Earth Observation to support Agricultural Damage Assessment in Crop Insurance Schemes

Adascis Final Meeting – Brussels, 24 June 2011

The ADASCIS project, some conclusions and recommendations

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Content of the presentation

- Expected results
- Practical constraints
- Consequences for the project
- Key results
- Conclusions and recommendations

Expected results

- A relevant set of crop damage and risk indicators
- An agrometeorological and remote sensing database
- A decision support system

Practical constraints

- ✓The SIGEC data not available anymore
- ✓Limited series of RS archive images
- ✓The low spatial accuracy of national statistical data
- ✓Lack of precise delineation of agricultural areas affected by past calamities
- ✓Past calamities claims files that does not reflect a reality in term of losses.
- ✓Large list of possible indices linked to adverse meteorological conditions and crops

Consequences for the project

- ✓Analysis of crop damages has to be conducted at municipality level
- ✓New indices have to be developed for each new situation
- ✓Difficulties to relate the indicators to crop damage
- ✓Robust estimation of return periods are needed
- ✓Validation of the system was conducted using a semi-qualitative approach

Key results

✓A set of indicators and new indices based on EO and on reliable and independent databases.

✓A prototype of semi-operational crop risk and damage assessment information service to support the definition and the identification of calamity areas.

✓This prototype allows the calculation of risks maps

✓The pre-operational tool has been used to assess the extend and the intensity of drought during the 2011 crop growing season.

Key results

✓For the Calamity Fund, the pre-operational information service provides a relevant web based tool for the identification of calamity areas.

✓For the national of regional authorities, the tool provides information for crop monitoring.

✓For the insurance sector, through provision of data and information, the tool may help to create new insurance products

✓For the scientific partners the outcomes are an improved version of BCGMS to facilitate the realisation of agrometeorological bulletin and the combination of the crop indices for crop damage assessment.

Conclusions and recommendations (1)

✓New data validation sets have to be collected

✓New crop specific indicators should to be developed

✓Research on robust estimation of return periods of extreme meteorological events and related indicators (agrometeorological, remote sensing) have to be conducted.

✓Potentialities of new remote sensing sensors should be evaluated

✓Field truth should necessarily be collected in case of a new calamity

✓Public or private support is necessary to insure the maintenance of the information system

Conclusions and recommendations (2)

Main agricultural calamities subject to compensation in Belgium

(source SPF Economy)

Climatic event	Royal Decree	Number of requests introduced	Number of requests approved	Total budget (million Euros')	Average compensation per farmer
Drought 1991	18-Nov-92	420	Not available	1,6	3714
Drought 1996	1-March-99	1757	1656	9,2	5574
Heavy rains in October-November 2000	9-August-2002	1146	926	6,2	6695
Heavy rains in September 2001	11-Sept 2003	580	352	2,8	8097
Scolytes between 1st January 2000 and 1st July 2002		208	202	4,7	23416
Drought and Rainfall 2006	8 Nov 2007	4939	3344	17,2	5147

Total : 41,7 M€

Conclusions and recommendations (3)

Main agricultural calamities subject to compensation in Belgium

Key figures

Total cost of the compensations (16 years) :	**41,7 M€**	
Average compensation per year :	**2,6 M€**	
Total number of requests approved :		**6900**
Number of requests approved per year :		**431**
Average compensation per farmer :	**6055 €**	

Hypothesis : 5% of false requests detected per year (22)

130788 € saved per year

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Question and answer session