Overview

- Comprehensive overview of selected initiatives

- What do we mean by “global”
  - available for the whole globe
    - aggregated to coarse resolution
  - global coverage of finer resolution data

Agriculture and Food Security
Global Spatial Data Initiatives

GLOBAL SPATIAL DATA AND INFORMATION USER WORKSHOP
Development, Dissemination, and Use

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Organizers: CIESIN, FAO, UNEP, WHO, and CGIAR
Co-Sponsors: CODATA and SEDAC
Dates: 21–23 September 2004
Venue: Lamont-Doherty Earth Observatory, Columbia University, Palisades, New York, USA
Global Datasets

What do we mean by global data?
- scope of information
- geographical coverage
- spatial resolution
- temporal resolution
- data type (point, polygon, raster)
- degree of processing
- data sources
- target audience

Typology of “Global Datasets”

Target User Groups
- Global Modelers to Local Users

Scale / Spatial Resolution
- Globally-aggregated vs. Global Coverage

Temporal Dimension
- Real Time – Early Warning – Disaster Relief
- Long-term – LUCC – Change Detection
- Current Status or Static vs. Dynamic / Periodic Update
  - e.g. DEM’s vs. population growth
FAOSTAT
International Statistics: contains over 3 million time-series records
GeoNetwork

FAO’s Portal for collecting, hosting and sharing georeferenced thematic information.

Provides a common metadata structure and search facility through which geographic (map) outputs can be searched for and downloaded by users.

SIMAG:
Spatial Information Management Advisory Group

FEWS-NET

DEPHA:
Data Exchange Platform for the Horn of Africa
FIVIMS

Interagency initiative to promote information and mapping systems on food insecurity and vulnerability.

Provides social indicators, especially as they relate to food security, such as access to safe water and various poverty measures.

Partner in PovertyMap.net

GIEWS Workstation

Global Information on Early Warning –

Provides assessment of the current year against other known years – particularly in relation to drought.

Works thru GeoWeb and GeoNetwork

KIDS Toolbox:

Key Indicator Display System
ARTEMIS: Africa Real Time Environmental Monitoring System

Time series of satellite images (low resolution) showing the status of the growing season and vegetation development in Africa and Latin America – CCD, NDVI and SPOT-4

Agro-MAPS: Global Spatial Database of Sub-national Agricultural Landuse Statistics

Currently contains data on crop production, area harvested and crop yields, for one or more years for each country

Agro-MAPS Explorer – facilitate selective retrieval of data from the full Agro-MAPS database.
GLiPHA – Global Livestock Production and Health Atlas

Scalable overview of spatial and temporal variation of quantitative information related to animal production and health, through the combination of maps, tables, and charts.

Data themes included are:
- biophysical
- socioeconomic
- livestock population
- livestock production
- animal health
- trade

GTOS – TEMS – Terrestrial Ecosystem Monitoring Sites

Directory of sites collecting long-term data on geo-physical variables.

About 300 indicator variables.

Also allows users to map where stations are in terms of, for example, agro-ecological zones.
The Latest Situation

17 September 2004: More swarms form in the Sahel.

Despite control operations, the situation is deteriorating in West Africa where the first generation of summer swarms is forming in southern Mauritania and Niger. As large numbers of late instar hoppers bands are present throughout the region, new swarms are expected to occur in the coming months.

ReliefWeb is a project of the United Nations Office for the Coordination of Humanitarian Affairs (OCHA).
FAO Nutrient Response Database

Spatial referenced database of nutrient response experiments.
AQUASTAT: FAO’s Information System on Water and Agriculture

Comprehensive information on the state of agricultural water management worldwide

Many maps of water resources available, e.g. Global Map of Irrigated Areas
Global Land Cover Facility
University of Maryland
Develops and distributes remotely sensed satellite data and products concerned with land cover from the local to global scales.
27,475 Landsat scenes
• orthorectified (georeferenced)
• 1990 and 2000
GeoCover
• georeferenced
• mosaiced
• Mr. Sid format
MODIS NDVI
GeoSpatial Science for a Sustainable Future

CGIAR – CSI
Consortium for Spatial Information

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The CGIAR Consortium for Spatial Information (CGIAR-CSI)

A global network of research laboratories applying geospatial science and technology for international sustainable agricultural development, natural resource management, biodiversity conservation, and poverty alleviation.

http://csi.cgiar.org

CSI Objectives

- Coordinate and integrate CGIAR geospatial efforts
- Strengthen the Centers’ capacities to apply Geo-Spatial Science
- Share and disseminate methods, tools, experiences,
  - within the CGIAR system,
  - with national / NGO partners,
  - globally via online access.
- Further development of global databases:
  - sustainable development,
  - agricultural research
  - natural resources management
Strategic Initiatives

Six high priority areas identified,
with their respective coordinating centers:

- Coordinated data management and tools (IWMI)
  - ICT/KM Project
- Geographic dimensions of crop varieties (CIMMYT)
- Impact assessment and policy research (IFPRI)
- Natural resource degradation (ICARDA)
- Integration, training, capacity building, with NARES (CSI)
- Poverty mapping (CIAT)
  - PovertyMap Project

GASSIA Workshop
Follow-up: GASSIA – Africa (March 2005)
CGIAR-CSI Regional and Global Datasets

Preprocessed SRTM DEM Data – 90m – GeoTiff – 5 Deg Tiles

CGIAR-CSI GeoPortal
MultiCenter MapServer and Data Sharing Platform

– CGIAR-CSI GeoPortal,
  - A central access point CGIAR geo-spatial data and tools.
  - GeoSpatial Data and Spatial Tool Sharing Platform

– CGIAR GeoSpatial “InfoFinder” – Meta-data inventory
  - Full set of metadata for CGIAR geospatial data
  - Facilitate dissemination of GPG’s

– CGIAR Multi-Center MapServer - GeoPortal
  - Assemble and make available a selected set of geospatial datasets for non-expert users
  - Demonstrate advanced ICT/KM spatial analysis capabilities,
  - Multi-Center analytic capability based upon a distributed database architecture.
GeoSpatial Info-finder

Significant Gaps

- Farming / Production systems
  - “LCCS” type hierarchical classification system
  - small farms methodology
  - dis-aggregation of the “mixed farming” category

- Global Irrigated Areas Mapping
  - spatial disaggregated country stats
  - actually mapping (e.g. remote sensing)
  - accounting for small irrigation systems
Most Significant Gap

**Missing Link:**
- Capacity at the National / Local Level
- Perceived demand at both ends of the user spectrum
- Allow national partners to manage their own resources

**Bridging the “GeoSpatial Digital Divide”**
- Creation of a viable, sustainable, and healthy, two-way interactive data exchange and information flow across scales

Geospatial One-Stop E-Gov Initiative

Operating Philosophy:

Two-clicks to the data.

We’re still not there, but this is where we should be headed.
Thank You...

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