
AGRICULTURE AND VEGETATION AT A LOCAL SCALE

**20 September 2005
Habay-La-Neuve, Belgium**

Carine Petit & Joost Vandenabeele
Earth Observation programmes



Have agriculture and environment been reconciled?



Welcome in the heart of the forest of Anlier

Natural park of “la Haute Sûre” and of the forest of Anlier is not a nature reserve

- 72000 ha – 6 villages
- In 2001, the Walloon government established the natural park
- Association of rural villages (low population density) to develop rural activities and land planning in a concerted approach to preserve the environment and the cultural heritage
- Aims at reconciling 2 opposite interests of ecology and rural development
- Natura 2000 candidate

Since 1997, environmental protection has been integrated in all sectoral policies of EU

- Half of Europe's land is farmed
- Over the past five decades, more and more intensive agriculture
- Agriculture is an industry and is a major source of pressure on environment
- Since the 1990s, reforms of the CAP have aimed at better balancing agriculture production, rural development and environment
- Since Agenda 2000, CAP has relied on two pillars:
 - market and income policy => **cross-compliance instrument**
 - sustainable development of rural areas => **Good Farming Practice** and **agri-environmental measures**

Agri-environmental indicators assess the interaction between agriculture and environment

- In order to implement good practices and to measure their success, it is necessary to develop means to assess them
- Provide quantitative information on the current state and changes
- Understand and monitor the linkages agricultural practices – environment
- Identify key agri-environmental issues of concern in Europe today
- Provide contextual information
- No validation, but checking the trends and the thresholds (suitable to the objectives of the agri-environmental measures)

Two projects have developed indicators

At European and national scales

- **IRENA** project (2002): Indicator Reporting on the integration of Environmental concerns into Agricultural policy).
- 35 agri-environmental indicators
- DPSIR (Driving forces - Pressures - State - Impact - Responses)
- Users: European Union Institutions, the Agriculture and Environment Ministries and policymakers in the Member States

At regional and local scales

- **SAGRIWATEL** project (2002-2005): Monitoring of Walloon agriculture with remote sensing
- Indicators for monitoring (including stress indicators), control and assistance to decision
- Users: regional and local authorities (agriculture and environment), farmers

What information can RS provide to CAP?

SPATIO-TEMPORAL DATA

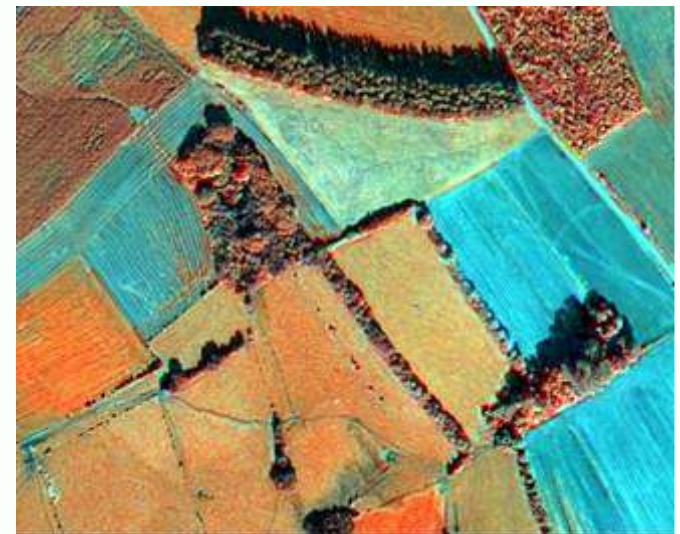
- Satellite or aerial
- Optical, SAR and hyperspectral
- Very high resolution to low resolution
- Every 15 min. to several days

ADDED-VALUE INFORMATION and MODELS

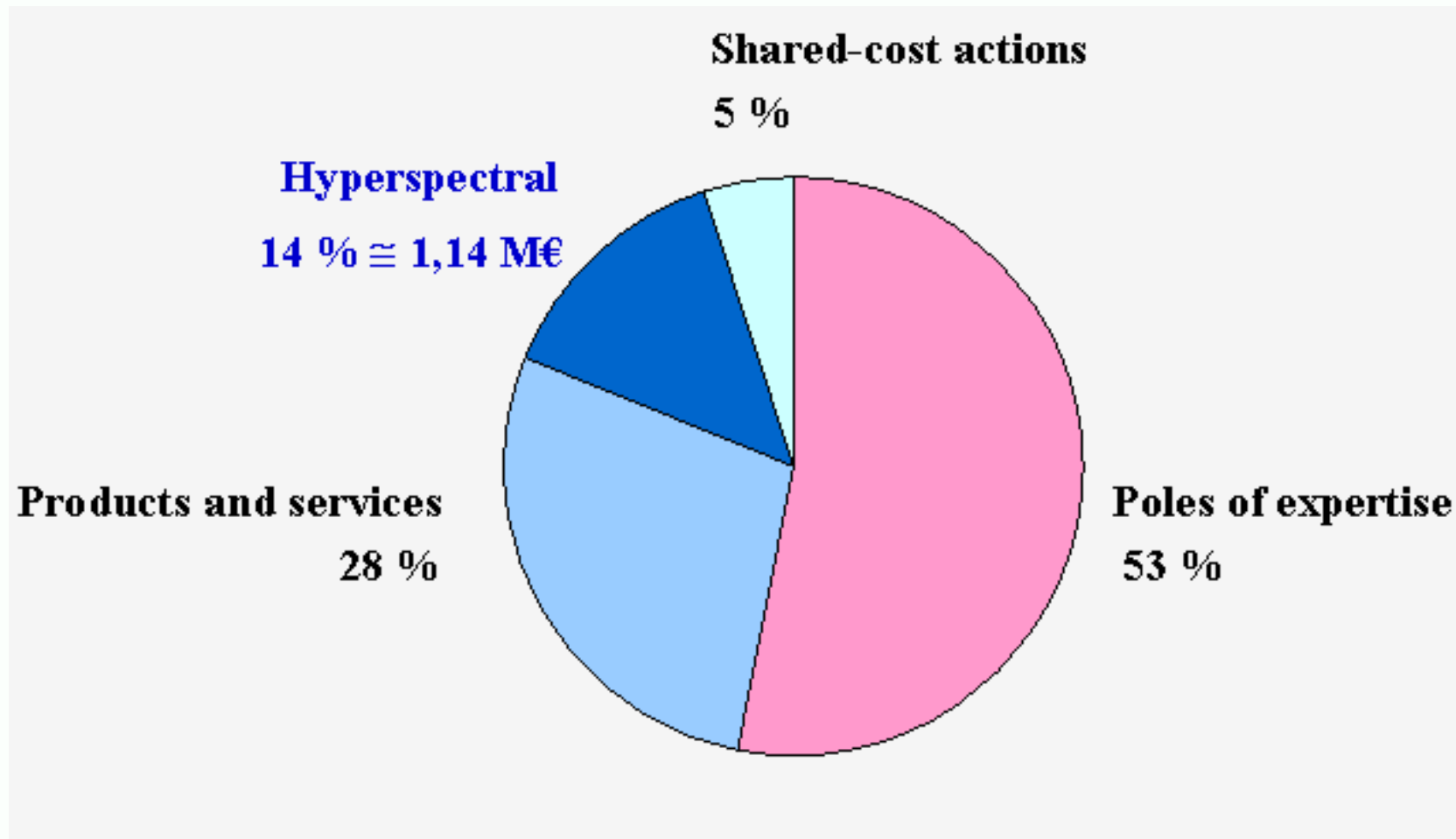
- Digital terrain models
- Acreage estimations of parcels
- Crop growth monitoring
- Crop and forest mapping
- Early stress detection
- Urban green vegetation
- Some agri-environmental indicators

The Belgian Science Policy supports two research programs in EO

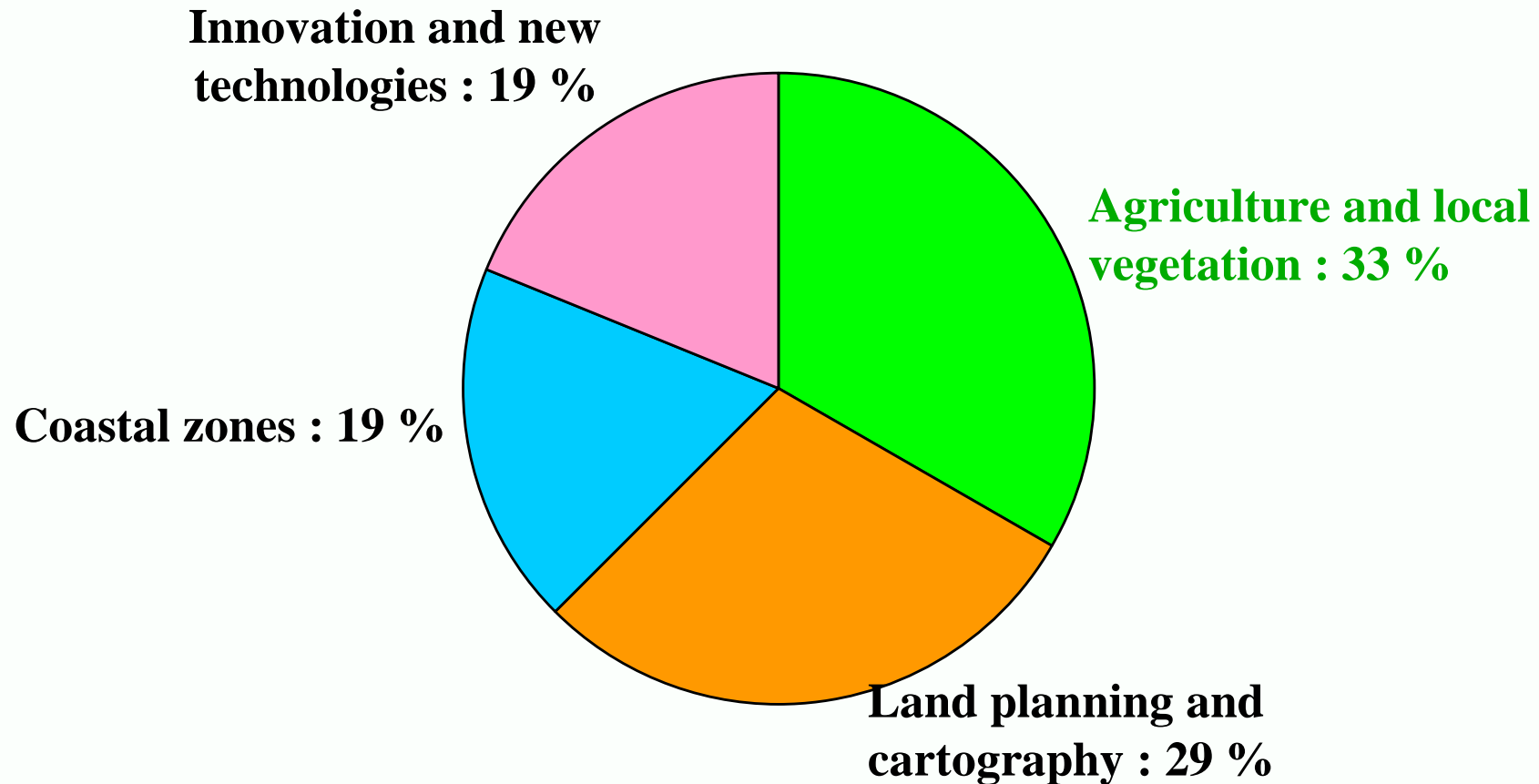
- **VG:** Scientific support for the exploitation of the VEGETATION instruments on board SPOT4-5
- **SR:** STEREO - Support to the Exploitation and Research of Earth Observation data
- Total budget: 14 MEUR
- 2001-2006



- **53% of the budget dedicated to basic research**
 - **28% of the budget dedicated to technology transfer**
-



Allocation of the budget between the four main thematic priorities of STEREO :



Programme of the day

Agriculture

- Support to control of direct aids
- Acreage estimation and crop growth monitoring
- Optical and radar remote sensing

Vegetation

- Early detection of stresses
- Forest and urban green mapping and monitoring
- Airborne hyperspectral images and VHR remote sensing

Agri-environment

- How to assess the impact of agriculture on environment?
- How help the farmers to develop their activity in a sustainable way?
- Can geographical information be useful to strengthen food safety and quality?



- Thanks to the speakers
- Have a look on the posters
- Have a very nice and fruitful day

- First shuttle at 5:30 pm
- Second shuttle at 6:30 pm
- Visit the castle and have a drink

