



Overview of Agricultural Monitoring and MARD Activities in Vietnam

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Outline

1 Overview of Agriculture in Vietnam

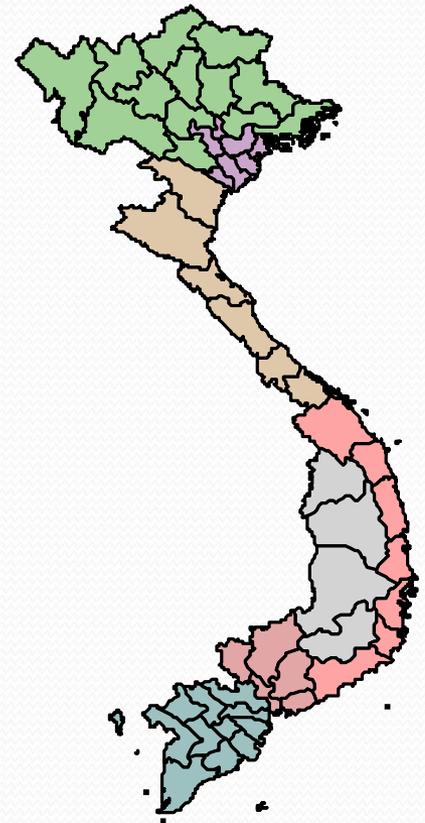
2 Statistics in Agriculture

3 Applying remote sensing in agri-monitoring

4 Expectation from this program

Overview of Agriculture in Vietnam

- Located: centre of Southeast Asia, borders China, Laos and Cambodia
- Natural area: 330,000 km²
- Coastline: 3,444 km
- Population: 96.4 million (2018)
- Number of provinces: 63



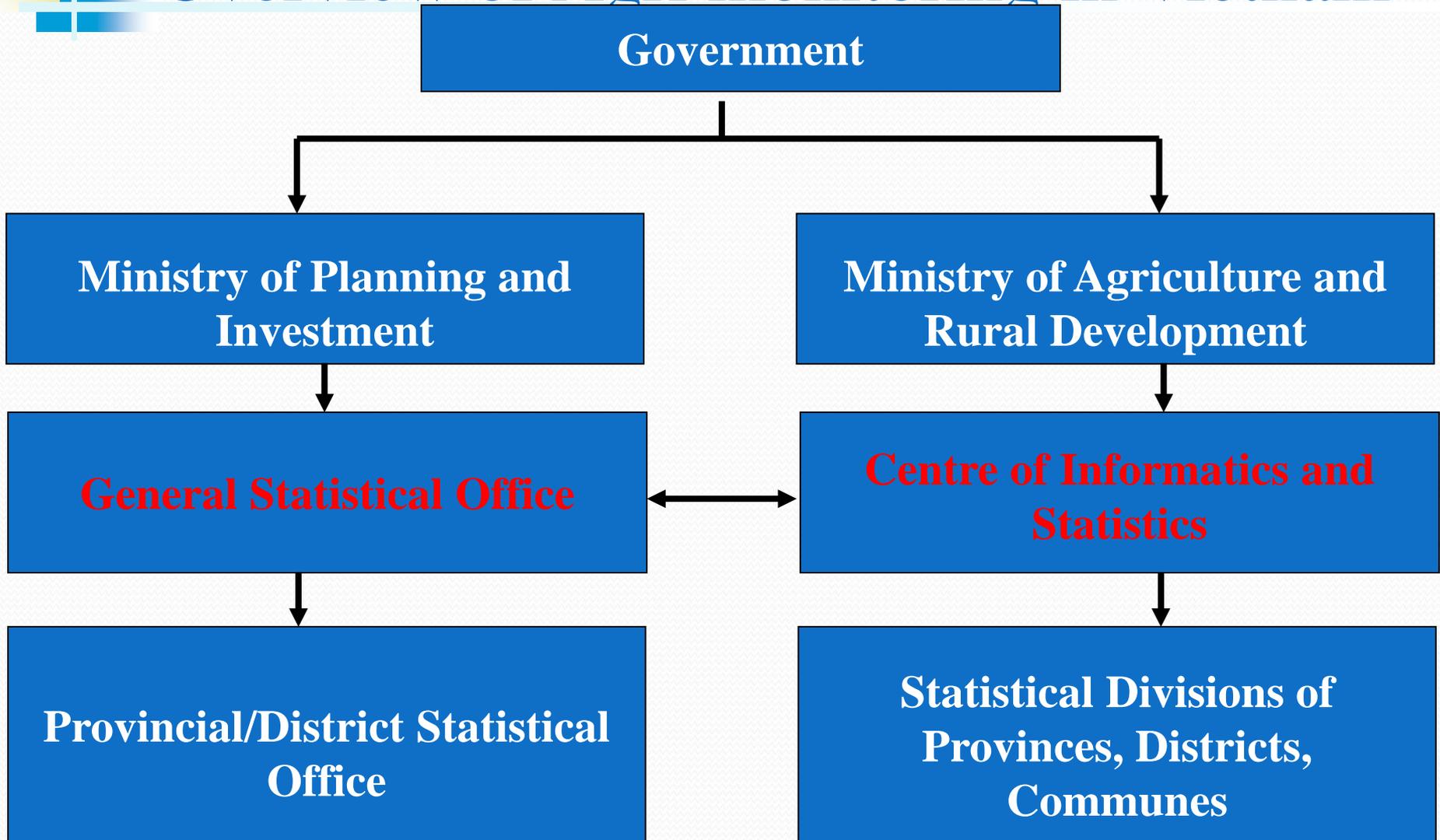
Overview of Agriculture in Vietnam

- Planted area for all crops in 2017: 11.53 MM ha, of which
 - Annual crops : 6.99 MM ha
 - Paddy area 4.14 MM ha
 - Perennial crops : 4.53 MM ha
- Forest area: nearly 15 MM ha
- Production of cereals
 - Paddy : 42.8 MM tons
 - Maize: 5.13 MM tons



Statistics in Agricultural sector

Overview of Agri monitoring in Vietnam





General Statistics Office (GSO)

- Department of Agricultural, Forestry and Aquacultural Statistic: Collecting, processing information on agricultural producing unit in all economic forms;
- Department of Commercial, Service and Price Statistic: Collecting and process information on agricultural price and trade;
- Statistic Informatics Centre: Analyzing data of survey on agriculture (agri-census).



Statistic system in MARD

- The MARD system of statistics concentrates on:
 - Monitoring monthly progress and seasonally estimate on agricultural production, especially the crop condition for the purpose of food security;
 - Collecting market prices for major commodities
 - Implementing Annually Survey programs
 - Releasing statistics yearbook.
 - Compiling data and information related to food security, poverty reduction and rural development



Center for Informatics and Statistics (CIS)

1. Statistics Division
2. Analysis and Forecast Division
3. Software and Database Division
4. Information Division
5. Network Management Division
6. Portal Management Division (Website of MARD)
7. Library Management Division

Functions and Activities of CIS

- Responsibilities: **Statistics, Information technology, Information and Library.**
- Main activities:
 - Implementing monthly report about agriculture production, market and export from many resources like administration reports by DARD, central technical department of MARD and Custom Office
 - Conducting surveys in agriculture, forestry and aquaculture
 - Publishing annual statistical yearbook of agriculture and rural development



Functions and Activities of CIS

- Publishing many agriculture and rural development bulletins, publication
- Managing information technology system of Ministry of Agriculture and Rural Development.
- Managing database of agricultural information system of Ministry of Agriculture and Rural Development

Method of collecting data

- Questionnaires
- Interviews
- Observation
- Sampling
- Historical methods (administrative report)
- Remote sensing (early stage)



Applying Remote sensing in Agriculture

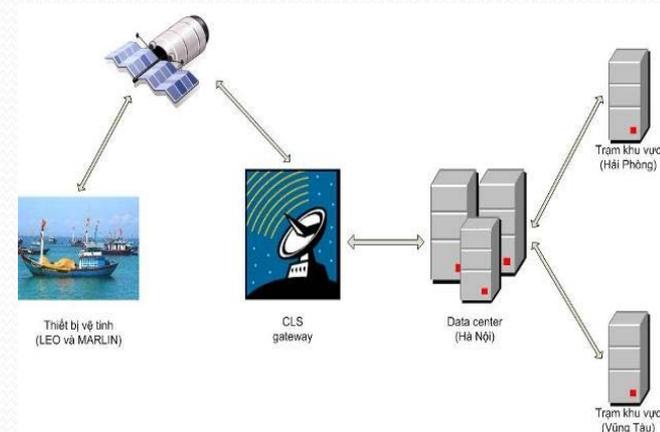
Fish management by MOVIMAR satellite

- Project of fish management by MOVIMAR satellite has been implemented for three years (2011 to 2013).
- Offshore fishing vessels of Vietnam have been equipped with information equipment such as satellite vessel monitoring system (MOVIMAR) Long range navigation with GPS (Integrated GPS), Coastal, Ship-to-Ship (ICOM) Auto storm.



Fish management by MOVIMAR satellite

- Three centers are operating database; processing remote sensing image in Hanoi, Hai Phong, Vung Tau;
- Supplying and installing 3,000 devices connected to satellites in 28 coastal cities and provinces;
- MOVIMAR system has promoted very actively in the management of fishing vessels today.
- In particular, the MOVIMAR system complies with the European Commission's recommendations in IUU management.



Crop monitoring (RIICE)

- The Remote sensing-based Information and Insurance for Crops in Emerging Economies (RIICE) Project
- National Institute of Agricultural Planning and Projection (NIAPP) – key implementor in rice monitoring for Vietnam, including rice mapping, yield forecast and product estimation.
- RIICE is providing new and cost-effective crop production monitoring technologies
- RIICE relies on two major components:
 - The earth observation data provided by Sentinel satellite
 - The algorithms and crop growth model developed by SARMAP, a Swiss company, and the International Rice Research Institute (IRRI)

Crop monitoring (RIICE)

- Rice domain:
 - Rice mapping at different stages;
 - Early yield forecast;
 - Early product estimation;
 - Damage assessment.
- Geographic domain:
 - RIICE's working in 10 provinces, including 8 in the Red River delta and 2 to other in the Mekong River.
 - RIICE looks at commune level as a basis for all analyses. Final outputs will be summarized at commune level.



FireWatch system in Vietnam

- FPD has developed and implemented the project "Early Detection of Forest Fires from MODIS Remote Sensing and Upgrading of Database Software" from 2007-2009.
- Firewatch Vietnam's is an automated system for early detection of hotspots across Vietnam from MODIS are routinely received at TeraScan receiving station located at 2 Ngoc Ha, Hanoi.



FireWatch system in Vietnam

- Developed on the basis of WebGIS, FireWatch Vietnam has the main functions as follows:
 - Provides real-time fire detection information detected from satellite data (the last 5 images) based on an interactive online map.
 - Fire alarm information
 - Online map services
 - Send notification/fire alarm information (SMS, Email)
 - Provides information on large firefighting areas with information on time, location, area of fire and field photos (LANDSAT satellite images) at a previous time and after fire.

Innovative Data Collection Methods for Agricultural and Rural Statistics

- International Asian Harvest Monitoring System for Rice (INAHOR) software developed by JAXA was tailored to pilot in Thai Binh, Vietnam.
- Both optical and radar satellite imagery used.
 - Time of project: 2 years (from 9/2014-10/2016)
 - The implementing agency: Center for Informatics & Statistics (CIS), MARD.
 - CIS's Activities: Field survey; Crop cutting; Farmer Recall Survey
 - The estimation results of the INAHOR software is very close to the other results by administrative statistical report done by GSO and CIS.

Advantages and Disadvantages

- Disadvantages:
 - Climate change
 - Terrain conditions and land fragmentation
 - Limited Budget
 - Methodology and technique
- Advantages:
 - Government policy: promote applying Remote sensing in Agriculture
 - CIS has human resources in IT, statistics and administrative statistic management



Expectation from this workshop

- To receive the support and collaboration from international organizations and countries.
- To exchange agriculture data with countries in the region as well as international organizations.
- To improve the basic knowledge and technique in applying remote sensing into agricultural statistics and crop monitoring.

Thanks for your attention