Quick scan

Geodata For Agriculture And Water In Kenya

AgriProFocus

Presentation Outline

- Background of agriculture in Kenya
- Major challenges to the agricultural sector in Kenya
- Government policy and program responses in agriculture
- Information suppliers in Agriculture
- Challenges of spatial information supply in Kenya
- Opportunities for use of geo-spatial information in agriculture

Background

Kenya total area - 575,000 km²

- 16% - high and medium agricultural potential - adequate and reliable rainfall – above 1000mm.
  - 80% of human population
  - Horticulture, industrial crops, crop agriculture, intensive livestock production - nearly 75% of milk production
- 84% - Arid and Semi Arid Lands – rainfall below 1000mm
  - 20% human population
  - 80% of the country's livestock and 65% of wildlife.
  - Pastoralism, extensive livestock production, agro-pastoralism – drought resilient/tolerant crops

Importance of agriculture

- Employment - 80% of Kenya's population – agricultural value chains – production, marketing, processing
  - Generates 18% of formal and 60% of informal employment
  - 24% of Kenyan GDP directly, and 27% with agro-processing
  - 65% of total exports.

Challenges In Agriculture Sector

❑ Over reliance on rainfed agriculture - 93% - increased exposure to climatic risks

❑ Rapid population growth - pressure on arable land – soil degradation

❑ Limited investment in irrigated agriculture - large scale farmers' 40%, smallholders - 42% and government-managed schemes - 18%.

❑ Dwindling land sizes
  ▪ Smallholders - 0.2 to 3 ha of land sizes - account for 75% of total agricultural output and 70% of marketed agricultural produce

❑ Limited diversification in agricultural production;

❑ Market and marketing challenges

❑ Poor and inadequate physical infrastructure – post harvest loss

❑ Limited financing for small holder agricultural activities

❑ Limited development and exploitation of the livestock sector

❑ Poor agronomic practices

Government Policy And Program Responses

The government has various policies, programs and activities being implemented towards agriculture. The policies and programs target

1. Increasing productivity

2. Commercialization and competitiveness of agricultural commodities and enterprises

3. Food security

4. Developing and managing key factors of production – land resources, water resources, forests, other inputs .

Information Suppliers In Agriculture

Several spatial data suppliers and consumers too – along the agricultural products value chain. Data format may be digital or analogue

- Private

- NGO

- Central government

- International or regional research organizations,

- Financial institutions

- Telecommunications industry

- Universities e.t.c……

Some of the platforms used - web, radio, mobile platforms, desktop

Challenges of spatial information supply

- ❑ Limited partnerships - data duplication and wastage of resources
- ❑ Spatial data - not geo-referenced limiting its use
- ❑ Data not in digital format – limits accessibility
- ❑ Administrative challenges on data sharing
- ❑ lack of policy on data sharing – no systematic way of access and sharing between the various players or data producers
- ❑ Limited awareness on data availability
- ❑ Limited updates on available data – methodology and purpose of initial data collection
- ❑ Datasets are in various formats and standards - data integration difficult and time-consuming
- ❑ Scattered and not connected – among various stakeholders
- ❑ No central repository or access point
- ❑ Low level of web connectivity and IT infrastructures, and human capital index
- ❑ Lack of knowledge to analyse metadata

Opportunities for use of geo-spatial information in agriculture

1. Weather based agricultural commodity insurance
2. Yield forecasting – multiple benefits
   - Credit facilities
   - Planning for input supplies
   - Financial resources access
   - Customer identification for credit
3. Early warning – risk maps – pests, diseases
   - Insurance products
   - Risk mitigation
   - Adaptation planning
4. Market mapping and analysis – targeting markets
5. Mapping agricultural production potential

Conclusion

There are so many initiatives in the use of geo-spatial data in agriculture and food security, which is also the national government priority, hence the need to embrace the opportunities presented for use of geo-spatial information