SEVENTH FRAMEWORK PROGRAMME
KKBE-2007-1-4-14
Cost of production using FADN data

Grant agreement for: Small collaborative project

Annex I - "Description of Work"

Project acronym: **FACEPA**
Project full title: Farm Accountancy Cost Estimation and Policy Analysis of European Agriculture
Grant agreement no.: 212292

Date of preparation of Annex I: 2008-02-11 (revised 2010-11-05)
Date of approval of Annex I by Commission:

	List of Beneficiaries				
Beneficiary Number	**Beneficiary name**	**Beneficiary short name**	**Country**	**Date enter project**	**Date exit project**
1 (Coordinator)	Swedish University of Agricultural Sciences	SLU	Sweden	1	42
2[1]	Swedish Institute for Food and Agricultural Economics	SLI	Sweden	1	9
3	Institut National de la Recherche Agronomique	INRA	France	1	42
4	Université catholique de Louvain	UCL	Belgium	1	42
5	Istituto Nazionale di Economia Agraria	INEA	Italy	1	42
6	Johann Heinrich von Thünen-Institut	vTI	Germany	1	42
7	Landbouw-Economisch Instituut B.V.	LEI	Nether-lands	1	42
8	Corvinus University Budapest	CUB	Hungary	1	42
9	Estonian University of Life Sciences	EMU	Estonia	1	42
10	Ministry of Agriculture and Food Supply	MAFS	Bulgaria	1	42
11	Lund University	ULUND	Sweden	10	42

[1] The participation of beneficiary no. 2, the Swedish Institute for Food and Agricultural Economics (SLI) has been terminated of December 31, 2008. The responsibilities of beneficiary number 2 have as of January 1, 2009 been transferred to partner 1, the Swedish University of Agricultural Sciences (SLU). A new beneficiary no. 11, Lund University (LU) will assist SLU in some of the tasks

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1. Concepts and objectives, progress beyond the state-of-the-art, S/T methodology and work plan

1.1 Concepts and project objectives

In spite of the trend towards increased specialization which has characterized farming in many European countries, most farms still have more than one enterprise. Yet, standard farm-accounting information is typically restricted to aggregate or whole-farm input expenditures, without revealing production costs per unit of each enterprise's output. Obtaining information on the per-unit production costs for the individual enterprises, measured by so-called input-output or (preferably) cost-allocation coefficients, is particularly important, though, both from a business-management and agricultural-policy perspective. Specifically, farmers may need this kind of information for evaluating the performances of their individual enterprises, for deciding whether to expand or contract particular enterprises or to establish a new (discontinue an existing) enterprise. Moreover, information on enterprise-level costs of production may be helpful in preparing activity budgets, planning yearly operations, applying for operational loans, and analyzing alternative marketing strategies. Likewise, policy-makers may want to have access to such kind of information, as it would considerably improve their capability of properly assessing the consequences of agricultural policy and technology scenarios on the economic performances of different types of farms. Considering that the direct collection of enterprise-level information is difficult and requires costly farm surveys, alternative tools based on econometric techniques may offer an attractive alternative for obtaining reliable estimates of unit cost of production in agricultural at a significantly lower cost. A first purpose of this research project is to implement this approach to estimate cost of production using existing FADN databases at the EU and national member states. This would require to examining its feasibility in light of the existing methods to estimate cost of production in agriculture and its relevance to provide quantitative information to policy makers.

FADN data systems are a formidable source of information to study many facets of EU agriculture. Originally, the FADN accounting framework and its underlying data systems were used as a means to provide information on cost of production used to "predict" annual changes of the CAP support prices (i.e. known as the "objective method"). Furthermore, it has been increasingly used by academics and policy makers for other purposes such as conducting farm performance studies, etc…However, with the successive reforms of the CAP since the early nineties, we could wonder whether farm accounting data generated by FADN are still the most appropriate or are of the "highest quality" to conduct economic analysis on EU agriculture. This is a crucial problem which needs to be addressed and this is what this research project is intended to do by: i) "reviving" cost of production studies applied to several aspects of EU agriculture; and ii) showing how it is possible to conduct fruitful quantitative policy assessment analysis using FADN data. This effort will essentially be pursued using alternative farm-based models.

These two broad dimensions of generating cost of production for agricultural commodities in the EU – i.e. developing appropriate cost of production model and

relying on representative farm accounting data for EU agriculture – cannot be covered exhaustively by the following research proposal, but the following objectives can be fulfilled. More specifically, the proposed project intends:

- To address the usefulness and appropriateness of the present FADN data systems to measure cost of production for agricultural commodities.

- To study the feasibility of developing a "general" cost of production model for EU agriculture that is easy to use by practitioners and reliable in terms of generating relevant analysis for agricultural production and policy analysis.

- To test and implement this cost model in an EU context with the idea in mind that it can be applied on a large scale (i.e. several agricultural commodities and large number of member countries).

- To assess the relationship between cost structure and farm performance, farm technology, environmental quality and farm heterogeneity with FADN databases.

- To provide methodological improvements to the above "general" cost of production model

- To undertake the evaluation of agricultural policy measures using FADN data indicators.

Each one of the above objectives is addressed in detail in a set of work packages, which are described in the following sections. The proposed project is targeted to provide technical support and relevant quantitative information on costs of production in agriculture to policy makers and experts within the Commission. In addition, it is also expected that the various tools (models) that are developed in this proposed research project will: i) strengthen the Commission's capacity to estimate costs of production for a wide range of agricultural products; and ii) improve the quality and accuracy of impact assessment of CAP measures.

The expected outputs associated with the above objectives include the following:

- A review of the EU FADN system including: i) a special emphasis on its underlying accountancy framework and cost concepts, ii) an examination of its usefulness from a statistical point of view, and iii) an analysis of addressing and incorporating off-farm business activities.

- A review of experiences of estimating cost of production in the EU and other major agricultural producing countries (US, Canada and Australia)

- The development of a "general" (econometric) model used to estimate cost of production for major agricultural products.

- The application of the former model to several agricultural products (namely crop products, milk and pigs) across several member countries using FADN data

- An operational computer tool with user-friendly interface that can be used by relevant services of the Commission to estimate costs of production for agricultural commodities

- Extensions and further applications of estimating cost of production in EU agriculture to study: farm efficiency and the competitiveness of crop and dairy sectors in the participant countries.

- The development and implementation of alternative microeconomic models able to represent farm technologies and relative cost structure on the basis of data and information available in national FADN systems and EU FADN data base.

- Applications studying the relationships between the costs of producing commodities across the EU and its impact which agriculture exerts upon the landscape and natural environment (i.e. multifunctionality of agriculture).

- New methodological applications of the "general" cost of production of model aimed at capturing the diversity and heterogeneity of EU agriculture.

- The development and implementation of farmed-based models that use production cost estimates to evaluate various agricultural measures on agricultural, environmental, financial and socio-economic indicators,

The proposed project includes several activities (tasks) aimed at both specification and implementation of new tools (models), and the development of important (cost) data from a policy point of view. Some of these activities will provide interesting contributions to the subject areas covered by this research proposal. More specifically, the contributions of this project to the existing knowledge of cost studies in agriculture could be summarized as follows:

- A proposed "general" cost of production model that is built in a theoretically consistent way and estimated with recent powerful econometric procedures such as entropy and Bayesian techniques. This latter aspect is quite innovative due to its large scale application to many EU-member countries.

- The implementation of this former model in the form of a ready-to-use computer tool.

- An empirical and policy focus. The numerous empirical applications that will be conducted in this proposed project should provide policy makers with a wide range of tools and comparable quantitative information (cost) that can be fed into agricultural policy impact assessment.

1.2 Progress beyond the state-of-the-art

The development of this proposed project dwells on a steady flow of scientific and technical works conducted over the last ten to fifteen years in Europe, on farm accounting data and on the estimation of cost of production. Since more than thirty years the European Union collects economic data on agriculture. For a part these data are based on the information of individual farms in the Member States (FADN). For another part the data have a macro-economic nature like the Economic Accounts for Agriculture (EAA). These data are used on EU and national level for many purposes, for instance development and evaluation of farm policy, economic research and information. In 2002 a study on the consistency of the agricultural sector database was carried out for Eurostat. Special focus was given to the cost of production per activity. During this study it became clear that given the different nature of the data sources (Standard Gross Margins (SGM), EAA and FADN) it was first important to examine the definitions in more detail. Besides this it was important to have a view on the use and availability of other data in the Member States. For this reason around 50 experts in the 15 Member States were interviewed. Parallel to this examination the project team could make use of the study and results of a project of INRA to develop a model (FADN/INRA model) on the relation between aggregated costs of production and returns.

Innovative ideas face many hurdles to become successful implementations. This is also true in farm accounting and in Farm Accountancy Data Networks (FADNs). Therefore it makes sense to bring together the 'change agents', the persons that have a personal drive to change the content of their work and their organizations. For farm accounting and policy supporting FADNs it is appropriate to do this in an international context: this creates possibilities to learn from each other. By bringing FADN managers and data users in micro economic research together, feedback is fostered. It is with this background that the Pacioli network organises a workshop every year. This small but open network has become a breeding place for ideas on innovations and projects. Pacioli was originally a Concerted Action in the EU's Third Framework Programme for Research and Technical Development (AIR3-CT94-2456). After completion of the contract with the PACIOLI-4 workshop, the partners decided to keep the network alive at their own costs. The topic of the last (14th) Pacioli workshop, that was organised in Vught, The Netherlands, was “Changes in Farming and the Effects on FADNs”. Many farms and farming systems have seen important changes in recent years: new agricultural policies, more emphasis on direct payments, changes in labor markets, increase in farm size, and new businesses. In many countries taxation and accounting requirements tend to treat farms more and more in the same way as other small and medium enterprises. All these developments influence accounting and farm accountancy data networks.

These raising concerns about farming accounting data and attempts to improve cost data concepts and other farm related indicators also parallel efforts made by researchers to develop appropriate tools (models) to estimate costs of production for agricultural commodities in the EU. Such an effort was initiated fifteen years ago in France by the Agricultural Division of INSEE and research economists at INRA. This led to the development of a cost of production model which was estimated .for several agricultural commodities and several EU member countries (see Bureau and

Cyncynatus, 1991; Pollet et al. (1998, Pingault and Desbois, 2003))[2]. This cost of production model was estimated using conventional econometric procedures such as ordinary- or generalized- least squares. Leon *et al*. (1999)[3] reconsider the econometric estimation of this former model using powerful and superior econometric techniques such as generalized maximum and cross entropy. All these econometric studies on cost of production will serve a background to develop the "general" cost of production model proposed in this research project.

[2] Bureau, J.C. and Cyncynatus, M. (1991). "Perspectives de l'amélioration de la méthode d'estimation des coûts de production à partir du RICA." *INRA Actes et Communications*, 5, 33-62.
Pingault, N. and Desbois, D. (2003). "Estimations des coûts de production des principaux produits agricoles à partir du RICA." *Notes et Études économiques*, No. 19, 9-51.
Pollet, P., Butault, J.P., and Chantry, P. (1998). Le modèle sur les coûts de production agricole. Discussion Paper E9802. Division Agriculture de l'INSEE, Institut National de la Statistique et des Affaires Économiques (INSEE), Paris.

[3] Léon, Y., Peeters, L., Quinqu, M., and Surry, Y. (1999). "The use of the maximum entropy method to estimate input-output coefficients from regional farm accounting data." *Journal of Agricultural Economics*, 50, 425-439.

1.3 S/T methodology and associated work plan

Overall strategy and general description

The work plan of the project distinguishes ten (10) different work packages. All of them include several sub-tasks in order to optimize the organization of the research and ensure that the different partners work together effectively. The proposed work packages are presented below. There are nine (9) work packages dealing with research activities and one (1) work package that refers to management activities. These first nine work packages can be further divided into three groups. The first group, which refers to the first four work packages, deals with the development, implementation, validation and dissemination of an "economic model for estimating the cost of production of various types of agricultural products using the FADN data". In the second group are included the next four work packages which focus on applications and extensions of the former cost model that are relevant to study performance, policy and farm structure considerations in EU agriculture. Within this group, alternative farm-based models are developed and used to generate estimated cost of production. Finally, the third group includes the last of these nine work packages. Its objective is devoted to the evaluation of (agricultural) public policies using cost estimates obtained in the previous work packages. The tenth and last work package relates to the management of the proposed project. There are 30 deliverables involved in the proposed research which are presented in the list of deliverables which also follows in the next pages.

The project coordinator will promote regular organization of project meetings to be attended by all partners, in order to ensure the implementation and to monitor the progress of the proposed research (see the relevant timetable that follows). Four general meetings involving all partners will be held during the expected life of the project. The first general meeting will take place in Belgium as soon as the implementation of the proposed project begins. That meeting will be crucial as it will be devoted to more detailed assignment of the various tasks, included within each work package, among project participants.

In order to avoid unnecessary delay of the implementation of the proposed research, the project coordinator will ensure the close collaboration among the partners involved. This will especially be essential for the first four work packages when all partners are participating in one way or the other, to the development and implementation of the "general" cost of production model. The close collaboration and the continuous communication between the participants together with the effort by the Project Coordinator will ensure a smooth implementation of the proposed research and its successful conclusion. The high quality of the involved institutions and their experience from other research programmes supports this claim. In the following pages, the detailed research agenda of the proposed research within the various work packages as well as the details on its implementation are presented.
The division of research tasks among participants reflects the scientific and technical expertise of each of the Partners involved in the project. The overall scientific coordination of all research activities lies with Partner 1 (SLU), while partners are responsible for the daily scientific coordination of the different tasks. There is one partner leading each work package. The Project Coordinator will be assisted by the

Project Management Office (see section 2.1) in the continuous monitoring of how the work proceeds, i.e. that each work package proceeds according to the tasks defined and the time provided for the work in the work plan (see work package list, deliverables list and work package descriptions below). It is essential to ensure that the work always is focused on providing scientific results in line with the stated objectives of the project.

The coordination role of Partner 1 will be carried out through frequent and direct interactions with the leaders of each work package as well as with the Project Management Office. The project's Steering Committee (see section 2.1) will also support the Coordinator, particularly when it comes to solving larger problems that may occur and taking the appropriate strategic decisions. Furthermore, the project coordinator will consult with the EU Commission at critical points of the project's development.

1.3.2 Timing of the work packages

		Month								
		1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-42
WP1	Concepts									
WP2	Specification and development of a “general” cost of production model									
WP3	Implementation and validation of the “general” cost of production model									
WP4	Dissemination and valorisation of the production cost models									
WP5	Applications and extensions of the cost of production model: performance analysis									
WP6	Modelling farm technologies									
WP7	Production costs and environment									
WP8	Methodological applications and improvements									
WP9	Evaluation of public policies									
WP10	Project management									

1.3.3 Work package list

WP No	Work package title	Type of activity	Lead partici-pant No	Lead participant short name	Person-months	Start month	End month
1	Concepts	RTD	7	LEI	25	1	18
2	Specification and development of a “general” cost of production model	RTD	1	SLU	31	1	9
3	Implementation and validation of the “general” cost of production model	RTD	6	vTI	65	12	34
4	Dissemination and valorisation of the production cost models	RTD	3	INRA	37	12	41
5	Applications and extensions of the cost of production model: performance analysis	RTD	8	CUB	28	1	32
6	Modelling farm technologies	RTD	5	INEA	32	6	24
7	Production costs and environment	RTD	1	SLU	23	1	32
8	Methodological applications and improvements	RTD	1	SLU	16	14	26
9	Evaluation of public policies	RTD	4	UCL	69	19	42
10	Project management	MGMT	1	SLU	13	1	42
	TOTAL				339		

1.3.4 Deliverables list

Del. No	Deliverable name	WP No	Partner responsible	Na-ture	Dissem. level	Delivery date
D10.1	FACEPA public website	10	SLU	O	PU	4
D1.1	Concepts of the EU FADN accountancy framework	1	LEI	R	PU	6
D2.1	Evaluation and comparability of EU and member country FADN databases	2	LEI	R	PU	9
D2.2	General cost of production model: conceptual framework, econometric specifications and estimation procedures	2	SLU	R	PU	9
D5.1	Methodology for analysing competitiveness, efficiency and economies of scale	5	CUB	R	PU	10
D6.1	Methodology to assess the farm production costs using PMP farm models	6	INEA	R	PU	11
D1.2	Literature review of other studies in the field of cost of production	1	SLU	R	PU	12
D7.1	Methodology for including environmental outputs in the cost function	7	SLU	R	PU	12
D1.3	The usefulness of the EU FADN database from a statistical point of view	1	LEI	R	PU	18
D6.2	Methodology for the definition of case study farms and model structure for each case study farm	6	INEA	R	PU	18
D5.2	Allocative and technical efficiency change and technological progress in farms' economic performance	5	CUB	R	PU	24
D6.3	The effects of the single farm payment on cost function and production function	6	INEA	R	PU	24
D8.1	A methodology to generate disaggregated input/output table of EU agriculture with an application to the region of Östergötland in Sweden	8	SLU	R	PU	26
D8.2	Quantile regression estimates of cost of production using FADN data	8	SLU	R	PU	26
D8.3	Varying cost estimates in Multi-product farming: An application to EU agriculture	8	SLU	R	PU	26

D3.1	Implementation, validation and results of the cost of production model using national FADN data bases	3	vTI	R	PU	30
D3.2	Implementation, validation and results of the cost of production model using the EU FADN	3	vTI	R	PU	30
D5.3	Performance of crop and dairy farms	5	CUB	R	PU	30
D9.1	*Ex-post* evaluations of agricultural and environmental policies in the EU with FADN data: Methods and results	9	UCL,vTI	R	PU	36
D4.1	A SAS-based computer package to estimate cost of production in EU agriculture available on a CD	4	INRA	O	RE	31
D5.4	Assessment of the impact of CAP reforms upon farms' economic performance	5	CUB	R	PU	32
D7.2	The influence of production costs on the supply of landscape services	7	SLU	R	PU	32
D7.3	Organic farming: implications for costs of production and provisioning of environmental services	7	vTI	R	PU	32
D7.4	The disadvantages of farming in marginal agricultural regions and the potential loss of environmental values	7	SLU	R	PU	32
D9.2	*Ex-ante* evaluations of agricultural and environmental policies in the EU with FADN data: Methods and results	9	UCL,vTI	R	PU	40
D4.2	Software user guide	4	INRA	R	RE	33
D3.3	Comparison of cost estimates based on different cost calculation methods and/or different data bases	3	vTI	R	PU	34
D9.3	Comparative *ex-post* analysis of past CAP reforms across selected Member States and regions with FADN data	9	UCL,vTI	R	PU	39
D9.4	Comparative *ex-ante* analysis of CAP reform options across selected Member States and regions with FADN data	9	UCL,vTI	R	PU	42
D10.2	Final plan for the use and dissemination of foreground	10	SLU	R	PP	42
D10.3	Final report	10	SLU	R	PU	42

1.3.5 Work package descriptions

Work package 1: Concepts

Starting date: Month 1
Activity type: RTD
Partner leading the WP: LEI

Participant number	1	3	4	5	6	7	8	9	10	11
Short name	SLU	INRA	UCL	INEA	vTI	LEI	CUB	EMU	MAFS	LU
Person months	0	2	4	4	4	7	4	0	0	0

Objectives

a) To have a clear description of the concepts used for the accountancy framework and the costs in the EU FADN database and the exceptions to this of individual countries,
b) To have an overview of other studies and methods used for observing and calculating costs of production,
c) To identify the statistical problems associated with the EU FADN database.

Description of work

This work package is an introductory activity and would serve as a background to the development of a "general" cost of production model. The aim of this work package is to provide the theoretical framework for the study at hand. Before we can do a comprehensive study on the cost of production based on the FADN data available at the European Commission (DG-AGRI) we first need to have more insight in the accountancy and cost definitions used as is described in the RICC 1256 Farm Return Data definitions. An important matter that also needs to be taken into consideration is how off-farm business activities are recorded in the FADN data and how they are affecting the calculation of costs of production and farmers' returns. This information is important do determine how the FADN data should be used in the "general" cost of production model. Further we will carry out an extensive literature review on methods used by other research groups in the area of calculation costs of production. We will describe the various studies on costs of production undertaken in North America (USDA), Canada (AAFC), Australia (ABARE) and studies conducted in Europe (such as the one on inputs for AgrIS carried out for Eurostat and others conducted through existing (research) networks such as PACIOLI and SEAMLESS). From the methods used by these groups will we define recommendations that will first be used to specify and developed the cost of production model in WP 2, but that can also be used to provide ideas on other methods for determining costs of production. These alternative methods could be national information based on activity based cost accounting or national sources that are more detailed than the FADN data. Finally we will describe in detail the implications of using the FADN data from a statistical point of view and

provide recommendations. From earlier studies that where based on the FADN data it became clear that the random sample, the weighting, the coverage of activities and the definitions used might cause statistical problems that have to be treated with care when developing a "general" cost of production model. Further there might be problems with the threshold for small and large farms applied in different countries.

To take stock of all the above issues and questions, and to ensure an optimum and full participation of partners in the in the cost of production model design and future applications, it is planned that the FACEPA project would start with a one day workshop to be held in Belgium where presentations on current and past experiences on estimating cost of production in agriculture will be made. This would offer the opportunity to invite farm management representatives and experts from the EU Commission.

Task 1.1) FADN Accountancy framework and cost definitions

This task will focus on the definitions used by the Commission in the FADN accountancy framework. This will mean that we will have to read all the available documentation at the Commission and provide a summary of concepts and definitions that can be used in the rest of this project. Before we can start the work on the "general" cost of production model it is important to have a clear picture about the concepts used in the EU FADN database. These concepts will determine to a large extent the way in which the model will be constructed and it will also indicate how the model results should be interpreted. This task will be carried out by INEA and CUB.

Task 1:2) Literature review on cost of production studies in agriculture

Task 1.2 will give an overview of other studies carried out in the field of costs of production by carrying out a literature review. There are several research groups in other countries that deal with costs of production at farm level. They probably all use different methods to reach a consistent data set on the costs of production. The main goal of this literature review is to learn from the other approaches and should result in recommendations for specifying and developing the "general" cost of production model in WP 2. This task will be carried out by SLU and UCL.

Task 1:3) Statistical usefulness of the FADN data

The purpose of this task is to determine the usefulness of the EU FADN data set for the determination of the costs of production from a statistical point of view. Before using the FADN data in a "general" cost of production model it is important to identify: 1) to what extent these data can be used and 2) where additional data is needed from other sources like Standard Gross Margin calculations or other national data on standard technical coefficients. This task will be carried out by LEI and vTI.

D1.1: Working paper: Concepts of the EU FADN accountancy framework (Month 6, Partner 7 responsible)

D1.2: Working paper: Literature review of other studies in the field of cost of production (Month 12, Partner 1 responsible)

D.1.3: Working paper: The usefulness of the EU FADN database from a statistical point of view (Month 18, Partner 7 responsible)

Work package 2: Specification and development of a "general" cost of production model

Starting date: Month 1
Activity type: RTD
Partner leading the WP: SLU

Participant number	1	3	4	5	6	7	8	9	10	11
Short name	SLU	INRA	UCL	INEA	vTI	LEI	CUB	EMU	MAFS	LU
Person months	13	10	1	1	2	1	1	1	1	0

Objectives:

a) To analyse and compare the characteristics of EU and national FADN databases, in respect of their consistency for production cost computations;
b) To present the specification of the cost of production model accounting for practical problems (econometric, statistical and data) when estimated with farm accounting data.
c) To review estimation procedures used to estimate the "general" cost of production model
d) To provide a set of guidelines and recommendations to implement the cost of production model at the EU and member country levels.

Description of work

Two tasks are planned in this WP. The first one will present the main characteristics of the EU and member state FADN databases and the conditions under which they can be used to estimate the "general" cost of production model. The second and major task of this WP is to lay out the theoretical and empirical characteristics of the cost of production model and to present the various econometric procedures that can be used to estimate it.

Task 2.1: Evaluation and comparability of EU and national- FADN data.

In any (economic) model implementation, there is a need to pay specific attention to the availability and reliability of data used. Although FADN datasets at the member and EU levels are to a certain extent "harmonized", differences occur. For instance, FADN data for input and output categories tend to be more aggregated at the EU level than at the member country level. Often, member states do not provide data for some variables (e.g. irrigated crops). Furthermore, some FADN databases established at the member country level include more information (e.g. cost figures for individual production enterprises), which could be used for the validation of the cost estimates, or include significantly larger number of farms. Further, there is no clear instruction on how to include off farm business activities. Countries therefore use different methods (Karlsson et al., 2006)[4].

[4] Karlsson, A-M, Larsson G., von Unge F., Aamisepp M., Jönrup H., Keztelyi S., Törzök Á (2006). *Availability and feasibility of collecting data on off-farm income and other income. A feasibility study*

Some countries exclude both output and input of off farm business activities. Others include both output and input of these activities and in some countries for part of the off farm activities output and inputs are included ("inseparable activities") while for other activities they are not. This makes it difficult to deal with this problem in a harmonized way for all EU member countries.

This task will provide an inventory of all these differences among FADN databases of all partner countries. For this purpose, an analysis of the EU and national member databases will be conducted throughout the EU. Special emphasis will be placed on analyzing data quality and providing plausibility, consistency checks and preliminary statistical or computational treatments, drawing on partners' experiences and expertise with respect to FADN databases. In addition, the EU FADN case will be reviewed. Special emphasis will also be placed on examining the incorporation of quantitative information on off-farm business activities in the national FADN. Results of this task will serve as inputs for the specification of the "general" cost of production model.

Task 2.2: Specification and estimation of a "general" cost of production model.

A common approach to the estimation of the cost of production from farm accounting data is to consider a system of linear equations representing the derived demand for inputs, where the inputs and output levels, both expressed in monetary units, are treated as the dependent and independent variables, respectively. The unknown and fixed coefficients of this model represent (average) estimates of the costs on a given input required to produce one unit of a given output. Although such a model specification is consistent with the microeconomic theory of the firm, its empirical implementation raises a wide range of econometric problems (heteroscedasiticty, colinearity and endogeneity issues, estimated negative coefficients, etc.) and data issues(adding up constraint, zero values, cross section versus panel data, etc). This task will first present the above model (called the "general" cost of production model" or "GECOM"), its strengths and weaknesses. Then, a detailed review of this model implementation concerning the use of conventional and more recent estimation procedures (generalized maximum entropy and cross-entropy, bayesian and robust estimation procedures) will be conducted. This task will also provide a set of recommendations and guidelines that can be used by all partners to implement GECOM.

An organisational meeting of all partners, and invited and EU Commission experts is planned at the end of month 10 to discuss the implementation of the cost of production model. This should be done in the light of the findings, recommendations and guidelines of WPs 1 and 2, concerning variable definitions, FADN data needs, statistical problems and econometric procedures.

Partner 1 (SLU) who has a long experience in estimating GECOM will lead this WP. They will be assisted by members from INRA who have experiences in statistics and econometrics. All other partners will also be involved in this WP to implement task 2.1.

on collection of data on off-farm income and on other income in FADN. Contract reference No AGRI-2005-401. Statisitics Sweden on behalf of DG-AGRI, EU Commission, Brussels

Deliverables

D2.1: Working paper: Evaluation and comparability of EU and member country FADN databases (Month 9, Partner 7 responsible)

D2.2: Working paper: General cost of production model: conceptual framework, econometric specifications and estimation procedures (Month 9, Partner 1 responsible)

Work package 3: Implementation and validation of the "general" cost of production model

Starting date: Month 12
Activity type: RTD
Partner leading the WP: vTI

Participant number	1	3	4	5	6	7	8	9	10	11
Short name	SLU	INRA	UCL	INEA	vTI	LEI	CUB	EMU	MAFS	LU
Person months	8	3	6	6	18	6	6	6	6	0

Objectives

This WP aims to implement, test and validate the 'general cost of production model' developed in WP2 for different products and databases. Specifically, the objectives of this WP are

a) To implement the cost of production models for different products, countries and production systems (small and large scale, and subsistence agriculture)
b) To validate the estimates by statistical tests, comparison of results across different databases, and comparison to results of other approaches
c) To provide recommendations on the further development of the model in WP 2

Description of work

Task 3.1) Implementation of the cost of production model

In this task, all partners will be directly involved in the estimation of the cost of production model using the recommendations made in WP2. Referring to the description of the call the model will be estimated using three pre-established agricultural products including crop products, pigs and dairy. The model will be implemented and tested on the basis of the EU FADN (P6: vTI) and national FADNs (all partners) in all partner countries (provided that partners have access to these data), drawing on partners' national experience and information. In this process, there will be attempts to consider off-farm business activities and different production systems (small and large scale and subsistence agriculture).

Task 3.2) Validation of the estimates

Estimates will be validated based on statistical test methods (e.g. with respect to endogeneity, collinearity and heteroscedasticity) in close cooperation with leading partners involved in WP2. The estimation results based on the EU FADN will be compared to the results based on national FADNs, to analyse the influence of information availability on the estimates. The knowledge of farm management experts will be utilised to evaluate the reliability of results and the usefulness of the proposed cost of production model. In addition, the plausibility of estimation results will checked by comparison with the results of other approaches identified in WP 1.2 (e.g.

budget cost methods, cross entropy approaches). The knowledge of farm management experts will be utilised to evaluate the reliability of results and the usefulness of the proposed cost of production model. The outcome of this task will continuously feed back to WP2, to improve the specification of the general cost of production model.

Deliverables

D3.1: Working paper: Implementation, validation and results of the cost of production model using national FADN data bases (Month 30, Partner 6 responsible)

D3.2: Working paper: Implementation, validation and results of the cost of production model using the EU FADN (Month 30, Partner 6 responsible)

D3.3: Working paper: Comparison of cost estimates based on different cost calculation methods and/or different data bases (Month 34, Partner 6 responsible)

Work package 4: Dissemination and valorisation of the production cost models

Starting date: Month 12
Activity type: RTD
Partner leading the WP: INRA

Participant number	1	3	4	5	6	7	8	9	10	11
Short name	SLU	INRA	UCL	INEA	vTI	LEI	CUB	EMU	MAFS	LU
Person months	2	31	1	1	1	1	0	0	0	0

Objectives

The objective of this WP is two-fold. *First to to provide an operational computer tool with a user-friendly interface* that can be used by the relevant services of the EU Commission to estimate production costs for EU agriculture using FADN data. It will be developed on the basis of the recommendations made in WP1, WP2, and WP3 on data and model developments and will be consistent with the EU information system platforms. This WP will also provide a set of software options that can be adapted to various comport systems (e.g. Linux, Unix. Windows) including open software architectures (R/Linux).

The second objective is to disseminate and valorise the various analytical approaches (models) that are being used in this research project to estimate cost of production in the various WP. This entails the organisation of a workshop at the beginning of the work project, and the development and implementation of training sessions for a panel of end users including economists and technical staff from the EU Commission and experts from various member states.

Description of work:

Task 4.1) Development of a computer software

This task will be devoted to the construction of a computer package that can be used in a user-friendly manner by economists and experts from the EU Commission. Its implementation will require: i) a careful examination of the functional requirements in light of the model recommendations made by WP3 and the economic and policy analysis needs of the EU Commission, ii) designing a proper architecture, iii) developing the beta-test release of the compute package and iv) issuing a set of open source specifications of the software under Common Creative License. This computer package will be developed with the software SAS and will include the following elements: a system generator, a choice-driven interface, parameter options, specification tests, estimation procedures, output management, graphical tools, validation of estimates procedures, micro-simulation tool, recovery process and error management. The above computer software will be compatible with EU Information system platforms and hence will be developed with the assistance of technical services of the EU Commission.

Task 4.2) Development of a software user guide

The software user guide will be a comprehensive manual of operations for the end user, including a system generation procedure, a description of the choice-driven interface, the specification of the model options, a case-study data set, a list of commented outputs and an index of error diagnosis. A technical guide will be also provided for installation and information system management purposes.

Task 4.3) Implementation and training

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Two roles are assigned in this task. First, to train a panel of end-users including economists and technical staff from the EU Commission and experts from various member states to the use and implementation of the computer-based cost of production model developed in this WP. This will be conducted through a couple of training sessions at the end of the project. In addition, the computer software will be disseminated to the various partners through a technical meeting dedicated for training and assessment. These training sessions will offer the possibility to obtain opinions from end-users on the usefulness and reliability of the cost of production model, opinions that can be used for the updating of future versions.

The second role in this task is specific to the needs of the EU Commission and its staff to comprehend thoroughly the different analytical approaches that can be used to estimate cost of production in agriculture. This will be achieved through two channels. First, a one day workshop destined will be organized at the beginning of the project to review and discuss the state of the art in estimating costs of production in agriculture. To respond to the technical needs of the EU Commission staff, several self-containing training sessions and/or seminars will be provided during the life of the project. These sessions will address the various modelling approaches used in agriculture that are relevant for this project. They will be organized for groups of ten to fifteen persons made up of technical staff of the EU Commission.

- A one-day workshop will be organized in Brussels at the beginning of the project to present, review and discuss the various approaches used to estimate cost of production in agriculture.
- Several training modules and/or end user sessions aimed at presenting and reviewing the various analytical approaches used in this research project will be organised for the technical staff of the Commission. These sessions will be held during the life of the project. During the first year there will be initial training on general aspects related to estimation and modelling of cost of production.
- A technical meeting will be organised with all partners for the training and assessment of the computer package to estimate cost of production.
- Two training sessions for end users from EU Commission and experts from member states will be organised, on how to use the computer package to estimate costs of production.

Deliverables

D4.1: A SAS-based computer package to estimate cost of production in EU agriculture available on a CD (Month 31, Partner 3 responsible)

D4.2: Software user guide. (Month 33, Partner 3 responsible)

Work package 5: Applications and extensions of the cost of production model: performance analysis

Starting date: Month 1
Activity type: RTD
Partner leading the WP: CUB

Participant number	1	3	4	5	6	7	8	9	10	11
Short name	SLU	INRA	UCL	INEA	vTI	LEI	CUB	EMU	MAFS	LU
Person months	0	4	0	3	0	3	15	3	0	0

Objectives

a) To analyze the relationship between production cost structure and farm performance

b) To analyze the efficiency (with special attention to the effect of economies of scale) and competitiveness of the crop and dairy sectors in the participant countries.

c) To assess the differences between the economic performance of individual and corporate farms in the New Member States.

d) To provide quantitative insight into the impact of CAP reform on farm economic performance.

e) Country level analysis of EU agriculture's competitiveness considering various support schemes.

Description of work

Task 5.1) Methodology for production cost structure analysis

A key objective of the research is comparing farm performance in the participating countries. The methodology for that analysis will be reviewed in this task. In WP 5, based on FADN country data, farm performance will be studied over an extended period, for agricultural sectors relevant for participating countries and affected by past and expected CAP reforms (i.e. crop, dairy sectors). Production cost analysis should be done for the above selected sectors for the individual participating countries. This work may include production frontier analysis and determining operational competitiveness (e.g. OCRA). In this task, CUB works together with INEA and EMU.

Task 5.2) Assessment of farms' economic performance

The competitiveness of the agricultural sector is dependent on the extent to which farms are able to:
- choose a profit maximizing input and output mix,

- produce in a technically efficient way on the long run,
- quickly adopt the results of technological progress.

The economic performance of farms will be decomposed into allocative efficiency, technical efficiency change and technological progress components taking into account past and future CAP reforms. Stochastic frontier models will be applied. The final assessment of the impact of CAP reforms on farm performance uses data from WP3 that adjust the farms' input/output mix for structural changes following CAP reforms. In this task, CUB works together with INEA and EMU.

Task 5.3) Assessment of the impact of CAP reforms upon farms' economic performance in the New Member States with special emphasis on the farm type

In conjunction with Task 5.2., a separate task is to determine the effect of farm type (corporate or individual, small or large) upon the economic performance of the crop and dairy farms of the New Member States. Task 5.3 will identify the differences in economic performance across farm type using both standard (individual and corporate farms) classification based on legal forms and alternative classification of farms focusing on organisational forms. In this task, CUB works together with LEI, INEA, INRA and EMU.

Task 5.4.) EU agriculture competitiveness analysis

Main tasks are working out the relevant methodology and using the latter analysing the competitiveness of EU agriculture (using data for participating countries), to establish the extent member states depend on subsidies, and the way producers in the analysed countries can compete on international markets should the subsidies be eliminated. In this task, CUB works together with LEI.

Deliverables

D5.1: Methodology for analysing competitiveness, efficiency and economies of scale (Month 10, Partner 8 responsible)

D5.2: Allocative and technical efficiency change and technological progress in farms' economic performance (Month 24, Partner 8 responsible)

D5.3 Performance of crop and dairy farms (Month 30, Partner 8 responsible)

D5.4: Assessment of the impact of CAP reforms upon farms' economic performance (Month 32, Partner 8 responsible)

Work package 6: Modelling farm technologies

Starting date: Month 6
Activity type: RTD
Partner leading the WP: INEA

Participant number	1	3	4	5	6	7	8	9	10	11
Short name	SLU	INRA	UCL	INEA	vTI	LEI	CUB	EMU	MAFS	LU
Person months	0	0	6	20	0	0	6	0	0	0

Objectives

The aim of this WP is to create, implement and test mathematical models (using Positive Mathematic Programming techniques) able to represent farm technologies and relative cost structure on the basis of data and information available in national FADN systems and EU FADN database. The main benefit compared with the approach chosen in WP1-WP3 is to develop a very flexible farm model that is able to consider different farm technologies in different territorial context and their relative total variable cost at farm level.

Specific objectives for WP6 are defined as follows:

a) Developing, applying and verifying the use of PMP models to estimate cost function
b) Estimating the evolution of production costs under the effects of CAP reform on cost structure and land use change;

Description of work

The main output of the research activities will be to simulate how firms react to changes the level of prices of outputs or under some specific policy scenarios. In fact, starting from output price and observed production level, PMP is able to estimate Total Variable Cost at farm level providing a “full cost matrix” useful for policy analysis evaluation and cross validation. This could be done also where data on individual variable costs are not available.

Farm models will be first developed and tested, then applied to case study to simulate farm behavior in different scenarios (price variation/ introduction of new policies / increase or decrease in the level of subsidies) and the impact on cost structure for the farm as a whole and for single production processes. Particular reference in the analysis will be given to effects of recent changes in the Common Agricultural Policy on fixed costs such us rents and land value, moreover the application of the models will allow to simulate how CAP reform will influence land use changes in the near future.

The research will focus on farm models used to estimate production costs at farm and production process level (crop, livestock breeding, other farm activities) with different policy scenarios and for several farm typologies. The method allows to create a matrix of variable costs under different conditions as well as to give an estimation of how

costs could vary depending from external to farm conditions such as prices, support policies, and constraints.

Task 6.1) Developing, applying and verifying the use of PMP models to estimate cost function

Estimation of cost function will be produced for specialized farms, for several Farm Types (according to the relevance of each farm type at national level). Such function will be then adapted to mixed farm types. A statistical method for the definition of the representative farms, i.e. proxies of Farm Types at national level will be studied and proposed by the coordinator of WP6. The estimation of the cost function will be obtained using Positive Mathematical Programming (PMP) models at farm level while information on farm structure, level of costs and revenues is provided by FADN. While PMP allows estimating the variable costs, according to the observed land use and production level, FADN will also provide information about fixed costs. Models will also estimate marginal costs of the set of activities according to farm specialization. The cost function estimated by means of PMP model will be then compared to recorded variable costs when this information is collected in the national FADN system (this will be done in all partner countries which have a national FADN that collects production process costs. This analysis will allow to test the accuracy of the model adopted and, in case, to better address the model to the "real" cost function. This research will be conducted by case studies and joining the contribution of UCL and CUB partners.

Task 6.2). Evaluation of the impact of the new CAP reform on farm production and farm economic behaviour.

The main purpose of this task is to estimate the effects of the single farm payment on the process of adaptation of farm technology by using the PMP models developed in previous task. The model will assess the effects of the decoupling assuming two different alternative hypothesis: a) a farm fixed cost and production function is assumed; b) a flexible production function is assumed, i.e. the activity yields can change according to specific activity conveniences resulting from the application of the single farm payment. As a consequence of this last option, the cost function will also be affected by the new CAP scenario. The CAP reform scenario will be integrated by another scenario that will consider the impact of the predicted price variations on farming organization. UCL and CUP will implement the model according to the objectives of this task and they will validate the results.

Deliverables

D6.1: Working paper: Methodology to assess the farm production costs using PMP farm models. (Month 11, Partner 5 responsible)

D6.2: Working paper: Methodology for the definition of case study farms and model structure for each case study farm (Month 18, Partner 5 responsible)

D6.3: Working paper: The effects of the single farm payment on cost function and production function (Month 24, Partner 5 responsible)

Work package 7: Production costs and environment

Starting date: Month 1
Activity type: RTD
Partner leading the WP: SLU

Participant number	1	3	4	5	6	7	8	9	10	11
Short name	SLU	INRA	UCL	INEA	vTI	LEI	CUB	EMU	MAFS	LU
Person months	11	0	0	0	5	0	0	0	0	7

Objectives

The research aims to characterise and to quantify the relationship between the costs of producing commodities across the EU and the impact which agricultural production exerts upon the landscape and natural *environment* (i.e., the multi-functionality of agriculture). Special focus will be placed on contrasting the costs of organic and conventional forms of production and their environmental performance. Further, the costs of producing in marginal regions and associated environmental impacts will be contrasted with those in more productive regions. The work has the following specific objectives:

1) *To determine the relationship between the costs of commodity production and provisioning of environmental values.*
2) *To contrast organic and conventional forms of commodity production in terms of costs and environmental performance.*
3) *To contrast the costs of commodity production and associated environmental impacts in marginal and productive agricultural regions.*

Description of work

Task 7.1) Value of environmental services supplied by farmers

This task will focus on studying the relationship between farm characteristics (costs of producing commodities) and the value of landscape or environmental services supplied by farmers. This will be done by empirically estimating the potential link between farmers' production costs using FADN data and independently observed changes in the natural environment. The empirical research will be done in Sweden where there is a large area of valuable semi-natural grasslands and a comprehensive GIS-based database of biological and cultural characteristics of individual grassland blocks (the TUVA database). The raw data stored in TUVA is, however, not immediately suitable for economic analysis. The first stage of the project will therefore be to develop indicators—based on the biological and cultural variables represented in TUVA—that are relevant for economic analysis. The second step will be to link individual FADN farms to TUVA. This will require matching the physical blocks of land surveyed in TUVA to the corresponding blocks of land in the Swedish agricultural land database that in turn can be linked to farms in FADN. The FADN farms will also be linked to the Swedish Farm Register (LBR) which contains detailed

information on livestock holdings and land use. Once FADN farms are matched with TUVA, the cost function will be used to determine the relationship between environmental value and costs of production.

Task 7.2) Organic farming

This task will be achieved by isolating the impact of organic farming on production costs and environmental quality. This subtask will analyse methodological issues (e.g. data needs and availability; estimation; interpretation) arising for extensive (i.e. non-average) technologies, using organic farming as an example. Productions costs in organic farming will be estimated and compared for selected countries (e.g., Austria, Italy, Germany, depending on the number of organic farms in FADNs), taking into account the specific requirements for organic production and relating the results to the structure of, and political environment for, the organic farming sector in the respective countries. A set of environmental indicators will be defined, in order to measure the impact of organic farming on environmental quality and subsequently analyse the relation between the provision of ecosystem services and production costs.

Task 7.3) Marginal regions

The analysis of marginal regions will be achieved by contrasting the costs of commodity production and levels of environmental impacts (services) generated in marginal agricultural regions with those in high cost regions. Agriculture in marginal regions such as mountainous and forest regions is often associated with high value landscape management, whereas the landscape in more productive regions is usually dominated by commodity production with relatively low marginal landscape value. The problems in "marginal" regions are typically, poor soil quality, small field sizes and shortened growing seasons which contribute to raising the costs of commodity production, but also the value of environmental services provided by agriculture. Indicators of landscape value such as average field size and Shannon's land use Diversity Index (which can be calculated from FADN data) will be used to measure landscape value. Subsequently the relationship between indicator values and the costs of production in a cross-section of EU regions will be analyzed.

Deliverables

D7.1: Working paper: Methodology for including environmental outputs in the cost function (Month 12, Partner 1 responsible)

D7.2: Working paper: The influence of production costs on the supply of landscape services (Month 32, Partner 1 responsible)

D7.3: Working paper: Organic farming: implications for costs of production and provisioning of environmental services (Month 32, Partner 6 responsible)

D7.4: Working paper: The disadvantages of farming in marginal agricultural regions and the potential loss of environmental values (Month 32, Partner 1 responsible)

Work package 8: Methodological applications and improvements

Starting date: Month 14
Activity type: RTD
Partner leading the WP: SLU

Participant number	1	3	4	5	6	7	8	9	10	11
Short name	SLU	INRA	UCL	INEA	vTI	LEI	CUB	EMU	MAFS	LU
Person months	12	4	0	0	0	0	0	0	0	0

Objectives

This WP is methodological-oriented. It intends to provide (new) applications and/or improvements of the cost of production model/estimates based on FADN databases. Stretched on a very wide territory, EU agriculture is quite diverse in terms of commodities produced, farm structures and production technologies. These former characteristics of EU agriculture should be considered when costs of production are estimated for (agricultural) commodities. The purpose of this WP is to address explicitly these dimensions of EU agriculture in this project by stating the following objectives:

1) to develop a methodology aimed at specifying disaggregated input/output tables of EU agriculture at the regional level (NUTS II or III)

2) to implement this former methodology using FADN data and apply it for a EU region

3) Using FADN data, to generate estimated indicators (quantile indicators) on the statistical distribution of cost of production estimates, and in so doing provide information on the distribution of costs according to size and/or scale

4) to specify and to estimate a varying-parameter, cost of production model to address the heterogeneity and diversity of EU farms

Description of work

Task 8.1) Using FADN data in agricultural input/output modelling for EU regions

Input/output tables of EU regions are square (commodity by industry) tables within which agriculture is considered as a single sector producing one aggregated commodity. Representing EU agriculture as such is not tenable since this sector is characterized by a wide diversity of farm structures producing several commodities with a large number of inputs, Hence, it is necessary to drop the single output representation of the agricultural sector and to develop instead a representation of EU agriculture which captures on the one hand the multiple-output orientation of this sector and the other, the large diversity of farm structures. This task addresses this problem by: i) developing a proper methodology based on a disaggregated representation of the EU agricultural sector, taking into account the existence of different farm systems; and ii) applying it to a region of Sweden (Östergötland).

FADN data such as the distribution of agricultural output production and valued added by types of farms, and cost of production estimates will be used to construct the disaggregated input/output table of this region's agricultural sector.

Task 8.2) Generating quantile estimates on the costs of production in EU agriculture

The cost estimates obtained with the GECOM model - developed in WP2 and implemented in WP3 - provide relevant quantitative measures on the cost structure of a notional "average" farm, expressing some central tendency of farm operations. If decision makers in the EU are interested in the distribution of these cost estimates among farms, it would be necessary to generate relevant quantitative information on the median, and the upper and lower ends of the cost estimates among sampled farms. This quantitative information can be obtained by applying quantile regression procedures to the general cost of production model. This task will apply these former estimation procedures to obtain estimated cost quantiles (for instance median, quartiles and deciles, etc..) for a sample of crop and dairy farms in France using FADN data. A comparative analysis and discussion of these cost estimates will also be provided.

Task 8.3) Estimating individual farm cost estimates using FADN data

This time, to capture the heterogeneity of farms and its implications on the derived cost estimates, this task will assume that the parameters of the general cost of production model are not fixed or constant anymore but varying "randomly" among farms. In so doing, the "general" cost of production model becomes a varying parameter specification that must be estimated with appropriate estimation procedures such as generalized maximum entropy and cross entropy procedures. An advantage of this alternative cost of production model specification is to derive the complete statistical distribution of the cost estimates. This task will present this varying parameter model which will then be estimated using it a FADN sample of crop and dairy farms in France and Sweden. The econometric and predictive performances of this alternative cost of production model will also be conducted and analyzed.

Partner 1 (SLU) will lead this WP and will implement the various applications for Sweden. Partner 3 (INRA) will undertake all applications for France planned under tasks 8.2 and 8.3.

Deliverables

D8.1: Working paper: A methodology to generate disaggregated input/output table of EU agriculture with an application to the region of Östergötland in Sweden. (Month 26, Partner 1 reponsible)

D8.2: Working paper: Quantile regression estimates of cost of production using FADN data. (Month 26, Partner 1 reponsible)

D8.3: Working paper: Varying cost estimates in Multi-product farming: An application to EU agriculture. (Month 26, Partner 1 reponsible)

Work package 9: Evaluation of public policies

Starting date: Month 19
Activity type: RTD
Partner leading the WP: UCL

Participant number	1	3	4	5	6	7	8	9	10	11
Short name	SLU	INRA	UCL	INEA	vTI	LEI	CUB	EMU	MAFS	LU
Person months	5	3	18	6	12	6	6	6	6	1

Objectives

This research component designs and develops key economic models that use the production cost estimates from WP3 but also from WP5, WP6 and WP7 to evaluate various agricultural measures on agricultural, environmental, financial and socio-economic indicators using FADN data and additional EUROSTAT data. In particular, this work package aims:

a) at providing and testing farm economic models suitable for evaluating *ex-post* measures that have been implemented as components of: (i) the reform of the Common Agricultural Policy (CAP) for the incumbent Members States since 1992, and (ii) the accession of the new Member States since their adhesion to the EU,
b) at providing and testing farm economic models suitable for evaluating *ex-ante* measures that would be most likely implemented as components of the continuation of the reform of the CAP,
c) at providing a preliminary comparative analysis on these *ex-post* and *ex-ante* evaluations across Member States and regions.

The main outcome of this WP consists in providing functioning farm-level economic models based on FADN cost estimates that are appropriate for *ex-post* as well as *ex-ante* policy analysis.

Description of work

Task 9.1) *Ex-post* evaluations

Partner 4 designs and develops in collaboration with Partner 6, which is responsible for the implementation and validation of the production cost models (WP3), farm economic models to perform *ex-post* socio-economic and policy analysis. These economic models use the estimations of production costs from WP3 and other relevant work packages 5, 6 and 7. This task relies on statistical and econometric methods to test to what extent and in which circumstances past agricultural measures have affected production costs and the agricultural, environmental, financial and economic performance at the farm level. This task focuses on specific past measures of interest as, for example, the changes in price support, the increase in compensatory payments and their restructuring into the Single Farm Payment (SFP), and the more recent introduction of cross-compliance. Then, all partners with the exception of Partner 1 test these statistical and econometric models, analyse their results by farm type, size and location and draw policy lessons. Specific attention is given to the

effects of these measures on land allocation and returns to farm land and family labour.

Task 9.2) *Ex-ante* evaluations

Partner 4 in collaboration with Partner 6 designs and develops farm economic models to perform *ex-ante* socio-economic and policy analysis. This task uses mathematical programming models that incorporate cost estimates from WP3 and other relevant work packages to evaluate to what extent and in which circumstances possible agricultural measures may affect in the future the agricultural, environmental, financial and economic performance of farms from FADN samples. This task focuses on specific possible measures of interest as, for example, the progressive elimination of the dairy quota, tighter cross-compliance, stronger modulation and SFP degression. Partner 4 provides the relevant parameter values and indicators that define the simulation scenarios. The simulation models are tested for selected Member States. All partners, except Partner 1, contribute with their national expertise to the analysis of the results by farm type, size and location and draw policy implications. A specific attention is given to the effects of these measures on bovine herd specialisation, land allocation and returns to farm land and family labour.

Task 9.3) Comparative analysis

From the *ex-post* evaluations, Partner 6 in collaboration with Partner 4 performs a comparative analysis across the Member States and their regions represented in the partnership and synthesises the policy lessons. Similarly, from the *ex-ante* evaluations, Partner 4 in collaboration with Partner 6 performs a comparative analysis across the selected Member States and synthesises the policy implications. These two comparative analysis benefit from feed-back from all partners.

Methodological guidelines for internal use will be produced in WP 9:

1) Guidelines for *ex-post* evaluations of agricultural and environmental policies with FADN data (Partners 4 & 6, month 20)
2) Guidelines for *ex-ante* evaluations of agricultural and environmental policies with FADN data (Partners 4 & 6, month 22)

Deliverables

D9.1: Working paper: *Ex-post* evaluations of agricultural and environmental policies in the EU with FADN data: Methods and results (Month 30, Partners 4 & 6 responsible)

D9.2: Working paper: *Ex-ante* evaluations of agricultural and environmental policies in the EU with FADN data: Methods and results (Month 32, Partners 4 & 6 responsible)

D9.3: Working paper: Comparative *ex-post* analysis of past CAP reforms across selected Member States and regions with FADN data (Month 34, Partners 4 & 6 responsible)

D9.4: Working paper: Comparative *ex-ante* analysis of CAP reform options across selected Member States and regions with FADN data (Month 36, Partners 4 & 6 responsible)

Work package 10: Project management

Starting date: month 1
Activity type: MGT
Partner leading the WP: SLU

Participant number	1	3	4	5	6	7	8	9	10	11
Short name	SLU	INRA	UCL	INEA	vTI	LEI	CUB	EMU	MAFS	LU
Person months	13	0	0	0	0	0	0	0	0	0

Objectives

d) Implement internal rules for project management
e) Provide continuous support to partners
f) Coordinate the reporting to the EU Commission
g) Monitor progress and resource use in the project
h) Set up and update the FACEPA website
i) Contractual management

Description of work

The Project Management Office, provided by Partner 1, is leading this work package.

Task 10:1) Rules governing the management of the project

At the initial stage of the project, the Project Management Office (PMO) will inform partners on the obligations and rules set out in the project Contract and the Commission's guidelines. Principles for the internal rules for the project will be set out at the startup meeting of the project. The Steering Committee is in charge of the internal rules, while the PMO acts as an advisor in these matters.

Task 10:2) Progress monitoring, resource use and reporting

This task involves monitoring progress and resource use as well as submission of deliverables and reporting to the Commission. The PMO performs the daily project management activities. The PMO reports project progress and upcoming problems to the Project Coordinator, while the Coordinator keeps the PMO informed on coordination actions and problems. The PMO will promote that partners finish their deliverables on time. Failure to do so may require actions not only from the PMO but also the Coordinator and the Steering committee. Further, the PMO provides partners with templates and support for the periodic and final reporting of the project, compiles the reports and takes the necessary actions to ensure delivery on time. The PMO is responsible for calculating advance payments and reimbursement to partners, while the Coordinator receive payments from the Commission and transfer the correct amount to each partner.

Task 10:3) Contractual management

Contractual management after start-up may require amendments to the Contract, e.g. in the case the consortium faces the need to replace, remove or add a partner, or unexpected events require a revision of the original project plan. A decision in the project Steering Committee, where all partners agree, is required before the consortium requests an amendment to the contract.

Task 10:4) FACEPA web site

The project should have a functioning public website no later than four months after project start. It will include a popular description of the project, partner information, the public deliverables produced during the project, and more in depth information on the project. The PMO is responsible for setting up and continuously updating the website.

Deliverables

D10.1: FACEPA public website (Month 4, Partner 1 responsible)

D10.2: Final plan for the use and dissemination of foreground (Month 36, Partner 1 responsible)

D10.3: Final report (Month 36, Partner 1 responsible)

Other: Interim project report(-s) (Dates set out by the Commission, Partner 1 responsible)

1.3.6 Efforts for the whole duration of the project

Indicative efforts per beneficiary per WP (person months)

Participant	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	Total
1: SLU		13	8	2			11	12	5	13	64
3: INRA	2	10	3	31	4			4	3		57
4: UCL	4	1	6	1		6			18		36
5: INEA	4	1	6	1	3	20			6		41
6: vTI	4	2	18	1			5		12		42
7: LEI	7	1	6	1	3				6		24
8: CUB	4	1	6		15	6			6		38
9: EMU		1	6		3				6		16
10: MAFS		1	6						6		13
11: LU							7		1		8
Total	25	31	65	37	28	32	23	16	69	13	**339**

Indicative efforts per activity type per beneficiary (person months)

Project number (FACEPA) : 212292

Activity Type	SLU	INRA	UCL	INEA	vTI	LEI
RTD/Innovation activities						
WP 1		2	4	4	4	7
WP 2	13	10	1	1	2	1
WP 3	8	3	6	6	18	6
WP 4	2	31	1	1	1	1
WP 5		4		3		3
WP 6			6	20		
WP 7	11				5	
WP 8	12	4				
WP 9	5	3	18	6	12	6
Total 'research'	51	57	36	41	42	24
Consortium management activities						
WP 10	13					
Total ' management'	13					
TOTAL BENEFICIARIES	64	57	36	41	42	24

Activity Type	CUB	EMU	MAFS	LU	TOTAL ACTIVITIES
RTD/Innovation activities					
WP 1	4				25
WP 2	1	1	1		31
WP 3	6	6	6		65
WP 4					37
WP 5	15	3			28
WP 6	6				32
WP 7				7	23
WP 8					16
WP 9	6	6	6	1	69
Total 'research'	38	16	13	8	326
Consortium management activities					
WP 10					13
Total ' management'					13
TOTAL BENEFICIARIES	38	16	13	8	339

1.3.7 List of milestones

Mile-stone number	Milestone name	Work package involved	Expected date (month)	Means of verification
1	Workshop on current and past experiences of estimating cost of production in agriculture	1	1	Workshop with invited speakers
2	Meeting with partners and the Commission on the implementation of the cost of production model	2	10	Agreement on model specifications
3	“general” cost of production model ready for implementation and testing	3	12	Model available
4	Models for analysing agricultural policy ready for evaluation	9	27	Models available
5	“general” cost of production model implemented and validated	3	30	Estimates validated
6	Operational computer software with a user-friendly interface	4	33	Meeting for training and assessment

2. Implementation

2.1 Management structure and procedures

The project management structure is designed to ensure that the goals of the project can be reached. That requires an appropriate decision making structure, continuous monitoring of progress, clear responsibilities, efficient project management, and a scientific coordination capable of linking together the research tasks within the project.

Project Coordinator

The Project Coordinator is the link between the European Commission and the Consortium as well as the promoter and supervisor of the overall progress of the project. In this work, the Coordinator will be assisted by the Project Management Office and the Steering Committee of the project.

Scientific coordination is the most important task for the Coordinator. It is the coordinator's objective to ensure that all efforts are focused towards the objectives of the project.

The Coordinator will be chairing the project Steering Committee and take actions to enable proper decision making in this decision body. The Project Coordinator's overall responsibility for coordinating the scientific activities in the project requires an efficient information flow within the consortium. E-mail is the most important tool for the daily internal communication. However, experience from previous projects shows that regularly held general project meetings, open for all researchers within the project, are very important for identifying problems at an early stage and finding efficient solutions to these. Further, the meetings of the Steering Committee will ensure that decisions are discussed with and have the support of project partners.

Steering Committee

The project has a clear organisation structure, with management, co-ordination and the project progress supervised by a Steering Committee. The Steering Committee will be composed of the team leaders of all partners (or authorised representatives of the team leaders) and is chaired by the Project Coordinator. In the Steering Committee, partners have one vote each. The head of the Project Management Office shall attend the meetings in advisory capacity. Any qualified person or external expert may also take part in advisory capacity. The Steering Committee will meet on a regular basis (approximately every six to nine months) to ensure the adequate management of both administrative and scientific matters.

The Steering Committee will monitor the overall progress of the research activities towards the objectives of the project, as well as the performance of the Project Coordinator and the Project Management Office. The Steering Committee shall control the execution of the project with regard to the work planned in the project plan (Description of Work) for the FACEPA project. It is responsible for implementing corrective actions where needed, and following up these actions.

The secretariat of the Steering Committee is ensured by the Project Management Office. The Management Office is also responsible for informing partners on decisions made by the Steering Committee.

Project Management Office

The Project Management Office is provided by partner 1 (SLU). The Management office is responsible for supplying a professional management of the project, while the Project Coordinator focuses mainly on the scientific coordination. Main responsibilities of the Project Management Office are to:

- ensure that project partners are informed about the rules set out in the Contract for the project and other rules set out by the European Commission;
- implement internal rules for project management;
- monitor that the participants follow the Contract and the project's internal decisions;
- give project partners advice regarding project administration;
- organise the periodic and final reporting and the submission of project deliverables to the Commission;
- set up and update the public website for the project;
- support the Project Coordinator and the Steering Committee;
- manage meeting agendas and minutes;
- facilitate and provide an efficient information flow within the consortium.

The Project Management Office has the main responsibility for work package 10.

The administrative officer will report to the Steering Committee on all relevant administrative and financial aspects including possible problems. The Project Management Office will have daily contact with the Project Coordinator.

Management activities

The plenary co-ordinating meetings of the Steering Committee will review the on-going work of each partner and evaluate whether any modifications are required. This approach will be very important to ensure effective linkages between work packages and partners, in particular regarding the linkages between the collection of empirical data and effective analysis. The Steering Committee will monitor the internal consistency and progress of interdependent tasks and will detect quickly any potential deviations from the proposed aims/methodology, which will be discussed at an early stage.

To ensure adequate co-ordination, a clear definition of responsibilities for work packages and deliverables has been defined. Responsibilities have been allocated according to the expertise of each participant. The day-to-day monitoring of progress on each of the tasks will be the responsibility of designated team leaders.

The Steering Committee will decide on the agenda and timing of the 4 General Meetings, which will involve all partners. The first general meeting will be in the month following the signature of the contract, followed by two annual progress

meetings and a final meeting. These meetings are designed to ensure the smooth and effective implementation of the project.

The EC officer responsible for the project will be informed by the co-ordinator about scheduled meetings and agendas at least 6 weeks in advance. Relevant experts from DG Agriculture will be also invited.

Flexible and effective modes of communication and a clear distribution of duties will be vital to the success of the project. The internal co-ordination of this project will be facilitated by the fact that most partners have past experience of working in EU framework projects and many team members have worked together in different international research projects. The project does however bring together a unique team of highly and suitably qualified researchers.

An adequate communication flow of the consortium will be ensured in the following ways:

- Continuous informal exchange of information by electronic mail.
- A project web site giving access to project documents, administrative information, and working papers and reports produced within the project. The web site will incorporate a discussion forum for issues related to the work packages.
- In addition to day-to-day communication via electronic mail, the regular Steering Committee meetings scheduled throughout the project will serve to analyse in more depth any problems of co-ordination or communication that may arise as the project progresses.
- General meetings and conferences will give all the team members involved in the project the opportunity to present and discuss research ideas and results.
- The exchange of researchers on short visits will enable both the discussion of data analysis, methodological issues and interpretation of results.

2.2 Beneficiaries

Partner 1: Swedish University of Agricultural Sciences (SLU), Sweden

The Department of Economics of the Swedish University of Agricultural Sciences has a staff of 80 persons employed of whom 26 have senior research and education positions and 28 have junior positions. Research activities lie within economics, business administration and history of agriculture. There are currently six full professorships.

Research projects based on the use of FADN data and analyzing the performance of Swedish farms are being conducted in the Department while some of its members are involved in research assessing the reform of Swedish agricultural policy prior and after this country's entry into the EU. The Department is also involved in EU-funded projects (MEDFROL, CARERA).

SLU is both the coordinator of the FACEPA project and responsible for the Project Management Office. In this capacity, it will be responsible for the scientific coordination and the project management. In addition, it will be responsible for:

- Work package 2 on the development of the general cost of production model.
- Evaluation of national FADN data, implementation of the cost of production model for Sweden and validation of estimates (WP 2 and 3).
- Leading work package 7.
- Work package 8 on methodological refinements and improvements.
- Contributing to the evaluation of public policies, using the models developed (WP 9).
- Finally, SLU will also provide contributions to WP2 and WP3 (development and validation of the cost of production model).

Yves Surry is a professor of agricultural policy and international trade with over twenty years of professional experiences in the field of agricultural, environmental and trade policies and the development of sectoral models of the agri-food sectors at the regional, national and international levels. He has been conducting research work in trade modelling and the EU agricultural markets and he currently work on projects dealing with regional modelling with an emphasis on the agri-food complex. Of relevance for this project have been research works dealing with the construction and use of an input/output and mathematical programming models for EU regions and the country of Morocco, and the development of econometric procedures to generate input/output and production cost coefficients for French, German and Canadian agricultural sectors or farms.

Professor **Ewa Rabinowicz** was formerly Research Director at SLI. Since January 2009 she is head of the AgriFood Economics Centre at the Department of Economics at SLU. She has extensive experience in analysing the CAP and providing advice on agricultural policy to national authorities, the EU, international organisations and governments in the CEECs. Ewa Rabinowicz was president of the European Association of Agricultural Economists (EAAE) 1996-1999. Ewa is also the coordinator of the FP6 project IDEMA, which analyses impacts of decoupled agricultural payments. She has been leading several research projects using Swedish FADN data.

Gunnar Lindberg is presently involved in an EU-funded project CARERA assessing the employment effects of changes in the common agricultural policy in rural areas. Gunnar's contribution in this project will be part of work package 8 on methodological refinements and improvements, and deals with the use of cost of production estimates in constructing input-output table for agriculture.
Daniel Wikström, a recent graduate in economics and econometrics. His research deals with the use of non parametric econometric procedures in agriculture production and the demand for food products.
Erik Pelling has been working as a research assistant on a policy-oriented and sectoral research dealing with Macedonian agriculture. He was formerly a junior policy adviser for the Swedish Ministry of Agriculture.
Dr Staffan Waldo has extensive experience of modelling and analysing fisheries production under the common fisheries policy (CFP), including e.g. production costs, the structure of the fisheries sector, and effects on marine environment. Waldo also has a field of competence in modelling the production of publicly financed education.
Dr Mark Brady is an environmental economist who has worked extensively with modelling the impacts of agricultural policy on the environment. Mark's special interest is ecological-economic modelling and he has expertise in the application of econometrics and mathematical programming to problems concerning agriculture and the environment. His work on agri-environmental policy analysis has for example included the implications of dynamic and stochastic processes for pollution management.
Ingrid Ragnarsdotter Jajke, Grants Office at SLU will assist the PMO with administrative matters. Ingrid Ragnarsdotter Jajke has a long experience of administration of projects from FP5, FP6 and other EU-funded projects.

Partner 3: Institut National de la Recherche Agronomique (INRA), France.

INRA, the French national institute for agricultural research, is a mission-oriented public institution under the joint authority of the Ministry for Research and the Ministry for Agriculture. The Social Sciences, Agriculture and Food, Space and Environment Department (SAE2) at INRA has been commissioned to conduct social and economic researches. The AgroParisTech Public Economics Joint Research Unit (PEJRU) and the Rennes Agricultural Economics Research Units (AERU) are devoted to the study of agricultural policy and trade. The Nancy Forest Economics Joint Research Unit (FEJRU) is in charge of the French FADN data processing for INRA researchers.

Jean-Pierre Butault is a Senior Director of Research at INRA-PEJRU. His main topics of research are Agricultural income, Agricultural productivity, Farm efficiency, CAP impacts on agricultural systems. Since 1988, his team has regularly been involved in works conducted for DG-AGRI and EUROSTAT on production costs of agricultural products.
Dominique Desbois graduated in Mathematical Statistics (Paris VI University), is in charge of cost production estimates for the French FADN Bureau (SCEES), on behalf of INRA-SAE2. He has been a key-expert with the EU-PHARE program in Bulgaria.
Laure Latruffe is a Researcher at INRA-AERU. Her main interests are farmers' production decisions and performance. She has participated in the FP6 IDEMA project "Impact of Decoupling", where she worked on farmers' future production decisions and factor uses.
Jean-Marc Rousselle is a Senior Engineer of Studies and a SAS programming expert, in charge of the information system at INRA-FEJRU.
In addition, an engineering assistant will be recruited as a SAS programmer for the overall duration of the project (36 months). During the project, two graduation trainees will be recruited each year for a 6 months period (2x3x6 months) in order to achieve specific developments

Sub-contracting partner: Institut national de la Statistique et des Etudes Economiques (INSEE), France. INSEE is the French statistical Institute, a Department of the French Ministry for Economics and Finance. The Institute has developed a long-term technical background in the field of agricultural production costs, a stake-holding in the French FADN and an expertise in statistical cooperation at various European levels.
Claire Plateau is the Head of Agriculture Division at INSEE. Bernard Legris is in charge of studies at the Agriculture Division. Pascale Pollet and Michel Cyncynnatus occupied the same function before.

Partner 4: Université catholique de Louvain (UCL), Belgium

The Research Unit of Agricultural Economics (ECRU) is an academic entity within the College of Engineering in biological, agronomic and environmental sciences (AGRO) at UCL. The research unit conducts applied research in three major area: agricultural and trade policy, environmental economics and microeconomics of rural development. Its research work heavily relies on economic theory, extensively uses quantitative methods and, when appropriate, incorporates risk analysis. Most of this work is developed in a view to support public decision making. It benefits from collaborations with leading national, European and US research centers and is supported by funding from the Region of Wallonia, various Belgian scientific research foundations and the European Commission. In particular, the research team of Professor Bruno Henry de Frahan designs and develops economic models at the farm, regional, national and international levels to evaluate agricultural, environmental and trade policy reforms.

For this project, the research team of Professor Henry de Frahan is responsible for coordinating the WP9 'Evaluation of public policies'. In that respect, it designs, develops and tests FADN-based economic models that are appropriate for ex-post as well as ex-ante policy analyses and coordinates comparative analyses that use these models across selected Member States. It also contributes to WP1 'Background' and WP5 'Modelling farm technologies' and participates to WP2 'Specification and development of a general production cost model' and WP3 'Implementation and validation of the production cost model'.

The research team of Professor Henry de Frahan uses FADN data to perform econometric analysis and develops mathematical programming models that, in turn, are used to simulate policy scenarios at the farm level (Polomé et al., 2005 & 2006). For example, it has designed, developed and used FADN-based models to simulate the Mid-Term Review of Agenda 2000 and the sugar reform at farm level (Buysse et al., 2007). It has used FADN data to estimate the production cost of dairy farms and the quota rents. These estimates are now used to simulate various policy options to reform the Common Market Organisation of milk and dairy products.

The scientific team for this project is composed of **Professor Henry de Frahan** and **an agricultural economist with a Master's degree in agricultural economics** and a minimum of two years of experience in micro-modelling and policy simulations. Since 2002, Professor Henry de Frahan coordinates the project 'Integrated Decision Support System for Agricultural and Environmental Policies in the Region of Wallonia' that was first funded by the Belgian Ministry of Agriculture and, since 2005, by the General Directorate of Agriculture of the Ministry of the Region of Wallonia. This DSS extensively uses FADN data for policy evaluation. He is the leading author of a handbook chapter describing methods for using mathematical programming with FADN data (Henry de Frahan et al., 2007).

Partner 5: National Institute of Agricultural Economics (INEA), Italy

INEA (Istituto Nazionale di Economia Agraria) is a public research body, supervised by the Italian Ministry of Agriculture, set up in 1928 and reformed in 1999. The statutory task of the Institute is to undertake surveys and studies on the economic aspects of agriculture, forestry, fishery and food sector, with special reference to agricultural and rural policies at regional, national and international level. Since 1965 it has acted as the liaison organ of the Italian State to the EU Farm Accountancy Data Network (RICA). The Institute has widened its field of study since it was founded not only to cover agriculture and agricultural economics but also economic policy, the environmental and territorial issues, trade, finance and information technology. Nowadays a central focus for its research activity is the institutional and policy design within a framework of integrated rural development. The institute has carried out research on behalf of several organisations including the European Commission, the Ministry for Agricultural and Forestry Policies, the Ministry of the Environment, the Ministry of Economy, and finally Regional and Local Authorities and Producer Organisations.

Prof. Filippo Arfini is involved in scientific research activity in the following three main research fields: 1) Methodologies (mainly based on mathematical programming) to analyse the impact of different agricultural policies at farm level but also at regional and national level; 2) Socio-economic analysis of food quality products and Quality Assurance Schemes; 3) Analysis of the socio-economic factors that influence economic development at local /rural level. He has also experience in EU research projects where he participated and is participating.

.**Dr. Luca Cesaro's** research activities in recent years have focused on rural development, with particular reference to mountain areas and forest measures. During the last decade he has been involved in research projects at national and international level dealing with analysis and evaluation of rural development policy, monitoring of public expenditure, forest sector analysis.

Franco Mari is researcher at the unit that manages the Farm Accountancy Data Network (FADN). On July 2006 he took the responsibility of the Unit. He is expert in FADN and in Typology of agricultural holdings and his main interest is in agricultural economics, with particular regard to the microeconomics aspects. He has carried out several studies about output and production costs of crops and livestock from FADN data.

Alfonso Scardera is researcher at INEA. He is responsible of the "Farm Accountancy Data Network" in Italy and member of National FADN Committee. Moreover, he joins the project S.I.C.A.N. (National Informative System for Agricultural Accounting).

Linda Di Mico has work experiences on EU projects at the Italian Ministry of Finance and Economics (Directorate *Structural and EU Funds*) and on data bases creation and management. Currently, she works at Inea, Department "Micro-economic research and accountancy surveys".

Partner 6: Institute of Farm Economics, Johann Heinrich von Thünen Institut, Bundesforschungsunstitut für Ländliche Räume, Wald und Fischerei (vTI), Germany

The Johann Heinrich von Thünen Institute (vTI) is attached to the German Federal Ministry for Food, Agriculture and Consumer Protection. Its mission is to provide the scientific basis for designing and implementing efficient agricultural policies, and to extend research findings to benefit society at large. In this context, vTI is scientifically independent. The Institute of Farm Economics engages in agricultural economics research relating to agricultural production processes, farm enterprises and farm households, factor markets, domestic agricultural sectors and related policy institutions. The institute's research findings provide a valuable source of information for political decision makers, farmers, agribusiness enterprises and non-governmental organisations and interest groups. Quantitative analyses play an important part in the Institute's work. Farm and regional differentiated sector models are available to assess policy impacts at farm, regional and sector level.

Within the project, vTI will lead and coordinate the implementation of the general cost model (WP 3). In addition, vTI will lead the research on production costs in organic farming (WP 7), and contribute to the literature review (WP 1), the evaluation of FADN data and the development of the general cost of production model (WP2), and the evaluation of public policies (WP9).

The working group 'Quantitative Policy Assessments' is involved in a broad range of policy assessments of CAP (Mid-term review, decoupling, milk market policy reform, sugar market reform, EU enlargement) for the Federal Agricultural Ministry. The working group has access to individual farm accounting data from the national network and has extensive experience in working with FADN data from the EU. The scientists involved in the project proposal do have broad experiences in agricultural and environmental economics, policy assessment and the development and use of mathematical models, and have been involved in numerous international projects: EDIM, GENEDEC, SVAPPAS, EU-CEEFOP, OFCAP, EFFS.

Dr. Frank Offermann is an agricultural economist and is responsible for the use and development of farm based models at the institute. He is a member of the working group 'Quantitative Policy Assessments', and has been working on the design of farm models based on FADN data within several EU research projects. He has been involved with research on economic aspects of organic farming since 1997 and has contributed to several EU-projects and studies on organic farming in the areas of farm level economic analysis and modelling.
Dr. Werner Kleinhanss is a senior researcher, leader of the working group 'Quantitative Policy Assessments' and responsible for the co-ordination of model based policy analysis at request of the Federal Agricultural Ministry. He has broad experience in farm level modelling and economic analysis based on FADN. He was/is involved in several EU projects in the area of agri-environmental policy, CAP reforms (decoupling, milk market policy) and policy evaluation.

Partner 7: Agricultural Economics Research Institute (LEI), Netherlands

The Agricultural Economics Research Institute, LEI, is the liaison agency for the Netherlands in the EU-FADN and the leading organisation in the Netherlands for research on business economics and socio-economics in agriculture, horticulture, fisheries and forestry. The expertise and experience of LEI cover the entire field from producer to consumer, and from the local level up to the international and global levels. LEI has about 300 employees and is part of the Wageningen University and Research Centre with about 7000 employees. The LEI has been involved in more than 80 projects using EU-FADN data and therefore has extensive experience with this database. This year the institutes organises for the 15th time a 3 day workshop on innovations in FADN (see www.Pacioli.org) with participants from all around the world. LEI has been actively involved in the setting up of FADN's in new Member States (Lithuania, Czech Republic, Hungary). The LEI has been involved in a lot of projects on cost of production calculations using FADN, both on national level and European level. The LEI was the project leader in the AGRIS project for Eurostat that aimed to use cost of production calculations based on FADN for allocating inputs to outputs in the Agricultural Accounts.

The main task of LEI in this project will be to be responsible for work package 1 on concepts. Further they will provide contributions to the development of the general cost of production model (WP2), the implementation, validation and performance analysis of the model (WP3 and WP5) and the evaluation of public policies (WP9).

The team's experiences relevant to the project

- Inputs for AgrIS - Checking the consistency of the agricultural sector database
- Management of Dutch FADN and liaison agency for the Netherlands
- Cost prices in pig production: Experiences with an EU-wide comparison
- Production costs in dairy farming

Drs Koen Boone is head of the Centre for Economic Information (including Dutch FADN) with a yearly budget of 6,7 million Euro. (2004 till present). He is leader of the Dutch delegation in the Management Committee of Farm Accountancy Data Network in Brussels (2000 till present). He was the project leader of the project inputs for AgrIS. He is involved in a high number of projects on comparing cost of production based on EU-FADN and the management of Pacioli workshops.
Drs. Krijn Poppe is head of the animal department at LEI. He is the leader of the Dutch delegation in the Management Committee of Farm Accountancy Data Network in Brussels (1985 till 2000). He is Secretary-General European Association of Agricultural Economists EAAE (1999 -) and the founder of the Pacioli workshops. He carried out the management of Dutch FADN (1985 – 2004). He is involved in a high number of projects on comparing cost of production based on EU-FADN (including the project inputs for AgrIS).
Drs. David Verhoog will be the co-ordinator of work package 1. He has co-ordination experiences, and was involved in the development a harmonised database framework in EUROSTAT. At Eurostat he was also responsible for the project inputs for AgrIS.

Partner 8: Department of Agricultural Economics and Rural Development, Corvinus University of Budapest (CUB), Hungary

The Department takes part in several national and international research projects. Each project is strongly based on economics and methodology and are quite practice-oriented. Their strength is to make responses from several discipline's point of view. Accentuated research field are: competitiveness, regional development, agricultural markets, food industry and rural development.

In the project CUB will lead WP 5: Applications and extensions of the cost of production model: performance analysis. CUB is also involved in WP 1, 2, 3 and 9

The staff has good capacity in using methodology of simulation, cluster analysis, price transmission analyses as well as evaluation competitiveness both at farm and sector level. Staff has been very much integrated into EU research network At this time they have been participating in ten EU FP program projects.

Csaba Csaki is an internationally well known agricultural economist, former president of IAAE. He has more than one decade experience of World Bank. He is a member of number of national and international advisory boards and member of the Hungarian Academy of Sciences.
Csaba Forgacs will be the head of the research team and covers the job of the team management. He is a former president of EAAE. He has been made research on several in EU projects e.g. TOPMARD, AGRI CEEC Policy, EUI-Net, SERA, CARERA.
Sandor Elek's research deals with theoretical issues of rural development, comparative analyses of economic structure of rural areas and rural development measures and rural stakeholders.
Tibor Ferenczi has been dealing with Agricultural Policy and CAP reform. He has been involved in negotiations between OECD and Hungary for years and has been involved in number of EU projects among them IDARA, TOPMARD, AGRI CEEC.
Imre Fertő is a part time Professor. He is a Senior Research Fellow and Research Director at the Institute of Economics of the Hungarian Academy of Sciences. His recent research focuses on technical efficiency and investment behaviour.
Gyula Módos has research topics mostly connected with cost-benefit analysis of production sector. He has participated in the agri-transformation process as an advisor. More recently his main topic has been competitiveness in production.
Jozsef Toth is mainly dealing with analysis and modeling. His research activity is concentrating on the functioning of agricultural markets and other places of economic coordination, like enterprises, clusters, etc. In Hungary he was the first one who has investigated the asymmetric price transmission in the agri-food sector (1997).
Tamás Mizik's main fields of interest are competitiveness, profitability, rural development, taxation and database using (mainly FADN database). He was involved in some international projects, such as IDARA and TOPMARD as well.
Attila Jambor, PhD student. He is a second year PhD student in the Department, his research topic is competitiveness in cereal markets. He has also worked with FADN database.

Partner 9: Estonian university of life sciences, Institute of economics and social sciences (EMU), Estonia

The Institute of Economics and Social Sciences was established under the Estonian University of Life Sciences on January 1st 2005. The main objectives of the new scientific institution are to promote the research work on the field of agrarian economics and social sphere in rural areas.

The Estonian University of Life Sciences is the centre of research and development in such fields as agriculture, forestry, animal science, veterinary science, rural life and economy, food science and environmentally friendly technologies.

The main tasks of Estonian team in the project are the following:

- Participation in the specification of a "general" model (WP 2);
- Implementation and validation of the model at national level (WP 3);
- Applications and extensions of the cost of production model (WP 5);
- Evaluation of public polices at national level(WP 9);

The team has some FADN experiences gained through several national and international research projects. International projects:

- 2000- 2001, Pilot Project on Agricultural Sector Modelling (ASM), financed by the PHARE Multi-Country Statistical Co-operation Programme. Main focus was put on establishing a set of data on the use of inputs by agricultural production activity;
- 2000-2001, Multi Country Statistical cooperation-Pilot projects on Statistics: Component: Economic Accounts for Agriculture financed by EU, Phare programme and implemented by NEI-ICON-ASA

National projects (Using the FADN data):

- 2006, Competitiveness evaluation in Estonian Agriculture, Institute of Economics and Social Sciences, Report 2006 (Estonian language);
- 2006, Unification of prices in European Union and the expected impact to the Estonian food prices, Institute of Economics and Social Sciences, Report 2006 (Estonian language);
- 2006, Needs and capabilities of investments in Estonian agriculture, Institute of Economics and Social Sciences, Report 2006 (Estonian language)

Staff of Estonian team

	Title	Name	Position	Competence/ experience	PhD students
Team leader	Dr. Econ.	Rando Värnik	Director	Costs of alternative crops	
Contact person	PhD	Mati Sepp	Head analyst	Competitiveness	
Team member	MSc.	Katri Lahesoo	Lecturer	Costs and price analyses	PhD student
Team member	MSc.	Ants-Hanne Viira	Head analyst	Econometrics	PhD student
Team member	BSc.	Eduard Matveev	Head analyst	FADN Data analyses	PhD student

Partner 10: Agrostatistics Directorate at the Ministry of Agriculture and Food Supply (MAFS), Bulgaria

The Agrostatistics Directorate at the MAFS is the liaison agency for Bulgaria for FADN. It is an official statistical body according to the Law on Statistics of Bulgaria since 1999 and is responsible for the agricultural production statistics, meat and milk statistics, balance sheets and FADN. There are about 130 people working for Agrostatistics, 20 of which are at central level.

The main task of MAFS in this project will be to participate in the national implementation and validation of the cost of production model and evaluation of public policy (WP2, WP3 and WP9).

The Agrostatistics Directorate has worked so far on the calculation of Standard Gross Margins for the EU typology purposes and the calculation of production costs per activity for national needs. With the FADN being under implementation, so far its data has been partially used for the SGM calculations and for the assessment of the level of compensatory payments for less favoured areas.

Ms Sevginar Mustafa is a Head of Agrostatistics Division. She has a long experience within the MAFS. She participates in the process of establishment of FADN in Bulgaria. She is involved in project "Finalization and Improvement of FADN in Bulgaria", PHARE 2004. She is responsible for the establishment and functioning of FADN in Bulgaria.

Mr Orlin Prandzhev is an expert at Statistical Analyses and Balance sheets unit, at Agrostatistics Directorate. He is a leader of Bulgarian delegation in the Management Committee of FADN and has experience in the calculation of SGM and production costs.

Mr Krum Hristov is an expert at Statistical Analyses and Balance sheets unit, at Agrostatistics Directorate. He participates in the National FADN Committee and will participates in the Management Committee of FADN. He has experience in the calculation of SGM.

A short term expert will be hired under the project. He/she will be a researcher with experience in the field of modelling and agricultural analysis.

Partner 11: Lund University, Sweden

The participation of beneficiary no. 2, the Swedish Institute for Food and Agricultural Economics (SLI) has been terminated as of December 31, 2008. The reason for this was that the former partner number 2 named the Swedish Institute of Agricultural Economics (SLI) was discontinued (as of January 2009) by decision of the Swedish Ministry of Agriculture, which at the same time transferred resources to two universities, the Swedish University of Agricultural Sciences and Lund University). In this process half of the former partner number 2, SLI's staff was employed by Lund University and the other half by the Swedish University of Agricultural Sciences. The personnel working with FACEPA was also split between these two universities in more or less equal halves when it comes to full time employment. As Joakim Gullstrand, who has been involved in FACEPA since the start, is employed by Lund University, it has been decided that Lund university should be included as a new partner in order to continue and finalise the work Joakim Gullstrand has started. Lund University will thus mainly work on Work Package 7 and Work Package 9.

The Department of Economics at Lund University School of Economics and Management is today one of the largest in Sweden, with about 1000 undergraduate students every term and about 45 active PhD students. The faculty consists of 35 teachers and researchers, of which 12 are full professors.

Associate Professor Joakim Gullstrand is a senior researcher with a strong background in econometrics. He has been involved in this project on his former employment at SLI. He has worked extensively with projects involving econometric analysis using Swedish FADN data and the national Swedish farm register. Further, his domains of competence are international economics and industry dynamics. His research activities in these areas centre on the effects of trade and agglomeration on firms' exit decision and productivity. 2.3 Consortium as a whole

The proposed research team involves ten (10) institutions throughout the EU, including universities (5), public research institutes (4) and an agricultural Ministry Directorate (1). The previous section (Section 2.2) provides further details on the project participants as well their accomplishments related to the scientific and technical topics addressed in the proposal. The overall project is coordinated by Prof. Yves Surry of the Swedish University of Agricultural Sciences, Uppsala, Sweden. He has substantial experience in the areas of agricultural and trade policies, sectoral models of the agri-food sectors and production economics. All the research teams involved in this project are recognized as leaders in their national research communities with for most of them extensive international relationships. They all have a proven track record for delivering high quality, international recognized research or policy-oriented analysis in the various areas of farmers' behaviours and farm performance. All partners have or have had direct or indirect involvement with FADN databases either as users and/or national liaison agencies (partners 5, 7 and 10).

The scientific coordination and project management is the responsibility of partner 1. Partner 1 (Prof. Surry) will be project coordinator. Over the last ten years, he has been involved in cost of production studies for EU agriculture (France and Germany) and has especially been working on the improvement of existing tools (models) to provide cost estimates. Partner 1 through its Project Management Office and under the responsibility of Erik Pelling will look after all the management aspects of the research project. All the management tasks, which appear under WP 10, aim at ensuring that the various research activities in this project can be implemented in a smooth and well coordinated way.

Most of the partners have extensive skills and knowledge in agricultural production, farmer's behaviour, agricultural policy, production economics and quantitative methods, which are areas of competence required to implement this research project. Thus, five research teams (Partner 1, Partner 3, Partner 4, Partner 5 and Partner 7) have long experience in estimating cost of production using FADN data. They combine particular skills in econometric modelling, mathematical programming and production analysis. Four research teams (Partner 4, Partner 5, Partner 6 and Partner 7) are involved in quantitative policy assessment of CAP policy reform using farm-based models and FADN data. Four research teams (Partner 3, Partner 5, Partner 6, Partner 7 and Partner 8) have deep knowledge and experience on performing quantitative analysis on farm performance and cost competitiveness. Environmental applications of this project will be conducted by Partner 1, Partner 7, and Partner 11 who have extensive experience in this area. Partner 7 is also quite versed in all the more general aspects of cost definitions and FADN accounting framework. Finally,

the remaining teams (Partner 9 and Partner 10) who use their national FADN database have the necessary knowledge and quantitative skills to perform the various project tasks involving the estimation of production costs and policy analysis in Central European countries. More generally, the project teams involve partners that are particularly experienced on the whole spectrum of the issues and topics covered by this project.

The way the research work packages have been designed and organised for the duration of the project should also strengthen the unity and wholeness of this consortium of ten partners. Hence, all partners are involved in three 'common' work packages (WP2, WP3 and WP9), allowing to achieve the goals of undertaking comparative cost and policy analysis across a wide range of EU member countries. Furthermore the distribution of tasks among the partners for the remaining six research WPs reflects their areas of expertise and interest.

Sub-contracting

Three research teams (Partner 3, Partner 6, and Partner 9) will subcontract specific tasks involved in this project.

Partner 3 will subcontract INSEE[5] (Institut National de la Statistique et des Études Économiques, Paris) to contribute to several tasks. First INSEE's involvement will be with WP4 ("*Dissemination and valorisation of the production cost models"*). Experts from this institution will provide technical support and advice to develop the computer software planned under this WP (which is under the responsibility of Partner 3). In addition, INSEE through its Agricultural Division has an essential experience in studying and computing costs of production for French agriculture using national FADN data (see section 1.2 for more details on this matter). In this capacity, it will implement the "general" cost of production model for crop products, pigs and dairy in France. Sub-contracting INSEE in this research project is motivated by the following reasons. First, INSEE has a long standing expertise in studying all economic aspects of agriculture whether at the farm or sectoral levels. Second, the Agricultural Division of INSEE has a close collaboration with the members of Partner 3 in studying the performance of the farm sector in France. Thirdly, through its various actions at the national and European levels, INSEE has been instrumental in contributing to the harmonization of statistical tools and systems in the EU. Finally, legal problems (i.e. impossibility and reluctance for this institution to be involved in EU-funded projects) has prevented INSEE from being a full partner. Under such conditions, sub-contracting seems to be a viable option.

Partner 6 will subcontract Dr. Nic Lampkin, University of Wales, Aberystwyth, Wales to contribute to Task 7.2 (WP7) aimed at analyzing the impact of organic farming on

[5] INSEE which is a branch of the French Ministry of Economy and Finance is the public institution collecting and producing socio-economic and demographic statistics for France. In addition, INSEE conducted various studies on the French economy. In the area of agriculture, its role is threefold: i) it is responsible for maintaining and calculating the economic accounts of this sector; ii) it also computes the aggregate farm incomes for France at the county, regional and national levels and iii) it also undertakes economic studies on the farm sector in France.

production cost sand environmental quality. The subcontracted work will include: i) the analysis of issues arising with respect to the use of FADN data and organic farming; ii) the analysis of the role of the structure of, and the political environment for, the organic farming sector in view of the estimation results for production costs in organic farms; and iii) to summarise and evaluate existing information on the contribution of organic farming systems to environmental objectives. The involved work and expertise is very specific and is limited to parts of Task 2, WP7 of the proposal, which is why a sub-contract approach has been selected. Calling on Dr. Lampkin to conduct this specific work is justified on the grounds that: i) he is a leading expert on economic and political aspects of organic farming in Europe and ii) he has co-ordinated and participated in several related EU-research projects.

Partner 8 has no direct access to its national FADN database and therefore for the successful implementation of the project tasks in which he is involved, they need a close cooperation with the institution responsible for the collection of FADN data in this country. Therefore Partner 8 will subcontract the Agricultural Research Institute in Hungary, which handles the Hungarian FADN database.

Partner 9 has no direct access to its national FADN database and therefore for the successful implementation of the project tasks in which he is involved, they need a close cooperation with the institution responsible for the collection of FADN data in this country. This task of collecting FADN data in Estonia is performed by the Rural Economy Research Centre (RERC), Lääne-Viruma, Estonia. As a result, Partner 9 will subcontract RERC to have access to national FADN in Estonia.

2.4 Resources to be committed

The project mobilizes 339 man months, divided on 10 partners. The tables below show how these man months are divided upon different personnel categories in each partner's team. Management activities account for 13 man months. Of the total input of man months, 47 percent are devoted to developing the "general" model and the software, in WP 1-4. About 50 percent are devoted to applying and extending the general approach in WP 5-9.

Personnel costs account for the vast majority of the direct costs (see tables below), but there are also costs for travelling to project meetings, subcontracting costs and some minor equipment and consumables costs.

Partner 1: SLU	months	€/month	sum
Professors	10	9000	90000
Director or equivalent	2	9326	18652
Senior Researchers	23	6443	149733
PhD students	12	3750	45000
Research assistant	11	4136	42540
Total direct costs for personnel			345925
Travel and subsistence			33000
Consumables			10000
Audit			3500
Total direct costs, euros			392425

Partner 2: SLI	months	€/month	sum
Researchers	3,5	5500	19499
Total direct costs for personnel			19499
Travel and subsistence			3424
Total direct costs, euros			22923

Partner 3: INRA	months	€/month	sum
Director or equivalent	8	8 719	69 753
Senior Researchers	3	5 619	16 857
Researchers	2	4 343	8 686
Research assistants	18	4 321	77 782
Senior Research assistants	14	5 431	76 030
Contractual Research assistant	12	2 847	34 160
Total direct costs for personnel			283 268
Travel and subsistence			10 000
Consumables			9861
Subcontracting			55 169
Total direct costs, euros			358 299

Partner 4: UCL	months	€/month	sum
Research assistants	36	5200	187200
Total direct costs for personnel			187200
Travel and subsistence			10000
Consumables			7900
Total direct costs, euros			205100

Partner 5: INEA	months	€/month	sum
Professors	12	6500	78000
Senior Researchers	10	5000	50000
Research assistants	19	3900	74100
Total direct costs for personnel			202100
Travel and subsistence			20000
Consumables			3000
Total direct costs, euros			225100

Partner 6: vTI	months	€/month	sum
Director or equivalent	2	5500	11000
Senior Researchers	4	5000	20000
Researcher	36	4380	157680
Total direct costs for personnel			188680
Travel and subsistence			12000
Consumables			2500
Subcontracting			18000
Total direct costs, euros			221180

Partner 7: LEI	months	€/month	sum
Senior Researchers	14	6817	95434
Research assistants	10	5798	57983
Total direct costs for personnel			153417
Travel and subsistence			15000
Consumables			2000
Total direct costs, euros			170417

Partner 8: CUB	months	€/month	sum
Director or equivalent	5	3400	17000
Professors	17	3100	52700
Senior Researchers	8	2600	20800
PhD students	5	2000	10000
Research assistants	3	1400	4200
Total direct costs for personnel			104700
Travel and subsistence			16000
Consumables and services			6800
Subcontracting			20000
Total direct costs, euros			147500

Partner 9: EMU	months	€/month	sum
Director or equivalent	2	5195	10390
Senior Researchers	8	4327,5	34620
PhD students	3	3462	10386
Total direct costs for personnel			55396
Travel and subsistence			10000
Consumables			700
Subcontracting			15386
Total direct costs, euros			81482

Partner 10: MAFS	months	€/month	sum
Director or equivalent	2	3430	6860
Researchers	8	1440	11520
Short term experts	3	1440	4320
Total direct costs for personnel			22700
Travel and subsistence			9000
Consumables			700
Total direct costs, euros			32400

Partner 11: ULUND	months	€/month	sum
Researcher	8	6000	48800
Total direct costs for personnel			48800
Travel and subsistence			2200
Total direct costs, euros			51000

Estimated eligible costs (including indirect costs) and requested EC contribution per beneficiary

Partner	Short name	RTD	DEMO	Management	Other	Total	Total receipts	Requested EC contribution
1	SLU	504967	0	122 913	0	627880	0	501638
2[6]	SLI	11 794	0	24 883	0	36 677	0	33 729
3	INRA	529 929	0		0	529 929	0	397 446
4	UCL	325 760	0	2 400	0	328 160	0	246 720
5	INEA	357 760	0	2 400	0	360 160	0	270 720
6	VTI	340 688	0	2 400	0	343 088	0	257 916
7	LEI	245 126	0	2 000	0	247 126	0	185 844
8	CUB	171 320	0	1 680	0	173 000	0	130 170
9	EMU	120 019	0		0	120 019	0	90 014
10	MAFS	51 840	0		0	51 840	0	38 880
11	ULUND	81600	0	0	0	81600	0	61200
Total		**2 740 803**	**0**	**158 676**	**0**	**2 899 479**	**0**	**2 214 277**

[6] Since partner number 2 (SLI) will cease to exist as an independent entity as from 1 of January 2009, their remaining tasks, duties and corresponding resources have been overtaken by partner number 1 (SLU), which in turn will involve a new partner number 11 (LU) in some of the tasks.

3. Impact

3.1 Strategic impact

Assistance to policy makers

Analysing the impact assessment of CAP measures is an obligatory, but complicated task for policy makers. Policy makers are therefore often making use of researchers to provide them with information to be able to carry out this task. Researchers on their turn are using agricultural- and econometric models for the impact assessment and are in need of high quality data. These data should originate from a well accepted data provider, preferably the European Commission it self. The Farm Accountancy Data, that is colleted by DG-AGRI and stored in the FADN database, contains valuable information on the returns and the costs of a large number of representative farms. These farms for 2004 now cover the most important farm types in all the European Union member states. The agricultural and econometric models mentioned above in general don't make use of these FADN data directly, but are instead activity based. This means that these models are in need of returns and costs per enterprise (activity). Currently this kind of data is often taken from different sources for which accuracy might be a problem. Because per enterprise (activity) data are not provided directly by the FADN database there is a need to generate this information through an econometric tool in an accurate and well thought way provided by this project.

The calculation of cost of production per enterprise (activity) thus serves as a basis for improving the agricultural- and econometric modelling for measuring the impact assessment of the CAP. However these data not only have their use for modelling, they can also be used themselves for analysing the impact assessment of CAP. The cost of production calculation can for example be used to analyse the relationship between the cost structure and the farm performance and to quantify the relationship between the costs of producing commodities across the EU and the impact on the landscape and natural environment.

All the above (cost) information that is important for policy makers are at the heart of the results and findings of several project tasks. For instance, some of the deliverables associated with WP5 and WP6 and WP9 (see D5.3, D5.4, D6.3, D9.3 and D9.4) would be highly valuable to policy makers. It is important to stress that that the deliverables D9.1, D9.2, D9.3 and D9.4 (associated with WP9) would show how the cost estimates but other FADN indicators are or can be systematically used in policy impact assessment exercises and how their accuracies could be tested. In a similar vein, all the empirical cost estimates that will be generated under WP3 for crop products, pigs and dairy would likely be valuable to policy makers. Finally, the implementation of this ready-to-use computer tool (model) to estimate cost of production would be quite useful to enhance the use of cost estimates in policy units of the Commission.

Generation of knowledge

This project and our approach for generating a database with cost of production per activity are not unique. Other research groups all over the world have probably used similar models to determine cost of production data. Besides using models they might also have experience in using other sources. Our aim is to learn from these other groups and to improve our approach with this knowledge. For this reason we will start the project with an extensive literature review. Different partners in the project team have experience in using econometric modelling for determining costs of production based on FADN data. The strength of this project is that modellers can combine their strength to establish an improved modelling tool for cost of production. This aspect of the project would enhance the empirical knowledge of cost of production in all agricultural sectors of EU member countries (se in particular the tasks of WP3 and the corresponding deliverables D3.1, D3.2 and D3.3). In the same vein, it is worth pointing the role of tasks associated with WP7 (see deliverables D7.2 and D7.3 D7.4) which would provide first hand information on the cost of production associated with more environmental-friendly farm systems. Another type of knowledge that will be generated by the project has to do with the model developments that are planned in this project. This especially concerns the tasks associated with WP3 and WP8.

Added value in carrying out the work at the European level

Undertaking the research project at the European level can be justified on the following grounds:

Pooling of resources: The proposed project brings together teams that have high expertise in the areas of cost analysis, farm-based modelling and farm accounting data. Hence Partner 7 is a leading expert in EU farm accounting data systems. As far as modelling is concerned, Partner 1 and Partner 3 have extensive experiences in developing and estimating cost of production models. Partner 1, Partner 4, Partner 5 and Partner 6 have a deep knowledge of farm-based models and more especially of mathematical programming. Finally, it should be pointed out that Partner 3 and Partner 5 have experts in conducting farm efficiency and cost competitiveness studies. Most of the partners have also experiences in consultancy and policy advice to government, inter-governmental and international organisations and have also been involved in the EU-funded projects.

Estimating cost of production and performing cost analysis from a broad European perspective: As this project would develop a “common” cost of production model that would be applied to many EU countries, it would provide homogeneous and comparable cost estimates and thus would allow to

3.2 Plan for the use and dissemination of foreground

Dissemination and use of project results

Main user groups of the project's results are the European Commission, national authorities responsible for the FADN, researchers in agricultural economics, and policy makers and policy advisors in the EU. Project results are also relevant to farmers' organisations, NGOs working with environmental and rural development issues, international organisations and the international academic community.

Users will be able to access the project's results during and after the implementation period by means of:

a) a specially designed website;
b) a series of working papers (most deliverables are working papers);
c) the final report;
d) the models developed;
e) an operational computer software with a user friendly interface for production cost estimation;
f) the User Guide to the software developed;
g) project organised workshops and seminars;
h) training sessions for Commission staff;
i) participation in international seminars and conferences particularly those organised by the European Association of Agricultural Economists;
j) publications in the media and specialised journals.

The interim and final results will be delivered to the European Commission and will (where applicable) be made publicly available on the Internet website maintained by the Project Management Office. The website will be managed also after the end of the project.

The project will set up a working paper series. Working papers will be produced through the lifetime of the project. Working papers will cover methodological issues, model documentation, project results and policy discussions. Working papers will be made publicly available on the website, and many of them are aimed at subsequently being publishing in international scientific journals.

The implementation of the computer software will be made on the EU Information system platforms with the help of technical services of the EU Commission. The training of a panel of end-users, including economists and technical staff from the EU Commission and experts from various Member States will be delivered during planned technical workshops and seminars.

Training sessions for Commission staff will be organised. These training sessions will cover both more general aspects related to estimation and modelling of cost of production and the use of the models developed within the project.

In order to reach a wide audience and increase the policy impact of the project's research, a one or two day seminar on production cost estimation will be organised in the end of the project based on the final results of the project.

Representatives of the European Commission will be invited to the seminars, workshops and general project meetings of the project.

Management of knowledge and intellectual property

To be able to achieve the various tasks assigned in this research project, FACEPA partners would need to have direct access to the EU FADN database, which would require that the EU Commission agrees to share such data information. In addition, it is expected that the proposed cost of production model would be part of the public domain once the FACEPA project is completed in 2010. All these matters concerning publication rights and data sharing would have to be discussed and settled with the EU Commission prior to start of the FACEPA project.

4. Ethical issues

Since the project will use FADN data, some data related to individual farmers will be available to project partners. However, the data in FADN do not include the type of personal data give as examples in the Ethical Issues Table below. Further, the analyses based on FADN data within the project are not aimed at analysing personal data, but input use, production levels and costs. Several partners in the project are themselves responsible for the national FADN and all other partners are using or have previously used FADN data, hence partners are already able to ensure that personal identity is protected.

ETHICAL ISSUES TABLE

	YES	PAGE
Informed Consent		
• Does the proposal involve children?		
• Does the proposal involve patients or persons not able to give consent?		
• Does the proposal involve adult healthy volunteers?		
• Does the proposal involve Human Genetic Material?		
• Does the proposal involve Human biological samples?		
• Does the proposal involve Human data collection?		
Research on Human embryo/foetus		
• Does the proposal involve Human Embryos?		
• Does the proposal involve Human Foetal Tissue / Cells?		
• Does the proposal involve Human Embryonic Stem Cells?		
Privacy		
• Does the proposal involve processing of genetic information or personal data (eg. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)		
• Does the proposal involve tracking the location or observation of people?		
Research on Animals		
• Does the proposal involve research on animals?		
• Are those animals transgenic small laboratory animals?		
• Are those animals transgenic farm animals?		
• Are those animals cloning farm animals?		
• Are those animals non-human primates?		
Research Involving Developing Countries		
• Use of local resources (genetic, animal, plant etc)		
• Benefit to local community (capacity building ie access to healthcare, education etc)		
Dual Use		
• Research having potential military / terrorist application		
I CONFIRM THAT NONE OF THE ABOVE ISSUES APPLY TO MY PROPOSAL	YES	

5. Gender aspects

The gender dimension is integrated from two perspectives. The project proposal attempts to strengthen the role of women in research. In the research team, women are leading several parts of the project. Further, the female participation in agriculture will be accounted for in the study, particularly in the new Member States, where women are heavily involved in agriculture.

FACEPA 212292

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