I Background

1) History of the SISEI Initiative

Significant efforts are being made to manage natural resources, involving scientific and technical research, the implementation of appropriate programmes and projects in the field, and the harnessing of local know-how. The results, in the form of products, information and data, represent a unique scientific, technical and cultural heritage for sustainable development and the fight against poverty in Africa.

However, it has to be recognized that this information heritage is more often than not dispersed on account of sectoral compartmentalization at the inter-institutional level, which results in duplicated activities that constitute a waste of time, energy and money.

The huge body of data, information and products thus accumulated does not always amount to a useable information capital for three main reasons:

(i) The results of data collection and processing are disseminated among only a limited number of users who often form part of the same professional, scientific or technical milieux;
(ii) The products generated are only to a limited extent transformed into information that can be directly used in decision-making processes relating to the management of natural resources and the environment;
(iii) The information all too often remains dispersed, restricted and hard to access by users at both the national and international levels owing to a lack of suitable mechanisms for the circulation of information.

The result of all this is an apparent lack of information at the local level which contradicts the existence in reality of an information heritage within national and international institutions or bodies specializing in Africa throughout the world. This loss of **"institutional memory**" due to dispersal and compartmentalization is now recognized as being one of the major obstacles to sustainable development in Africa.

Accordingly UNITAR, ITU and OSS took the initiative to develop for the benefit of the African Continent a capacity building programme, on integrated management of Data on Information to implement Multilateral Environment Treaties, entitled “Environmental Information Circulation and Monitoring System on the Internet” or “SISEI” (acronym derived the French title “Système d’Information et de Suivi de l’Environnement sur Internet”).

The SISEI is therefore a national and sub regional capacity building programme for the implementation of environmental information management tools to assist in implementing the legal instruments relating to the environment in Africa - desertification, biodiversity, climate change, wetlands - and is based on new information and communication technologies. During the years 1996-2001 several pilot projects were implemented at the national and regional levels in Africa to test this concept of Environmental Information Circulation and monitoring System on the Internet, in association with Benin, Mali, Morocco, Senegal, Tunisia, the Permanent Interstate Committee for Drought Control in the Sahel (CILSS), the Intergovernmental Authority on Development (IGAD) and the Arab Maghreb Union (UMA).

In the light of the very encouraging results of these field trials and in response to request from many African countries and regional organizations. ITU, UNITAR and OSS decided to validate and finalize the programme and to extend its application to all the African Continent.

The project document of the SISEI Programme for Africa was finalized and approved during an Institutional Meeting held in ITU Headquarters on 15-16 October 2001 with the participation of 14 African countries and 14 international and regional organizations, including several European countries and the European Community.

In the course of the year 2002, UNITAR invested a lot of efforts broadening the partnership around the SISEI initiative. Specific agreements with the Network on Sustainable Development in Africa (NESDA), the Association for the Development of Environmental Information (ADIE), the EIS-Africa NGO, as well as other UN agencies such as UNEP and the USAID supported Geo Spatial Data Infrastructure Initiative.

A presentation of the SISEI Programme was made during the World Summit on Sustainable Development (WSSD, Johannesburg, September 2002) as a Type II Partnership within the NEPAD framework. Moreover, the programme was recognized by the African Ministerial Conference on the Environment (AMCEN) as a relevant contribution to capacity building effort in Africa.

2) The ITU, UNITAR and OSS Partnership within the SISEI

ITU, UNITAR and OSS, in close cooperation with the beneficiary African countries and with the support of international and regional specialized Organizations or Institutions, agreed to jointly develop and implement for the benefit of all African countries, a national and sub-regional capacity building programme, on the application of the new information and communication technologies for the establishment of and environmental information management and monitoring systems for sustainable development in Africa.

The ITU, UNITAR and OSS partnership aims at generating adequate conditions for the establishment of a coherent and efficient institutional framework, and the development and appropriation of technological tools for the accessing, exchange and circulation of useful information within each African countries as well as at the regional and continental levels.

3) The African context

Significant efforts are being made in Africa to manage natural resources and the environment, involving scientific and technical research, the implementation of appropriate programmes and projects in the field, and the harnessing of local know-how. The results, in the form of products, information and data, represent a unique scientific, technical and cultural heritage for sustainable development and the fight against poverty in Africa.

However, it has to be recognized that this information heritage in Africa is often dispersed on account of sectoral compartmentalization at the inter-institutional level, resulting of an apparent lack of information at the local level which contradicts the existence in reality of an information heritage within national and international institutions or bodies specializing in Africa throughout the world.

This loss of '**institutional memory**" is now recognized as being one of the major obstacles to sustainable development in Africa.

4) The international context

Strengthening of the collection and exchange of information is recommended by Agenda 21 (Chapter 40) and by other international legal instruments relating to the environment.

(i) The Framework Convention on Climate Change specifies under:

Article 5 - Research and Systematic Observation:

(a) The Parties shall support and further develop, as appropriate, international and intergovernmental programmes and networks or organizations aimed at defining, conducting, assessing and financing… data collection and systematic observation, taking into account the need to minimize duplication of efforts;

(b) Support international and intergovernmental efforts to strengthen systematic observation and national scientific and technical research capacities and capabilities, particularly in developing countries, and to promote access to, and exchange of, data and analyses thereof….

(c) *Take into account the particular concerns and needs of developing countries and cooperate in improving their endogenous capacities and capabilities to participate in the efforts referred to in subparagraph (a) and (b) above ».*

Article 12 - Communication of Information related to Implementation:

«Each Party shall communicate to the Conference of the parties ….. :

(a) national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases….

(b) a general description of steps taken or envisaged by the party to implement the Convention ; »

(ii) The Convention on Biological Diversity specifies under:

Article 12 - Research and Training:

The Contracting Parties….shall : (a) Establish and maintain programme for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components and provide support for such education and training for the specific needs of developing countries.

Article 17 - Exchange of Information:

The Contracting parties shall facilitate the exchange of information, from all publicly available sources, relevant to the conservation and sustainable use of biological diversity, taking into account the special needs of developing countries.

Article 18 - Technical and Scientific Cooperation:

Each Contracting Party shall promote technical and scientific cooperation….through the development and implementation of national policies. …special attention should be given to the development and strengthening of national capabilities, by means of human resources development and institution building.

(iii) The Convention to Combat Desertification specifies under:

Article 16 - Information Collection, Analysis and Exchange:

The Parties agree….to integrate and coordinate the collection, analysis and exchange of relevant short term and long term data and information to ensure systematic observation of land degradation in affected areas …; To this end, they shall…:

(a) facilitate and strengthen the functioning of the global network of institutions and facilities for the collection, analysis and exchange of information, as well as for systematic observation at all levels, which shall inter alia:

(i) aim to use compatible standards and systems;

(ii) encompass relevant data and stations, including in remote areas;

(iii) use and disseminate modern technology for data collection, transmission,

(iv) link national, subregional and regional data and information centres more closely with global information sources;

Article 19 - Capacity building, Education and Public Awareness:

The Parties recognize the significance of capacity building – that is to say, institution building, training and development of relevant local and national capacities – in effort to combat desertification, and mitigate the effects of drought. They all shall promote capacity building:

(a) by strengthening training and research capacity at the national level in the fields of desertification and drought;

(b) trough cooperation…to strengthen the capacity of affected developing countries Parties to develop and implement programmes in the field of collection, analysis and exchange of information pursuant to article 16.

(iv) The International Telecommunication Union Conferences, in particular the first World Telecommunication Development Conference (WTDC, Buenos Aires, 1994), the Plenipotentiary Conference (Kyoto, 1994), the second WTDC (Valletta, 1998) and the third WTDC (Istanbul, 2002), have emphasized the role of telecommunication and information technologies for environmental protection and sustainable development.

Recommendation 7 of the WTDC-98 calls for:

1. The implementation of a global operational telecommunication-environment project on the development and use of telecommunication and information technologies for the protection of the environment and sustainable development.

2. The organization of seminars, regional workshops and training and research programmes in order to study the matter in greater depth and heighten awareness among all those concerned of the value of implementing multilateral and bilateral projects within the framework of international cooperation.

3. The establishment of a framework for international cooperation which will enable all those concerned to carry out, promote and develop projects to ensure optimum use of the most appropriate telecommunication and information technologies for the protection of the environment and sustainable development.

Recommendation 7 of the WTDC-2002, reaffirmed the importance and the role of telecommunication and information technologies in the protection of the environment, and specifies:

1. *the respective telecommunication authorities should take the initiative in providing all possible support, directly or indirectly, in collaboration with the respective environmental authorities, to promote applications devoted to the protection of their environments;*

2. *the importance of an integrated network for collecting, processing and disseminating environmental information at the national, regional and international levels be recognized and all necessary steps be taken towards implementing such networks;*

3. *pilot project in this area be identified and carried out at the regional, sub regional and national level, in cooperation with international organizations and wit the support of international telecommunication operators.*

II SISEI Programme concept, approach and methodology

The SISEI concept is derived from the observation that the success of many projects aimed at establishing information systems has been seriously impaired by their limitation to purely technical aspects. It therefore aims at generating adequate conditions for:

✓ the establishment of a coherent and efficient **institutional framework** that is conducive to synergy among current or planned endeavours;

✓ the development and appropriation of **technological tools** for the accessing, exchange and circulation of useful information relating to sustainable development in general and the environment in particular, for the benefit of decision-makers, governmental or non-governmental structures, civil society and the private sector on the African continent.

Drawing on the experience, preliminary results obtained and lessons learned from pilot projects, the SISEI concept is based on the combination of three components taken in parallel, namely **institutional**, for synergy of action between stakeholders; **technical**, to strengthen the local capacities concerned; and **scientific**, for the development and rational use of information and communication technologies for sustainable development in Africa.

◺ **The institutional component** is based on a participative approach through partnership between the different stakeholders and information generators. It fosters coordination through consultation and decision-making on the basis of negotiated consensus, and is aimed at:

- ✓ Fostering the **establishment of an institutional framework** linking the international, regional, sub regional and national levels and which is conducive to the circulation and exchange of useful information;
- ✓ Defining universally-acceptable agreements for the **constitution and sharing of a common information capital** with a view to managing environmental information, making optimum use of existing resources and identifying additional needs;
- ✓ Establishing a **strategy** that is **tailored** to the interests of the different stakeholders;
- ✓ Drawing up **rules and mechanisms** in respect of the circulation, accessibility, exchange and updating of the information contained in the SISEI.

An agreement is reached between all parties on these different points through the drawing up and adoption of an "**information charter**".

◺ **The technical component** aims primarily at:

- ✓ Strengthening national, sub regional and continental capacities for communication infrastructure development with a view to ensuring access to and efficient use of information and communication technologies for meeting the needs identified in the institutional component. Public and private telecommunication operators are encouraged to facilitate such access;
- ✓ Developing the capacity of SISEI partner institutions to make use of existing infrastructures and master information and communication technologies in order i) to circulate information on the management of natural resources and the environment (documents and various types of product such as reports, publications, files, maps, data, indicators and metadata); and ii) to facilitate the integration and networking of existing databases and geographic information systems using Internet services;
- ✓ Establishing an information capital by developing capacities for the management and enhancement of SISEIs.

◺ **The legal component** aims at enabling:

- ✓ The countries to define and elaborate their legislation regarding the access to environmental information, based n the principles of the Aarhus convention;
- ✓ The updating, adaptation and transfer of new methods of information validation and circulation which require constant surveillance in a rapidly changing environment;
- ✓ The countries to maintaining the interest of the partners concerned in order to avoid a further widening of the **digital divide** and allowing them to work in a well defined legal environment.

A three stages methodology is therefore proposed, based on a consensus on the roles and tasks of the key individual institutions (nodes) that constitute the SISEI networks at both the national and sub-regional levels. The main expectations of the network are the enhancement of data integration and information management capacities, a greater utilization and repackaging of information available onto the Internet to support policy-oriented actions at various levels, an improved development planning process at both the national and the sub-regional levels in the context of sustainable development, and a greater participation of stakeholders in decision making processes.

The SISEI concept responds to the needs expressed by a large number of decision-makers responsible for environmental matters in African countries.

In addition of being a technological tool, this programme encourages the various players involved in the management of natural resources and the environment to share their experiences and information heritage. This approach aims to create a synergy of both human and financial resources, establishing environmental information systems within national programmes such as national development plans, national environmental action plans, poverty eradication plans, etc. It will also catalyze the development of National and Regional Spatial Data Infrastructures (NSDI and RSDI) for use in planning and decision making for sustainable development.

The SISEI takes the form of a website which serves as an environmental gateway at the national, subregional and regional levels, offering the user a one-stop information shop comprising several specialized gateways such as:

- An institutional gateway, with each partner owning its own website enabling it to become acquainted with other partners:

- The general information on the body in question (contact details, terms of reference and prerogatives, objectives, resources, results, available services, products) is arranged according to a pre-established and homogenous format.

- The institutional portal, which is structured on the basis of a typology of the partners, provides access to the web sites of the various partner bodies.

- A thematic gateway, in which the information is organized according to sectors of activity (forestry, animal breeding, agricultural production, irrigation, combating desertification, biodiversity, etc.).

- Thematic groups, formed around institutions involved in the field in question, are responsible for structuring the information and disseminating it via the SISEI gateway, taking care to balance the information supply and demand.

- A virtual library which, under the auspices of the documentation centers of the different ministerial bodies, is gradually opening up direct online access to reference material.

- Anyone is able to identify a document reference and then access the source electronically from his or her own workstation.

- A virtual map library which, subject to the regulatory provisions in force, allows access to map resources (thematic maps, satellite images, aerial photographs, geodesic graticules).

- Different levels of product are offered: metadata (references), quick look (reduced images), raw data (digital reproduction) or analytic products (combinations of georeferenced information layers accessible via the Internet – GisWeb).

III The SISEI Programme objectives

The general objective of the SISEI initiative is to provide countries and regional organizations with systems for the validation, circulation and harnessing of relevant environmental information with a view to strengthening the participative approach at the different decision-making and operational levels and thereby promoting enlightened decision-making.

The detailed objectives, as expressed by the partner sub regional organizations and national institutions, primarily focus on:

i) strengthening of national capacities;
ii) supporting and encouraging ongoing initiatives;
iii) enhancing the value of the existing information heritage;
iv) develop efficient decision making processes and mechanisms;
v) establishing an operational network of institutions using or producing information.

Those objectives are very closed from some of the goals and objectives of the United Nation Millennium Declaration, as this initiative aims at generating an information community who, through the use of new technologies - especially information and communications technologies - will have the knowledge to elaborate policies for poverty eradication.

IV SISEI Programme implementation strategies, responsibilities and tasks

1) Implementation approach

The implementation of the SISEI programme will be carried out in a phased approach with the initial stage focusing on a selected number of countries. This stage will also involve sub-regional organizations with established formal institutional structures for environmental data and information generation and dissemination within their respective sub-regions.

The collective efforts and network resources of ITU, UNITAR and OSS represent an appropriate framework for developing such a unified collaborative approach in the implementation of SISEI in Africa. In this regard and in consideration of the complementarities of ITU, UNITAR and OSS, in the development of institutional capacities to facilitate environmental information access in Africa, it is imperative that the efforts and practical activities are undertaken in a coordinated and harmonized way that allows synergy and common attainment of the individual and common objectives of the three organizations.

The deployment of the initiative will be conducted in three phases:

Phase 1: Building on past experiences
The first stage relates to the capitalization of experiences and the transfer of know-how and skills for the strengthening of sub regional and national capabilities ahead of the decentralized implementation of the initiative. A steering committee will be established. The first stage aims at analysing and consolidating the experience gained in the launch and development phase of the SISEI, in particular in the conceptual areas, on the basis of the following:

- Building and documenting examples for further replication of the concept on the different scales;
- Studying compatibility between the level of approach and methods to be applied;
- Refining target user groups in order to reach a compromise between accessibility of information tailored to the target users and the widest possible dissemination of that information.

Phase 2: SISEI implementation at country level
The second stage relates to the operational implementation of the SISEI. During this phase, the regional SISEI and some 10 national SISEI are gradually set up in 10 selected countries, through a modular approach. Three modules have been identified that would ensure a smooth, efficient and timely implementation.

In parallel to this, specialized tools are developed, and tested through a collaborative and technical work, for further integration into the SISEI web portals.

Phase 3: Evaluation and extension to additional countries and sub regions
This stage will serve to review the progress achieved in participating countries and sub regions, to assess the efficiency of such a network, and plan for improvements as well as broadening the initiative to other African countries and Regions.

2) Implementation responsibilities

ITU and UNITAR will be responsible for the implementation of the activities in accordance with the terms of the Cooperation Agreement signed on November 27, 2002.

The implementation will therefore be undertaken in a well-coordinated approach focusing, in a 1st stage, on 10 countries (Gambia, Ghana, Guinea, Mali, Mauritania, Morocco, Niger, Kenya, Uganda and Zambia).

The approach to be used in the implementation of this stage will comprise two major components:

a) a collective effort that will bring together the 10 countries under a common platform focusing on common goals and objectives, portal template design, content formats, methodologies, tools as well as provision of common set of training skills and materials. This approach will also be used in the assessment of individual experiences and lessons learned which will serve as a basis for the formulation of a longer term support programme for replication in other countries of Africa.

b) the day to day implementation of specific activities at the individual national and sub-regional level focusing on the development of content that is specific to the respective individual countries and sub-regional organizations. Implementation of this component will also entail development of national portals for hosting national level datasets and related information resources to be made accessible through SISEI.

3) Implementation tasks

ITU and UNITAR, together with OSS, will work jointly on the SISEI implementation, through a phased approach that will include, among other tasks:

a) Identify appropriate points of contact at the policy-making level in both the telecommunication field and in a lead national environmental institution in the countries for future communications of a political, technical and strategic nature related to the national network initiative and more specifically, the implementation of SISEI in each of these countries;

b) Provide technical support services and take a lead role in the facilitation of discussions in the inception (Kick-off) workshop with national and sub regional institutions involved in the project. The inception workshop, which is to be organized and conducted jointly by ITU and UNITAR, is also intended to discuss and finalize the content for the SISEI implementation plan and set up a realistic action plan for the follow-up activities;

c) Organize and conduct awareness as well as specialized training workshops in countries, to equip national network partners with a range of skills related to the implementation of SISEI in their respective countries;

d) Provide technical assistance, through training to partner institutions, in the integration of national and sub regional portals into the SISEI portals and assume a lead role in the development of the national level contents (information & application tools) by counterpart institutions in the 10 countries;

e) Conduct a continuous assessment process, contribute to the promotion of the programme, and publish jointly training material.

V Expected results

The establishment of such environmental information management and monitoring systems is based on the principle of generating institutional agreements and technical solutions proposed by the partners according to local contexts and conditions. Particular attention will be paid to the points of interaction and transfer between national and sub regional levels. The partners will therefore be invited to determine the substantive aspects involved, with a view to setting up information exchange mechanisms between the African continent and external partners in the framework of solidarity between North and South, bringing together existing experience and capacities.

Expected results of such initiative, through a progressive implementation at three levels - national, sub regional and regional are:

- A functional, coherent and efficient **institutional framework** that makes for synergy in current or planned endeavours;
- An operational **technological tool** for the access to and the exchange and circulation of useful information;

- **Technical structures that can exchange dialogue** in order to integrate scientific and technical data in planning and decision-making processes;
- **Increased use of Internet-based information sources** in support of processes intended to assist in decision-making through **improved ergonomics** of the access gateways;
- Better **integration of the different players** in participative decision-making processes;
- **Easier access for the different institutions** and the general public **to environmental information** in the public domain, such as legal texts;
- An **information network** interlinking national systems through the regional nodes;

VI Specific targets of the Initiative

The initiative will serve the various partners concerned with environmental issues, namely the **authorities** (coordination bodies, ministries and their respective technical services), the **scientific and technological community** (research laboratories, higher education and training institutions, etc.), the **civil society** (NGOs, associations, etc.), the **private sector** (consultants, companies, etc.) and **partners in cooperation** (multilateral and bilateral development agencies, etc.).

The three-year initiative is aimed at making SISEI operational in the four sub regions of the African continent, namely CILSS-ECOWAS, IGAD, UMA and SADC. In addition to the sub regional bodies that will be establishing their own sub regional systems, several countries in each sub region will implement operational systems.

VII The SISEI partnership structure and responsibilities

- Institutional framework

No single agency or NGO can aspire to be the sole interlocutor of countries and sub regions on environmental issues or sustainable development or the sole supporter of related capacity building efforts. There is a wide range of needs and priorities depending of various circumstances and there is a great variety of approaches to capacity building and a wide range of modalities and sources for international support –albeit with overlaps to be avoided, gaps to be filled, and synergies to be exploited.

In 1996, the **Observatory for Sahel and Sahara** (OSS), in collaboration with the **United Nations Institute for Training and Research** (UNITAR), established as an international framework for North-South partnership, has elaborated the Desertification Information Circulation System (DIS) concept, which, with the additional support of ITU, was broadened, into the Environmental Information and Monitoring System on the Internet concept (SISEI).

The SISEI concept was tested and validated by ITU, UNITAR and OSS in a number of African countries and sub regions, with the financial support of France, Germany, Italy, the World Bank, UNDP/UNSO, UNEP/GRID and the *Fonds francophone des Inforoutes*.

Monitoring

The initiative will be subject to a continuous monitoring and review by the different steering committees at national, sub regional and regional level. A set of indicators will be defined and gathered during phase 1, based on past experiences brought by the partners.

National leading institutions in every country will coordinate implementation of the national project and run the network of partners at the national level.

A steering committee will be established to ensure consistency and a coherent implementation of the programme. The steering committee will meet regularly at least twice a year to review programme implementation and financial issues. Responsibilities are distributed as follows:

OSS (Observatory for Sahel and Sahara) will ensure overall consistency in the framework of support for the implementation of the CCD, carrying out a global evaluation of the programme on behalf of its members, hosting and managing DIS/SISEI Africa.

UNITAR (United Nations Institute for training and research) will ensure technical consistency of the programme, being responsible for the overall coordination of training activities, including training of trainers and initial training where the necessary competences are not available in situ, with the aim to strengthening national and sub regional capacities. In addition, UNITAR will supervise R&D activities carried out within the framework of the programme (GisWeb, metadata) in collaboration with programme's partners organizations.

ITU (International Telecommunication Union) will ensure technical support for issues related to telecommunications and the Internet, especially when dealing with assistance with training for the operator staff, technical and economic project studies, as well as relations with the private sector and telecommunication operators in beneficiary countries. In addition, ITU will provide assistance in negotiations with operators and in obtaining the required equipment.

Other partner from the private sector, cooperation agencies, and international organizations may join the programme at any time. Their role in the steering committee and contribution to the programme will be defined according to their interest and expertise.

The SISEI web portal (www.sisei.net) will be the major communication tool to inform the partner community about developments, progresses made, events, etc. The same information will be also available on the partners' web sites. A Newsletter will be also widely disseminated to the environmental community working in and for Africa.

It is expected that at the end of the 3-year phase of this initiative a number of countries and sub regions will have fulfilled most of the expectations mentioned here above.

The operational network of sub regions, countries and institutions established through this partnership will then constitute the backbone for an expansion of the initiative to the entire African continent and beyond.

Coordination

In close collaboration with their partners and the beneficiary countries, UNITAR, ITU and OSS will be coordinating the overall implementation of this initiative, as well as will oversee the operational setting-up and training method components using existing African capacities. Each component – national and sub regional – will have its own coordination and implementation mechanism, including a steering committee composed of the leading institutions as well as the main donors.

VIII Capacity building and technology transfer

SISEI is a decentralised computerized system set-up as a network of harmonized web sites connected by electronic means, which facilitates standard access to data, information and products relating to the environment.

The programme has a strong capacity building component and in countries where it has been implemented, through pilot projects, the following outputs and capacities have been generated.

- enhanced capacity for data and information management (improved the management of existing data bases, data banks and other information sources);
- greater utilisation and repackaging of internet-sourced information to support policy-oriented action at various levels;
- improved development planning processes at national and district levels in the context of poverty alleviation;
- enhanced capacities for integrating environmental data and information into development planning at various levels;

- enhanced collaboration and co-ordination between the key national institutions as well as other stakeholders at various levels.

Thus, SISEI is based on the strengthening of national and sub regional capacities mostly through institutional facilitation with a participatory approach for consensus building, technical training, training of trainers, as well as legal and technical capacity building measures through a south-south cooperation.

The infrastructure and telecommunications facet of SISEI is considering the generally low level of technical capacity in the countries and the difficulties in accessing such capacities. Specific arrangements will be studied on a case-by-case basis so that each country and sub region will progressively handle and host its own SISEI portal.

The efforts made in respect of the structuring and dissemination of information will have to be accompanied by a strengthening of the communication capacities of the local users in order for the information to become accessible Africa-wide. It will also be necessary to integrate local server solutions as from the initial phase in order to foster adoption of the SISEI by the partner institutions. Technical solutions will be sought as an answer to the following needs:

- Strengthen communication capacities in the countries concerned using local strategies;
- Promote adoption of the technologies and systems by users and SISEI partners;
- Clearly specify the demand for environmental data that are useful for development in Africa and initiate specific activities under each of the identified themes;
- Evaluate the impact on demand of knowledge of the information capital;

Budgetary allocation for equipment is also a crucial point as countries may not have the capacity to invest in hardware and software to develop and to run IT applications, and ensuring effective participation of the stakeholders for a wide dissemination of environmental information and products.

IX Funding arrangements

Financial arrangements using partnership approach are crucial for this kind of initiative when considering the budgetary issues. Thus, it is expected that funding comes from three main channels: - multilateral grants and loans - direct bilateral assistance, and - in-kind contribution and investment from countries and sub regions.

Substantial sums have been invested in the elaboration of the SISEI concept and activities since 1998, coming from different sources. In addition, ITU contributed to support three (3) regional workshops in East Africa (IGAD), North Africa (UMA) and West Africa (CILSS), in the form of fellowship grants.

The provisional budget for this 1st stage of SISEI programme implementation consists of two financial contributions, which availability is respectively confirmed by ITU and UNITAR, and the complementary in kind funding provided by recipient countries, as well as other additional future contribution from new partners will constitute the provisional budget of the 1st stage of SISEI programme implementation.

UNITAR will ensure synchronization of the resources mobilized by its network of partners, under the rules defined with these last.

ITU will administer its financial contribution under the rules in force in the Organization.

With the aim to improve cost effectiveness and efficiency in managing the overall programme activities, UNITAR will administer contributions for international expertise and coordination. However, and if deem needed, UNITAR may be required by partners to administer other specific components of their contribution. When this happens, UNITAR maintains a separate account for any disbursements and will submit to those partners, including ITU, upon the completion of the work a detailed breakdown of expenditures incurred, duly certified by an authorized official of UNITAR.

ITU and UNITAR will - jointly and severally - conduct the activities linked to this 1st stage of SISEI programme implementation, in coordination with the partners and with the cooperation of all interested parties.

For each activity scheduled under the SISEI programme, ITU, UNITAR in coordination with their partners will develop a technical document presenting the scope of the components, including break down of activities, objectives, expected results, as well as financial arrangements. Each activity budget will specify the parties to be financed by ITU and the ones to be funded through other partners contribution. Those technical documents will serve as project sheet for the corresponding activity implementation.

UNITAR and ITU being UN entities will follow financial and administrative rules and regulations of the United Nations. Any dispute between the Parties raising out of, or in connection with this Cooperation Agreement shall be settled directly and amicably by them through mutual negotiation. In the case of failure of such amicable settlement, the dispute shall be settled in accordance with UNCITRAL Arbitration Rules as at present in force. The Parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such controversy or claim.

Partner countries in which the project will be implemented have already formulated project documents and in which they have committed themselves to contribute in-kind for their respective SISEI project. Countries and sub regions have thus defined the amount of financial resources needed for implementation, based on their needs and expectations.

X Project Execution Modalities

Introduction

In October the 15th and 16th 2001, was held at the Headquarters of the International Telecommunication Union (ITU), the institutional meeting for the adoption and implementation planning of the Environmental Information System on the Internet programme (SISEI Africa 2002 - 2005).

The representatives of the countries and sub regional institutions have expressed their strong interest in the SISEI programme (2002 - 2005). They approved the proposed plan of action and schedule of activities in which each country will compile a project document specifying institutional and technical framework, presenting an evaluation of needs for equipment, administrative and human reinforcement of local capacities.

As an outcome of the October meeting, UNITAR has developed guidelines to assist countries drafting their national SISEI project document. Those support documents were then posted on the www.sisei.net web site.

A first series of project documents for the 10 countries including Gambia, Guinea, Ghana, Kenya, Mali, Mauritania, Morocco, Niger, Uganda and Zambia, was approved.

The current document present a specific Modus Operandi that would ensure a concerted, coordinated and efficient implementation in the countries. It aims at recognizing and taking into account differences among those 10 countries, with regard to their level of awareness, technical capacity, communication infrastructure, as well as considering the evolution of the situation that may have occurred in those countries since they elaborated and submitted their project document.

Execution modalities are conceived on a modular approach that will fit with assumptions mentioned above:

- Activity 1 deals with the preparation of the overall project planning development phase and includes 2 sub regional workshops.
- Activity 2 is considering a country approach and includes national awareness and production of information products (inventories, etc…).
- Activity 3 includes a regional restitution workshop.

- Activity 4 deals with technical capacity building and includes technical training workshops on information management.
- Activity 5 is about the legal aspects of accessing environmental information and includes 2 sub regional workshops.

Operational use of ICT for environmental protection

In parallel to training activities conducted both at the sub regional and national levels, ITU, UNITAR and OSS, together with their network of partners, will work on the development and adaptation of a set of analytical tools to support SISEI implementation. The SISEI toolset is likely to include:

- Design and development of metadata infrastructure adapted to SISEI and integration into a web interface
- Establishment and configuration of environmental server at country level
- Development and/or adaptation of a GIS interface compatible and integrated in a web portal.

XI SISEI Programme activities definition

The project includes five group of activities conducted either at regional, sub regional or at national levels. Depending on the sub regional introductory workshops recommendations, the order of the subsequent activities may change.

Activity 1: Sub regional introductory workshops

The series of workshops that is proposed aims to establish Environmental Knowledge Nodes at country level in order to promote participatory and fair exchange of ideas among environmental stakeholders, and to strengthen collaboration and coordination while implementing environmental legal instruments. Due to the cultural specificity of countries selected, 5 English speaking and 5 French speaking, it is propose to hold 2 distinct workshops.

Objectives

The main objective of this activity is to introduce participants to the SISEI concept and initiate a collaboration process among environmental stakeholders. It is therefore focusing on defining relevant ways, at country level, that would lead to improve access to and transparent dissemination of data and information. Also, it seeks for country appropriation of the concept by institutions dealing with environmental issues. It is based on tools and methodologies that are using ICT applications.

Workshops will have the following immediate objectives:

- Awareness raising of participants with the aim to generate adequate conditions for the development of appropriated national policies regarding environmental information circulation.
- Take into consideration the articulation of the various elements that compose a SISEI, such as telecommunication infrastructure, data infrastructure, information circulation protocols and arrangements, elaboration of specification for ICT related applications that would address their needs and requirements for environmental protection for sustainable development.
- Look for potential synergies or synchronization with similar initiatives currently conducted in the countries, so that to maximize the interest and impact of SISEI projects as an information circulation system that would assist stakeholders to better collaborate and coordinate environmental related activities.

Expected results

At the end of the workshops, participants will have a good knowledge of the SISEI concept, and the importance of the different components. They will then be in a position to finalize their SISEI implementation plan at country level taking into consideration similar and complementary initiatives (programmes, projects, activities, etc.).

Participants

It is expected to invite two to three participants per country, represented the target community involved in such a process:

- one at decision making level, i.e. Director of ministerial department related to environment of agriculture
- one thematic expert, i.e. national focal point for an environmental convention
- one telecommunication expert, i.e. ITU focal point in the ministry in charge of telecommunications

In addition, 1 or 2 representatives of sub regional organization(s) will be invited so that to ensure further linkages between national and sub regional levels.

Workshops organization and agenda
Training workshops will be organized over a 4-days period including:

- Technical segment with presentations and discussions on the various aspects of the project
- Institutional segment to work on country project and specific issues raised by the participants.

Activity 2: Institution building and legal framework at country level

Generally EIS programs recommend that involved stake-holders should, according to their respective capacities, integrate and coordinate the collection, analysis and exchange of relevant data and information to ensure systematic observation of environment and to understand better and assess the processes and effects of land degradation. To this end, national stakeholders are to facilitate and strengthen the functioning of the global network of institutions and facilities for the collection, analysis and exchange of information, as well as for systematic observation.

What has come very clearly in different countries has been the lack of information on environmental issues such as deforestation; land degradation, loss of fertility or land tenure. This information is often available but not accessible. An Environment Information Circulation and Monitoring Systems would facilitate access and therefore enhance decision making both at national, district and local level. This network is to use modern technology for data collection, transmission and assessment of natural resources and to link national and local data and information centers more closely with global information sources.

The proposed SISEI project implementation will aim to link existing natural resources data bases or more simply sources of environment information at national level to district / local authority level. Such a system, in allowing regular access to update information related to environment issues will enable decisions makers to improve their planning and management capacity. This is likely to promote proactive rather reactive response to environment management and planning issues.

SISEI projects implemented at country level will ensure that activities for collection, analysis and exchange of information address the needs of decision-makers and all stakeholders, including local communities. Therefore, the first series of national workshop includes awareness workshops and identification of needs, the elaboration of an institutional profile of the environment and an Information Charter

Objectives
In the interests of avoiding duplication and prohibitive costs, the elaboration and implementation of the project will duly take account of existing structures, experiences and processes. To this end, an inventory of existing structures will be undertaken. Consultations and coordination at both the national and the local levels will be initiated in order to try to improve and strengthen the management and dissemination of data and information on environment issues, to define priorities and to establish partnership agreements at local and national levels taking account of common interests.

The major objective of the activity 2 is to clarify the institutional framework at country level so that to generate adequate conditions for further project implementation steps. This institutional building stage aims, through a participatory approach, to define and establish:

- institutional strengths and weaknesses through needs assessment
- expected functionalities and results from virtual clearing-house mechanism;
- administrative rules and regulations for the circulation, access and exchange of environmental information;

- ethics and principles guaranteeing the sustainability of the system, including legal, administrative and technical aspects of environmental information.

The institutional setting is based on national consensus concerning the roles and tasks of the key individual and institutions (nodes) that constitute the network at country level. The strength and success of the network would accrue from the complementarities of the network nodes making optimal use of the comparative advantages of each of them.

Activities
A series of workshops will be organized in each country to present the new information and communications technologies (ICT) such as databases, geographical information systems, remote sensing. These information and awareness workshops will help participants to understand advantages and limitations of ICT, to define and pinpoint their needs with regard to the circulation of data, information related to environmental issues.

A consultation will be carried out in close collaboration with thematic groups and existing libraries to define capacity strengthening needs (human resources, equipment, etc.) in term of improving the management of literature, databases as well as geospatial data. The ultimate outcome of the national workshop is to reach an agreement on implementation modalities among institutions

Activities carried out at the local and national levels will consist in preparing inventories of what already exists in terms of institutions, programs, experts, data banks, information and products relating to environmental issues and mitigating land degradation effects. The result of this stage is the editing of a National Institutional Profile of the Environment.

Another activity carried out at the country level is to set up a project management structure and to establish SISEI management bodies such as for instance a steering committee, a Forum of Partners, thematic working groups, etc…

Beneficiaries
The beneficiaries will be, among others, the national organizations and institutions, the administrative and technical services of the countries, territorial divisions, the scientific community, non-governmental organizations, local communities and the private sector.

Expected results
It is expected at the end of this activity that countries have elaborated an “Institutional Environmental Profile”, and have compiled an inventory of existing and available data and information. A second outcome of this activity is the elaboration of an Information Charter, a document that explain collaborative mechanisms among the institutions involved in the network

Activity 3: Regional restitution workshop

Sharing of experiences among countries involved in the project

Objectives:
The workshop aims to provide a platform for experience sharing among the countries that have embarked into a SISEI process. One of the objectives is to review the progress achieved by the countries regarding the institutional and legal frameworks. The workshop will also aim to plan subsequent activities carried out at sub regional level.

Activities:
Activities conducted under “Activity 3” are:
- workshop organization
- preparation of contents
- conduct the workshop
- prepare progress report for partners of the programme including donors

Expected results
The main outcome of this activity is a mid-term progress report, as well as a detailed plan of action for the year 2004. The recommendations of the restitution workshop are also expected to contribute to raise interest from additional donors to support the programme.

Activity 4: Sub regional technical training workshop

Objectives:
Activity 4 aims to develop the technical capacity of countries to set up their web portal as well as meta databases.

Activities:
Training workshops on the Internet and the development of meta databases will be conducted at sub regional level Each country will nominate participants who will attend a training workshop on the use of the Internet and on the realisation of a web page in order them to put on their own the proper information and data related to their country. Beside training sessions, some brainstorming sessions will be dedicated to the ergonomic of the web sites in order to have a harmonised network of web sites. The participants will start realising the web sites and meta databases as practical exercises.

This stage comprises the provision of data processing equipment consisting of adequate hardware and software ensuring full participation of each of the partner institutions, and linking equipment providing for networking horizontally among sectors that are using and providing data and vertically among spatial levels.

Implemented at the national level, training activities consists of purpose-oriented training of managers and users of data, information and products meeting the needs identified. Depending on the needs of country organizations, taking account of their human resource capacities, training of trainers could be envisaged if necessary. Training will take account of existing national capacities. It will be provided in the form of classes and practical sessions.

Expected results
Training will ultimately enable those concerned to implement the project themselves. The contents will be determined in the light of needs identified during stage 1 with the national capacities and with the support of the project partners. Recipient trainees will apply their new technical skills developing the outcome products – SISEI entry gate, Web sites of the institutions. A continuous technical backstopping will be provided when needed by the trainers.

One of the outcomes of the SISEI process is the establishment of information portals accessible on the Web. Therefore, a SISEI portal framework will be provided to each country, facilitating the integration of data, and information gathered in the previous steps. Technical training on the use and maintenance of such portals will be provided to partner institutions.

At the end of activity 4, it is expected to have:

- a network of harmonised websites, where users may access environment metadata and information.
- a group of trained experts capable of mastering and developing the national SISEI web portal and to mastering and developing the meta data base on the web.

The evaluation of this activity will review the execution of the project, identify progress in various activities, and draw lessons and conclusions. Progress reports will be prepared by the leading agency in the country in collaboration with UNITAR and submitted to donors and other partners and authorities.

Activity 5: Sub regional workshops on legal issues regarding accessing environmental information

Objectives
The objective of Activity 5 is mainly to promote the guiding principles of the Aarhus Convention (pilar 2) on the access and dissemination of environmental information, and to link it to the Agenda 21.

Activities
Sub regional workshops will be organized on the topics and working groups at country level will be established so that it paves the way for the development of national legal framework in that domain.

Expected results:
The workshops should initiate a momentum at country level and push forward the issue involving the community of environmental lawyers.