
Results of a Workshop on Scientific Data for Decision Making Toward Sustainable Development: Senegal River Basin Case Study

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Presentation Overview

- Workshop Organization
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- Summary of Issues Raised by Workshop Participants
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Workshop on Scientific Data for Decision Making Toward Sustainable Development

- Convened by the Senegal and U.S. National CODATA Committees on 11-15 March 2002 in Dakar, Senegal
- Examined data sources and data handling in West African region, using the Senegal River Basin (in Senegal, Mali, Mauritania, and Guinea) as a case study to determine how S&T data are or can be better used in decision making related to sustainable development
- Sponsored by the National Science Foundation under Grant No. INT-0138247

Workshop Organizing Committee

- Abdoulaye Gaye, chair, Senegal National CODATA Committee, *co-chair*
- William Jobin, Blue Nile Associates, *co-chair*
- Oumar Talla Diaw, Laboratoire National de Recherches Vétérinaires
- Dialo Diop, Hôpital des Enfants Malades, Albert Royer CHU-FANN, University of Dakar
- William Parton, Colorado State University
- Madiaw Seck, Direction de l'Aménagement du Territoire
- William Sprigg, University of Arizona
- Larry Tieszen, EROS Data Center, U.S. Geological Survey

Statement of Task

- Identify all types of existing scientific and technical data and information sources relating to the Senegal River basin that have been created or collected by government, academic, and private-sector entities.
- Examine how these data and information sources have been used for research and for various types of decision making regarding the environment and people in the Senegal River basin area, using specific examples.
- Identify technical, scientific, management, and policy barriers encountered in both the creation of these databases and in their use for decision making. In identifying these barriers, consider what was done previously and what might be done in the future to overcome them.

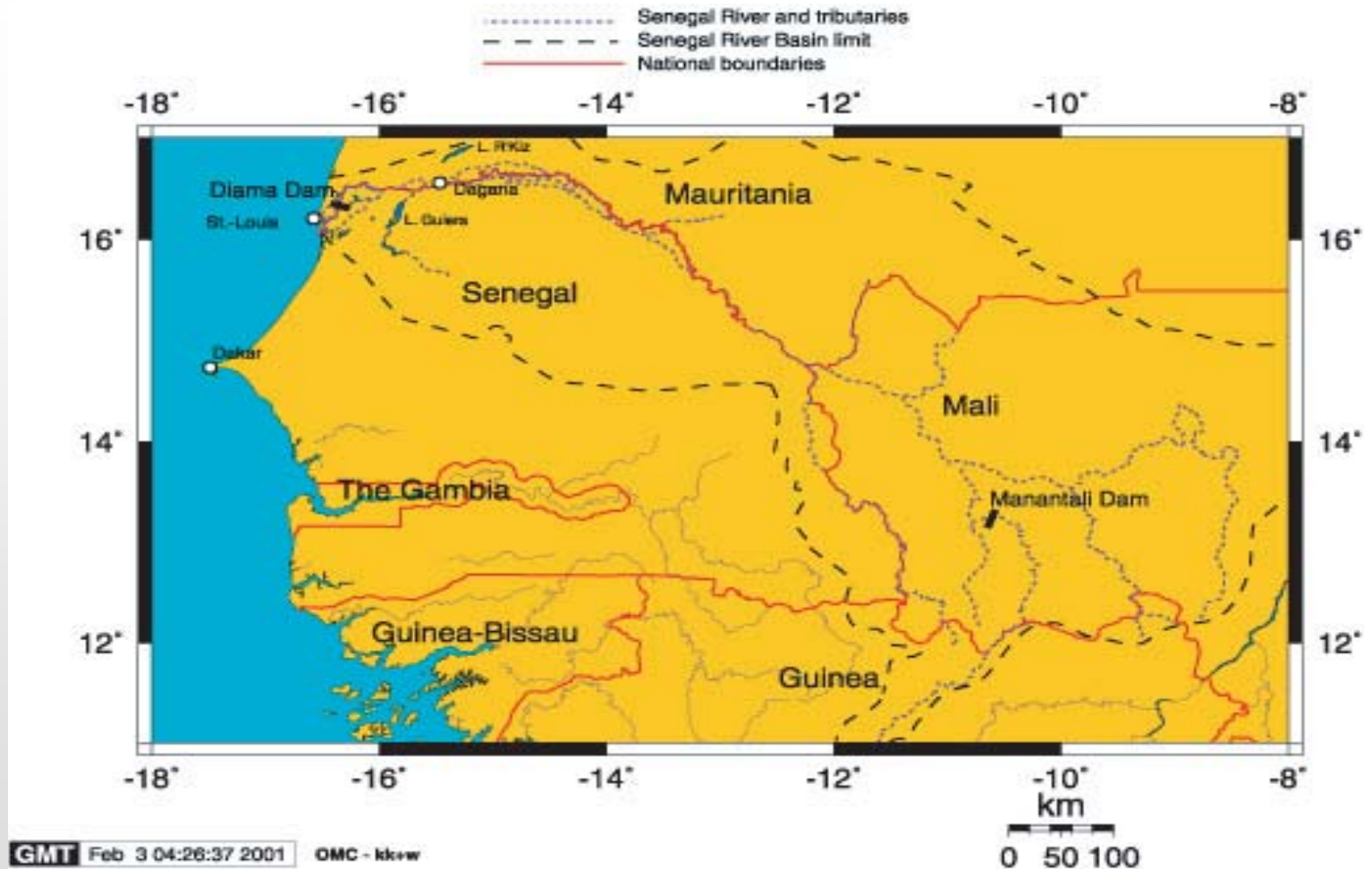
Workshop Objectives

- Focus on important issues relating to the management of scientific data for the sustainable development of the Senegal River area in the West African region.
- Bring U.S. and African experts together, not only to focus on the questions posed in the Statement of Task, but to develop linkages for future collaborations, both among the participating individuals and between the USNC/CODATA and other African CODATA Committees.
- Promote U.S.-Senegal and U.S.-African scientific cooperation, and to stimulate potential interest in other related initiatives in the area of S&T data activities and capacity building.

Key Features of the Senegal River

- Senegal River originates in Guinea, and is formed by confluence of the Bafing and Bakoye Rivers
- Bordered by Guinea, Mali, Mauritania, and Senegal
- SRB occupies approximately 300,000 km²

Senegal River Basin



Senegal River Management

- Late 1960s, Organisation des Etats Riverians du Fleuve Sénégal: Guinea, Mali, Mauritania, and Senegal
- 1972, creation of the Organisation pour la Mise en Valeur du Fleuve Sénégal (OMVS): Mali, Mauritania, and Senegal

Workshop Presentations

- Environmental Issues and Related Data
- Health Issues and Related Data
- Socioeconomic Issues and Related Data
- Issues Concerning Data for Decision Making about Dam Projects

Environmental Issues and Related Data

- Manantali Dam began generating hydropower in 2001 to Bamako, Mali
- Improvement of navigation facilities has not been implemented
- Irrigation development is slower than planned
- Dams reduced the variety of ecosystems in the valley
- Basin ecosystems are now threatened by decreasing productivity because of inadequate resource management, including deforestation, soil erosion, overgrazing, and desertification
- Reduction in species diversity

Health Issues and Related Data

- Increased waterborne diseases since the dams were constructed, including schistosomiasis, malaria, Rift Valley Fever, river blindness
- Proliferation of snails, which can be an intermediate host of human and animal trematodosis

Issues Concerning Data for Decision Making about Dam Projects

- *Dams and Development: A New Framework for Decision Making*, World Commission on Dams
- Using GIS to Identify Opportunities for Cooperation in International River Systems

Socioeconomic Issues and Related Data

- Atlas on Population, Food and Environment: SRB and CILSS Member countries. Focus on Burkina Faso, Mali, Niger, and Senegal.
- Presents the results of a temporal and spatial analysis of the relations between population factors, agricultural land use and performances, nutrition, and land degradation.

Scientific Data Issues

- The broader basin needs to be studied in its totality.
- Many of the SRB problems require very data-intensive studies.
- The issues and problems confronting the management of the SRB are multisectoral and multidisciplinary, and their resolution will require data and information from many areas and sources.
- There is generally a lack of baseline data, an inability to compare data, an inability to even find documents, and a serious time lag between data acquisition (e.g., stream flow) and availability.
- There are many foreign data sources that are relevant, as well as a wealth of information based on the experience in managing other river systems.

Technology-related Data Issues

- There is a wide disparity in technological capabilities for SRB-related data and information management and use.
- There is a need to have a standardized, modern, cartographic GIS as a tool to integrate the diverse data resources in support of various decision making and policy formation activities, both for the SRB and for many other applications and geographic areas.
- Other computational tools are needed to model and assess agricultural, environmental, and hydrological processes.

Institutional Data Issues

- Improving the coordination of existing institutions and projects is a key concern.
- The CSE might consider viewing its role as a clearinghouse for a national and regional spatial data infrastructure.

Policy Issues Regarding Data for Decision Making

- There is a need to take better advantage of the SRB data that are collected, and to establish early warning and vulnerability links.
- There is a role for the scientific community in the policy process.
- For data collection and analysis, as well as for the use of the data in decision making, there are political and ideological biases and barriers.
- Related to the previous issue is the need to involve all stakeholders, including the people from the communities directly affected, in the problem management and policy formation.

Workshop Results

- Summary report available online and in hard copy via the National Academies Press Web site at www.nap.edu. A French translation is also available from the USNC/CODATA.
- Information regarding the workshop can be found on both the U.S. and Senegal CODATA Committees' Web sites at: www7.nationalacademies.org/usnc-codata or www.codata.sn/16conf.htm