



Institute of Food and Resource Economics



WP5- Socio-economic, technology assessment and environmental impact

Place, date, unit, occasion etc.
Slide 1



Aims and objectives

The main objective of this work package is to assess the economic and environmental impact on:

farmers, markets and regions from implementation of information intensive management systems.

- to assess the likely acceptability of these systems among users and stakeholders.

Task 1 Farm economic management model

Task 2 Environmental impact and indicators

Task 3 Technology assessment

Task 4 Assessment of socioeconomic impacts on EU markets and regions



Participants in WP5

P5 University of Copenhagen UCPH, Denmark

P2 Centre for Research & Technology CRTH-ITEMA, Greece

P3 University of Aarhus AU, Denmark

P7 Leibniz-Centre for Agricultural Landscape Research ZALF, Germany

P10 Agrifood Research Finland MTT, Finland



Task 1 Farm economic management model

This task will include a model of farmers management of different input sources, treatment and information management systems (incl. precision farming systems) for a number of crop rotation systems and commonly produced crops in different European regions including:

- Wheat
- Rape seed
- Sugar beets
- maize other cereals or cotton

Based on a number of model farms designed for different European regions, we intend to integrate current advanced information systems, precision farming and robotic systems.

To optimise the farm economy - the model will allocate factor inputs to the farmers' different crops based on actual/expected prices of factor inputs and yield response



Task 2 Environmental impact and indicators

For each technical scenario at each site, a number of environmental indicators will be estimated including: nitrogen surpluses, pesticide use and fuel consumption for different strategies and technical scenarios.

Based on these systems we intend to compare the economic viability of different technologies compared with conventional systems according to expected future drivers such as changes in fuel prices

Environmental effects at the regional and EU-level are analysed and aggregated in terms of fuel, energy, fertilizer, and chemical costs (see also task 4).



Task 3 Technology assessment

In part 3 a survey and technology assessment will be conducted to assess the likely perception among users. This assessment will rely on interviews with relevant stakeholders and farm surveys in relevant regions.

Compliance with standards and legal requirements for control and safety systems for robotic and information intensive management systems will be assessed in cooperation with WP2.

The PF adoption surveys will be conducted and compared with existing studies and feed back from user groups.



Task 4 Assessment of socioeconomic impacts on EU markets and regions

In task 4 the socioeconomic effects will be assessed by using the FOI GTAP-model (global trade model and database) for a number of relevant farming systems.

The new and more efficient technologies are introduced to the GTAP with a change in cost structures and factor productivities are estimated.

By using the FOI GTAP model the national and regional socioeconomic effects of PF can be assessed using factor productivity scenarios and slow or fast dissemination of the PF to other regions.



Expected outcomes

In WP5 we will identify the consequences of different **future farm** scenarios at the farm level – in terms of economic yields and feasibility - and identify good management strategies in line with WP2.

We will identify the cost of different information-intensive farming systems for different scale capacities and compare with conventional systems.

Potential benefits related to these systems such as: labour savings, yields, fuel savings and higher work quality (accuracies) will be estimated and used to quantify the factor productivities.

Farmers' attitudes and perspectives for the new generation of farms and technologies will be assessed with farm surveys.

By using the FOI GTAP we can model the national and regional socioeconomic effects of information intensive and PF systems.

