traditional Alternative Energies

19 Project for the Promotion of Rural Micro-businesses

20 Farmer Entrepreneurship Support Project

21 Integrated Production System

22 Community Natural Resources Management Project

23 Conservation of Biological Diversity

24 Environmental Science Institute

25 Centre for Ecological Monitoring

26 Senegalese Institute for Agronomic Research

27 Inter-State School for Veterinary Sciences and Medicine

Cooperation with the *Groupe d'experts pour l'utilisation durable en Afrique de l'Ouest*[28] (WASUSG) has not been initiated.

The UICN Sustained Use Initiative (SUI) undertook missions to support the UICN Economic Services Unit (ESU) project and TRAFFIC.

4.7 During Phase I, the program was managed by a Steering Committee (CMO) with representation by DPN, DEFCCS, and ITA. Other members include representatives from the academic community, NGO's, and ISRA and the CSE as the main partner institutions. In this way the most concerned institutions were represented within the management team, while others were invited for meetings and seminars as Collaborators of the CMO.

It appears to have been an omission that the *Direction de la Prévision et de la Statistique*[29] was not represented in the CMO at the technical level. Potentially DPS will be a very important user of the survey data on wild resources production and trade.

Recommendation: Establish close collaboration with the DPS to prepare for inclusion of the project findings in the calculations for the System of National Accounts. This would still be useful at this late stage of Phase I, as work on the National Accounts is presently under way.

Recommendation: During Phase II, when focus shifts from data collection to a community type approach with a greater attention for the ecological aspects of community interaction with collaboration with a wider range of institutions and NGO's may be needed. It is advisable that the composition of the CMO should reflect such changes where necessary. With regard to future maintenance of the database it is desirable that the DPS remains involved, as well.

A more detailed discussion of the role of the CMO within the program follows further below.

5. PROJECT ACHIEVEMENTS - GENERAL POINTS

5.1 The achievements expected from the program are listed in the Project Document (August 1998). The project Document does not categorize the achievements by the phase of the program in which they are expected to occur, so this information is added below, by comparing the list of achievements with the project objectives. Only 4 of the achievements are relevant to the first phase.

5.2 Specific Achievements expected from the program:

1. Increased capacity of local research institutions in the area of wild species management (Phase I and Phase II).

   This has been a major achievement of the VALEURS project. The field activities conducted by CRODT and BAME, and to a lesser extent by other organizations, have enabled scientists and technicians in these ISRA departments to further develop their skills in data collection, and in some cases get a near-complete overview of the national situation nationwide regarding the harvest of target wild species.

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[28] Expert Group for Sustained Use in West African

[29] National Bureau of Statistics

The Seminars organized by the project have also had a positive contribution, by assembling groups of professionals from different scientific and management disciplines, with focused presentations on the findings of the program, and on seminar topics selected by the project. These seminars encourage participants to take a wider view of their specialties, and to see the broad spectrum of activities that make up natural resources management.

The large number of smaller studies undertaken within the framework of the VALEURS program has ensured that this increased capacity is not limited to only a few major partners. In this manner, the program has achieved a balanced combination of capacity building and achievement of results (see below under point 4).

2. increased capacity of local leaders' skills in the management of wild species (Phase I and Phase II);

   In the way the program was set up, there was little participatory data collection or monitoring in Phase I, so this achievement is to be expected mostly from Phase II. However, a different methodology could have achieved a more participatory approach for some of the field surveys, and there could have been more local capacity building at the Regional and Community rural levels.

3. increased capacity of Senegalese government authorities in the formulation and implementation of natural policies and plans for wild species management (Phase I and Phase II);

   This is likely to be an important achievement for the VALEURS project. The capacity developed within ISRA is covered in (1) above. Benefits to policy makers are likely to accrue after the synthesis process at the end of Phase I, when national-level data are transferred to Ministries dealing with statistics, forests, and fisheries. Estimates on national harvests of important wild plant products will raise awareness in the government of the value of this sector in the national economy. The information on the state of the continental fisheries is of national importance not only for identifying the value of the rivers and estuaries, but also for providing important documentation on the current status of the fisheries following the catastrophic effects of drought, to the new Department of Continental Fisheries.

   In addition to the main survey activities, a large number of smaller studies have been concluded that are important to understand the sector of wild resource exploitation. While the results of these studies are not as tangible as quantitative data on the economic contribution, they considerably contribute, through increased understanding, to the capacity of policy makers to formulate and implement policies.

4. development of research and project tools, methods, and processes for the sustainable use of wild species in Senegal (Phase I and Phase II).

   In Phase I, research methods have been designed and applied to field data collection in the areas of household socio-economic surveys for wild species, the trade in wild species and an inventory of fish harvests and fishing methods. A process of data synthesis, interpretation and presentation is planned for the last few months of Phase I. Methodology for collecting ecological data on wild species and methodology for participatory natural resource management have not yet been selected and tested in the field.

6. INSTITUTIONAL AND SOCIAL ASPECTS

6.1 The review of forestry policies and strategies was the object of a study conducted in the silvo-pastoral zone, in the Tambacounda and Kolda regions.

That of the SPZ was realized by a BAME team while the two others were carried out by 2 independent consultants.

6.2 The SPZ study makes a thorough analysis of forestry policy. It reviews past projects as well as developments observed at the institutional level since the implementation of the PAFS. The successive population involvement strategies are described in detail.

The conditions for the development of the biggest selling wild products, i.e. gum, are well analyzed. However, it would have been interesting to look into other wild products and identify the degree to which gum and these other products contribute to the constitution of the populations' income.

As for the methodological choice, information from grassroots organizations, members of the committee to fight against bush fires, members of women groupings, GPF and NGO's intervening in the area would have certainly enriched the analysis.

The review of the role of the committees to fight against bush fires could have been more complete while the analysis of the role and responsibilities of actors according to gender was not done.

The delay in the effective implementation of the regionalization process is mentioned in the report but the reasons given (by whom?) are baffling.

The link between some of the tables included in the report (surface area of classified forests, distribution of anti-bush fire committees per administrative department) and the finality of the report are not clear.

6.3 The Tambacounda report gives a good insight into the region and the summary assessment of the implementation of the law relative to regionalization is enlightening.

However, the description of the institutional and legal framework does not give information about the reality in the region. The concrete expression of orientation policies and national institutional choices in the region are simply skimmed over and the review of implemented programs incomplete: the PGCRN, for example, is omitted.

The dynamics between the actors in charge of implementing these policies and the life of the institutions as well as the management of interests (and conflicts?) are not mentioned even though the region is known for its important wild resource appropriation stakes.

The report did not analyze the roles and responsibilities of actors depending on gender.

6.4 The report on the Kolda region is (too) elaborate. The review of the forestry sector planning and the legislative framework is informative and well documented. However, the analysis could have been improved by further information from various actors of the sector. Certain aspects of the national fauna policy which are not of regional interest could have been shortened. The effects of political choices on actors (grassroots associations, NGOs) and conflict management could have been developed.

The analysis of the roles and responsibilities of actors according to gender was not effected.

Recommendation: the CMO which will be put in place for the second phase should initiate a new approach to validate the documents produced by UICN partners and consultants. For each research type, it will be useful to identify a person in charge of the quality of the final product. During presentations of draft reports at least one other person (which could be invited to the meeting for that purpose only) should act as discussant, ensuring a system of peer reviews.

7. ECOLOGICAL ASPECTS

7.1 CSE products

7.1.1 Although CSE products based on interpretation and synthesis of the results are a part of the Phase I, the production of these products had hardly begun at the time of the Phase I review. As a consequence, it was very difficult to see how the program viewed the significance of the results. We emphasize that the CSE products (and the rest of the synthesis) are of great importance to way the results are perceived by audience. A clear process is needed It is important that the possibilities for and constraints on GIS products are fully discussed during synthesis by the GIS specialists and the research scientists, with a focus on the target user audience. For instance, discussion of the spatial distribution of the survey efforts refers to the concept of six eco-geographic zones, based on combinations of vegetation cover, land use and other factors. This layer is not specified in the GIS outputs, and there is no detailed description of the zones and their significance to the VALEURS project.

7.1.2 What kind of synthesis products are needed? It is clear that from the outset, the program was intended to have an international profile. Although Phase I has produced a lot of documentation, it will be useful to produce a single, concise, high quality report on Phase I for general circulation. There needs to be a strong focus on the design of this report, especially on the content and appearance of the maps, figures, tables, photographs, and text boxes.

7.1.3 The basis on which the country's ecosystems are classified for the project should be reviewed, comparing a six eco-region approach, the 13 eco-region approach from the "Plan National d'Action pour l'Environnement", and a vegetation map derived from satellite information. The most appropriate interpretation should be used in the GIS presentation of the programs results by CSE.

7.2 Sustainability

7.2.1 Sustainability is based on the relationship between humans and their natural resource base, and needs a sound basis in ecology as well as socio-economics. Because of the project's focus on NTFP's (excluding also fuel wood), there are automatic constraints in the program on its capacity to deal at the community level with the issues of sustainability in wild resource management. It is important that these constraints and their effects on the objectives of Phase II be identified and discussed during the planning for Phase II.

7.2.2 At an international level, definitions of sustainability are necessarily broad, and have little direct relevance to local projects (e.g. the definition from the Convention on Biological Diversity). To move towards local sustainable management of natural resources, a project first needs to fine-tune general concepts to fit the local conditions. This process requires strong intellectual leadership, since it may involve incorporating new concepts.

7.2.3 Current trends in the landscapes and ecosystems of Senegal, as discussed in the literature mentioned in **Annex 4**, suggest that degradation of the natural environment on a massive scale is in progress. Factors include drought and a rapid increase and expansion of the human population in rural areas. Wood resources are being overexploited and the ratio of cultivated land and scrub to woodlands is increasing in the south. Populations of larger mammals are in decline outside of protected areas, and it is therefore likely that other non-wood wild species are also over-exploited. Sustainable management could therefore entail a reduction in harvests and income from specific wild species rather than the increase expected by the project.

7.2.4 If the program moves to community-level projects in Phase II as planned, the sites and the objectives will need to be very carefully evaluated for suitability from a sustainability standpoint. Although a large amount of information on bio-diversity, land-use, woodland ecology, wood products etc. is available in literature and reports, most of this has not been reviewed and synthesized for the project, which raises the question of how it will be accessed for the design of Phase II. The designers of Phase II participatory management projects need to be sure that the land use systems in which the projects will be launched do not contain conflicts beyond the projects capacity to resolve.

Example: Sustainable management of natural resources in woodland cultivated by slash-and-burn agro-forestry. Here, the concepts of both sustainability and wild species need to be evaluated in the light of the way the land is managed, since the “wild” products may come from fallows of decreasing age. Human management of the entire landscape is fairly intensive over time: the “wild” areas are in reality managed agro-forestry lands, whose main function in the agro-forestry system is the provision of soil fertility. However, they also provide many other benefits, especially fuel wood, building materials, NTFP’s and grazing. Nationally, it is reasonable to regard the products of the fallows as wild resources, and combine them with the same products collected from non-cultivated lands. However, at a local level, the “natural” products from fallows could also be regarded as crops, directly comparable to cultivated crops for harvest, transformation and marketing, differing mostly in the cultivation method.

7.2.5 VALEURS has identified target wild species, which are economically important. However, within the landscape, these resources cannot be managed in isolation. The project would need to generate a large amount of additional information before the issues surrounding sustainability can be understood to a level that can form the basis for management interventions. So far, the only information that has been collected is on trade and from the household surveys, and is largely anecdotal beyond the values of the target species. Additional information that would need to be collected includes the size, productivity and regeneration of the resource base; successional ecology of the agro-forestry system, land tenure and resource ownership; grazing rights, timber extraction, fuel wood and charcoal, relationships between fallows, cultivated land and population pressure, and comparisons between the total values to the community of the different ages of fallow and the cultivated land. In the more complex land use systems, it is likely to be beyond the capacity of VALEURS Phase II to collect the necessary background information. Consequently, the program might want to focus on sustainable wild resource in the simplest management systems that can be found, where conflicts between different land uses are low.

7.3 Scientific leadership

7.3.1 The program is at the forefront of applied environmental science in Senegal, and is also important in the West African region. If the program is to achieve, or even partially achieve its objectives, it will be necessary to break new ground in the application of the Phase I results to Phase II. During this process, it is inevitable that situations arise that require the development of original solutions, or changes in direction of the project. The two phases of the program are an information gathering phase and an implementation phase. However, strong scientific leadership is required throughout both phases if the program is to be successful. There needs to be a clear vision of where the program is going, with continual adjustments to this vision as the program becomes more focused. The vision needs to be based on a broad knowledge of the biological and social sciences, and a detailed knowledge of similar approaches adopted elsewhere. This information needs continual fine-tuning as it is applied to the situations that unfold in Senegal. The scientific leadership of the program needs to be maintained and strengthened in Phase II through the identification of one or a few specialists who can provide the program with more scientific leadership. There also needs to be an efficient process of integrating the scientific review into the field program.

7.4 Rare bio-diversity and nationwide densities of NTFP species

7.4.1 For a relatively dry country Senegal has a surprisingly high number of rare and endemic species, a characteristic normally associated with moist forests in western Africa. The rare mammals are mostly concentrated in and around protected areas, The river systems support a number of endemic fish species, while there are reportedly more than 40 endemic or near endemic plant species scattered through the country, 30 of which are listed as rare. It is therefore quite likely that rare species that can only be protected in Senegal will be present in any project demonstration areas. In Phase II, if the project decides to work with communities at a local level, experts should be included who can find these species, and make management recommendations if they are found. In addition, some useful plants are likely to be rare locally, and these can be identified by local experts and incorporated into management plans. Management for completely and partially protected tree species listed by the Forestry Department should also be included.

7.4.2 The total resource base is a useful indicator of the sustainability of resource extraction, especially if increased production is an objective. The information base for these calculations was not developed during Phase I. Some of it may be available in the literature, but if so, the references were not reviewed and cited for the project. If the information were to be collected in Phase II, the best method for plants would probably be to find average densities per hectare for the vegetation types that have already been mapped and described from satellite images. Stratified random sampling would provide densities (and size if needed) per hectare, but a very large quantity of data would needed, making this a poor use of project resources during Phase II. For continental fisheries, the total harvest was fairly comprehensively covered in Phase I, but it would be difficult to measure the size of the resource base, and consequently estimates of additional potential or over-harvesting.

7.5 Continental Fisheries

7.5.1 The continental (non-marine) fisheries project has involved a large amount of data collection on the estuaries of Senegal, especially the Fleuve Senegal and the Sine Saloum. Data on the current status of the continental fisheries were largely lacking in Senegal, and the VALEURS project has provided a very valuable data set at a time when a new department for Continental Fisheries has just been established and interest is high. There appears to be a good opportunity for VALEURS to have an important impact on continental fisheries at a policy level, and this objective should be pursued during synthesis and in Phase II. In the Fleuve Senegal, the VALEURS project is providing baseline data that can be used to see what is happening to the fish and fisheries following a massive decline in harvests in recent decades, reported to be from over 30,000 tons down to around 10,000 tons in recent years.

7.5.2 The data collected by ISRA is a very detailed and much-needed update on the situation regarding the estuarine and riverine fisheries. Because the data are recorded by species, this is an advanced tool for monitoring the fisheries. This data set can be regarded as a baseline survey. In Phase II it should be possible to design an on-going monitoring program based on the information gathered in Phase I. We suggest that at selected fish landing points in the three estuaries, ISRA scientists work closely with local people to establish a monitoring program run locally.

7.5.3 How does the project relate to sustainable use of the resources? The river and estuary ecosystems are complex. Although techniques for studying estuarine and riverine ecosystems are well established and much of the necessary information for ecosystem-based management could be gathered, this would be an expensive and lengthy process, unsuitable for VALEURS. The Phase I approach of collecting fisheries data was very successful, and this gives an important window on the sustainability of fishing. Logically, the Phase I program could be followed up in Phase II, as a participatory monitoring project at the Collectivite rurale level.

Still in Phase I, it should be possible to produce some impressive products from this large body of work through synthesis and through collaboration with CSE.

7.5.4 During Phase II, there should be an effort to obtain more information on the rare/endemic fish species of Senegal, of which about 10 have been cited as species of concern. As an additional bio-diversity objective for fisheries in Phase II, the status and conservation of the manatee should be included. This IUCN-listed threatened species is rare and declining in rivers and estuaries throughout West Africa. It is excluded from most mammal conservation programs because its habitat is often poorly represented in protected area systems. The manatee is affected by climate, especially salinity increase in its habitat, and by interactions with humans, especial with fishermen. It is sometimes hunted, but a greater danger is drowning when manatees become entangled in fishing nets. The VALEURS project is an ideal vehicle to generate information and awareness on manatees through community monitoring of manatees, by recording manatee sightings, deaths along with data on fisheries.

Another useful focus during Phase II is on the mangroves of the Sine Saloum and Casamance estuaries, and on the sustainable harvest of oysters.

7.6 Intellectual property rights, ownership of biological diversity

7.6.1 Biological diversity translates into genetic diversity, and for plants especially, into chemical diversity. In Senegal, this diversity is widely utilized in traditional medicine, and some medicinal plants are becoming increasingly commercialized. Senegal appears to lack legislation that would support the development of new medicines and the commercialization of traditional uses. There is a need to clarify at a national level the process for commercializing plants, the ownership of the intellectual property regarding plant use, how royalties on commercial production will be levied and distributed.

8. ECONOMIC VALUATION

8.1 General considerations

8.1.1 During Phase I, the VALEURS program has put emphasis on:

- Developing a valuation methodology applicable to all of wild resources, so as to apprehend the full extent of their contribution to the economy and identify constraints and opportunities arising from a more sustainable use;

- Set up and feed an information system through the collection and processing of valuable data. Data gathered during Phase I should provide information about the sustainability of the current use of wild resources and their economic contribution. This information will come in useful in shaping policy and institutional proposals for change.

8.1.2 In the following an attempt is made to evaluate the relative success of the program with regards to these main objectives. While this section at times may appear very critical of the results, it should be understood that a considerable part of our criticism is based on hindsight only. The VALEURS project is rather unique in its attempt to achieve near to national coverage. In our opinion the overall result obtained by the program is commendable. While we have some reserve with regard to the reporting, which is not very systematic and of varying quality, the collected data itself is a major success. The accessibility of the reports is too low, even for data oriented readers, like ourselves. Part of this is due to matters of presentation; part of it results from lacking information with regard to definitions used and methods employed. Reporting is sometimes very unbalanced, providing very detailed information while the main results remain without much clarification. In almost all cases the reports contain little in terms of interpretation. However, all of this can be remedied at the next stage, i.e. while preparing the synthesis documents. Nevertheless, the writing of a synthesis document remains a major effort and will require very active participation of the authors of the report.

8.1.3 Returning to the main objectives of Phase I mentioned above, it appears that these main objectives have been redefined at a number of points:

- Obtaining an estimate of **the contribution of resource extraction to the national economy**. This interpretation excludes (for the time being) the other possibility of trying to include collection of stock data.

- Services income derived from wild resources (in particular tourism and hunting) are felt to be an important part of the contribution of wild resources to the economy. So far there has been no attempt to quantify this contribution, beyond some data collection on hunting and visits to national parks from secondary sources. A Willingness to Pay study has been planned but was postponed since the relevant data could only be collected during the dry season, i.e. the study could not be finished before the end of Phase I. There is also mention of even park entrance fees pricing study.

  These kinds of studies might not be very cost-effective. As mentioned, some qualitative and quantitative data have been collected regarding hunting and park entrance fees. Available data on hotel visits have not yet been studied, although they are available at the Ministry of Tourism. An analysis of those data linked to those on hunting and park visits may be possible in cooperation with the ministry. This would require a breakdown of the data by region and nationality. Combined with a small case study of the sector, this could produce a very rough estimate of the importance of wild resources. While such an estimate can not replace a WTP study, it would be far less expensive and the extra precision (basically only to better convince the nations policy makers) might not be needed, since the tourist sector as a whole is already included in the System of National Accounts. Less expensive shortcuts could easily give misleading results even though appearing very accurate. Since a large part of the proceeds from international tourism remain abroad and prices are subject to huge market distortions (WTP by tourists may not translate in WTP by tour operators who may have their own reasons to channel tourists to specific countries and places). Any study of WTP that does not take these distortions into account is bound to lead to erroneous conclusions. In addition there is the complicated issue of perceived safety of travel to and within different countries, with which Senegal competes for tourists.

  A park pricing study, as suggested in one of the consultant/trainer reports appears a rather expensive way to go about the issue of park entrance fees. It is likely that more down to earth (and less risky) approach of trying out gradually changing prices while observing effects on visitor numbers would do the same trick. This approach, which is essentially also measuring WTP, is far simpler than a questionnaire to tourists either on entry in the country or even abroad.

- An important aspect of the contribution of wild resources to the economy is the degree to which certain regions, communities, and households depend on the extraction of wild resource for their livelihood. This dependence has been defined in terms of cash income from collection, fishing, and hunting, as well as in terms of home consumption. The latter has achieved less attention than outright sales, while products not marketed at all have received even less coverage.

- In general, the supply side has been given most attention in the quantitative studies. A very interesting qualitative study of the demand side gives important insights into consumer behavior and consumer preferences. This type of data is important to have a handle on the feasibility to influence the market for wild products. As input to more quantitative models, these findings are difficult to integrate with the data collected on the supply side.

The major part of all survey efforts has been directed at the process of extraction itself. Markets and consumers have received less coverage in the surveys. Because of this focus on estimation of the total production at producer level, the surveys could not cover the whole country. An alternative approach would have been to combine a market study with small and focused community studies looking into producer costs and home consumption at the producer level. This might have been a more efficient way to collect data on the economical value. The choice for a household survey may seem logical, since resource management at the local level, i.e. by those who engage in extraction, is perceived as a major tool in the development of a sustainable approach to wild resources. But even at present, there is a great gap between community presence during Phase I and the community oriented focus needed in Phase II.

8.2 Hunting and collection

8.2.1 As mentioned above the surveys were limited to specific zones that were estimated as to provide the major share of traded wild products, rather than to cover the whole country. As a result the data will give an **underestimate** of the actual economic extraction value. This appears an acceptable and cost-effective choice. To cover a larger area of the country would not only have considerably more expensive, but would have greatly increased management problems, while the importance in terms of contribution to the national economy is thought to be small. Data collection on the source of produce sold in the urban markets could probably be used to corroborate this conclusion (certainly in qualitative terms). As was mentioned with regards to study of sustainability extraction it might have been better to include less productive areas for comparative purposes. This can still be done during Phase II (if this remains a major aim during Phase II. More serious however could be that poor people might still depend considerably on wild produce, also in low producing zones, in comparison to the average population in such zones. This would mean that in terms of poverty reduction these scarce wild resources could still be of some importance. Furthermore, the fact that such zones do not result in traded products might result in an urban bias with regards to conclusions on quantity and significance. It is therefore recommended that some efforts are made to study more intermediate zones in some detail, either qualitatively or through a few small focussed quantitative studies.

8.2.2 A further limitation of the approach followed is that the trade surveys are urban centered rather than covering rural to rural flows. In some countries these tend to be considerable, depending largely on seasonal flows. In Senegal it is likely that rural to rural flows in some products such as karité or important. Nevertheless it is the impression of the researchers that the rural to rural flows would not influence the overall results of the surveys much.

Quantitative or qualitative market data to be collected during Phase II could be used to corroborate this at relatively low cost.

8.2.3 It was decided to limit the coverage of medicinal plants within the main surveys, and use qualitative techniques instead. This is probably a very wise decision. It is our experience that proper data on medicinal plants and other traditional medicines can only be obtained through consumption surveys. To undertake such a survey is a much larger task and within the present budget an impossible task.

8.2.4 There is no reporting on procedures used in the surveys, on definitions used in the field etc. Clear is that most findings are rounded figures. This introduces estimation margins that are not sufficiently discussed. In terms of volumes or weights the margins likely vary according to product, because in general people use standard procedures. The way the data look at present, large amounts are rounded differently from small amounts. Such rounding errors may or may not result in important estimation errors, especially since calculation procedures (multiplication by number of trips) tend to multiply the rounding errors. Since volumes are measured at the producer level, the likelihood of estimation errors is largest for products that are mainly home consumed.[30] While products that are rare may have large sampling variations but because they are unique the quantity and value estimations for such products could be small.

In many surveys it can be assumed that such errors are averaged out, especially when the number of products are few, but this should be investigated for wild products.

8.2.5 One way to check on quantities is volume measurement at the end of the trading chain. Careful investigation of sources and volumes in markets along the trading chain would have been useful, to establish more reliably how much of produce actually stems from the key production areas, but also to be able to test for serious discrepancies between estimations along different points in the channel.

Since this seems not possible with the present data it could be attempted to at least test for observer or interviewer bias, by dividing the interviewers into two groups and obtaining separate estimates. There are several other procedures available to obtain better estimates of confidence intervals than the parametric method proposed in the technical documents.

Recommendation: To calculate confidence intervals of the data collected for different products and at varying resolutions it is best to adopt a bootstrapping method. A systematic application of this method should have a high priority since the GIS database encourages working at different resolutions. It is also necessary to resolve the issue of confidence intervals before the data can be made available for local resource management purposes.

8.3 Continental fisheries

8.3.1 The data on the economic contribution by continental fisheries mainly are presented in two reports. The first report presents detailed tables on producer prices by species obtained on a daily basis in all ports observed. The second report presents information on the total production by species, the amounts sold, the amounts transformed into secondary products, and the price paid by the wholesalers. In a summary table, production costs, marketing costs, and transformation costs are reported by region. While the methods used appear sound, the methodologies used are only partially reported. Certain details (such as how the interviewer estimates the price per kilo using a table relating size to weight), the method for calculating annual mean prices is not presented. For instance, it is not clear whether daily recorded prices were actually weighted according to volume traded during that particular day. These type omissions can easily be remedied in the synthesis document.

[30] Collection and hunting for home consumption is often less easily quantified by interviewers and respondents and therefor more prone to estimation errors. And, on top of that, estimates of quantities collected often are seriously biased for products that are mainly home consumed.

Recommendation: A data sheet should be prepared explaining the precise nature of all calculations employed to obtain the economic value estimates for the fishery sector. Separate estimates of the added value at the level of the primary producer should be made for different types of fishermen (depending on the capital investment).

8.3.2 A more important problem is the lack of information on the marketing chain as a whole. Fish is sold by the fishermen to the “mareyeur”, who in turn sells to the wholesaler, who in turns sells to the retailer. While the reports cover the first two actors (fishermen and “mareyeur”) information concerning added value further along the marketing chain is lacking. It is likely that this added value is a considerable proportion.

8.3.3 A further problem is the lack of systematic coverage of home consumption. For some species there is a discrepancy between the tonnage landed and the tonnage sold. Presumably this tonnage could be home consumption as well as losses (due to lack of demand). In discussions at the CRODT it was also suggested that fishermen do keep some of their catch separate for home consumption. This quantity would actually not enter into the tables at all.

There is room for some improvement of the information in this respect. A qualitative study (or a small quantitative study) could be designed to estimate home consumption, losses, costs and profits of other actors. Another issue is how this rich database could be maintained with less detail to highlight fluctuations of the contribution of this sector to the national economy. A similar study could provide some information on the amount of home consumption of the primary producers and their labor force.

8.3.4 The fishery data do not cover the whole of the continental fishery sector. Survey reports only exist for the Fleuve Senegal Estuary and the Saloum Estuary. Data have been collected for the Casamance, but to date the report is not yet finished (expected soon?). Other areas have not been covered at all. These areas include up-stream fishery along the Senegal River, amongst others. It has been suggested that the economic significance might be small, but this should certainly be corroborated by additional data that possibly could be found by literature study or other indicators.

9. EFFICIENCY OF IMPLEMENTATION

9.1 In general project costs have been reasonable compared to similar costs elsewhere (See **Table 1**) This is mainly due to the relatively small amounts spend on external consultants for backstopping and program formulation.

Table 1

	Expenses in FCFA			
Description	1998/1999	2000	2001 budget	Total
8 Case Studies (budget for consumer preference study was 16,80,000 FCFA)	824,000	2,850,000	19,980,000	23,654,000
CSE: GIS, GIS file, GIS Data bases	0	0	6,250,000	6,250,000
Quantitative surveys BAME and CRODT (including RRA's)	23,847,402	64,768,079	7,788,421	96,403,902
Grants	0	1,200,000	0	1,200,000
Training/ workshops	0	5,250,000	16,000,000	21,250,000
External consultants support	284,910	24,270,702	20,548,422	45,104,034
Management and Coordination ISRA and BAME	8,388,366	15,139,953	0	23,528,319
Total survey and study related expenses	33,344,678	113,480,734	70,566,843	217,390,255

9.2 In view of the amount and quality of the collected data the overall costs of the quantitative surveys have been low, even when the overheads paid to ISRA and BAME for management and coordination are added to the direct costs of the surveys.

The cost of most case studies is in accordance to their relative purpose and the amount and significance of the data collected. Only the consumer preference study using focus groups was expensive (in relation to the amount of knowledge acquired). Although the study provides considerable insights in possible factors of consumer behavior and other aspects of the use of wild resources, it is likely that the added value of this study could have been obtained at lower cost, by way of informal interviews and observations. Furthermore, it is difficult to see how this qualitative material can be used for modeling consumer behavior without first going through an additional phase of quantitative data collection.

On a general note, compared to simple open interviewing techniques at markets, focus groups are an expensive method of data collection, especially in an urban setting.

9.3 Although the cost of external consultants to date has been relatively low, the benefit to the program could have been higher if the timing of support visits had been more adapted to program needs. This of course is a logistic problem confronting many organizations using external consultants. But if a program is supposed to be self-reliant and basically run by local institutions these institutions should be responsible for requesting support at the moment such support is most useful. There is often a tendency to treat the external consultant as an external agent, rather than as a colleague invited for a peer review, when plans are ready for implementation and could benefit from the critical opinion of outsiders.

The following example illustrates how the proper timing of support was sometimes lacking:

During a visit by an international IIED consultant discussions resulted in an advice to include amongst others questions on home consumption of households collecting wild products in the survey. This was after the actual field surveys had already started. Since the questions could be added to a module that was to be used later, the problem could still be solved in this case. However, this situation should have been avoided by better planning.

Recommendation: Planning of support in the form of backstopping or training should be made the responsibility of the target group or institution. They should ensure that they timely request for this support and training. These requests should be channeled through the program coordinator and the CMO, who would then contact the trainer or backstopping institution. In this manner, it is the target group that bears the responsibility if a workshop or a backstopping visit are not properly timed or otherwise lack in relevancy.

9.4 The Dakar-based IIED Sahel program assisted UICN in the organization of a seminar to revise the project framework in May 2000. The key recommendations of the said seminar are listed hereunder:

- Institute an information, education and communication (IEC) program addressed to grassroots communities, local authorities as well as technicians and professionals of the sector with a view to strengthening their involvement in the sustained management of wild resources.

- Train communities on wild species nursery and exploitation techniques, as well as agro-forestry techniques applied in wild resource management.

- Develop a wild resource database while ensuring that it is put in a format that facilitates its access and use by all the actors, including grassroots communities, and which is compatible with other existing information systems.

- Publish an information bulletin on the UDRSS/VALEURS Program.

Following this workshop, the IIED Sahel program carried out a study on the issue of demand for wild products and it's effect on the sustained resource management.

Recommendation: the IIED/UICN partnership for the implementation of the VALEURS project would have been more productive if the Sahel program were more involved in the first phase. This shortcoming could be avoided in the second phase by adopting a clear schedule of activities to be carried out jointly. The objectives, which MARP hopes to realize in 60 villages during the second phase, should be attentively examined and maybe even reconsidered.

9.5 Training was organized by hiring consultants, some of which were from abroad. The relevance of training materials and techniques is difficult to establish in hindsight, as there was no systematic record of participant evaluations. Only in one case, the report on the training clearly suggests that the training itself had little relevance for the actual tasks of the participants. As will be mentioned below this can at least partly be attributed to a lack of explicit description of project issues.

Recommendation: Training workshops should depend on the expressed needs by the trainees. It is not sufficient for such needs to be described in broad terms. The trainer should receive, together with the TOR, a document describing the tasks for which the trainees need training and a most recent update on the current status of their task and any perceived problems with a smooth execution in the near future. It is also important that training should take place in time to plan subsequent task execution (and not while the task has been started).

9.6 In the light of the long delays in program execution especially during its early stages, the question should be posed whether the program did not over extend its possibilities. These early delays appear to have been mostly the result of logistic problems: departure of important staff at the very beginning of the program. The accomplishments of the program, in particular the fact that program has been successful in obtaining most of the data needed to estimate the economic contribution of wild resources to the economy shows that once these logistic problems were solved the program did very well. Nevertheless, at present the amount work waiting completion is considerable: analysis, writing up, and the design of the GIS database. The coming month is going to put a heavy strain on human resources and it would be best if arrangements could be made to continue some of the outstanding tasks into Phase II.

10. EFFICACY OF THE IMPLEMENTING BODY AND ITS MAIN ASSOCIATED PARTNER AND THE EFFECTIVENESS OF MONITORING AND EVALUATION MECHANISMS AND PROCEDURES

10.1 The evaluation team was impressed by the way the Co-ordinator manages the project, particularly since we know that she was assisted by an assistant and a information officer only during the last 6 months.

10.2 The collaboration with local and international institutions, mentioned in the document, was effective and materialised through agreements.

10.3 With regard to the project's co-ordinating organs, the various theoretical formulas were compared to the reality of the pace of execution.

The following scenario was provided for initially:

- a Management Committee will meet four times during the project implementation phase (at the beginning and at the end of the situation analysis phase and at the end of each part). These meetings will be held at the same time as the planned regional seminars. Their aim will be to establish a link between national policies and international forums for wild resource conservation and management. The meetings will provide the opportunity for the international technical validation of the approach through observations, discussions and amendments of project activities.

- A national co-ordination body referred to as the Project Implementation Committee (*Comité d'Exécution du Projet* or CEP) will bring together the institutions and technicians involved in the implementation of some components of the project. The Committee will meet regularly to examine the state of progress and co-ordinate the activities of partners in Senegal.

10.4 The following organs are mentioned in the 1997 –1998 annual report:

- The Steering Committee (*Comité dePilotage* or CDP) responsible for orientations and decision-making. The CDP is in charge of validating the recommendations made by the Implementation Committee (*Comité de Mise en Œuvre* or CMO) and the Project Assembly (*Assemblée du Projet* or AP). The Steering Committee comprises representatives of Ministries and National Departments, Research Institutions, donors and local authorities.

- The Implementation Committee, CMO, which regroups highly qualified experts in various fields: ecology, GRN, SIG, economics and other social sciences. The CMO defines the general project implementation methodology, fixes research priorities, examines the working program (annual, long-term), examines the work program results, follows up and evaluates the progress of work.

- The Project Assembly (AP) is a network of national experts set up to build and develop national capacities relative to GRS and provide the experts with the opportunity and means to work together. The Project Assembly should facilitate communications between members of this network, on the one hand, and between these experts and the Implementation Committee (CMO), on the other.

10.5 In practice, a ten-member Implementation Committee (CMO) was set up in 1999. It first held its meetings monthly and then quarterly.

The institution of the Steering Committee (CDP) and the Project Assembly (AP) was not felt to be relevant before the initial results of the socio-economic surveys could be presented to them. Programmed for June 1999, at a meeting to which representatives of the Group of Specialists on the Sustained Use of Wild Species in West Africa would have been invited, the establishment of the Project Assembly is still not effective.

The same applies to the launching of the Steering Committee (CDP), which should have taken place during a workshop attended by the Rural Council Chairmen to initiate the political organs' sensitisation strategy. Thus, the involvement of Regional Councils was marked by the participation of Mr. Bocar Sall of the Saint Louis Regional Council. For other regional councils visits and informal contacts were organised during missions in the field.

10.6 In view of the project's set objective of encouraging investments in wild resource development, the private sector already active in the field could provide the Implementation Committee with interesting elements. Setexpharm, which has expressed its willingness to take part in activities relative to the sustained production of sterculia gum and aquaculture, seems a valid partner in this regard. The Implementation Committee could serve as a framework to facilitate collaboration between the private sector and State structures, in particular.

Recommendation: in view of the fact that the Implementation Committee did not live up to expectations during the first phase, its composition as well as the definition of responsibilities should be given special attention before the second phase takes off. The leadership, roles and responsibilities of members should be more clearly defined.

10.7 The program has been effective with regard to monitoring of task completion. There is however no evidence of monitoring of data collection procedures (most interviews have space for a supervisor to enter name and date, this was never filled, which does not mean that the interviews were not checked). Interviewer supervision appears to have been relatively poorly developed, and data integrity of the database was not checked at each stage. There might be confusion about which version of the database is where (the current version of some databases kept at IUCN were corrupted which prevented the evaluators from estimating aspects of data quality)[31]. Within the current structure of the program it is not clear who is responsible for what. It is likely that the problem with the database may have been due to a power failure of to a corrupted disk. It is most urgent that these problems are under control since they might cause difficulties during the preparation of the synthesis documents.

This type of problems is common even in projects handled by a single institution. It is therefore understandable that they provide a greater danger when a tri-partite arrangement exists.

Recommendation: Procedures should be formulated that arrange for proper data exchange and version control between the partner institutions. Arrangement should be made for a back up on CD-ROM of all data whenever new versions of the database are created.

10.8 The program VALEURS has been an effort of co-operation between a number of institutions trying to deal a basically single objective and a number of common tasks. The institutional arrangement set up for the purpose of managing and monitoring these tasks while effective in getting considerable work done appears to have been relatively weak as an instrument of focussing the research work that has been done. The CMO and its collaborators have been acting as a sounding board for survey planning, survey progress reports, and the reports produced. In addition a number of workshops have been held to formulate research goals, review survey activities, and discuss (preliminary) findings. In addition several visits by external consultants from IUCN International, IIED, and others have served for this purpose.

10.9 Nevertheless, from the viewpoint of outside evaluators, it appears that there was no clear standard procedure in place to oversee the whole chain of research planning and monitoring progress from topic formulation, definitions used, to reporting, data base construction, and, finally production of a synthesis report. Within the current institutional set-up the IUCN coordinator (and the CMO) have monitored research process mainly from the organizational viewpoint leaving a large number of decisions to the competence of those responsible for carrying out these activities.

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[31] This situation was remedied immediately after the completion of the evaluation.

10.10 While it is our opinion that the project largely fulfilled the objective of gathering the relevant economic data, much improvement would have been possible if the planning of research and reporting had been more explicit and documented. This would have entailed writing a comprehensive documentation (protocol) before the start of each study. This protocol needs to specify explicit objectives, the precise data to be expected, the format of the report (up to the actual tables to be included with all definitions and calculation procedures), and the final database to be built. Each step should be specified with a clear indication of its contribution to the (perceived) needs of the ultimate users of the data. While it is often best to make an inventory of such needs in a participatory manner, the skill and experience of the implementing agent, in many instances suffice to draw up this type of protocol.

10.11 Not only would such an approach have aided considerably in report writing during the final stages of the work, it would also have shown clearly where and when support from external consultants was needed, and which additional studies were necessary. It certainly would have made the expenses on outside support more cost-effective. Although these expenses have been kept relatively low within the budget of the program (so far external advisors and consultants have been involved only for short visits). For example, the use of these funds would have been more useful if the economics expert could have visited before the formulation of survey questions and if the workshop on mapping would have had a closer relationship the actual tasks of the partners and their staff.

10.12 A good preparation does not necessarily imply more work. Normally, it does force one to think clearly at an early stage, but the same time would otherwise need to be spend towards the completion of the work. This does not only apply to surveys (whether quantitative or qualitative) but also to participatory activities. According to the program document, each community wild resource management plan will include:

- statement of the objectives of the plan;
- description of the activities designed to achieve the objectives, including management of the resource and market development and delivery of products or services;
- the results of the preliminary baseline survey of the wild population or habitat to be used;
- description of the procedures that will be followed in monitoring the status of the target populations or habitat;
- an explanation of how the annual harvest (or use) levels will be set by the community and the procedures that will be used to adjust it from year to year;
- performance targets to monitor and evaluate the effectiveness of the plan;
- an estimate of anticipated income and how that income will be distributed in the community;
- budget to implement the plan.

It is very easy to just produce a list of standard activities and procedures but that is not enough. It is important to require that a detailed plan is made which is subsequently discussed with an experienced fellow worker or resource person.

Recommendation: Tasks should be more explicitly formulated. In general, funding of each task should depend on the delivery of proposals that relate the tasks to expected results in a more explicit way. Documents of this type should in fact contain a detailed outline of the expected outputs, with checklists for qualitative material and formatted tables for quantitative material. Each element of the plan should be related to a proper and verifiable purpose.

10.13 Currently there has been very little contact about the actual needs of the ultimate users. Since the field surveys were mostly extractive by nature, there was no process in place to relate local and regional needs for data to the current effort. As already mentioned, the Direction de la Prévision et de la Statistique should have involved from the very beginning. This involvement needs to be both at the co-ordinating *and* at the technical level: to integrate the collected data particular attention needs to be given to aspects of definitions, limitations of the collected data, and models being used for calculations.

Recommendation: Consultations with DPS should start as soon as possible in order to involve them in the preparations of the synthesis documents and the GIS database.

10.14 Another important task is the planning of procedures to maintain the database. Databases often have a short shelf life. Data on extraction can be very misleading if treated as static, especially when pressure on the ecosystem increases because of high extraction rates. A more continuous process of data collection can also serve as a monitoring system on sustainability especially when data on the spatial distribution of extraction are taken into account. Obviously setting up such a system will have to wait till Phase II, but the actually planing of such a system is closely related to the design of the database itself (maintenance is the most frequent form of access).

Recommendation: Procedures should be formulated that arrange for proper data exchange and version control between the partner institutions. Arrangement should be made for a back up on CD-ROM of all data whenever new versions of the database are created.

Recommendation: Planning of future maintenance procedures and a regular system of data collection should be completed during the design of the database itself.

10.15 Related to these considerations is the need for procedures to govern access to the information in the database. The contracts between CSE and IUCN clearly define ownership of the data and derived products, but there should be a transparent and short process regulating access by third parties.

Recommendation: There should be a transparent and short process regulating access by third parties, specific also about costs of such access.

11. COMMUNICATION STRATEGY

11.1 The establishment of an information center for consulting publications and a wild resource database are among the key results expected from the project. The resources of this information center are constituted by data collected during the first phase.

However, the communication strategy should satisfy better-targeted needs. In the report of the project framework revision workshop organized with IIED support, it is mentioned that: "some partners expressed the hope that communication between the program coordinator and the partners will be improved. In this regard, various suggestions were formulated. Some of them emphasized the need for a greater decentralization of the coordination system.

11.2 Within a general strategy of decentralization there is however always the need for a strong coordination albeit on the basis of delegation by the participating user community. Database maintenance functions, training, analysis, and in general development activities require a centrally coordinated approach which however responsive to the needs of the population served, rather than trying to dictate needs that do not reflect the problems experienced by the community. This also means that the generally extractive approach to data collection taken during the first years of the program is not necessarily wrong. The service that can be provided to the user community probably would be much smaller if the approach had been more participatory and less standardized.

11.3 In this regard, a proposal was made to study the possibility of making Regional Development Agencies (ARD) the focal points of regional support groups, whose key role is to serve as a local "response" to communication/coordination mechanisms set up at national level."

These proposals relate to the issue of identification of SIG users who should be determined quickly. This will facilitate the institution of a permanent structure with the resources required for the appropriation and update of the database.

The recruitment of an information officer in April 2001 that resulted in the start of data classification and organization is a vital step, even though practical problems (essentially the smallness of UICN offices) continue to exist.

Recommendation: the communication strategy of the VALEURS project should be refined by quickly identifying the main users of available data. The decentralized mechanisms for access to information and the resources required by it can be taken into account in the formulation of the second phase.

12. TRAINING

12.1 The main training activity was a seminar on “Bio-diversity Economy and prospective study of an estimate of the possibility to pay for tourism and/or hunting” which was well appreciated by the user community. At the same time, the techniques discussed during the training were perceived as having little applicability to the actual problems of data collection and analysis. This illustrates the double nature of training: providing understanding and providing applicable knowledge. Both have advantages: intellectual understanding empowers, skills lighten tasks. As general rule of thumb, training in analysis should take practical problems into account but carry discussion one step further to ensure that the trainees do not need to blindly follow prescriptions learned. It is the opinion of the evaluators that in this case the training was too theoretical in relationship to the problems at hand. If the training had been held at an earlier stage, the program had been more in the position to take this direction. At present, the tasks taken up by the program are already more than is possible to carry out within the program’s time frame.

12.2 At another level, the project enabled ISE and EISMV students to pursue research in the wild resources management field and Mr. Bienvenu Sambou, member of the Implementation Committee did not hesitate to state that: “the project data is a gold mine for ISE students.”

Mr. Modou Lô, of the Faculty of Medicine and Pharmacy is also very pleased with the project partnership and has specific ideas about what the practical activities of the second phase should be.

There is no doubt about the project input in terms of the stimulation of intellectual activity for a better knowledge of wild resources. The second phase should make it possible to extend the training program to the population.

13. TAKING GENDER INTO ACCOUNT

13.1 Even though the taking into account of gender and equity was not explicitly expressed in the project's anticipated results, appropriate measures to include this aspect as soon as possible have been initiated.

Thus, in late 1999, local consultants with renowned expertise in auditing and gender training in the natural resource management field were called upon and included in the team of Implementation Committee (CMO) collaborators.

A two-day sensitization workshop addressed to UICN decision-makers was held.

At the end of this first activity, the following Plan of Action was adopted:

- Pursue and improve the training of UICN Senegal staff and initiate similar programs for partners.
- Work in coordination with program officers at the head office
- Balance and diversify teams of consultants to ensure that there are alternative views on studies carried out within the framework of the projects
- Evaluate the taking into account of the gender approach in ongoing projects
- Prepare gender conscious tools for the entire UICN staff.

13.2 In view of the schedule constraints of both the Project Coordinator and consultants, this Action Plan could not be implemented.

And yet, the execution of programmed activities would have been a vital contribution for BAME, CRODT and other members of the implementation Committee in the whole data collection process. They would have facilitated the creation or strengthening of a global gender sensitive environment from the data collection stage and thus avoid what is very often seen in projects: "the addition" of the gender dimension after the project has been planned.

Recommendation: the second phase reformulation process should explicitly include planning activities that cater for the inclusion of the gender dimension and its immediate implementation.

14. PARTICIPATORY APPROACH

14.1 The project documents often refer to "participation" (cf. participatory or shared diagnosis) and the option to involve all the partners by using a participatory approach was stated as soon as the project was being planned.

However, the implementation of the first phase did not leave much room for an effective implementation of the participatory approach.

The second phase during which local authorities and the grassroots populations will be more active, will require greater attention in this respect.

Recommendation: the services of other UICN projects, IIED and member structures of the Implementation Committee with an experience in implementing the participatory approach should be put to use to ensure an effective evaluation and follow-up of the compliance with the participatory approach exigencies during the second phase.

15. DEMONSTRATION PROJECTS

15.1 The second phase is expected to be devoted to the realization of demonstration projects, even if at the end of the first phase the project has no model to circulate as such.

However, discussions with members of the Implementation Committee made it possible to identify a few promising experiments already in progress that can serve as a point of departure for the formulation of realistic actions in the field.

The following examples can be mentioned:

- Malicounda, for a guinea fowl breeding experiment;
- Fandène, for palm tree production management
- Bettenti (in the Saloum delta), for ditax production management,
- Bayakh, Kayemor, for the village botanical gardens run by women and meant for the production of medicinal plants
- Makon (in the PNNK periphery) for an agouti breeding project
- Madinakouta (in the PNNK periphery) for an experiment in wild animal breeding by a youth association
- Fatick, (Malango health center) for an experiment on the production of medicinal plants.

Practical activities in the field based on the identification of the most demanded wild products and their production zone were also suggested.

The local institution considered most appropriate to carry out the activity will be entrusted with the responsibility of implementing the project with the backing of other structures present.

16. OPPTIONS FOR PHASE II

16.1 Phase II as proposed in the original project document relies heavily on information about the ecosystems for outputs on sustainable natural resource management. The requirements for a community wild resource management plan are very detailed in the description of Phase II, and rely heavily on ecological data not yet collected. Also, increased economic benefits are expected, whereas in reality the field situation may require reduced harvests to achieve sustainability. During the re-formulation of Phase II, serious consideration should be given to the feasibility of collecting the necessary baseline information in time to formulate management plans, since a total of only 18 months is allocated to all these activities. Phase II could be redesigned with a slightly different interpretation of the project's goal to enhance the sustainability of uses of wild species in Senegal, and focus on economic rather than ecological aspects.

16.2 Basically, the most complex problems are likely to be encountered where there are a lot of conflicting uses for the land and resources, especially where there is agriculture. Complex problems may also arise if there are conflicts based on land tenure or zoning, or where resource use is partly illegal. Sustainable management of natural resources under such conditions requires careful investigation and conflict resolution. Overall, given the narrow NTFP focus of the VALEURS project, complex situations regarding natural resources management should be avoided, since it would be difficult for the program to assemble the information and expertise needed. Other situations are more tractable and more suitable for Phase II, where resources are abundant and not threatened by conflicting uses.

16.3 There appears to be an underlying assumption in the Project Document that within 5 years the project can move from information gathering, through synthesis, to actual implementation of resource management by communities. This is not realistic, especially now that the necessary information base on land use and the ecology of the resources in target field areas has not been developed. In any case, experience with the sustainable management of natural resources by communities in West/Central Africa requires a long-term commitment from the donor. Developing the necessary capacity at the local level to manage resources is difficult, and the resource-use conflicts that require resolution are often fairly intractable.

16.4 The achievement of the project Goal and the Objectives does not specifically require that the sustainable management of natural resources takes place in the field. The effectiveness of the project will be much greater if the Phase II program draws on the strengths developed so far, and on the information base from Phase I. The program is likely to be much less effective if a lot of unknown ground has to be covered in Phase II, and if the technical expertise needed is markedly different to that required for Phase I. A careful consideration of various options is needed during the design of Phase II, to improve the success of the project and the achievement of objectives.

16.5 Whatever design for Phase II will be selected, the results of Phase I will need to be safeguarded from the destiny of so many database collection efforts. In fact one might say that to engage in a major effort of data collection entails the duty to set up a system of maintenance. This aspect has as yet not received sufficient attention in the project documents and will have to be included in the planning of Phase II.

16.6 During Phase II it is better to organize database maintenance on the economic value on well structured market surveys, and to determine community selection more on questions of resource management. In our experience a community oriented approach inherently conflicts with central needs of data extraction. At the end neither will be successful, data will be sloppy because the community does not understand why certain data are needed unless they need the data for their own resource management, and community acceptance will be low. This is also why the idea of using participatory types of community assessment (PRA) during Phase I shifted towards non-participatory assessments (RRA).

16.7 Some options for achieving the project goal and objectives regarding sustainability:

Option 1: follow the project document, including details of the structure and outputs of Phase II. This option moves from socio-economic surveys during Phase I to the implementation of land-use planning and resource management in Phase II.

Constraints on option 1: the allocated time, 2 years, is probably about enough to carry out the land-use and ecological surveys, and to engage the local resource-users and managers in the process. The actual interventions for sustainable management would occur after the end of Phase II, and there is no point in carrying out the preliminary work unless there is a firm commitment on the part of the donor to complete the process, through an extension to Phase II of several years duration. This option also requires a lot of expertise that has not yet been tapped by the project, nor has there been an assessment of the availability of the needed expertise within Senegal. One possibility is to join forces with another existing program that has already an ongoing participatory program in connection with natural resource management. This possibility however limits the integration of Phase I results and expertise into Phase II, since co-operation with an existing program limits the choice of participating regions and communities.

Option 2: case studies. For this option, some narrow objectives on sustainable management could be achieved by focusing simply on one or a few of the most important species, preferably in areas with few land-use conflicts.

Constraints on option 2: a narrow focus does not lead to sustainable management, since other, possibly conflicting uses of land and resources are not be covered.

Option 3: community monitoring of resource extraction. This is a very useful step towards sustainable resource extraction, allowing a new kind of relationship to develop between government agencies (or NGO's) and communities, re-defining roles with agencies as providers of extension services and the communities as managers. This type of relationship is a prerequisite for moving to community-based resource management. It also enables communities to develop the expertise to understand the resources, and to see the importance of technical information. Appropriate areas for this option are the monitoring of the fisheries in the three large estuaries, and the monitoring of the production of the most important NTFP's.

Constraints on option 3: this option does not lead directly to sustainable resource management, but it is a necessary step in that direction. This option does also give a good handle to maintenance of the data collected during Phase I. If organized well, it also has the possibility of persistence after the VALEURS project is completed.

Option 4: focus on markets, resource extraction. This option develops the areas where the program has performed most effectively and uses expertise that has already been tapped. It does not depend for success on areas such as local governance, ecology and land-use, which are largely unknown within the context of the VALEURS project. Also, other organizations active in sustainable resource management agree that valuation and the monitoring of resource extraction is a very useful niche, and will provide very useful information that no-one else is collecting.

Constraints on option 4: this option concerns economics, not sustainable management. However, it is a useful and appropriate niche for the VALEURS project in the broad spectrum of activities needed for Senegal's natural resource management to move towards sustainability. Like option 3 above, this option is a good starting point to set up a system of database maintenance. Since this option uses better known techniques, the chances for high quality data are better in option 4. Persistence beyond the duration of the VALEURS program however is more difficult to organize in this option.

17. LIST OF RECOMMENDATIONS

Below follow the recommendations. In each of the sections the recommendations are ordered by (global) importance.

17.1 Recommendations pertaining to Phase I (or very early in Phase II):

1. **CSE products, synthesis and presentation of results.** This final part of Phase I is of critical importance for the design of Phase II, for the communication of the outputs of Phase I, and for the perception of the program by users. The project needs to focus fully and immediately on these issues, and ensure that the outputs are of the highest quality and produced in a timely way.

2. **Casamance data on fishery.** The fishery data do not cover the whole of the continental fishery sector. Data have been collected for the Casamance, but to date the report is not yet finished. This report should receive the highest priority since it is important that the data are included in the GIS.

3. **Confidence intervals of estimates.** To calculate confidence intervals of the data collected for different products and at varying resolutions it is best to adopt a bootstrapping method. A systematic application of this method should have a high priority since the GIS database encourages working at different resolutions. It is also necessary to resolve the issue of confidence intervals before the data can be made available for local resource management purposes.

4. **Methods sheets.** A data sheet should be prepared explaining the precise nature of all calculations employed to obtain the economic value estimates for the fishery sector. Separate estimates of the added value at the level of the primary producer should be made for different types of fishermen (depending on the capital investment).

5. DPS. Establish close collaboration with the DPS to prepare for inclusion of the project findings in the calculations for the System of National Accounts. This would still be useful at this late stage of Phase I, as work on the National Accounts is presently under way.

6. DPS involvement in synthesis. Consultations with DPS should start as soon as possible in order to involve them in the preparations of the synthesis documents and the GIS database.

7. **Reliability estimates.** It is necessary to present some evidence on the reliability of the estimates as obtained during the hunting and collection surveys. One way to check on quantities is volume measurement at the end of the trading chain. Careful investigation of sources and volumes in markets along the trading chain would have been useful, to establish more reliably how much of produce actually stems from the key production areas, but also to be able to test for serious discrepancies between estimations along different points in the channel.

   Since this seems not possible with the present data it could be attempted to at least test for observer or interviewer bias, by dividing the interviewers into two groups and obtaining separate estimates.

8. **Database design.** Planning of future maintenance procedures and a regular system of data collection should be completed during the design of the database itself.

9. **Access to GIS and databases.** There should be a transparent and short process regulating access by third parties, specific also about costs of such access.

10. The **communication strategy** of the VALEURS project should be refined by quickly identifying the main users of available data. The decentralized mechanisms for access to information and the resources required by it can be taken into account in the formulation of the second phase.

17.2 Recommendations pertaining to Phase II (general):

1. **Time Frame of Phase II.** During the design of Phase II, the time frame needs to be carefully examined. The current time frame (24 months) is too short to accommodate the ambitious Phase II program described in the Project document. Either the scope of Phase II should be greatly reduced, the time should be extended, or a compromise arranged involving both. The experience of the first Phase it has become clear that to organize this type of program involving many different partners entails a slower speed of program execution. It has to be discussed with the Donor, whether the program duration can be extended, staying within the budget allowed.

2. **Sustainability.** The concept of sustainability and its relevance in Phase II should be carefully studied.

   - The concept of sustainability in the Project Document;
   - How to define sustainability for Phase II in a way that meets the project's objectives and draw on the project's areas of expertise in economics.

3. **Participatory Monitoring.** Participatory monitoring of natural resources is a good activity for starting to involve local communities in natural resource management. Monitoring should be included in all the demonstration projects, with the establishment of well-designed baseline inventories followed by periodic re-census by local managers.

4. **Gender.** The second phase reformulation process should explicitly include planning activities that cater for the inclusion of the gender dimension and its immediate implementation.

5. **Scientific leadership.** This needs to be maintained and strengthened in Phase II through the identification of one or a few specialists who can provide the program with more leadership in this area.

17.3 Recommendations pertaining to Phase II (ecology and bio-diversity):

1. **Rare Bio-diversity.** Any field demonstration projects should include a small component on the inventory and management of rare bio-diversity. There should also be a component focused on the management of locally rare species identified by community members, such as rare medicinal plants, and nationally protected species.

2. **National NTFP Inventories.** The project should not focus on measurements of the total national resource base for important natural products. This would be too large and costly an undertaking.

3. **Intellectual property rights.** This policy issue should be included in Phase II, regarding ownership and royalties from the development of biological diversity.

4. **Resource-poor areas.** These areas should be included for study in Phase II, to find out how the available wild resources are used, and to find the causes of resource depletion

5. **Bibliographies.** If the project decides to pursue community-based natural resource management in Phase II, annotated bibliographies should be produced on management topics not yet covered, which will need to be addressed during the demonstration projects. These topics include, but are not limited to, fire ecology, timber extraction, the charcoal industry, local fuel wood extraction, grazing on semi-natural pastures, land tenure and resource ownership

17.4 Recommendations pertaining to Phase II (economy):

1. **Home consumption and marketing characteristics in the continental fishery sector.** A qualitative study (or a small quantitative study) could be designed to estimate home consumption, losses, costs and profits of other actors in the continental fisheries sector. Another issue is how this rich database could be maintained with less detail to highlight fluctuations of the contribution of this sector to the national economy. A similar study could provide some information on the amount of home consumption of the primary producers and their labor force.

2. **Rural to rural flows.** It is the impression of the researchers that the rural to rural flows would not influence the overall results of the surveys much. This hypothesis could be checked with quantitative or qualitative market data during Phase II at relatively low cost.

3. **Continental fishery outside study zones.** It has been suggested that the economic significance of the continental fishery outside the areas covered by the surveys is small. This should certainly be corroborated by additional data, which possibly could be obtained by way of a literature study, or by using other indicators.

4. **Intermediate zones.** Since poor people might still depend considerably on wild produce, in low producing zones, in comparison to the average population in such zones. It is therefore recommended that some efforts are made to study more intermediate zones in some detail, either qualitatively or through a few small focussed quantitative studies.

5. A **park pricing study**, as suggested in one of the consultant/trainer reports appears a rather expensive way to go about the issue of park entrance fees. It is likely that more down to earth (and less risky) approach of trying out gradually changing prices while observing effects on visitor numbers would do the same trick. This approach, which is essentially also measuring WTP, is far simpler than a questionnaire to tourists either on entry or abroad.

17.5 Recommendations pertaining to Phase II (database):

1. **Database maintenance.** During Phase II it is better to organize database maintenance on the economic value on well structured market surveys, and to determine community selection more on questions of resource management. In our experience a community oriented approach inherently conflicts with central needs of data extraction. At the end neither will be successful, data will be sloppy because the community does not understand why certain data are needed unless they need the data for their own resource management, and community acceptance will be low.

2. **Continental Fisheries Monitoring.** The continental fisheries surveys produced valuable information. Monitoring of fisheries in the three estuaries should continue in Phase II, and should become community based, where data gathering and some analysis is carried out locally, in collaboration with a scientific institution. Monitoring of the mangroves and oyster harvest, and the status of the manatee populations should be included.

17.6 Recommendations pertaining to Phase II (organizational):

3. **Focused targeting of activities in Phase II.** The revision of the formulation of the second phase should be devoted to the identification of results likely to contribute in achieving the project objectives and the activities to be carried out should be more selective and better targeted.

4. **Study protocols and other planning documents.** Tasks should be more explicitly formulated. In general, funding should depend on the delivery of proposals that relate research questions or other tasks to expected results in a more explicit way. Documents of this type should in fact present a detailed outline of the expected outputs, with checklists for qualitative material and formatted tables for quantitative material. Each element of the plan should be related to a proper and verifiable purpose.

5. **Quality control of documents and data.** The CMO which will be put in place for the second phase should initiate a new approach to validate the documents produced by UICN partners and consultants. For each research type, it will be useful to identify a person in charge of the quality of the final product. During presentations of draft reports at least one other person (which could be invited to the meeting for that purpose only) should act as discussant, ensuring a system of peer reviews.

6. **Planning of support in the form of backstopping or training** should be made the responsibility of the target group or institution. They should ensure that they timely request for this support and training. These requests should be channeled through the program coordinator and the CMO, who would then contact the trainer or backstopping institution. In this manner, it is the target group that bears the responsibility if a workshop or a backstopping visit are not properly timed or otherwise lack in relevancy.

7. **Planning of training workshops.** Training workshops should depend on the expressed needs by the trainees. It is not sufficient for such needs to be described in broad terms. The trainer should receive, together with the TOR, a document describing the tasks for which the trainees need training and a most recent update on the current status of their task and any perceived problems with a smooth execution in the near future. It is also important that training should take place in time to plan subsequent task execution (and not while the task has been started).

17.7 Recommendations pertaining to Phase II (institutional arrangements):

8. **Composition of CMO.** During Phase II, when focus shifts from data collection to a community type approach with a greater attention for the ecological aspects of community interaction with collaboration with a wider range of institutions and NGO's may be needed. It is advisable that the composition of the CMO should reflect such changes where necessary. With regard to future maintenance of the database it is desirable that the DPS remains involved, as well.

9. **Implementation Committee.** In view of the fact that the Implementation Committee did not live up to expectations during the first phase, its composition as well as the definition of responsibilities should be given special attention before the second phase takes off. The leadership, roles and responsibilities of members should be more clearly determined.

10. **The IIED/UICN partnership** for the implementation of the VALEURS project would have been more productive if the Sahel program were more involved in the first phase. This shortcoming could be avoided in the second phase by adopting a clear schedule of activities to be carried out jointly. The MARP realization objective in 60 villages during the second phase should be attentively examined and maybe even reconsidered.

ANNEX 1: Terms of Reference

(Excerpt of sections common to the three consultants recruited for the phase I evaluation)

Background

In 1998, UICN launched the VALEURS Project (*VALorisation des Espèces pour une Utilisation Durable des Ressources Sauvages au Senegal*) with funding support of the Netherlands Ministry for Development Cooperation. It aims at promoting the sustainable use of wild species of flora, fauna and inland water bodies through appropriate national policies, planning and investment. The project approach is based on the assumption that wild resources fare far less than agricultural production in the making of policy and decisions, whereas they form the basis of bio-diversity. The current status devolved to wild resources is due mainly to a gap in the available information about wild resources biology, ecology and above all about their economics.

At first, the approach strives to establish the importance of wild resources in relation to the household, community and country economy and to integrate the assessed value in the relevant land-use options, allocation of production inputs and investment decisions. A two-part integrated strategy was designed with local and international partners to fulfill the project's specific objectives over a five-year period. Phase I, which is due for completion in December 2001 is devoted to data collection and analysis as well as development of concepts and tools. More precisely, phase I work has an emphasis on:

- Developing a valuation methodology applicable to all of wild resources, so as to apprehend the full extent of their contribution to the economy and identify constraints and opportunities arising from a more sustainable use;

- Set up and feed an information system through the collection and processing of valuable data. Data gathered during phase I should provide information about the sustainability of the current use of wild resources and their economic contribution. This information will come in useful in shaping policy and institutional proposals for change.

Funding for phase II will depend heavily upon the success of phase I to meet assigned objectives. Phase II is tentatively associated with three main objectives:

- To demonstrate methods to enhance the sustainability of wild resources working with local communities

- to provide advice on development policy for the sustainable management of wild resources to different stakeholders (government, donors, NGOs, communities and the private sector) ; and

- to communicate lessons and findings in Senegal and other West African countries.

In recent years, the Senegalese institutional and political contexts were dominated by decentralization. Decentralization witnessed the transfer of NRM prerogatives from the central authority to local communities. However, it has not always been an easy task to harmonize the "local authorities code" with prior state and land legislation, the "forest code" and the "hunting code". Besides, it appears that local authorities cannot always afford to enjoy their new rights.

Among ecological factors, climate changes were the most influential. Notwithstanding global changes, pluviometry improved and drought effects declined.

It is not obvious that anthropic factors have led to a wiser use of natural resources. Research conducted during phase I of VALEURS on sustainability assessment, demand and supply may shed a light on this matter.

Objectives of the evaluation

The goal of the evaluation is to undergo an exhaustive, critical, in-depth analysis of the project conception, planning and implementation. Lessons learned, obstacles identified and potential improvements will form the basis of the reformulation of phase II current proposal.

As such, the evaluation shall:

- analyze project conception, its suitability in the sociological, ecological and policy contexts of Senegal and the West Africa sub-region
- investigate project targets and their relevance to stakeholders requirements and current NRM policies;
- examine the institutional framework governing project implementation (implementing bodies, cooperation institutions, beneficiaries, …) and draw lessons for future prospects;
- assess the extent to which the approach, activities and results have fulfilled objectives and expectations;
- question the level of efficiency of project implementation, i. e. whether the way human, financial and time resources were mobilized was commensurate with objectives;
- examine the efficacy of the implementing body and its main associated partner and the effectiveness of monitoring and evaluation mechanisms and procedures;
- produce a detailed report providing:
    - a clear understanding of the approach that prevailed, results and prospects;
    - conclusions; and
    - recommendations

Ways of achieving the objectives of the evaluation include:

- Becoming aware of information produced by the project (reading and analyzing text documents: study reports, progress reports, research reports, looking at data in different formats: quantitative, spatial and other stored in databases and GIS prototype) in addition to any relevant information on the project (proposal, list of partners, list of sites, etc).
- Briefing (IUCN staff, the Netherlands Embassy Representative, and project implementing partners)
- Interviews

- Fieldtrips
- Visits to partners
- Debriefing (IUCN staff, the Netherlands Embassy Representative and implementing partners).

Assignments of the consultant

The consultants covenant to contribute from the specific expertise drawn on them to:

- analyze project conception, its suitability in the sociological, ecological and policy contexts of Senegal and the West Africa sub-region
- investigate project targets and their relevance to stakeholders requirements and current NRM policies;
- examine the institutional framework governing project implementation (implementing bodies, cooperation institutions, beneficiaries, …) and draw lessons for future prospects;
- assess the extent to which the approach, activities and results have fulfilled objectives and expectations;
- question the level of efficiency of project implementation, i. e. whether the way human, financial and time resources were mobilized was commensurate with objectives;
- examine the efficacy of the implementing body and its main associated partner and the effectiveness of monitoring and evaluation mechanisms and procedures;
- produce a detailed report providing:
    - a clear understanding of the approach that prevailed, results and prospects;
    - conclusions; and
    - recommendations

Ways of achieving the objectives of the evaluation include:

- Becoming aware of information produced by the project (reading and analyzing text documents: study reports, progress reports, research reports, looking at data in different formats: quantitative, spatial and other stored in databases and GIS prototype) in addition to any relevant information on the project (proposal, list of partners, list of sites, etc).
- Briefing (IUCN staff, the Netherlands Embassy Representative, and project implementing partners)
- Interviews
- Fieldtrips
- Visits to partners

- Debriefing (IUCN staff, the Netherlands Embassy Representative and implementing partners).

Reporting

The consultant shall fully contribute to writing the evaluation reports:

- Preliminary report: a preliminary report shall be handed out prior to debriefing

- Final report: 2 hard copies as well as 2 electronic copies of final report on the evaluation shall be delivered to both the Netherlands embassy in Dakar and to IUCN/Senegal country office no later than 2 weeks after debriefing.

ANNEX 2: Mission Program

Date	Activité	Institutions et personnes contacté
05-Nov-01	Démarrage de la mission	
	Présentations à l'ambassade des Pays-Bas (M. Niemeijer)	Ambassade des Pays-Bas-M. Alioune DIALLO
	Briefing à l'UICN	Chef de Mission UICN, Chargé de projet, Team Leader
	Revue documentaire	
	Projection: présentation du projet VALEURS	M. Niemeijer, Mme Ndiaye, Chargé de projet, Documentaliste, Assistant
	Mise à disposition de la documentation du projet (portail FTP et des fichiers électroniques de documents et bases de données, documents imprimés)	M. Niemeijer, Mme Ndiaye, Chargé de projet
06-Nov-01	Séance de travail de l'équipe d'évaluation	M. Niemeijer, Mme Ndiaye, M. Thomas
	Discussions sur l'agenda provisoire	UICN et équipe d'évaluation
	Revue documentaire	
07-Nov-01	Séance de travail au BAME/ISRA (8:30-11 h)	Equipe du BAME
	Séance de travail au CRODT/ISRA (11:30-13 h)	Equipe du CRODT
	Séance de travail à l'ISE (15-16 h)	DR B. Sambou
	Séance de travail à la faculté de Médecine et de Pharmacie (16-17 h)	DR M. Lo
	Séance de travail à l'EISMV (17-18 h)	Pr C. Ly
08-Nov-01	Briefing:ambassade des Pays-Bas (9-11 h)	
	Séance de travail à la DPN (10:30-11:30)	M. D. M. Ba
	Séance de travail à la SETEXPHARM (12-13 h)	Mrs Diallo et Diop
	Séance de travail à la DEFCCS (15-16 h)/ Séance de travail à l'ITA (15-16 h)	M. Papa Ndiaye (DEFCCS)/ M. Ababacar Ndoye (ITA)
	Séance de travail à la Direction de la Prévision et de la Statistique (16-17 h)	M. Fall
09-Nov-01	Séance de travail au CSE (9-11 h)	Mrs Diop et Dièye
	Séance de travail à l'IIED-Sahel (11:30-13 h)	M. Bara Guèye
	Séance de travail à ENDA-SANTE (15h30-16h30)	Mme Fatimata Sy (Rue Félix Eboué, ECOPOLE)
	Séance de travail à la Direction de l'Aquaculture et de la Pêche Continentale (DAPC 16-17 h)/ Séance de travail à la Diection de l'Océanographie et de la Pêche Maritime (DOPM 16-17 h)	M. Cheikh Tidiane Bousso (DAPC Building administratif, 4ème étage)/ DR Ndiaga Guèye (DOPM Place de la Gare)
	Entretien avec l'expert en genre (17-18 h)	M. Daouda Diop

Date	Activité	Institutions et personnes contacté
10-Nov-01	Writing draft report	
11-Nov-01	Writing draft report	
12-Nov-01	2nde séance de travail avec le CRODT (7:30-8:30)	M. Djiby Thiam
	Séance de travail au CSE (9-11 h)	M. I. A. Wade
	Séance de travail au ministère du tourisme (12-13 h)	M. Mbengue (Direction des Professions et Activités Touristiques-Rue Calmette)
	2nde séance de travail avec le BAME (disponible entre 11h et 13h)	M. C. M. Ndione
	Entretien avec M. B. O. Sall (12-13 h)	
14-Nov-01	Draft de rapport d'évaluation disponible(8 h)	
	Transmettre le draft de rapport à l'ambassade des P-B+ BAME + CRODT	
	Entretien avec la GTZ (8-9 h)	M. ZIBERT
	USAID (9:30-10:30)	Mrs Peter Trenchard et François Faye
	Ministère du commerce (annulé)	M. Niang (Directeur du Commerce Intérieur)

Date	Activité	Institutions et personnes contacté
14-Nov-01	Debriefing (14:30-17:00):	
	Fin de la mission d'évaluation	
	Participants	M. Djiby THIAM (ISRA-CRODT)
		M. Cheikh Mbacké NDIONE (ISRA-BAME
		M. Alioun DIENG (ISRA- BAME
	Bailleur	M Alioune DIALLO (Ambasade des Pays-Bas)
		M. Michel TAVAREZ (Ambasade des Pays-Bas)
	UICN	M. Matar Diouf (Chargé de Programme)
		Mme Oumou K. LY (Chargé de Projet)
		Melle Fatimata DIALLO (Documentaliste)
		M. Mouhamadou Lamine MBAYE (Asistant de Projet)
	Mission	Prof. Drs. Rudo Niemeijer
		Mme Oumy Khairy NDAYE
		Dr. Duncan W. Thomas

ANNEX 3: DOCUMENTS AND DATA SETS CONSULTED

Document d'élaboration du projet (CAF2.5)

UICN SN. (Nov. 1997) Utilisation durable des ressources sauvages: document d'élaboration du projet (version française). Dakar: UICN (CAF2531)

UICN SN. (Août 1998) Utilisation durable des ressources sauvages: document d'élaboration du projet (version anglaise) . Dakar: UICN (CAF2532)

Rapports de programmation (CAF3.1)

EDWARDS, S. (mars 1998). - Rapport d'évaluation de progrès et de programmation # 1. Washington DC: SUI. (CAF311)

EDWARDS, S. Janv. (1999). - Rapport d'évaluation de progrès et de programmation # 2: plan des opérations pour l'année 1999. Washington DC: SUI. (CAF312)

EDWARDS, S. Janv. (2000). - Rapport d'évaluation de progrès et de programmation # 3. Washington DC: SUI. (CAF313)

Plan d'exécution technique et Financière (CAF3.2)

LY, O. K. (1999) Plan d'Exécution Technique et Financière (Plan de travail) année 2000 Dakar: UICN SN. Projet UDRSS/VALEURS (CAF321)

LY, O. K. (2000) Plan d'Exécution Technique et Financière (Plan de travail) année 2001 Dakar: UICN SN. Projet UDRSS/VALEURS (CAF322)

LY, O. K. (2000) SUWS Master plan project (Plan de travail) année 2001 Dakar: UICN SN. Projet UDRSS/VALEURS (CAF323)

Protocoles de recherche et termes de références (CAF4)

IUCN SENEGAL ; IUCN SUI (1999) ToR of the Second Review and Planning Mission, december 04-11, 1999 (CAF42)

DEME, Moustapha Estimation de la valeur économique des ressources halieutiques continentales: approche méthodologique. - Dakar: ISRA. CRODT ; UICN SENEGAL (CAF43)

ISRA. CRODT; ISRA. BAME ; UICN SENEGAL. Projet UDRSS/VALEURS (Juin 1999) Protocole de recherche: programme ressources halieutiques continentales. - Dakar: ISRA. BAME ; UICN Sénégal. Projet UDRSS/VALEURS (CAF44)

ISRA/BAME ; UICN SENEGAL. (Juin 1999) Projet Utilisation Durable des Ressources Sauvages Au Sénégal: enquêtes socio-économiques et démographiques sur les filières des produits sauvages (ressources végétales et fauniques). - Dakar: ISRA/BAME ; UICN SENEGAL (CAF45)

Bishop, J. (April 2000) Potential inputs to the UDRSS/VALEURS project by staff of IIED-Sahel fall under four broad headings: elements of Terms of Reference for IIED-Sahel (draft). s.l.: IIED (CAF46)

ISRA. CRODT. (jan 2001) Protocole de recherches Programme Ressources Halieutiques Continentales (CAF41)

UICN Senegal. Projet VALEURS. (2001) ToR: The Demand for Wild Goods and Services: Proposal for qualitative research (CAF47)

UICN SENEGAL ; CSE (2001) Mise en place d'un système d'informations géographiques (SIG) pour le projet UDRSS / Sénégal- VALEURS: Termes de référence (CAF48)

DIENG, Alioune ; NDIONE, Cheikh Mbacké ; SENE, Astou (jan 2001) Méthodologie des enquêtes socio-économiques des ressources sauvages terrestres (végétales et fauniques). - Dakar: ISRA. BAME ; UICN Sénégal (CAF49)

UICN SENEGAL. Projet UDRSS/VALEURS (oct. 2001) Evaluation du projet UDRSS/VALEURS: termes de référence (CAF410)

UICN SENEGAL. Projet UDRSS/VALEURS (sd) Diagnostic thématique sur les ressources sauvages et évaluation de la contribution économique de l'amodiation et du tourisme cynégétique dans les régions de Saint-Louis et Tamba (CAF411)

Rapport de mission (CAF5.1)

BISHOP, J. (mars 2000) Sustainable Use of Wild Species in Senegal (UDRSS / VALEURS project). Trip Report: 20-26 February 2000 (CAF512). - London: IIED

BISHOP, J. (juill. 2001) Trip report 3-8 June 2001 (Version anglaise). - London: IIED. (CAF511)

Rapports semestriels (CAF5.3)

UICN SN. (Juill. 1998). - Rapport semestriel de progrès (période du 01 décembre 1997 au 30 juin 1998). (CAF531)

UICN SN. (Août 1999). - Rapport semestriel de progrès (période du 01 janvier au 30 juin 1999) (CAF532)

UICN SN. (Mars 2000). - Rapport semestriel de progrès (période du 01 juillet au 31 décembre 1999) (CAF533)

UICN SN. (Juill. 2000). - Rapport semestriel de progrès (période du 01 janvier au 30 juin 2000) (CAF534)

UICN SN. (Mars 2001). - Rapport semestriel de progrès (période du 01 juillet au 31 décembre 2000) (CAF535)

Rapports annuels (CAF5.4)

UICN SN. (Mars 1999). - Rapport annuel de progrès (période du 01 décembre 1997 au 31 décembre 1998) (CAF541)

UICN SN. (2000). - Rapport annuel de progrès (période du 01 janvier au 31 décembre 1999) (CAF542)

UICN SN. (2001). - Rapport annuel de progrès (période du 01 janvier au 31 décembre 2000) (CAF543)

Rapport scientifiques (CAF6)

Ressources fauniques

ISRA. BAME. (févr. 2001) - Chasse et gestion durable de la faune dans les régions de Tambacounda et Kolda (CAF6530)

ISRA. BAME. (mars 2001) - Commercialisation des produits dérivés de la faune dans les marchés urbains de Soumbédioune et de l'avenue Blaise Diagne (CAF6534).

BAME. (mars 2001) - Place de la faune dans la sécurité alimentaire des communautés rurales autour du Parc National de Niokolo Koba (PNNK) et celles de la Falémé: espèces prisées et stratégies des populations locales (CAF6536)

ISRA. BAME. (Avr. 2001) Rapport de mission « Evaluation de la contribution économique du tourisme cynégétique et de vision dans les régions de Saint-Louis et de Tambacounda » (CAF6538)

ISRA. BAME. (juin 2001) Chasse et gestion durable de la faune dans les régions de Tambacounda et Kolda (CAF6540)

ISRA. BAME. (juin 2001) Place de la faune dans la sécurité alimentaire des communautés rurales autour du parc national de Niokolo-Koba (PNNK) et de la zone d'intérêt cynégétique (ZI(C) de la Falémé: espèces prisées et stratégies des populations locales (CAF6541)

ISRA. BAME. (juin 2001) Commercialisation des produits dérivés de la faune dans les marches urbains de Soumbédioune et de l'Avenue Blaise Diagne (CAF6542)

Ressources halieutiques

ISRA. CRODT. (janv. 1999). - Diagnostic sur l'exploitation des gastéropodes en Basse Casamance (CAF655)

ISRA. CRODT. (Févr. 1999) - Unités de pêche continentale dans les régions naturelles du Fleuve et du Sine Saloum: résultats de l'enquête cadre du 23/ 01 au 02/ 02/ 1999. (CAF656)

ISRA. CRODT. (Mars 2000) - Résultats généraux de second recensement cadre (saison des pluies) des unités de pêche (25 octobre au 05 novembre 1999). (CAF6518)

ISRA. CRODT. (Oct 2000) - Recensement des unités de pêche dans les zones géographiques du fleuve Sénégal et du complexe deltaïque du Sine Saloum en 1999. (CAF6522couv, CAF6522txt)

ISRA. CRODT. (Oct. 2000) - Dictionnaire des sites de débarquement du delta et de la basse vallée du fleuve Sénégal en 1999. (CAF6523)

ISRA. CRODT. (Oct. 2000) - Dictionnaire des sites de débarquement du Sine Saloum en 1999. (CAF6524couv, CAF6524txt)

ISRA. CRODT. (Janv. 2001) - Estimation de la valeur économique des ressources halieutiques continentales: approche méthodologique. (CAF6526)

ISRA. CRODT. (Mars 2001) - Prix au débarquement du poisson en milieu continental, Méthodologie de collecte et premières tendances. (CAF6531couv, CAF6531txt)

ISRA. CRODT. (Juill. 2001) - Effort de pêche, captures spécifiques et valeurs économiques des débarquements de la pêche continentale dans le fleuve Sénégal et au Sine-Saloum. (CAF6543)

Ressources végétales

ISRA. BAME. (Févr. 1999) - Analyse des politiques et stratégies mises en œuvre dans le cadre de la gestion des ressources forestières de la région de Tambacounda (rapport d'étude) (CAF659)

ISRA. BAME. (Mars 2000) - Approche institutionnelle et analyse historique des politiques forestières dans la région de Kolda (1960-1999) (rapport d'étude) (CAF6519)

ISRA. BAME. (Août 2000) - Caractérisation des exploitants des produits de cueillette dans la région de Tambacounda (résultats préliminaires) (CAF6521)

ISRA. BAME. (janv 2001) - Revue des politiques et stratégies forestières en ZSP (Zone Sylvo Pastorale) (rapport d'étude) (CAF6528)

ISRA. BAME. (mars 2001) - Etude de l'organisation et des performances de filières forestières (CAF6532)

ISRA. BAME. (mars 2001) - Exploitation et valorisation des produits forestiers non ligneux dans la région de Kolda: caractérisation des acteurs de base (CAF6533)

ISRA. BAME. (Mars 2001) - Caractérisation des exploitants des produits de cueillette en Zone Sylvo-Pastorale (CAF6535)

ISRA. BAME. (juin 2001) - Exploitation et valorisation des produits forestiers non ligneux dans la région de Kolda: caractérisation des acteurs de base (Version finale) (CAF6539)

ISRA. BAME. (Août 2001) - Calcul des estimateurs des principaux résultats des enquêtes sur la valorisation des produits forestiers non ligneux dans les régions de Tamba et de Kolda (CAF6544)

DIOUF NIASSE, Seynabou (Oct. 2001). - Evaluation socio-économique des ressources végétales: cas de Cordyla pinnata (Dimb) à Karang Poste et Detarium senegalense (Ditakh) à Bettenty (Draft) (CAF6548)

Ressources sauvages

NIANG, M. (sept 1998) - Etude préliminaire: Revue des politiques et évaluation des institutions nationales en matière de gestion des ressources sauvages (CAF652)

NDIAYE, A. (Sept 1998) - Etude préliminaire: Synthèse des travaux de recherche et d'études sur l'évaluation économique ou la contribution dans la satisfaction des besoins des ménages des ressources sauvages au Sénégal (CAF653)

ISRA. BAME. (févr. 1999 - Ressources sauvages de la région de Kolda: diagnostic participatif du 23/ 01 au 03/ 02/99 (CAF657)

ISRA. BAME. (févr. 1999) - Ressources sauvages de la région de Tambacounda: un diagnostic participatif (CAF658)

ISRA. BAME. (mars 1999) - Ressources sauvages de la région de Ziguinchor: diagnostic participatif du 24/02 au 05/03/1999 (CAF6510)

ISRA. BAME. (juin 1999) - Questionnaire #: (Caractérisation des agents de commercialisation ((Collecteur /Bana Bana) (CAF6511)

ISRA. BAME. (juin 1999) - Questionnaires: Evaluation de la Valeur (Commerciale des Produits Sauvages (CAF6512)

ISRA. BAME. (juin 1999) - Questionnaire: (Caractérisation des exploitants (CAF6513)

ISRA. BAME. (juin 1999) - Questionnaire: Grossistes (CAF6514)

ISRA. BAME. (nov. 1999) - Ressources sauvages de la Zone Sylvo- Pastorale: diagnostic participatif de 08 au 17/ 11/ 99 (CAF6515)

SALL, B. O. ; LY, C. (Juin 2000) - Rapport de l'« Etude sur les exportations et importations de ressources sauvages et leurs produits au Sénégal » (CAF6520)

ISRA. BAME. (janv 2001) - Méthodologie des enquêtes socio-économiques des ressources sauvages terrestres (végétales et fauniques) (CAF6525)

ISRA. BAME. (janv 2001) - Enquêtes socio-économiques et démographiques sur les filières des produits sauvages (ressources végétales et fauniques) (CAF6527)

GUEYE, Bara ; TALL, Mansour ; NDIAYE, Fatou et al (octobre 2001) Les déterminants socioéconomiques de la demande des ressources sauvages au Sénégal (Draft) (CAF6545)

ISRA. BAME ; UICN SENEGAL (sd) évaluation économique des ressources sauvages: questionnaire # 7: suivi des zones amodiées (services fournis , production, investissement et consommation (CAF6549)

DIENG, Alioune B. ; MBAYE, Mouhamadou L. (2001) diagnostic thématique sur les ressources sauvages et évaluation de la contribution économique de l'amodiation, du tourisme cynégétique et de vision dans les régions de Saint-Louis et Tambacounda. Rapport de mission (CAF65410)

Méthodologie

COULIBALY, D. ; LY, O. K. (Juill. 1998) - Etude préliminaire: Proposition d'une méthodologie pour l'évaluation économique des ressources sauvages au Sénégal. (CAF651)

ISRA. BAME (Janv. 1999) - Comment mener un diagnostic participatif dans la zone Sud (régions de Kolda, Tamba et Ziguinchor) ? (CAF654)

BISHOP, J. (Mars 2000) - Rapport sur la revue critique de la méthodologie d'évaluation économique. - Londres: IIED. (CAF6517)

Socio-économie

NIANG, M. ; LY, I. (Déc. 1999) - Rapport de l'étude sur l'application au Sénégal des conventions internationales sur l'environnement (RAMSAR, CITES, CDB, CCD). (CAF6516)

ISRA. BAME. (janv. 2001) - Caractéristiques socio-économiques des ménages dans les communautés rurales de la région de Tambacounda (résultats préliminaires). (CAF6529)

ISRA. BAME. (Mars 2001) - Caractéristiques socio-économiques des ménages dans les communautés rurales de la zone sylvo-pastorale. (CAF6537)

Genre

UICN Sénégal. PROJET VALEURS (sd) Programme GENRE 2001: Accompagnement engendering: Memorandum of understanding (CAF6546)

DIOP, Daouda ; SOURANG NDIR, Maïmouna; FALL NDIAYE, Khady (1999 ?) Atelier de sensibilisation sur genre et développement, Dakar, 22-23 décembre 1999. Rapport (CAF6547)

Ateliers et séminaires (CAF11.1)

UICN SN. (sept. 1998). - Rapport de l'atelier de lancement du projet. (CAF1111)

UICN SN. (Fév. 1999) - Rapport de l'atelier sur l'approche méthodologique tenu à Bambey le 12/02/99. (CAF1112)

UICN ; IIED. (mai 2000) Rapport du séminaire de Mapping (séminaire de redéfinition du cadre du projet). (CAF1113)

Moran, D. (juill. 2000). - Rapport des séminaires de formation sur l'économie de la biodiversité et l'étude prospective d'une estimation de la Disposition à Payer pour le tourisme et/ ou la chasse. (CAF1114)

UICN SN. (juin 2001). - Rapport du premier séminaire d'évaluation des travaux de recherche de la phase I du projet. (CAF1115)

Comité de Mise en Œuvre (CAF11.2)

UICN SN. (Nov. 1998). - Rapport de la 1ère réunion du Comité de Mise en Œuvre. (CAF1121)

UICN SN. (Déc. 1998). - Rapport de la 2ème réunion du Comité de Mise en Œuvre. (CAF1122)

UICN SN. (Fév. 1999). - Rapport de la 3ème réunion du Comité de Mise en Œuvre. (CAF1123)

UICN SN. (Mai 1999). - Rapport de la 4ème réunion du Comité de Mise en Œuvre. (CAF1124)

UICN SN. (Déc. 2000). - Rapport de la 5ème réunion du Comité de Mise en Œuvre. (CAF1125)

UICN SN. (Mars 2001). - Rapport de la 6ème réunion du Comité de Mise en Œuvre. (CAF1126)

UICN SN. (Mai 2001). - Rapport de la 7ème réunion du Comité de Mise en Œuvre. (CAF1127)

UICN SN. (2001). - 8ème réunion du Comité de Mise en Œuvre. Proposition de termes de référence et plan de travail de la validation des enquêtes socio-économiques (UICN-ISRA). (CAF1128)

UICN SN. (mai 2001). - 9ème réunion du Comité de Mise en Œuvre. Proposition de termes de référence et plan de travail de l'évaluation. (CAF1129)

List of Databases

Bases de données sur le recensement des unités de pêche

Bases de données sur les sites de débarquement

Bases de données sur les prix au débarquement

Données sur les caractéristiques socio-économiques

Caractérisation des bana_banas dans la zone sylvopastorale

Caracterisation des acteurs de la filiere

Caractérisation des Exploitants

Caracterisation des exploitants dans la zone sylvopastorale

Caracterisation des bana_banas dans les regions de tamba et kolda

Chasseur

Enquetes menages

Exploitant

faune et sécurité alimentaire

Suivi des marches dans la zone sylvo_pastorale

Pharmacopée

Suivi des grossistes

Suivi de marche dans les autres regions

Tableau_menage_faune

Tableau_age_des_chasseurs

ANNEX 4: ADDITIONAL DOCUMENTS REFERENCED

Plan National d'Action pour l'Environnement. 1977. Secrétariat Permanent du Conseil Supérieur des Ressources Naturelles et de l'Environnement, Dakar. 158pp.

Ba, Amadou Tidiane (editor). Monographie Nationale sur la Biodiversité au Sénégal. Undated, 1995 or later. Ministère de l'Environnement et de la Protection de la Nature, Dakar. 82 pp.

Guide de la Diversité Biologique du Sénégal. 1991. World Conservation Monitoring Centre, Cambridge. 20 pp.

Sequestration du Carbone dans les Sols, Dakar, 25-27 Septembre 2000. Workshop Report. Le Centre du Suivi Ecologique (CSE), Dakar. 59 pp.

Les Feux de Brousse au Senegal; Enseignments du Suivi Satellital du CSE. 2000. Le Centre du Suivi Ecologique (CSE), Dakar. 19 pp plus Annex.