

PARTNERSHIP INITIATIVES INFORMATION SHEET

Name of the Partnership/Initiative

Global Information System and Land Surface Analysis, Monitoring, and Mapping for Sustainable Development to support Decision Making

Expected date of initiation: 2003

Expected date of completion: 2006

Partners Involved:

Governments: Italy (DGCS-IAO/IUCN), U.S.A. (USAID-GISD), Benin, Eritrea, Senegal, Tanzania

A number of other governmental organizations have shown interest in joining the Partnership. These include but are not limited to the following: Canada, Egypt, France, Ireland, Japan, Mali, Mozambique, Namibia, Netherlands, Niger, Norway, South Africa, Uganda

Intergovernmental organizations: FAO (including GTOS), IUCN, UNEP, CILSS, IGAD SADC, CGIAR/CSI, World Bank, UNITAR, WMO (including GCOS), UNGIWG, UNDP, IDB, UNECA, GRID/UNEP,

Major groups: DGCS-USAID

Other: AFRICOVER, AGRHYMET, EIS-AFRICA, GISD, IUCN, NASA, NOAA, NIMA, USGS-EROS, US Forest Service, USDA, WRI, IFDC, CSIR, CSE, RRSU, RCMRD, NCRS, GSDI, EUROGI, UCGIS, ESRI, Inc. SKE, Inc. Natural Resources Canada, SISEI/ROSELT, CRSP Council (US), SCGIS, Winrock, ITC, NRC/NAS, AAG/NGS, ICASA, ESSE/USRA, the Heron Group (University of Pennsylvania), MIOMBO.net. , IUCN, IGAD, CESIA- Accademia dei Georgofili, PRGIE, ECART, CGIAR

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Main objectives of the Partnership/Initiative

Please provide a brief description:

Make geo-referenced data and projects on the environment and natural resources worldwide more accessible, with emphasis on developing countries, as a contribution to consolidating the capacities of both institutional and private decision-makers to effectively and sustainably address their development pursuits. This important objective focuses on relevant planning and management challenges which emerge within the framework of current sustainable development constraints, as summarized hereafter.

Global concerns about food security for the growing populations in developing countries, environmental degradation, and climate change or variation, and civil unrest have underscored the need for consistent and timely biophysical and socio-economic geo-information. Technological approaches are now available to quantify, document, and disseminate information on fluctuations and trends in the environmental parameters and natural resources, climate, changes in vegetation cover, surface waters, wetlands, land quality (including degradation), desert margins, settlements and other land cover features at local, national, regional and global levels.

A number of land cover classification projects have been developed to provide for the growing demand for information at global and regional levels. For example, recent products include the global land-cover dataset (IGBP-DIS for coarse resolution information) and Africover in East Africa for detailed high-resolution assessments. These and other more localized projects produce potentially valuable information on the current status of the environment and natural resources which could help assess trends through time or predict and model future development scenarios. This information from diverse sources, however, can be applied more effectively toward meeting sustainable development needs especially relative to capacity building and applications:

- Currently, systems cannot be reliably compared because of methodological differences such as in the definition of land cover classes, classification systems, mapping methodologies, and accuracy assessment procedures. Therefore, there is an arguable need for harmonization among these projects to obtain the benefits from synergy among mapping and monitoring activities at global and regional levels; as well as to facilitate interaction among relevant data management, provider institutions, and users, either governmental, non governmental or private.
- The very interaction between relevant stakeholders is, moreover, hindered by the lack of reciprocal knowledge of existing information and data availability, inadequate access to project results and source data, as well as inadequate communication, distribution, and application of information. This problem applies not only across geographic areas but also between the different provider and user categories, both among decision-makers and communities. Therefore, there is an urgent need for creating new networks and/or facilitating links between existing ones at the local, regional and global levels. An appropriate culture emphasizing standards, interoperability, and data sharing will facilitate the relevance of all project data.
- Decision-makers as well as private potential users are often not adequately provided with the necessary capacities and/or are characterised by non-comparably advanced technological standards. Some level of capacity building is required for common interests to be pursued effectively.

In sum, there is a great need to bridge the digital and knowledge divide by consolidating the capacity of both institutions and local-level users to actually manage the technical implications of accessing, integrating, up-dating, and adding local value to geo-information that is used in decision-making. Specific regard must be given to the local and sub-national as well as regional and/or global levels in the provision of on-the-job training, the development of integrated databases, model development, networking, and remote sensing testing and interpretation.

Please provide a brief description of the relationship of the Partnership/Initiative with the objectives of Agenda 21 as well as relevant goals and objectives of the United Nation Millennium Declaration:

The Agenda 21 document released at the Rio Summit in 1992 recommended the use of remote sensing and geographical information system (GIS) technologies for coordinated, systematic, and harmonised collection and assessment of data on land cover and environmental conditions, and especially for monitoring degradation. Two specific actions related to land cover assessment were listed among the UNCED priority requirements: bridging the data gap, and improving the availability of information.

FAO and UNEP have taken a lead in harmonization of land cover classification terms and their definitions¹ as have other international organizations, e.g., the IGBP and various conservation foundations. In continuation of their efforts and as another step towards development of a global, harmonized land cover classification and mapping strategy, FAO and UNEP have embarked on establishment of a Global Land Cover Network cooperative programme (GLCN). The objective of the GLCN will be to provide direction, focus and guidance for harmonization of land cover mapping and monitoring at national, regional and global levels. Access to important source imagery to facilitate this process has been aided by several initiatives and agencies within the U.S. including TM imagery in support of the Global Observation of Forest Cover (GOFC) and the Millennium Assessment project.

The overriding and most important objective of this cooperative programme is to increase the benefits from the international land cover projects to developing countries within the broader goal of improving Decision-Support-Systems (DSS) within agriculture and natural resource management. These countries, and local-level users, urgently need more reliable and current land cover information for sustainable development and management of their natural resources as was highlighted at the recent *Geospatial Applications to Support Sustainable International Agriculture* workshop at the USGS-EROS Data Centre (May 19-31). See more at: <http://edcsw3.cr.usgs.gov/ip/gassia.html> Opportunities are being undertaken in this partnership to:

- develop an enduring networks of users, trainers, and providers that have the capacity to use these new technologies effectively for the benefit of developing countries;
- establish resource networks among developing countries' experts and specialists from the developed world who can support capacity-building in Africa, Latin America and elsewhere;
- enhance the capacity of national agricultural research systems (NARS) and international/regional agricultural research centres such as the CGIAR Centres to provide backstopping and technical support in the arena of geospatial technologies, to partners within their regions of endeavour and competency,;
- increase the emphasis on enhancing data access, distribution, and applications testing, development, and deployment, using systems of interoperable data standards for common access and application as well as future assessments, monitoring and modelling (prediction);
- more effectively integrate real-time and periodic satellite data products with local and regional geospatial datasets used in decision-making both from biophysical as well as socio-economic arenas of research and application,
- provide increased timely access globally to datasets, tools and other analytic products via both Internet as well as other "transition" distribution mechanisms such as CD's.

The present partnership initiative particularly aims at contributing to 1, 7 and 8 Millennium development goals focussing on most significant components of poverty alleviation, environmental sustainability and functional reasons toward the development of a global partnership for development.

¹ In 1994 FAO and UNEP started a joint *Initiative on Standardization of Land Use and Land Cover Classification Terminology*; following with projects such as *Africover* and the *Global Forest Resources Assessment* by FAO, the *UNEP Global Resource Information Database (GRID)*. Furthermore, FAO organized an Expert Consultation on *Harmonization of Forest-Related Definitions* in January, 2002.

Expected results:

Please provide a brief description:

An approach to developing networks of specialists and regional centers for sustainable applications will be implemented. A solid framework for institutional involvement and data sharing with an emphasis on relevant applications will be developed. The approach will emphasize regional and global mapping and monitoring initiatives with particular attention given to developing countries in Africa and Latin America. We will harmonise mapping and monitoring approaches in a manner which enhances local ownership and creative input and continues to lead to informed decision-making related to sustainable management of land and water resources, strengthening food security, and improving environmental protection.

Specific targets of the Partnership/Initiative and timeframe for their achievement:

1. Establish a user-community network for environmental, agricultural, forestry, natural resources, and socio-economic data monitoring and management for sustainable development;
2. Improve the access to and availability of reliable, standardised, and interoperable data and applicable information on global environmental, land cover and natural resource systems in a geo-referenced manner;
3. Facilitate the exchange of experience and training between data producers and users and nurture a network of peers that bridges developed and developing countries;
4. Build/consolidate capacity through technological transfer and on the job training, as well as the application and testing of the acquired know-how and established networking in actual planning and management pilot projects.

The above specific targets, which are to be considered as triggers/foundations for long-term sustainable development processes, are to be achieved within a three-year time frame.

Coordination and Implementation mechanism

Please provide a brief description of expected coordination/implementation mechanism of the Partnership/Initiative.

Establishment of a coordination unit for networks of mapping and monitoring initiatives, in support of sustainable development decision-making.

The coordination and implementation mechanism of the Partnership/Initiative will insure the following functions:

- the establishment of the network center,
- the involvement and coordination of all relevant stakeholder inputs, needs, perspectives,
- assist in the building of spatial data infrastructure (SDI) particularly at the national level, including
- enhancement or creation of geospatial services for data handling and exchange (GISD, OGC, EIS-Africa), and IAO/IUCN, CESIA, CSE

- enhance access and archiving of data products through strengthening of cooperative networks of distributed systems and data portals which have redundant back up,

Direct involvement of diverse data and technology resource providers is anticipated, such as GISD, GSDI, Africover, AGRHYMET, IUCN, SECOSUD, EROS Data Center, NASA, NOAA, etc. IAO/IUCN, ESRI, SKE, EUROGI, ESA, CESIA, CSE, TELESPAZIO, EURIMAGE etc. But, **involvement of users must be primary**—problems and issues that affect real places, people and cases in developing countries--not technology--must be the driving force behind this public-private alliance.

Users of many types will be included, see some of partners now involved in GISD = <http://www.opengis.org/gisd/> . For example, CISD, FAO, IAO/IUCN, UNEP, EDC, regional remote sensing and agricultural research centers, NARS, NGOs, governments, and local user-groups) will facilitate implementation of “model/pilot” activities that enable more timely and easy access to geo-information as well as to standardize data acquisition and management. This will be based on ToRs developed with the involvement of users of various types from global to local (IAO/IUCN to local-level user-groups of farmers, private sector, civil society).

Other activities envisaged include:

- Development of a procedural and methodological framework to ensure the systemic management of information, inter-sectoral integration toward the environmental conservation and sustainable resource use, and monitoring of the networking process (IAO/IUCN, USGS-EDC)
- Technical support relevant to legislation and regulation for adoption of methodologies for the production, management and exchange of data, the development of D-bases and standardization of agriculture and forestry information (FAO, USGS-EDC, US Forest Service, IAO/IUCN, UNEP, GSDI,)
- Policy promotion, reform, coordination, training and institutional support in the broader “geo-information” arena to foster/enable legal, regulatory, and practical access by civil society and private sector to higher quality information, data, information and communications technologies (ICTs), and hardware/software essential for open and transparent.
- Empowerment of civil society as well as research and educational community to increase their capacity to utilize tools, technology and geospatial information/data that enhances decision-making in sustainable development with a focus on agriculture, natural resource management, health, poverty reduction, economic growth, trade, disaster mitigation and governance.

Arrangements for funding

Please describe available and/or expected sources of funding for the implementation of the Partnership/Initiative (e.g. donor government(s); international organization(s)/financial institution(s); foundation(s); private sector; other major groups, etc.):

This will be a true “public-private” alliance or partnership in which all participating entities will contribute both direct as well as in-kind financial, material, technical and human resources according to each one’s capacity and according to an agreed-upon “division of labor” and workplan. Sources, types and timing of resources to be provided by differing partners will be worked out at an implementing “Stakeholder Conference” to come shortly after WSSD in Johannesburg in late 2002. A plan will be developed and then implementation will follow with

frequent re-evaluation and correction of goals and objectives.

In addition to better coordination of existing funded activities, new resources will be marshaled from both private and public sources. The principal conveners of this Stakeholder Conference will be USAID—GISD from the U.S. and DGCS – IAO/IUCN (Italy) in collaboration with UNEP/FAO. Other potential partners will be encouraged to participate and to coordinate their activities with this initiative. The proposed DGCS initial contribution is of EURO 2.000.000.

Arrangements for capacity building and technology transfer

Please include information if the Partnership/Initiative provides for training, informational support, institutional strengthening and/or other capacity building measures:

As indicated above, among the Partnership Initiative contributions, will be a particular focus on capacity-building and training, know-how and technological transfer, institutional strengthening, and users' capacity building. These capacity-building activities will build upon existing project activities already in place. See some of the existing activities and initiatives listed on the websites at the end of this document. We will NOT attempt to duplicate existing efforts that are working, but rather focus on strengthening existing capacities; new capacities, if needed, will be planned and implemented in close cooperation with the user countries and communities in the target developing countries.

Please also provide here a brief description of expected arrangements for technology transfer .

Expected arrangements for technology transfer include:

- the establishment of a methodological and procedural framework inclusive on development of regulations, standardized protocols, and research methodologies,
- on-the-job training in partnership pilot projects,
- inter-institutional cooperation and sharing via face-to-face meetings as well as use of ICTs (Information and Communication Systems)—use of Distance Learning Systems and Virtual Laboratories,
- archiving of remotely sensed imagery and building new access points and portals,
- processing of near real time data and creating new applications and access points,
- developing and testing applications of remote sensing and GIS data for national and local-level user needs,
- improvement of regional Science and Technology resources and institutions applying geospatial technologies in sustainable development and decision-making,
- promoting activities that increase access to data, tools and geo-information products to civil society and the private sector,
- develop and coordinate production of needed framework datasets that serve multiple user groups using inter-operable standards, particularly focusing on national and regional-levels,
- cooperate with the private sector, i.e. through standards bodies such as the OGC (Open GIS Consortium) to better engineer interconnected methods of sharing data and other tools, hardware, software and telecommunications products using internet-based and mobile technology tele-communications systems (Location-Based Services).

- Strengthen capacity of national-level educational and research institutions, e.g. universities and regional remote sensing and agricultural research centers in developing countries, to better provide technical backstopping, training, and outreach to users of new tools, products and applications.

Links of Partnership/Initiative with on-going sustainable development activities at the international and/or regional level (if any)

Please provide a brief description:

Close collaboration and linkage with a number of ongoing regional and global “geospatial information” initiatives as well as environmental conventions will be pursued, e.g. UNFCCC, UNCCD, the Millenium Assessment, and research projects focused on measurement of regional land cover change (e.g. CARPE, LUCC, IGBP, LPA, CCAD, MIOMBO). The goal will be to more effectively coordinate with existing projects to enhance data access and decision-making as well as research—we will strenuously attempt to reduce duplication of effort and increase the value-added of multilateral and bilateral investments in Science and Technology transfer. Close coordination will be done with current initiatives facilitating “integration” and building of SDIs (Spatial Data Infrastructure) and NSDIs (National Spatial Data Infrastructure)—this means we will work closely with the GSDI-6, UNGIWG, and Global Map Initiatives, as well as the many national and regional initiatives such as SISEI in Africa or IGDN in Latin America. This particular initiative will highlight current activities being implemented by Africa-EIS, SISEI.NET, Africover, USAID/EMIS, AEGIS/GASSIA, CCAD, GISD, FEWSNET, GSDI, IGAD, ADIE/PRGIE the ACCESS Initiative led by WRI, the USAID Leland Initiative, and others in Africa and the Caribbean and Central America.

Monitoring Arrangements

Please describe expected arrangements for monitoring of progress in the implementation of Partnerships/Initiative after it will be launched at the WSSD:

(e.g. frequency/modalities of preparation of progress reports; electronic updates, news-letters, etc)

The involvement of reference institutions e.g. UNEP, FAO, IAO/IUCN, GSDI, , UNGIWIW, will ensure adequate monitoring standards and effectiveness of modalities to be developed later. The specifics will evolve in the course of the project implementation. Annual reports of activities, successful achievements, and difficulties encountered will be disseminated to all participants and described via the web as well as other methods of dissemination, e.g. CDs. USAID/EGAT and DGCS/IAO/IUCN through associated partners in various regions and partner countries, will assist in providing coordination and linkage between public and private partners worldwide via the logistical support of partners and sub-contractors such as IFDC, EIS-Africa, OGC, GSDI, ICASA, CGIAR/CSI, AGRHYMET, CSE, and others as needed, etc.

Other relevant information:**Implementation plan sustainability**

It is envisaged that once the networks have been set up, their functioning will become a part of normative work programme in each partner institution, support for sustainable coordination will be provided, and exchanges among developing and developed country counterparts will increase. Harmonised mapping products of global and regional projects will be available for global negotiation processes at high ground resolution, compatible with applications at country level, such as the land use planning, assessment of deforestation and other environmental degradation, impacts of natural disasters, etc. New applications will be developed to address sustainable development practices and problems as defined by users in developing countries from local, national regional and even global perspectives. The focus will be on “public-private” partnership building that considers social, economic as well as environmental sustainability. The long-term goal of this partnership, is to facilitate a transition to more effective utilization of what the research community refers to as “sustainability science” within the realm of decision-making and decision-support-systems, in all arenas of social, economic and environmental management. See the book entitled: *Our Common Future*: U.S. National Academy of Sciences, National Research Council.

Selected Partner Web-sites:

<http://www.opengis.org/gisd/>

<http://edcsnw3.cr.usgs.gov/ip/index.html>

http://www.fao.org/sd/index_en.htm

<http://www.unep.org/dewa/>

<http://www.ifdc.org/>

<http://www.afr-sd.org>

<http://www.uneca.org/>

<http://www.esri.com>

<http://www.gsdi.org/>

<http://www.wri.org/wri/>

<http://www.eis-africa.org/>

<http://www.skeinc.com/>

<http://www.sisei.net/>

<http://www.africover.org/>

<http://www.iucn.org/>

http://www.esteri.it/http://www.spatial-info.org/shtml/init_csi.shtml

<http://www.fews.net/>

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http://www.spatial-info.org/shtml/init_csi.shtml

<http://www.ecart.iao.florence.it>

<http://www.igadregion.org>

<http://www.esd.worldbank.org/reimp>

<http://www.agrhymet.ne>

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