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Food security - GMFS

**GMES services element
Co-location 5**

8 March 2007, ESA ESRIN, Frascati, Italy



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Policy drivers

- Support the european policy on food aid and development
- Support international & global agreements such as WFS, WSSD, MDGs

Users

- +30 user organizations & networks
- SLAs with mandated organizations
(MoA Malawi, FMoA Sudan, CSA Ethiopia, FAO, WFP, JRC, MINAG Mozambique, DAPS Senegal, AGRHYMET, SADC, RCMRD,)
- SLAs include strong commitment from users (& resources allocation!)

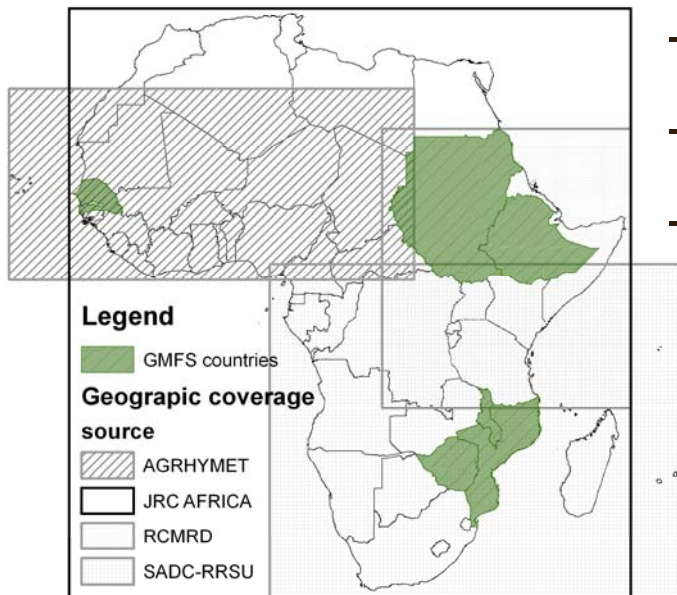


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Service portfolio

4 Service lines:

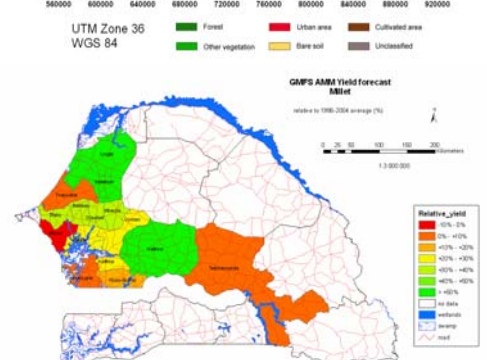
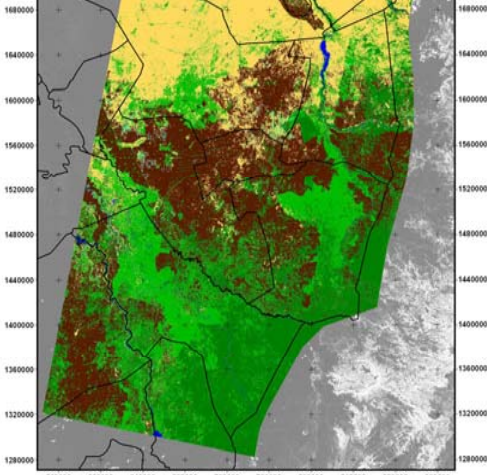
- Support to FAO/WFP CFSAM missions
- Early Warning service (continental)
- Agricultural mapping service (national)
- Yield assessment service (national)



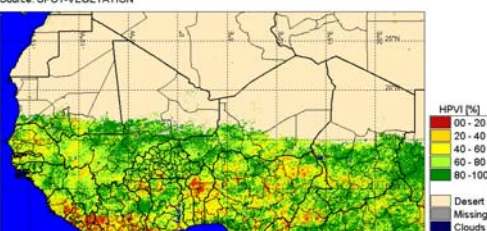
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Achievements

- Annual **crop mapping** Sudan, Ethiopia, Senegal, Malawi, Zimbabwe, (Mozambique)
- Yearly **Yield modelling & forecasts** in Senegal, Malawi
- Delivery of **Early Warning** service based on 10-daily indicators to national, international & regional users since 2003
- **CFSAMs**: 24 crop yield forecast bulletins supplied to FAO/WFP
- 3 regional **geonetwork** nodes established & integration with FAO catalogue
- 10 **training sessions** to help users integrate GMFS services in to their decision-making



Region: GILSS
 Period: February, 2007, Dekad 2/3
 Theme: Normalized Difference Vegetation Index (NDVI)
 Historical Probability VI (HPVI) = VPI
 Source: SPOT-VEGETATION





Global Information and Early Warning System

Mandate:

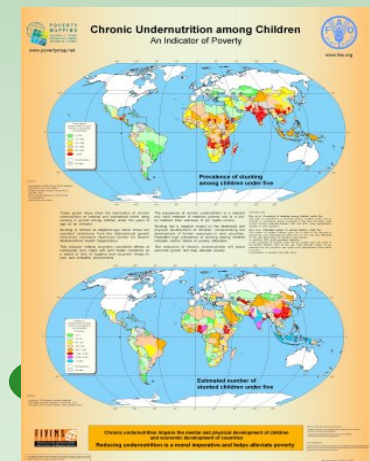
- Global & regional
- National/country level

Purpose:

- Global monitoring & analysis of food security (incl. MDGs)
- Early warning for potential food crises
- Emergency needs assessment and response

Resources:

- Major support from the EC/FAO Programme





Global Food Security Information and Analysis

Long- and short-term data needs:

- Environmental & agro-climatic conditions
- Natural resources (soil, water, rangeland)
- Crop and livestock production; prevalence of diseases
- Socio-economic; trade and markets; consumer prices
- Food intake; nutrition and health status, Demographics

Determinants of data quality:

- Timeliness & context relevance
- Resolution (disaggregation)
- Geo-referencing



GIEWS Workstation - Crop Monitoring

Welcome guest

PROJECT VIEW TOOLS LANGUAGES

MAP TABLE CHART METADATA

Change Geographic Area: Eritrea Log In

Layer Selection

Level 1 Datasets

Legend

Rasters

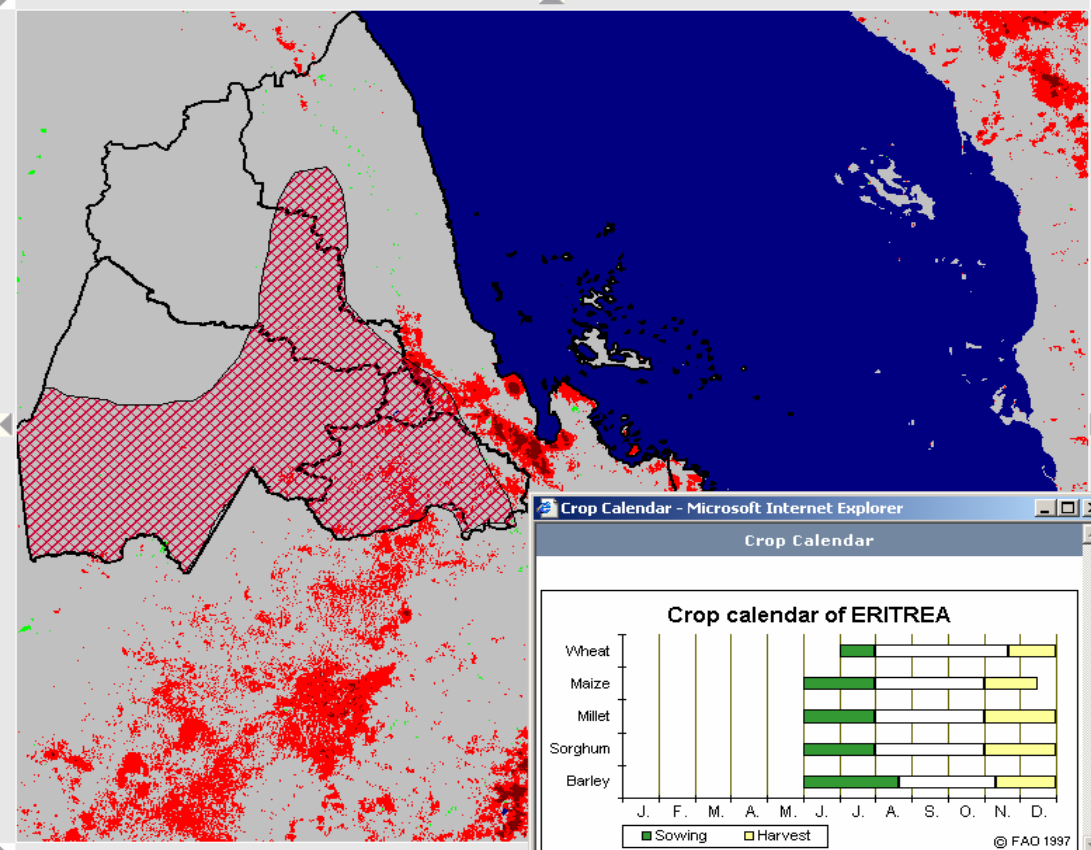
- Remote Sensing Products
 - SPOT
 - MAY 2006 dekad 2
 - MAR 2006 dekad 3 DY
- | | | |
|------------|-----|-----|
| Bare Soil | 37 | 59 |
| Sparse Veg | 60 | 74 |
| Light Veg | 100 | 119 |
| Medium Veg | 145 | 169 |
| Heavy Veg | 170 | 194 |
| Water/Mask | 210 | 229 |
| | 229 | 239 |
- | |
|----------------------------|
| Large Decrease (> -15%) |
| Small Decrease (-15%, -5%) |
| No Change (-5%, +5%) |
| Small Increase (+5%, +15%) |
| Large Increase (> +15%) |
- Water

Geographic

Level 1

0 94 km

Show All



Text

Reference Date: 10-May-2006

ERITREA (10 May)

The final estimate of the 2005 cereal crop has not yet been made available. However, tentative estimates indicate a crop of about 150 000 tonnes, about 15 percent above the average of the previous five years. Planting of the 2006 long cycle crops will start in the next six to eight weeks. On average, Eritrea produces only a fraction of its total food requirements and largely depends on imports.

Food Security Status

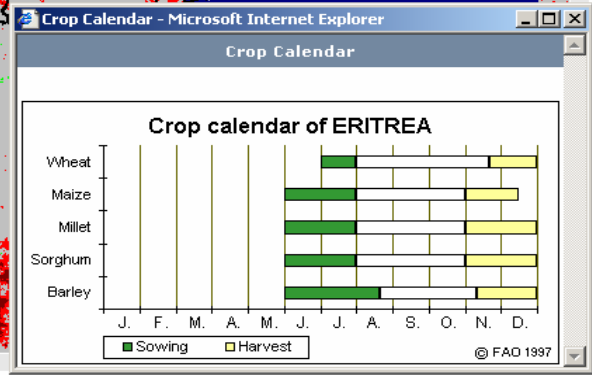
Reference Date: 2006-03-23

Type of Food Insecurity

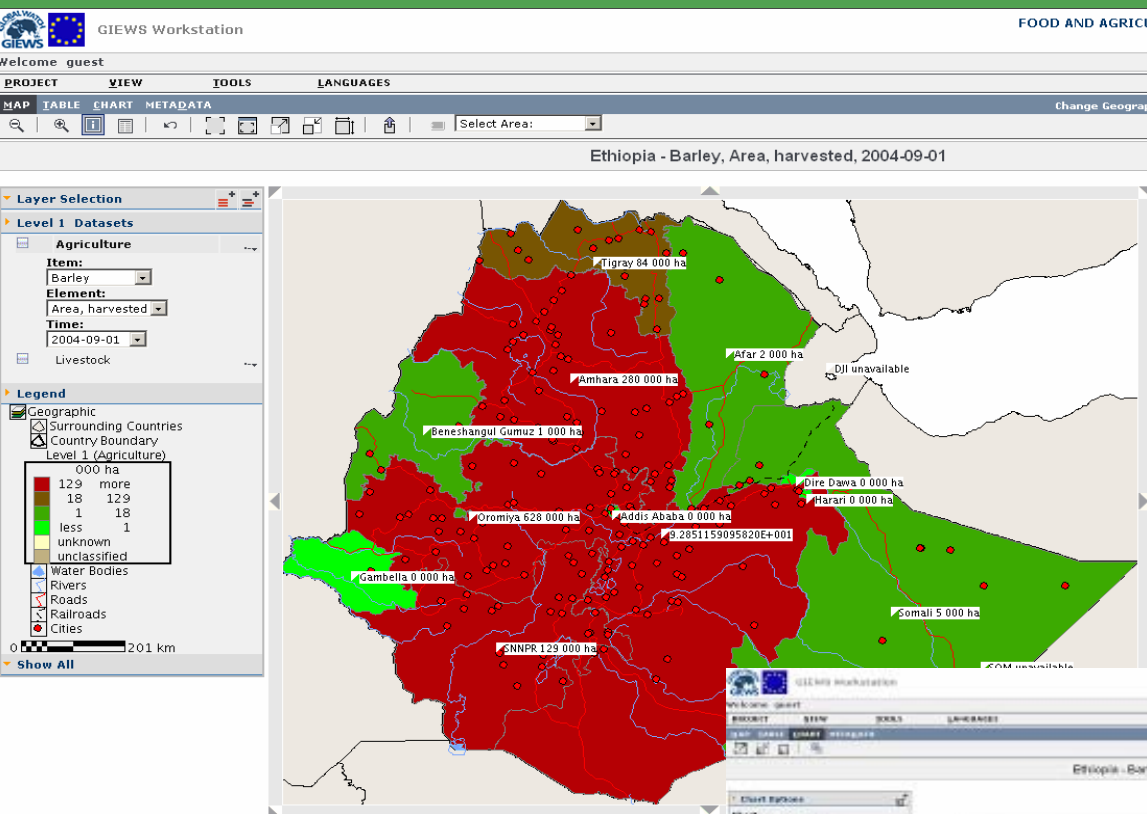
Exceptional shortfall in aggregate food production/supplies

Main Reasons

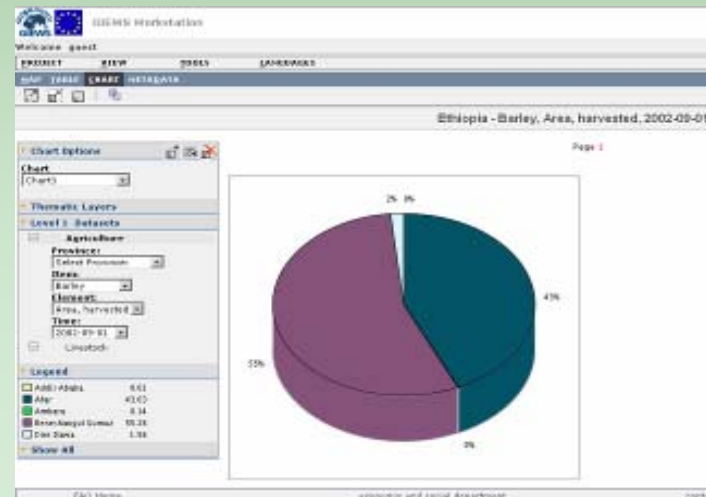
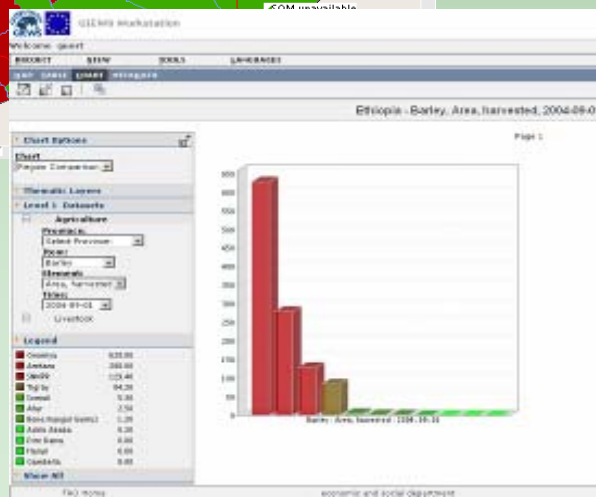
Drought, IDPs, returnees, high food prices



GIEWS Workstation – Economic Indicators



Province \ Time	2004-09-01	2003-09-01	2002-09-01	2001-09-01
Addis Ababa	0.20 000 ha	0.20 000 ha	0.10 000 ha	0.10 000 ha
Afar	2.50 000 ha			
Amhara	280.00 000 ha	410.00 000 ha	468.50 000 ha	491.30 000 ha
Beneshangul Gumuz	1.20 000 ha	1.30 000 ha	1.50 000 ha	2.70 000 ha
Dire Dawa	0.00 000 ha			
Gambella	0.00 000 ha			0.02 000 ha
Harari	0.00 000 ha			
Oromiya	628.00 000 ha	576.00 000 ha	601.60 000 ha	601.70 000 ha
SNNPR	129.40 000 ha	115.70 000 ha	116.90 000 ha	123.30 000 ha
Somali	5.30 000 ha	5.60 000 ha	17.00 000 ha	17.50 000 ha
Tigray	84.20 000 ha	90.30 000 ha	80.70 000 ha	88.70 000 ha



- Ag. Mapping
- Yield estimates
- Early warning
- CFSAM

Ethiopia

- Population ~75 mln
- Cereal/pulse production 12-20 mln tons/yr
- MoAg estimates > CSA est. by 25%
- Difference > food aid deliveries
- CFSAM in each of last ten years
- EC Project – support to FSIS... with both institutions, others



Bas: ETHIOPIA, Growing Season 2005, Site 1 & 2



CLASSIFICATION

The DEM of the Agricultural Basins is based upon the algorithm developed by...

DEM of Agricultural Basins is based upon the algorithm developed by...

The purpose of this map is to provide the agricultural basins...



Legend

- Water
- Agriculture area
- Agribusiness center

Background: 1:250,000 topo map

RGB

- Red: 8470_1
- Green: 8470_2
- Blue: 8470_3

DATA

DEM based on the only...

Background: Topographic map (1:250,000) of Ethiopia, Ethiopia WMO edge...

Class on the map only is based on the DEM (DEM) data...

Agribusiness center is provided based upon the classification of the DEM using...

Water information is based on the DEM (DEM) data...

The area of the map is provided by the government of Ethiopia, through the...



A map of Ethiopia with a red dot indicating the study area.

Scale

0 1000 2000

Projection: UTM Zone 37N

Map Date: 12 June 2016

GMFS

Geospatial Modelling Framework for Sustainable Development

- Ag. Mapping
- Yield estimates
- Early warning
- CFSAM

Zimbabwe 2004/2005

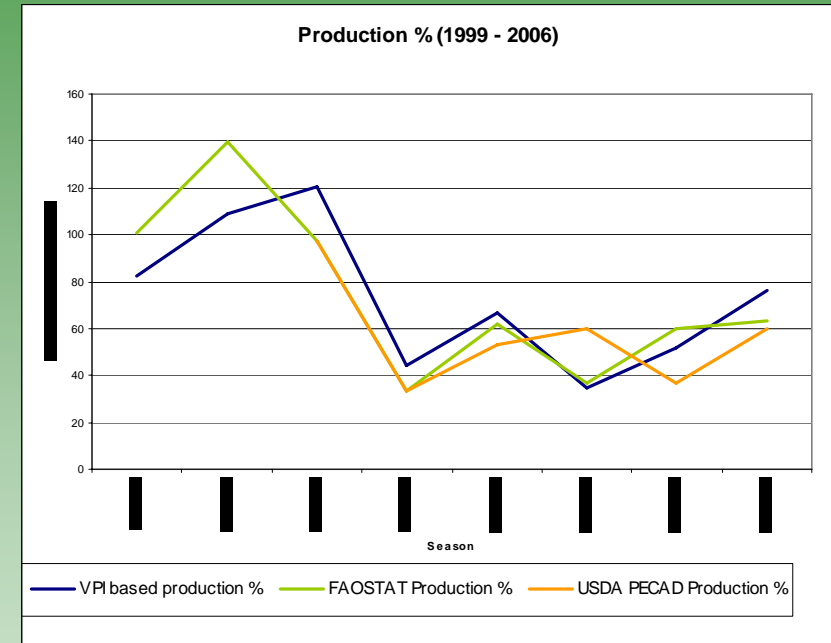
- Last CFSAM 2004/05 (interrupted)
- GoZ maize production estimate 2.4 mln tons
- FAO: cereals 951,000 tons (+/- 10%) published
- Utilization: 2.5 mln tons



- Ag. Mapping
- Yield estimates
- Early warning
- CFSAM

Zimbabwe 2005/2006 maize prod.

- FAO: ~1.1 mln tons
- USDA: 900,000 tons
- GMFS: 1.16 mln tons

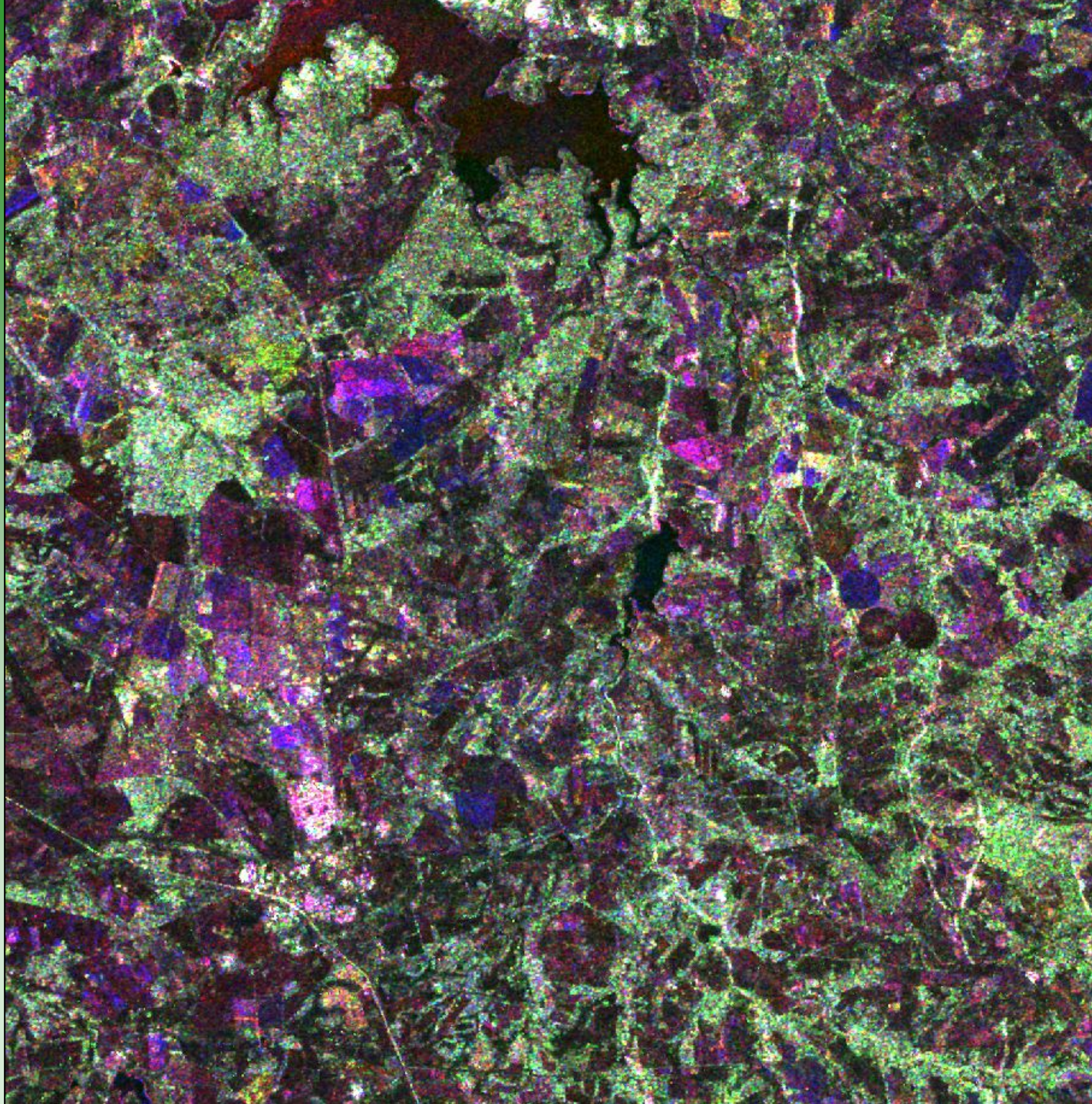


- 2006/2007 CFSAM requested by GoZ...



ENVISAT ASAR

Zimbabwe 2005/6



10 Oct 2005 (HH)

10 Oct 2005 (HV)

13 Nov 2005 (HH)

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Food Security Information services

- Driven by EU level policies
- Sustainability depends on EC funding (no subsidiarity issues)

⇒ GSE Food Security services are EC Core Services

How do they fit in the LMCS Global Component??

- LMCS Global Component is currently UNDEFINED
- GSE Food Security services can transfer into the LMCS global component depending upon how it is defined



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FP7 LMCS Global component: The way forward

- **Global** Component must include services at **regional/national/sub-national** scale.
- User Requirements must be specified by real users: FAO, WFP, REWU, NEWU, African Ministries of Agriculture, etc., users as **IG members**
- Annual **in-situ** fieldwork is essential for calibration & validation
- Users must be involved to maintain **service quality** and to promote building of **local capacity** (as required by EU development policy).

