**Agro-MAPS**

A global spatial database on sub national agricultural land-use statistics
Status of available data - 1

Insufficient agricultural land use information needed to examine national, regional & global issues

TOPICAL ISSUES

• Food security & poverty
• Land degradation
• Climate change
• Policy formulation
• Land use planning
• Investments in sustainable agriculture
• ..

Millennium Ecosystem Assessment
Status of available data - 2

Regional/ global data

- Crops: FAOSTAT; IFPRI
- Forests: FAO (FRA)
- Water: AQUASTAT, U. Kassel, U. Frankfurt?
- Cultivation intensity: NASA
- Eco systems: USGS
- Protected areas: UNEP-WCMC
- Land cover/use: FAO(Africover); USGS; IFPRI; SAGE; LUCC; MA; GLC2000; Global Mapping;

Shortcomings: ± limited coverage / number of classes; non-standard definitions; insufficient information on management aspects; insufficient detail; modelled data
Agricultural land use

**How?**
Management: inputs, technologies

**Where?**
Location & spatial extent

**What?**
Objectives: Products, services

**Why?**
eg. reasons (biophysical, socio-economic,..)

**When?**
Timing of operations

**How much?**
Quantities: areas, products, ..

Major characteristics of agricultural land use

*Versus* Land cover... the observed (bio)physical cover on the earth’s surface *(LCCS, 2000)*
Agro-MAPS database contents

**What?**
Objectives: Products, services

**Where?**
Location & spatial extent

**How much?**
Quantities: areas, products, ...

Statistics aggregated by **sub-national** administrative districts.
- crop production
- area harvested
- crop yields

Major contents of the Agro-MAPS database
Contributors to Agro-MAPS

- Global data base; sub national; geo-referenced;
- Pooled contributions
## Compilation - tabular statistics

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- **FAO codes**
- **barley**
- **area harvested**
- **Spelling; name changes**
- **redistricting**
- **Boundary file codes; SALB**
- **production**
- **Missing; not available; zero; validation vs FAOSTAT**

- **Data from diverse sources; IPR issues**
- **Harmonization; accuracy!!**
Compilation of boundaries

- Differences in 2nd level boundaries from different secondary sources
- Boundary disputes
- Coding scheme
## Matching statistics to boundaries

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**Challenge:**

Find the right map!
Subnational vs national statistics

Crop distribution - Maize

Statistics aggregated by **57 Countries**

Statistics aggregated by **5690 Administrative units**
Status of Agro-MAPS

Countries for which data are contained in Agro-MAPS

121 - admin 1
60 - admin 2
Status of Agro-MAPS

121 - admin 1
60 - admin 2
Status of Agro-MAPS
Status of Agro-MAPS

The map illustrates the status of Agro-MAPS across different regions, with varying shades indicating the number of crops (1-8, 9-16, 17-26, 27-47) or indicating no data.
Status of Agro-MAPS

Admin2
Number of crops
- 1 - 6
- 7 - 11
- 12 - 19
- 20 - 27
- No data

Agro-MAPS
Data organisation

statistics

shapefiles
Agro-MAPS Explorer

A tool for browsing the Agro-MAPS database

Search & output parameters
Admin1; maize; production
Most recent data; shapefile
On-line query & data access

CD-ROM publication: all regions - mid 2005

Interactive query & display of maps

Download data

Agro-MAPS site
Test site
Users guide

Interactive query & display of maps

Maize, Area Harvested (HA), Most recent

Millet, Area Harvested (HA), Most recent

to magnify an area click on the map

to see a value click on the map

Surrounding Countries

Agro-MAPS
Introduction Maps Tables Graphs

Country: Senegal
Layer: Senegal Admin 2
ITEM: Millet
Year: Most recent

Millet, Production (MT), Most recent

CD-ROM publication: all regions - mid 2005
Applications of Agro-MAPS data

Indicators
• land degradation
• Millennium Development Goals
• State of land and water resources
• Global ecosystem assessment

Land use/ farming systems mapping
• spatial distribution of major food crops
• district level land use/ farming systems characterisation

Food security
• famine early warning

Climate change
• impact of climate change on food production

Land degradation
• areas of risk to land degradation
• soil fertility assessments
Applications of Agro-MAPS data

Indicator analysis - (e.g. monitoring progress - MDG Goals)
Goal 1: Eradicate extreme poverty & hunger
Goal 7: Ensure environmental sustainability

TOPICAL ISSUES

• Food security & poverty
• Land degradation
• Climate change
• Policy formulation
• Land use planning
• Investments in sustainable agriculture

SELECTED INDICATORS from Agro-MAPS

• Potential for expansion of agricultural areas
  - ratio of cultivated to cultivable land
• Potential for intensification
  - Ratio of harvested to cropland areas
  - Ratio of cultivated land to fallow land
  - agricultural land under irrigation
• Sustainability
  - arable and permanent cropland area (the cropland area used for food production) (UNCSD indicator)
Land degradation assessment

Macro-economic policies
Growth in population, income
Land use
Land tenure
Poverty
Natural disasters

Driving forces

Pressures

Reponses

Impacts

State

Rising demands
• Agriculture sector: products / inputs
  - over grazing
  - nutrient mining
• Waste disposal

Poverty & migration
Reduction in products & services
• Carbon sequestration
• Water quality; biodiversity
• Habitat destruction

LADA project

Macro-economic policies
Land tenure policies
Conservation/ rehabilitation
Early warning systems
Investments

Ecosystem Approach
Relationships: DPSIR
Decision making tool

Agro-MAPS data
Zones at risk to degradation

Comparison:
- Soil suitability - Results of agro-ecologic studies
- Agro-MAPS data on actual land use

GAEZ
Cultivation potential for rain-fed grain maize production (intermediate input level)
Characterization - Farming systems

11. Agro-pastoral millet/sorghum
8. Cereal-root
7. Root crop
2. Tree-crop

Irrigated areas

Agro-MAPS: major crop combinations

Farming systems & poverty study, 2001

Appropriate investment strategy?
• Expansion; intensification;
• Off-farm income; abandon agriculture
Avian flu

chickens

ducks

rice production

Agro-MAPS site
Test site
Users guide
More information ...