



**UNITED NATIONS**

**ECONOMIC AND SOCIAL COUNCIL  
ECONOMIC COMMISSION FOR AFRICA**

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**Workshop on Spatial Data Infrastructures (SDIs):  
Technical and Institutional Components  
6-7 September 2001  
Addis Ababa, Ethiopia**

DISD/GEOINF/WS\_SDI/01  
October 2001  
Original: ENGLISH

**REPORT OF THE WORKSHOP**

## **OBJECTIVES AND ORGANIZATION OF WORK**

1. The Workshop was held at the Headquarters of Economic Commission for Africa (ECA) on 6 and 7 September 2001, concurrently with the second meeting of the Committee on Development Information (CODI2).
2. The objective of the workshop, an activity of DISD work programme for 2000-2001, was to provide to decision-makers, producers and users of Geoinformation, an overview of policies, concepts, standards and practices associated with the implementation and operation of SDI, with particular attention to metadata and clearinghouses. It aimed to increase the understanding of potential African officials and other stakeholders of their responsibility to develop SDI, and of how SDI is built, how it works, and why it is important.
3. The workshop was organized with the cooperation of the US Federal Geographic Data Committee (US FGDC), the US Geological Survey (USGS)/EROS Data Center, and the Global Spatial Data Infrastructure (GSDI), which provided the resource persons and training materials. The resource persons were: Ms. Kate Lance, Ms. Michelle Anthony and Mr. Alan Stevens.
4. The workshop was conducted in English with simultaneous translation into French.
5. The Workshop was attended by high-level officials interested in Geoinformation management, drawn from the public sector, academia, research institutions, etc, from Africa and abroad. The list of participants is appended to the report.
6. The workshop was organized in three successive parts, namely:
  - a. Eight instructional sessions on SDI concepts, institutional administration, standards, metadata catalogue, interoperability and web mapping, and discussion of needs for metadata, web mapping, standards implementation.
  - b. Four working groups, on:
    - Strategies for obtaining high level government support for NSDI,
    - National SDI organization/leadership/role of national mapping agencies
    - Realistic 'gains' that can be measured (Where to start? How to monitor progress?)
    - National websites for presenting harmonized data and information
  - c. Presentation and discussion of working groups results

## **REPORT OF WORKING GROUPS**

### Group 1: Strategies to convince policy makers about the need for NSDI

7. The working group considered:
  - a. All stakeholders in geoinformation in the country should come together and work as a team.
  - b. The group should identify the appropriate policy makers for NSDI implementation in the country.
  - c. Then identify the routes or the access to the policy makers as it relates to each country.
  - d. Create awareness among the policy makers on the need for NSDI:
    - Definition of NSDI
    - What each country stands to gain through the implementation of NSDI
    - Cost implications of the project
    - Concise

- Well-articulated
  - How it can be implemented
  - Human resource implications (status of existing personnel and training/re-training needs)
  - Hardware and software requirements
  - Any external (donor) assistance required.
- e. Find a role for the policy makers in the implementation process.
- f. Relate it to what is going on in advanced countries, e.g., US

Group 2: national organization / leadership / role of NMA's

8. Prior to making suggestions for advancing national organization/leadership for SDI, the working group heard candid accounts from several countries about their organizational structures and institutional challenges.

9. A number of countries already have formal inter-institutional committees, while others are in the process of initiating a national committee. So, there are examples that can serve as models.

10. It is suggested that ECA document the organizational structure and history of these varied initiatives – in more detail than the responses to the ECA questionnaire has already provided. It is especially useful to know about the status of the committees (number of ministries/agencies involved, names of ministries/agencies involved, structure of executive board, political level of participants, types of sub-committees, frequency of meetings, legal status of committee, whether it is a committee, commission, or some other entity, etc.).

11. It is difficult to make suggestions for national organization/leadership since each country has its own situation and history. Suggestions cannot be uniformly valid to all. In some countries, the national mapping agency is strong and has the ability to assert itself. In other countries, over time, donor support has gone to other sectors and the political status of the national mapping agency is less.

12. The working group members recognize that mapping today is multi-dimensional and multi-sectoral, so all agreed that a multi-institutional leadership approach is necessary. Institutions involved in geoinformation can have more “power” in the government together as a multi-institutional entity than they can have as one institution alone trying to bring about change.

13. The following suggestions were made regarding how the national mapping agencies can move forward in establishing a multi-institutional body:

- a. Identify key stakeholders, from within and outside of government, including data producers, data users and vendors.
- b. Bring key “players” together for a ‘general consensus’ meeting(s). Jointly plan for an inter-institutional workshop.
- c. Use an inter-institutional workshop as an ‘open forum’ for
- d. Identify the capabilities of stakeholders
- e. Identify challenges (in terms of leadership, politics, technology, and finances)
- f. Identify objectives for a national committee

14. No one institution should ‘impose’ itself on the others. The NSDI initiative should be perceived by all as a joint effort, with all institutions having a voice and role. Those institutions that are better prepared to devote their time and resources to the national effort should be called upon to do so.

15. Use the workshop to establish leadership for an inter-institutional committee.
16. Form an interim committee (ad-hoc), which will function using available resources from the agency or agencies providing leadership. Define roles of the committee and establish sub-committees if applicable for areas of particular interest.
17. Gradually work towards obtaining legal recognition of the committee. Some of the mapping agencies mentioned that they might have difficulty leading the inter-institutional effort without legal authority. It is understood that enabling legislation will take time to develop. However, the ad-hoc or interim committee still should function informally until an official sanction/policy has been achieved. In fact, enabling legislation is unlikely unless the ad-hoc committee demonstrates why a committee is valuable and cost-effective.
18. Interim committees, and committees that are already established, should communicate and share experiences with the ECA Secretariat and with sub-regional centers involved in training and capacity building. By sharing experiences, each country can learn from each other, and hopefully new ideas will evolve for effectively institutional organization for NSDI.

### Group 3: Realistic gains or indicators on NSDI development

#### 19. Indicators for ECA Secretariat

- a. Ensure that resolutions of CODI-I and CODI-II relating to GI are passed to the conference of ministers for approval.
- b. On approval, ECA should communicate to the members so that they can use them at the national level to start establishing NSDI.
- c. ECA should take the lead role in the establishment of the permanent committee on SDIs for Africa as already approved in the resolutions. ECA should set up a secretariat and operationalize the committee.
- d. The permanent committee should organize seminars and workshops at the national and subregional levels to sensitize policy makers and stakeholders on the development.
- e. ECA should constantly communicate with members on NSDI developments in the region and the rest of the world. ECA should take advantage of regional centres' relations with national contacts in order to facilitate information exchange between ECA and the member states.

#### 20. Country Level Indicators

- a. National mapping agencies (NMAs) should act as a lead agency to establish a technical working group (TWG) to start working on developing NSDI.
- b. As soon as ECA communicates the approval of CODI-II resolutions, TWG should write a special memo to the government for the creation of National Geo-Information Committee as an official government organ, based on the resolution. For countries that already have a committee, these committees should work to increase participation of other agencies that were not previously members. Progress can be measured by monitoring the level and extent of participation. Also, the strengthening of the legal status of the committee is another element that can be measured over time. The frequency of committee meetings could also be used as a measure.
- c. The committees should hold regular seminars and workshops to sensitize and energize stakeholders on SDI. These workshops can be documented and quantified over time to confirm that SDI awareness raising has increased.

- d. All countries should participate in the committee on Global Mapping according to their capabilities and set criteria. Category 'A' countries should assist less able countries to transfer skills and technology to fulfill their obligations. From now until 2 years from now, it will be possible to measure the increase in country participation.
- e. All countries should use the available GSDI gateway; they should also establish country servers as feasible and connect with the distributed global network through use of internationally accepted standards..
- f. Initiate policy and regulatory legislation.
- g. Participate in ISO committees and adapt their standards.
- h. Submissions to the Rio+10 summit (WSSD in Johannesburg in 2002) to emphasize GI activities.

## 20. Capacity Building Indicators

- a. Since regional centers serve an important role in capacity building, their activity can be measured by the extent to which countries are supporting the regional centers through contributions and member fees.
- b. Regional center activity can also be measured by the count of the number of training courses, workshops and seminar held by regional centers on GI.
- c. Training assistance from Global Mapping should utilize the sub-regional centers as their focal points. This activity can be monitored.
- d. ECA should coordinate the establishment of common curricula on SDI and help in the establishment of continental geoinformation networking.
- e.

## Group 4: The Installation of National Web Sites

### 21. Objective

- To conceive and carry out a national data base consisting of (at least) core data sets (base layers) upon which all GIS users rely.
- To provide access to the national data base to the general public through a National Web Site (hosted on one of more servers)

### 22. Structure of the Site

- a. 3 levels:
  - regional
  - national
  - institutional
- b. The ideal would be for each country to have its own server. Each country should strive for this. However, in the interim, some countries may have financial and internet connectivity constraints.
- c. Considering the difficulties that certain countries encounter, an alternative approach could be to offer space on a server maintained by the permanent committee for Africa that would be a gateway for African information through formal agreements.
- d. to adopt a standard scale
- e. set up of an institutional organisation and arrangements to support and maintain the national web sites.

### 23. The Integration of Data/Information

- a. Harmonisation of the of data utilising ISO standard
- b. Emphasis will be laid on the installation of Meta data
- c. a minimum of data should be defined for each country and the region

24. Examples of Applications

- a. The management of soil at the national level
- b. Answers to emergencies
- c. The management of environment and related subjects
- d. Improvement of Standard of Living

25. Conclusion : ECA and other partners would be expected to play the role of leadership in the installation of this Web site

**Program for CODI Seminar on SDI's  
Addis Ababa, September 6-7, 2001**

**Day One – Sept 6, 2001 (1:30 pm – 6:30 pm)**

- |   |   |  |         |
|---|---|--|---------|
| - | 1:30 – 2:00                               | Welcome and Group Introductions  | Stevens |
| - | 2:00 – 2:45                               | How NSDI functions in the U.S. (origins of FGDC, day-to-day administration, framework)                           | Stevens |
| - | 2:45 – 3:15                               | Core Components of Spatial Data Infrastructure   | Lance   |
| - | 3:15 – 3:30                               | Overview of Geospatial Standards   | Lance   |
| - | 3:30 – 4:00                               | Metadata Catalog Demonstration   | Anthony |
| - | 4:00 – 4:30                               | Break  |         |
| - | 4:30 – 5:00                               | Catalog and Metadata   | Anthony |
| - | 5:00 – 5:30                               | Interoperability and Web Mapping / Open GIS  | Anthony |
| - | 5:30 – 5:45                               | UNEP.net   | Wilson  |
| - | 5:45 - 6:30                               | Discussion of needs for metadata, web mapping, standards implementation (Who's ready? What are the constraints?) |         |
| - | <hr style="width: 10%; margin-left: 0;"/> |  |         |
| - | ~ 5 ½ hours                               |  |         |

**Day Two – Sept. 7, 2001 (8:30 am – 12:30)**

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|---|---|--|--|
| - | 8:30 – 10:30                              | Working Groups   |  |
| - |   | - a) national NSDI organization / leadership / role of NMA's                               |  |
| - |   | - b) strategies for obtaining high-level government support                                |  |
| - |   | - c) realistic 'gains' that can be measured (Where to start? How to monitor progress?)     |  |
| - |   | - d) national websites for presenting harmonized data and information                      |  |
| - | 10:30 – 11:00                             | Break  |  |
| - | 11:00 – 11:30                             | Presentation of Working Group Results  |  |
| - | 11:30 – 12:30                             | Discussion: cost-effective regional support to national initiatives (How to move forward?) |  |
| - | <hr style="width: 10%; margin-left: 0;"/> |  |  |
| - | ~ 4 hours                                 |  |  |

Al Stevens, US Federal Geographic Data Committee, GSDI Secretariat,  
[astevens@godi.org](mailto:astevens@godi.org)

Michelle Anthony, US Federal Geographic Data Committee, [anthony@usgs.gov](mailto:anthony@usgs.gov)

Kate Lance, USGS/EROS Data Center, [klance@usgs.gov](mailto:klance@usgs.gov)