RICASTINGS - the implications of a new farm return on a renewed FADN

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January 1999

Report 99.06

Agricultural Economics Research Institute (LEI, The Hague)

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Abitabile, C., G. Beers, G. Bonati, C. de Bont, B. Del'homme, G. Larsson, H. Lindén and K.J. Poppe
The Hague, Agricultural Economics Research Institute (LEI), 1999
Report 99.06

The RICASTINGS project studies the need for a new farm return in the EU's Farm Accountancy Data Network. The analysis, based on interviews with stakeholders and workshops, shows that a new farm return not necessarily solves the performance problems of the FADN, but could be instrumental to achieve new workings methods in the network. A proposal for a flexible farm return with up to date information technology is provided.

Disclaimer
The present report is the result of a study carried out for the Directorate-General of Agriculture of the European Commission by a group of experts from different countries of the European Union. The report is made available with the authorization of the European Commission as a contribution to the ongoing debate on the role of the FADN and its farm return in relation to the agricultural policy. It does not necessarily reflect the opinion of the European Commission services and in no way prejudges the Commission's official position in this matter.

Restricted circulation
The circulation of the working paper is restricted to the authors, DG VI A.3 and the FADN managers.

Contents

Preface

The Farm Accountancy Data Network is an agreement (written into law) between member states and the European Commission to gather and exchange micro economic data on farming. This system has clear performance problems and is up for revision. The RICASTINGS-project investigates the feasibility of a new farm return to improve the performance.

During the course of the study it turned out that the farm return as such is not the major bottleneck of the current system. It is much more the performance of the network (network management), the lack of publications and the conversion and control programmes that are problematic. However a new farm return influences all these aspects and the introduction of a new farm return can be used to change working methods.

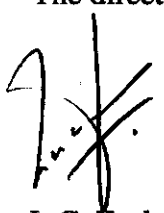
This background made it necessary for the project team to reflect on the new farm return in relation to the working methods of a renewed FADN: A new farm return without a renewed FADN would be useless. This working paper is the result of this analysis.

Originally the project team had in mind to submit this working paper as the final-report to the European Commission. However DG VI A.3, whilst acknowledging that coincident changes in the context of the EU farm return were both desirable and necessary for the future of the EU FADN, wished the study to concentrate on the farm return itself. The study report is entitled The feasibility of a new farm return for the FADN'. It draws heavily on this working paper as well as the previous working documents. In consensus with DG VI A.3 it has been decided to make this working paper available as it will be useful, e.g. for IT experts to review it in current FADN IT maintenance projects and for the FADN network in total.

The project team would like to express its severe thanks to all persons that provided useful input to the project. Besides the FADN managers and the interviewed stakeholders, we thank the interviewers (listed all in appendix 3), Bernard Brookes, Keyo Hyvönen and others in DG VI A.3 for their guidance, Catherine Guillaume for developing the prototype in MSAccess and Brigitte van Oord and Iris van Es for their secretarial support.

We hope that this report will help the FADN/RICA network to adapt and survive in a confusing period of a changing CAP and new information technologies. That will be an ongoing process.

The director,



L.C. Zachariasse

A bird's-eye view of the results

EU – FADN

Farm Accountancy Data Network

PERFORMANCE PROBLEMS:
- Results too late
- Inaccessible outside DG6 (A/3)
- Content outdated due to changing CAP
- Support from unit in DG6 too data oriented

SHOULD THE FARM RETURN (the major element of the system) BE RENEWED?

NO:
Performance problems are mainly due to:
- Conversion software
- Control programme
- Working methods A3 and RICA committee

YES:
- Current farm return should be simplified
- Needed to remove bottlenecks of conversion and control software
- Way to introduce new working methods in A3 and the RICA committee

CONCLUSION:
- ***Yes, make new farm return***

But only feasible if:
- working methods and IT are changed
- limiting conditions are respected

And with a distinction in:
- hard core = obligatory, simplified current farm return
- voluntary surveys = additional, subsamples take what is available

Changing the Farm Return = Changing the FADN

ALTERNATIVE:
- Don't change FADN
- Risk large budget cuts and abolishment
- Buy studies from outside consultants with inferior data

LIMITING CONDITIONS:
- Farm return should be flexible (CAP changes)
- EC can not easily change national farm returns (based on national laws, member states pay most of the data collection costs)
- Conversion should be a core competence, as new data sources will be available.

NEW WORKING METHODS:
- Subsidiarity to Member States
- Task forces for data management
- Closer link to policy making
- Quality program
- Audit in stead of control

SUPPORTED BY UP TO DATE IT:
- Data dictionary
- WWW with data definitions, results and conversion rules
- Everyday data delivery by internet
- Conversion software available
- Upgrade RICA 1, 2, 3 needed

Management summary

Objective of the study

This study is a feasibility study for a major reform of the farm return of the EU's Farm Accountancy Data Network (FADN). The study should make clear the future form and content of the data provision by the member states to the EU FADN based on the (renewed) objectives; it should provide a plan (in the form of a draft call for tender) for the implementation of this data-provision. A new system should fit the information needs of the Commission and should be flexible enough to be adjusted to changing information requirements.

The study is based on:
- extensive survey with the managers of national farm accountancy data networks (FADN) in all member states;
- interviews in all member states with stakeholders (financiers, users, information suppliers) and FADN managers;
- workshop with the users in DG VI;
- workshop with FADN managers of all member states;
- discussions with the DGVI A3 staff;
- previous work done on FADNs in Central and East European Countries;
- previous work carried out in the concerted action PACIOLI;
- experiences in member states with an innovative FADN.

Opinions stakeholders

The survey among about 55 stakeholders revealed that:
- information requirements have changed;
- the FADN has to be adjusted, in particular to the evolution of the CAP;
- the current performance has to be improved within the same budget;
- data are too old;
- data are not accessible enough;
- clear allocation of responsibilities, tasks and work between DGVI-A.3, the RICA committee, national liaison offices and local accountants is desired (on maintenance of the farm return, control of data, conversion and publication).

In general the priorities of DG VI on the new farm return do not differ significantly from those of the stakeholders in the member states. DGVI stressed especially the importance of:

- alignment of the data set to the evolution of the CAP
- gross margin and cost of production data
- having data in time, including rapid results
- more flexibility, including a split in hard core and voluntary data
- improvement of interaction with policy makers in other units of DG VI to solve the problems of the complexity of the data.

If FADNs succeed to fulfil these conditions, there is a future for micro-economic data sets.

Feelings of FADN managers

The growing awareness of the importance of stakeholders makes FADN managers express similar feelings:

- use of data should be stimulated;
- need for a new system, adjusted data sets and new technology;
- worried about financial restrictions;
- member states responsible for quality of the data set;
- clearer and new role for DG VI A3.

Basic concepts for a new farm return: from data handling to data management

The current FADN has clear performance problems in the eyes of stakeholders and FADN managers: conversion takes too much time, data are too late and unaccessible. However the FADN itself is not questioned and is seen as a unique, and increasingly needed, micro-economic tool. It can be concluded that the FADN should not be abandoned but improved. The farm return should be flexible enough to support the changing CAP. The current farm return has become obsolete, in term of IT and in relations to the current CAP.

A new farm return is feasible because FADN managers have become convinced that a change is needed, and in several member states the software is old. An incremental approach in adoption of the new farm return is also contributing to the feasibility.

National farm returns differ largely between member states and it is not feasible to oblige member states to harmonize them on the short term. Several member states have their farm return based on national tax and accounting laws, that can not easily be changed. In future there will be more data sources than now, and conversions from these data sources can be attractive. The core of the FADN business is conversion. Conversion can be carried out at several places. Carrying out the conversion process totally by the Commission is not realistic. This would require an amount of know-how on national farm returns that is not manageable. It can be concluded that conversion should be carried out in the member states.

The farm return should be based on accounting statements, which means that a] there is an incentive to use harmonized indicators in the national publications, and b] national member states can answer questions from users.

The EC has not many possibilities to require data which are not yet gathered in member states. The EC pays only a small amount of the costs. In some cases it will be possible to link a regulation (that obliges countries to collect the data) to a policy proposals.

The most likely strategy is to take in all which is available, and to try to convince member states to shift their own resources to gather the data that the EC and other member states would like to have. Methods for convincing (besides the reallocation of budget) are helping in innovation, providing data from other countries and confront policy makers with "blank columns".

The need for a flexible approach makes it necessary to design the new farm return (FR2000+) with an obligatory 'hard core' and a voluntary flexible part.

Obligatory data should contain at least all the details needed for the FADN objective of monitoring income. That is a simplification of the current that set. Voluntary data are additions to make the data more useful for the FADN objective of policy research, especially on specific policy issues where policies are still being developed.

Although the current legislation mentions both objectives and the second one is the most important nowadays, the surveys from the member states learn that several FADN managers see the FADN as the representative sample for monitoring income, and associate voluntary data on subsamples as 'outside the FADN', so convincing them is important here. The objectives should officially be recoined as 'monitoring of income and other policy objectives' and 'policy research'.

Obligatory data should be in as soon as possible and therefore they should not be too detailed. 60% should be in after 6 months, 100% after 9 months. This is an improvement over the current situation that is only possible by simplifying the current farm return into the hard core, reorganization of conversion and control and improve network management. There is nearly no experience in the FADN with gathering data before the end of the year. Therefore this makes no sense to include it in the new farm return.

Figure 1 shows the statements that will be included at the start. Other issues that are mentioned as interesting are environmental data (pesticides, energy, use of water and deforestation), integrated production and precision farming. They could be added in future if more member states are able to deliver data.

Characteristics of the new system: farm return 2000+

Core of the new system will be a data dictionary that contains the definitions of indicators and statements. The data dictionary contains EU definitions as well as member state definitions and the conversion formulas. If member states insert their own definitions and the conversions formulas in de data dictionary, the data dictionary will generate automatically software for conversion of member state data sets into the common EU data set.

Survey	Topics	Current tables	Reference for harmonization
HARD CORE			
Farm structure statement	esu, uaa, awu, crops areas, lu	A, B, C, D, K	farm structure survey
Farm profit and loss account	inputs, outputs in euro oly	E, F, K	EU accounting directives, IASC
Farm subsidy statement	subsidies per regulation	J, M	CAP regulations
Farm flow of funds statement	cash flow, investments	G	EU accounting directives, IASC
Farm balance sheet	capital, liabilities		EU accounting directives, IASC
VOLUNTARY			
Mineral balances	nitrate and others		concerted action Elisa
Costs of production	gross margins, physical data	F, K	classex 44 on sgm
Diversification on the farm	organic production		
	processing on the farm	K	
	agri-tourism	K	
	landscape maintenance	J, M	concerted action Elisa
	forestry	K	concerted action Mosefa
Activities outside the farm	non-farm activities		Kshatriya study
	non-farm income/capital		Kshatriya study, OECD ewg2, B. Hill

Figure 1 Statements included in FR2000+ at the start

Conversion and control will be done by the member states. Data will be send to Brussels by Internet connection. A work flow management function in the system will enable to supply data from member states continuously which will speed up the availability of the data significantly.

The data dictionary needs to be available on the Internet: public availability of definitions and formats will facilitate harmonisation. The common EU data set will be available for users (in several layers of accessibility) by Internet technology.

Organizational issues

Stakeholders and FADN managers expressed the need for a clear assignment of responsibilities. This is even more the case if data are more accessible and FR2000+ replaces the current farm return. Complexity and the need for flexibility ask for a more organic approach (see figure 4.1).

Member states will be responsible for the quality of the data they supply to the EU database. Core activity of the A3-unit is on using micro economic data for policy studies for the Commission. As the FADN is the main supplier of this data, it is for DG6 important to be involved in its management: this brings the FADN close to its users and gives DG VI access to national know-how on policy studies. The RICA committee will remain responsible for the compulsory data set, the quality system and the guidance of task forces of member states to exchange voluntary data sets.

This situation is roughly in line with the current regulations on the FADN. However, in practice the support of data supply and data publication by A.3 has been overshadowed by managing the conversion and checking of data at the end of the pipeline. This needs to be replaced by a quality program, based on stakeholder interaction for stimulating 'user defined quality' of the data and a peer-review system for exchanging expertise and experiences between member states.

For operating the new system three tasks will be available at EU level:

- a database manager for the technical assistance in inserting data by the member states and making the data accessible for users;
- a data manager for maintaining the definitions in de data dictionary and identifying new data requirements in DG VI;
- a network manager for co-ordination of member state activities, especially for initiating and facilitating task forces that concentrate on the quality system and standardisation of especially the voluntary data sets.

These tasks are not new, but especially data management and network management become more important. It is advised to make explicit functions for them, freeing policy analysts from these tasks.

For the implementation of the new farm return, two types of tasks are needed:

- activities regarding the development of the IT infrastructure and software (selecting data dictionary and database, developing network-infrastructure, creating conversion software);
- activities to make detailed data definitions, a quality program and a www site.

The IT tasks can be build in or upon the current IT projects RICA 1, 2, 3. The other activities can be sourced out with a tender procedure to taskforces.

1. Introduction

1.1 Problem definition and objective

The EU FADN is the primary instrument of micro economic analysis in the European Union. The data are collected from farm accounts by member states in national accounts networks, of which data are converted and transmitted to the European Commission according to the data definitions and structure of the EU farm return. This farm return has been defined more than 25 years ago. Since then the needs of users like policy analysts and researchers have changed, in line with changes in the Common Agricultural Policy and the enlargement of the EU. At the same time the developments in information technology have delivered improved methods for data management.

For these reasons a revision of the EU FADN farm return is appropriate. In addition the data handling environment of the Commission is being renewed and several member states are in the process of modernising their micro economic information management. In line with this, several contributors to the EU FADN have carried out a concerted action PACIOLI (AIR3-CT94-2456) to exchange ideas and foster innovation in this field. This concerted action also called for a renewal of the farm return.

The renewal of the farm return is a major reform of the EU FADN. A proposal to implement a new farm return will therefore lead to discussions and debates within and between member states of the future content and form of the farm return. On some topics regarding the scope of the farm return, like the inclusion of data on costs of production, non-agricultural income and environmental indicators, these discussions are connected to the objectives of the EU FADN and the national FADNs. This also concerns the identification of the users that the FADN tries to serve. It is not clear which changes in the farm return have the support of the users, the data collectors and the (national) financers of the FADNs. Interaction with these stakeholders could also reveal demands on other aspects of the performance of the EU FADN, like more rapid results, the use of alternative data sources, the timeliness (rapidness) of the results and the frequency of the results.

For these reason a feasibility study for a major reform of the farm return is seen as a necessary step before a new farm return is developed and implemented. This feasibility study should make clear *the future form and content of the data-provision by the member states to the EU FADN based on the (renewed) objectives of the EU FADN and should provide a plan (in the form of a draft call for tender) for the implementation of this data-provision.* A recommendation to keep the current farm return unchanged is not ruled out in advance.

1.2 Methodology

The feasibility study for the new farm return has been carried out by four partners: the Dutch Agricultural Economics Research Institute (LEI), it's Italian equivalent INEA, Statistics Sweden and Enita de Bordeaux. The study has been named RICASTINGS – RICA's Study To Install a New Generation of Statistics. It has been carried out in three phases:

Phase 1 Fact finding on the current situation (December 1997 – March 1998). In this stage two important activities have taken place to get input from FADN managers and (other) stakeholders [1]. An extensive survey has been designed and send out to the member states (in English and French). This survey (with more than 100 questions) has been given considerable attention by the national FADN managers and has been returned by all FADN managers (including two regional ones and the FADN managing unit DG6 A/3 itself).

All over the EU more than 50 stakeholders have been interviewed in an open interview using a questionnaire. To organize this, a special procedure has been established with the help of the FADN managers and the PACIOLI group. Interviews have been carried out by an independent expert from a neighbouring country, using an open questionnaire provided by the project team. Stakeholders to be interviewed have been selected by the local FADN manager, and included the local FADN manager himself. With a few exceptions the local FADN manager has not taken part in the interviews himself and interviews have been with one stakeholder per interview. A number of interviews were carried out in DG6 and DG19. To give an example: an FADN expert from England has done the interviews with stakeholders in Ireland and an Irish expert has done them in Denmark.

This approach has a number of clear advantages. A practical one is that it solves most of the language problems, as interviewers were selected on speaking the local language (where needed) and being able to report to the project management in English, French (or German and Dutch). It also makes experts available, who would not be willing or too expensive to do 50 interviews all over Europe. More important is the fact that the interviewers are themselves involved in the FADN management and learn directly from interaction with stakeholders: they will reflect on their own situation too and make themselves more open to change. This also leads to a high involvement of FADN managers in the feasibility study, as everybody can watch how conclusion on e.g. the current performance and future needs are drawn. Due to the help of the local FADN managers and the flexibility of the interviewers this procedure has been successful.

The results of the survey and the questionnaire (interviews) have been analysed and reported to the workshops (see below) and the FADN management committee in its spring 1998 meeting. Two working documents are available with more detailed results:

- Working document Replies to survey of FADN managers;
- Working document Results of the interviews with stakeholders.

Phase 2 Survey of future requirements and possibilities (April 1998 – June 1998). Central in this phase have been two workshops, both held in the first week of May in Brussels. The

[1] Stakeholders are all those persons and organizations that have an interest in functioning of the FADN, e.g. because they provide data, finance or use the data.

first workshop has been with persons from DG6 A-directorate and a representative from Eurostat. The workshop of half a day concentrated on issues like the objective of the FADN vis a vis the mission of unit A.3, the division of work between DG 6 and the member states and the data requirements in future. A second workshop has been held with the FADN managers and accompanied persons that normally visit the FADN management committee. This workshop lasted one day and with the use of several workshop methods (brainstormings, discussions, tasks to fill in certain formats) many opinions and suggestions have been expressed by this involved group of persons. The workshop showed a good spirit and consensus on the fact that change is needed. Detailed reports with the results of the workshop are available:

- working document FADN managers: Criteria for the future farm return;
- working document Taking stocks of DG6's requirements on a new farm return.

In addition results from the questionnaires have been used in the analysis. Attention to the issue of enlargement of the FADN to Central and East European Countries (CEEC) has been paid by studying relevant literature [1] and using the results of a Phare sponsored workshop in November 1997 in Budapest [2].

In the project it turned out that the farm return as such is not the major bottleneck of the current system. It is much more the performance of the network (network management). The lack of publications and the conversion and control programmes that are problematic. However a new farm return influences all these domains and the introduction of a new farm return can be used to change working methods.

This background made it necessary for the project team to reflect on the new farm return in relation to the working methods of a renewed FADN: A new farm return without a renewed FADN would be useless.

Phase 3 Consideration of the implementation of a new farm return (June 1998 – September 1998). This phase has been characterized by digestion of all the inputs and making a coherent proposal for the future. Several items have been studied in detail, like the quality issue and the information and communication technology options (ICT or IT). A workshop with the members of the project group, beginning of July 1998 in The Hague, has been useful to clarify unclear points and to put the jig-saw puzzle together. This led, among others, to a discussion note with 21 decision points on the structure of the new farm return (see chapter 4 of this report). This document has been discussed with DG6 A.3: first with the management and the analysts and then with the persons responsible for database management. With an accompanying letter of DG6 it has also been send for consultation to the FADN managers in the member states. In addition suggestions for the follow up of this project and the relationship with current IT projects have been discussed with the management of DG6 A. To test the feasibility of the data model defined for the new farm return, a prototype in MsAccess has been

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[1] See B. Pohl: Aufbau und Anwendung von Testbetriebssytemen in den Ländern mittel - und Osteuropas; In: ASA: Aufbau agrarpolitischer Informationssysteme in den Ländern Mittel - und Osteuropas - eine Zwischenbilanz, 1997; See F. Simon: Enquête sur la mise en place d'un Réseau d'Information Comptable Agricole (RICA) dans les Pays Candidats; Brussels DG6 A/3, 1998.

[2] ASA and LEI: Agricultural Information systems for policy and market decisions, 1998.

developed. Most of the results of this phase have been reported fully in this report, but in addition the following reports are available:

- working document A quality programme for a new farm return;
- thesis: Vers une nouvelle fiche d'exploitation Europenenne: etude de faisabilite et proposition d'un prototype.

1.3 How to read this report

For readers who are not prepared to read the full report from the beginning to the end, the structure of the management summary might give clues for interesting chapters. Chapter 4 is recommended as a very essential chapter, as it provides the turning point between the input from the stakeholders and FADN managers reported in the first chapters, and the more detailed decisions on a new farm return (FR2000+) in the chapters 6 to 9. Chapter 5 provides more or less the same information, but then not as an analysis but in the form of a short story that pictures the consequences of the decisions for future working methods.

In addition policy makers might be tempted to check in chapter 2 and 3 if they agree with the analysis on current performance and future needs. Managers might be more interested in chapter 10, the plan for the follow-up. And experts in accounting, information technology or quality management could check the chapters 6 - 9.

2. Current performance of the FADN

2.1 Introduction

In this section of the report the views and opinions of stakeholders and FADN managers are presented on the actual performance of FADN; it is a short description of the state of the art. The information is based on the questionnaire (survey) replied by the FADN managers in the EU member states, and by the unit DG VI.A.3 in Brussels, and on the results of the interviews carried out with a wide range of more than 60 stakeholders in all member countries, and on the EU level. Figure 2.1 provides an overview of the types of stakeholders of the EU's FADN. In addition information on this item has been gathered during the workshops in may 1998 with FADN managers and EU staff. On these points working documents with more specific information are available.

2.2 General observations

The general impression of FADN managers and many stakeholders on the current situation of FADN is that the performance is not optimal; the different lacks and shortcomings, but also the strong points are mentioned in brief in the next sections. At the same time there is a need and willingness to adapt and improve FADN. It is also recognized that many obstacles have to be overcome in this process.

In general there is much interest in FADN; it is mentioned as an important (micro-economic) source of information by which the farm sector is well documented in relation with other sectors of the economy. It is also observed that the importance of FADN is increased because of the changes and the reform of the CAP.

The stakeholders can be divided according to two different positions and interests:

- stakeholders not directly involved in the data collection and processing are mainly interested in the results of FADN as they are published and made available, while
- FADN managers, including unit DG VI.A.3, have also an interest in the quality of the process of data handling and the optimalization of their management of the system.

2.3 Current use of FADN data

There is a difference in the use of FADN data and results. In most countries national (and regional) data are used intensively, while EU data (from all countries) or data of one or more other EU countries are used only occasional. This has several reasons for this, besides the fact that many persons are first of all interested in the situation of the farm sector in their

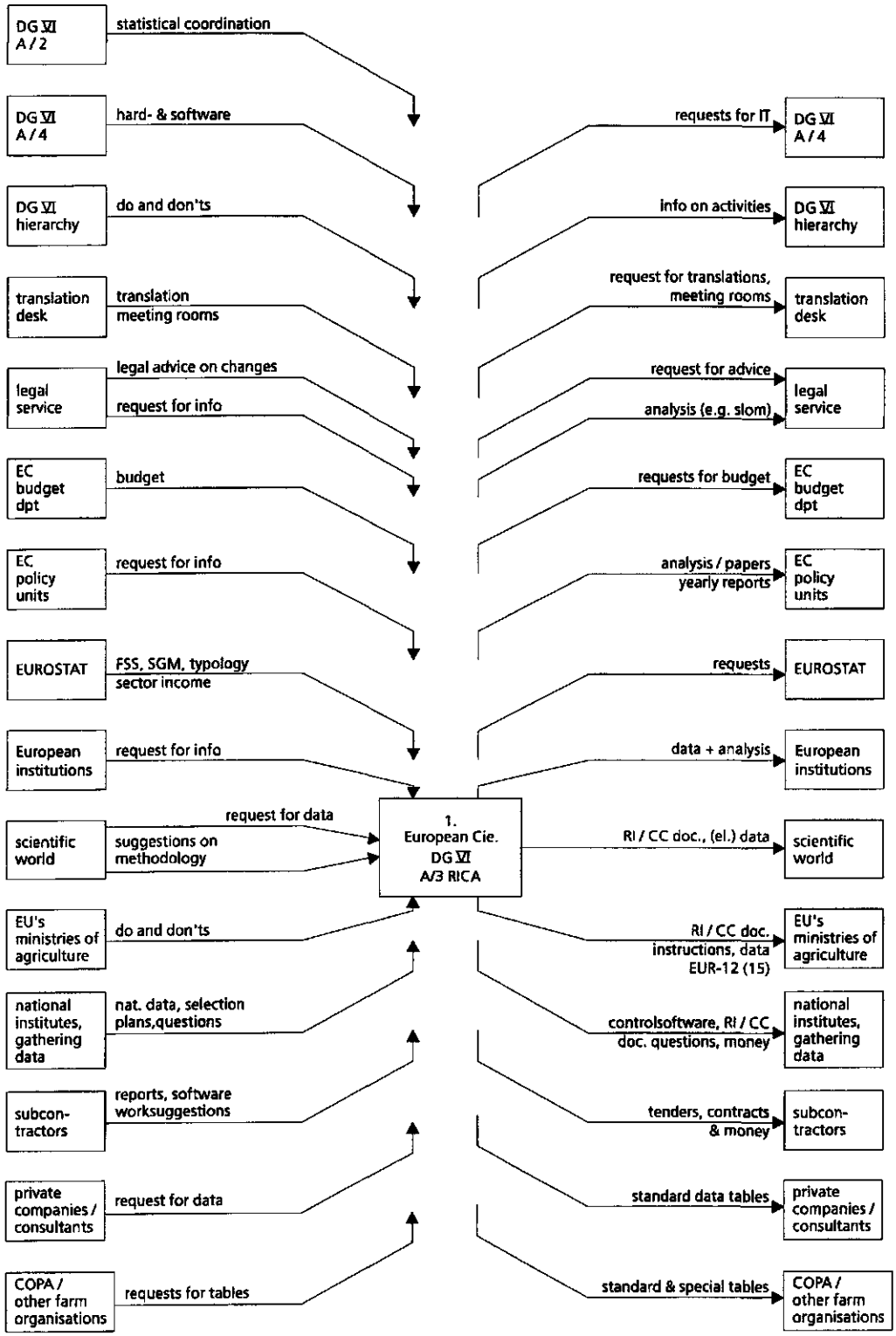

Figure 2.1 Stakeholders diagram DG6 A/3 FADN

own country: the late availability of data of other countries, the lack of publications on it, differences in definitions and lack of knowledge on the definitions used in other countries.

The demand for data of other countries mainly concerns data from countries and specific regions with a comparable structure of farms and the same types of products.

Main users of FADN data and results are the EU Commission and national governments (mainly Ministries of Agriculture), farmers organizations, universities and research institutes, advisory and extension services, banks and the agri-business.

2.4 Objective of FADN

The use of FADN data has several, quite different objectives. The main, as they are mentioned in the interviews and discussions, are:

- development, maintenance and evaluation of (farm) policy;
- monitoring the development of incomes of farmers in general or in specific regions or with specific types of production;
- to compare income results of farmers inside the sector and or with other groups in the society;
- to collect specific information per type of production on costs, quantities, as well as on the relation between production and environment etc.

These objectives are in some respect different from the official EU objectives of FADN: monitoring income and business analysis. In DG6 there has been an important shift from monitoring income ("objective method") to policy analysis (especially of budget effects and product supply response of policy proposals).

It is observed that for the different users of FADN data and results the objectives are not equal. Different users, for instance politicians on the one hand and researchers or teachers on the other, have different needs on data and results.

It is also remarked that the objectives of FADN have changed during the time - more than 25 years - it now functions; this is related to the development of the CAP, the enlargement of the EU, the changes in the role of agriculture.

Quick statistics and forecasts of incomes-results of farmers on the basis of FADN are only produced in some countries. It is not clear if more member states are interested in doing this in future. FADN results and data are used however in many countries to obtain or to estimate macro-statistics and -figures on agriculture, as well as to calculate standard gross margins.

2.5 Organization of FADN

It is clear that the organization of the FADN is different per member country; in some countries the collection of data is done by one institute or the Ministry of Agriculture, in some by different regional private accountancy-offices, institutes or universities. This means not only that the position of the national FADN managers is different. At the same time there is a

(wide) variety – sometimes even inside a country - in the use of technology (IT), working methods, the process of control data, the availability of (micro-)data and the speed of delivering data to Brussels and the presentation of national publications.

In general stakeholders have the opinion that the contacts with the national FADN managers in their own country and their services are good and constructive. This does not mean however that there are no remarks and desires on the provision of data and results; time of presentation and data on specific regions and types of production have to be improved, some remark.

Stakeholders (except the FADN managers) on the other hand have (nearly) no contacts with DG VI.A.3 in Brussels; there are several reasons for this, mainly the lack of actual data and the insufficient access to FADN data. It is also observed that many (national) stakeholders having a need for data of other member countries present their questions to the national FADN managers.

FADN managers as well as some other stakeholders see several shortcomings in the organization at EU level and in the communication in both directions. They have a lot of suggestions for improvements in this field; the suggestions are dealing with the decision-making process, the provision of information and the communication with Brussels, the documentation etc. (see 3.6).

2.6 Quality

FADN managers and stakeholders in general have the opinion that on different aspects the quality of FADN has shortcomings and has to be improved. On the other hand there are interviewed persons who qualify FADN results as good. More general is the idea that FADN results are necessary to be well informed on agriculture and to manage the CAP, or the farm policy in general.

Stakeholders mainly underline the need of a quicker availability of the results; they have severe criticism on the too late presentation of EU data. FADN managers in this respect underline the objective to deliver correct data in time (within 9 months of the end of the accounting year). Many member states however have enormous problems with this; these are related with the format of the farm return, control programs (see also 2.7), budgets and connected to that, lack of staff.

The problem of timeliness regards especially the EU results, but in some countries also the national ones. So there is (in general) a time-lag between the presentation of national results for an accounting-year in the member state and the presentation of the results for the same year for that country on EU level.

Another problem mentioned is the lack of documentation and information on the available results, at least on EU level. Not in all cases it is clear what kind of definitions and methods are used. Besides the fact that some remarks where made on the defintions used at EU level, the use of different definitions and methods in the member states handicaps the use of the national data and results in other countries.

Linked to this problem is the question of representativity; some stakeholders have the opinion that the sample is too small, especially to represent specific regions and types of production. Some FADN managers and stakeholders are worried about the non-response of farmers to participate (voluntary) in the system.

More general is the observation that there is no quality program on FADN, at least not at EU level; in practice in different countries there are several programs to guarantee the quality of procedures and data. But there is no (common) mechanism or procedure to evaluate the working process on a consistent manner.

2.7 Content of the farm return

In the reactions of the FADN managers on the questionnaire a lot of information and suggestions are presented to change and improve the current tables of the farm return. The background for this is that in several cases EU FADN definitions are not clear or different from the national ones, while on some items it is difficult to collect the required data and or to make the desired distinction in available data, for instance on loans. Implementation therefore gives problems for many items in the return.

The main items (tables) giving problems are: labour (C), costs (F), land, buildings, capital (G), debts (H), subsidies, grants and compensation payments (J and M) and quotas and rights (L). But also on the other tables shortcomings are mentioned in combination with suggestions for improvement.

The problems on the content of the farm return are a major reason for the problems and questions dealing with the presentation in time of (correct) data. Besides that, (nearly) all FADN managers have the experience that with the existing EU control programs it is very hard or impossible to respect the deadline of 9 months after the end of the accounting-year.

2.8 Finance

Some stakeholders have the opinion that the costs of FADN are reasonable related to the importance of the information provided: they are necessary to manage the costly CAP. It has to be observed however that the costs of FADN (EU and national) are not known by most stakeholders. Most of the FADN managers have to obey severe budget restrictions.

It is remarked several times that more money should be available for analysis, access and presentation and publication of data and results. There seems to be an imbalance between costs of collection and making data accessible. On the other hand some persons find the EU reimbursement per farm too low, while others suggested the amount to be decreased when (correct) data are not presented in time.

There are some worries among FADN managers and stakeholders about the (actual or future) policy of their national government to obtain budget savings. In some member states where costs of collecting data per farm are higher than the EU reimbursement per farm, this is one of the reasons to be reluctant to new activities in the frame of FADN.

The current and future financial situation could (therefore) handicap the further development of FADN, as for example the addition of new data in the farm return. Therefore there is the question of strategy: which problem has to be solved first (speed of data and results, quality, content, presentation) and can the approach be combined with improvements and additions to the farm return?

3. Future needs

3.1 Introduction

This section of the report deals with the needs of stakeholders and FADN managers as they were presented in the period February – May 1998. In that period there were surveys in the form of a detailed questionnaire presented to FADN managers, interviews with stakeholders and workshops with FADN managers and DG VI staff. More detailed information on the future needs is available in the Working documents.

3.2 General observations

On the one hand there is the opinion of some stakeholders that the current FADN and farm return has to be maintained, they see only reasons for minor adjustments and improvements in the farm return (see for remarks on the actual tables of the Return section 2.6).

Most of the interviewed persons as well as the FADN managers are however in favour of a major change of the system. They have several reasons for that opinion, not only that the actual system is founded more than 25 years ago. The main reasons for renewing and restructuring are coming from the development and changes of the objectives of FADN; these are mainly related to the evolution of the CAP and the functions of agriculture), as well as the (insufficient) quality of the actual FADN system and its results and the new (technological) opportunities to manage and publish data.

3.3 Objectives

In general it is pointed out that the FADN has to give adequate information on changes in agriculture (incomes, level of costs of production etc.), also in relation to farm policy, mainly the CAP. It is also observed that there is - however not general - a need of information on the change of the role and functions of agriculture: rural business, including tourism, the link with the environment and nature, forestry, and other (new) activities on the farms are mentioned as important for FADN.

This means that the number of objectives and the scope of FADN are increasing. At the same time it is remarked that FADN can not fulfil all these objectives; there are other sources of information which can be used, for instance the information provided by EUROSTAT and special, eventually ad-hoc surveys of economic institutes and universities.

3.4 Data content

There are different views on the data content of the farm return:

1. there is on the one hand a group of persons who are not in favour of including (many) new data in the farm return;
2. on the other hand there are people in favour of increasing the data content of FADN with data on environmental issues, pluri-activity on the farms and non-farm-income.

The first group has mainly the following reasons for their (negative or reluctant) attitude:

- extra costs;
- non-acceptance by farmers (and in some countries also by accountancy-offices) which provide data;
- lack of quality of data;
- lack of representativity.

In this group some representatives stress that FADN has only as function to present data on income of farmers from agricultural activities. Some suggest also to get additional information by other sources outside FADN, for instance by special surveys.

The second group agrees with them on the fact that the actual farm return has to be improved (on the actual tables), but finds it also (or even more) important to have new sets of data on the items mentioned (pluri-activity, environment, non-farm-income) in relation to the changes in the farm policy (CAP) and in the functions of agriculture. Linked to this it is also underlined that FADN has to invest more in policy analysis than (only) monitoring incomes.

In this group there are however differences in the views on which data can be added to the farm return. On the many aspects of these (new) items, the position and opportunity per member state to collect data are quite different. For instance in some countries data on agri-tourism are already available or can be made available in a couple of years, in others on forestry or on mineral balances or pesticides. The same occurs on data on special production systems as organic production, the processing and/or (direct) marketing of products on the farm, or on data on landscape maintenance by the farmer and forestry on the farm.

Besides that, on forestry there is a difference in opinion whether these data have to be integrated in the farm-account or separated from it.

A major point, that is supported by many persons involved, concerning results of FADN in future is the need for data on gross margins (per enterprise and as far as possible per product) and on costs of production. This point is also very much stressed by DG VI. In fact for the calculation of the enterprise (branch of production on the farm) profitability it is required to include questions on variable costs and quantities for a set of production lines.

It is also clear that there is a need for more economic indicators, for instance on the effect of subsidies and levies on income and as well as of sale, purchase and lease of quotas and other production rights. For these economic data it would be feasible to integrate them in the (obligatory part of the) new farm return.

Most countries are also interested in improved indicators for large entities; this is also of interest in relation with the enlargement of the EU in the coming years. On the other hand

it does not seem necessary to adapt the definition of a farm; of importance is a direct link with the definition in the (national and European) Farm Structure Survey (FSS).

It is suggested in relation to these differences in views and opportunities to make a distinction in the farm return between:

* a hard core of (obligatory) data; and
* voluntary data.

For the voluntary (or optional) data this gives the opportunity for exchange between member states, without excluding the access to countries without those data. For the voluntary data it is suggested also to obtain them from sub-samples; this can be done at least at the start of the collection during some years. The voluntary exchange of data should be supported by developing common standards and definitions in the framework of EU FADN. It is stressed in this context that (also) for the voluntary data a minimum quality level is required, for instance on the representativeness of the samples.

Related to the distinction between obligatory and optional data, it is suggested to define different incomes:

a. income from primary agriculture production;
b. income from all activities on the farm including 'non or semi-agricultural activities';
c. total income of the household, including off-farm income.

It has to be accepted that in some cases all these incomes can not be gathered or be seperated.

In fact this means for the persons concerned, that there is in future no single EU FADN farm return; it will be flexible and adaptable during the years ahead. In this situation, it must be made clear what are the (common European) definitions of different return(-levels).

While there is no consensus as to whether new data and what kind of such data should be added, there is a common view of both groups that there is a need to improve the current farm return; the existing tables are too complex, contain in some respect too much details, which might be deleted, while other aspects should be included. Many suggestions in this respect are presented (see 2.7 and the working documents: 'Replies to survey of FADN managers' and 'Results of the interviews with stakeholders').

It can be concluded that the content of the farm return has to be simplified and made more flexible.

3.5 Quality

As far as the quality of the FADN is discussed it is clear that in the different discussions and reactions of stakeholders and FADN managers this is (mainly) related to:

- the content of the farm return and FADN results in relation to the needs of the users (relevance);
- the quality of the data (representativity of farms per country, region, type of production, size of the samples, working process, data handling, control, accuracy);
- the delivery of results in time (timeliness);

- the way of presentation of the results, availability and access of data (completeness, coherence).

On all these aspects there are desires for improvements and there is a need to work out a number of recommendations of stakeholders and FADN managers, so that they can be used in practise. In addition it is suggested to develop an (integrated) Quality Program for a new farm return.

On the desired content of the farm return in future remarks have been made in § 3.4. On the quality of the data it is recommended to establish a quality procedure; member countries have to report on a regular base (for instance each year) how it is implemented; for example on the selection of farms in the sample in relation to the FSS, the use of definitions and the implementation of them in relation of the FADN farm return definitions, the data control on different levels. Important also is the positive attitude and willingness of (most) FADN managers to cooperate with colleagues in other countries to improve their own system.

In relation to the presentation in time of (especially the obligatory) results, it is also suggested to present first provisional or draft data (on national and EU level) and later final results.

It is also discussed to abolish (or eliminate) the data control at (centralised) EU level; this would help to present results in time and save human resources. This would automatically give more responsibility to the member states in relation to the quality of their data. It requires as first steps a simplification of the farm return and clear instructions on it (documentation) as well as (at least some) standardisation of the controls.

The role of finance and regulations of the EU to promote the quality (and the use) of FADN can also be taken into account, is concluded in meetings with FADN managers.

3.6 Organization

On the level of the EU there is a need to improve the decision making process regarding changes in definitions and content of the farm return. Several managers indicate that this process must be more clear and open; changes can be prepared in working parties (or 'task force-groups') of the RICA Committee with representatives (interested experts on the specialized fields) of the member states.

Some remarks and suggestions are also made on the work of the unit VI.A.3. In some respect they are different; some FADN managers underline that the unit has to give more priority on data management and data handling. Others underline the importance of policy-analysis and think more could be done in presenting analyses on the development of results of the farms.

Other suggestions are connected to the communication and feedback with VI.A.3 in Brussels; it should give more assistance to the member states (help desk) to improve and fasten the data flow. It is also suggested that there should be more know-how in Brussels on the local conditions for farming in Europe.

Related to this is the remark to promote more 2-way communication with unit VI.A.3 in Brussels and to learn more from each others experience. Besides that there is, at least in some member states, a need for training of employees on different skills (management and organization, data processing etc.). At least in new member states this need is clear.

More general, there is a need for a clear allocation of responsibilities, tasks and work between the unit VI.A.3, the RICA Committee, the national and local offices. This regards mainly the maintenance of the farm return, the control of data and results, the conversion of national data to EU data and the publication of them. In some cases it is concluded that there is a shared responsibility of DG VI A.3 and the national offices (liaison agencies); e.g. for the function of helpdesk for data collectors, conversion data from national to EU farm return and for analysis.

On the use of IT that there is the feeling that it would be optimal to have the same (a common) system in all member countries, but the reality is there are clearly different IT platforms. Linked to the differences in the administrative structure in the member countries, it is expected that there will also be a variation in the use of IT in future. This has as consequence that it is hard to obtain a common EU approach on software use. However incorporation of the new farm return in the national software would help data control and improve data quality.

3.7 Presentation

FADN has to present itself better (client- and user-friendly) is an important conclusion of the discussions with stakeholders and FADN managers. A better presentation is seen as (one of) the best opportunities to promote the use of FADN results and by this to improve the financial and political conditions for the system in the years ahead.

Several suggestions are made in relation to this, among others to present press releases, to use Internet and to present more information micro-electronic. In general the availability and exchange of (more) data is relevant. This can be in the form of main results in popular publications with only a small number of indicators, analysis for research or more detailed studies. The electronic access to micro-data for different users is one the central points to be worked out.

In the presentation of results different aspects can be underlined and given more interest. A major point is that this has to be done in relation to the desires of users, for example the demand for more information on the level of costs of production, gross margins and subsidies.

The presentation of results on voluntary or optional data has also to be worked out. One question is whether this presentation is to be done by EU FADN or by (one or some of the) member countries concerned.

3.8 Finance and feasibility

On the finance of the FADN in future a few stakeholders think there are possibilities for savings at the national level; they think more efficiency can be obtained in collecting and processing data by using more advanced IT Related to this is the view that more money should

be available for publication, presentation and explanation of results. In this opinion there is a need of restructuring FADN to get more useful information for present needs.

On the other hand there is the view of some stakeholders that the collection of more and new data requires more money. It is also stressed in this respect that it is of value to invest more in an instrument what can show the impact of proposals for changing policy; this requires a.o. the availability of (more) actual data. Most stakeholders however think that more investments in FADN could only be possible after improving its effectiveness and utility.

The order of priorities for the future of FADN is not for all stakeholders and managers concerned the same. The following aspects (in random order) are mentioned:

- new data;
- higher speed;
- higher frequency;
- improved data quality.

For some people such priorities can be combined with less farms in the samples (for example by a reduction of the number of homogenious arable and or dairy farms, or by deleting the small farms), or with less data per farm (data which are not used and which are difficult to obtain could be deleted). For some data it is also suggested to collect them not each year.

The possibility to use EU payments to improve the quality of data and for additional information (data on new items) can also be worked out; this would however have as a consequence a differentiation in the reimbursement per farm between the countries and eventually also inside some of the countries.

At least there is a need of information on financial resources and requirements among FADN managers for the coming years; they want to be sure for the years ahead. This is underlined as a necessity for planning investments and activities, for training personnel etc. More general stakeholders like to know what are the plans related to FADN; what kind of information can they expect and obtain.

3.9 Needs of DG6

In general the priorities of DG VI on the new farm return do not differ significantly from those of the stakeholders in the member states. DGVI stressed especially the importance of:

- alignment of the data set to the evolution of the CAP
- gross margin and cost of production data
- having data in time, including rapid results
- more flexibility, including a split in hard core and voluntary data
- improvement of interaction with policy makers in other units of DG VI to solve the problems of the complexity of the data.

4. Basic features of a new farm return: from data handling to data management

4.1 Introduction

This chapter reports a large number of proposed decisions for a new farm return. These proposals are based on the analysis of all the external inputs (the interviews with stakeholders, the survey with the FADN managers, the workshops) that have been reported in the previous two chapters. In a certain sense this chapter is a turning point in the report: based on the inputs, an analysis is presented, that will be worked out in more detail in the next chapters on points like the content of the farm return, the IT aspects and the quality management. The analysis has been done in coordination with the analysis of those more detailed aspects, and has been discussed with DG6 A/3.

4.2 The need for a new farm return

Obvious the first question to be discussed is the need for a new farm return. The current FADN has clear performance problems in the eyes of stakeholders and FADN managers: conversion takes too much time, data are too late and unaccessible. One could say that the current farm return is not feasible any more and that a situation of no change would sooner or later lead to the end of the FADN. However the FADN itself is not questioned by stakeholders and is seen as a unique, and increasingly needed, micro-economic tool to support the CAP. As the CAP is the next years to stay, although perhaps in changing clothes [1], it therefore can be concluded that the FADN should not be abandoned but improved and its farm return should be flexible enough to support the changing CAP (CAP is a moving target), in current EU and Central and East European Countries. The current farm return cannot play this role and has become obsolete, in terms of IT as well as in relation to the current CAP and the needed flexibility.

A new farm return (to be called 'FR2000+') is needed, but it is not enough to satisfy the stakeholders. Although a new farm return can support the conversion and speed up data exchange, a new farm return as such is not sufficient. Users should quickly get more data (better access) otherwise they will not support a period of change with even more performance problems due to the introduction of a new farm return. Good public relations will be essential. In addition FR2000+ should use information technology options to support a FADN that can innovate, otherwise the next 'farm return-crisis' is in 2005. This makes the conclusion inevitable that changed working methods and a new culture in the FADN system has to be introduced. FR2000+ should in this respect be seen more as a mean than as a solution.

[1] See e.g. A. Buckwell et al.; Towards a common agricultural and rural policy for Europe; European Economy, 1997-5.

Figure 4.1 illustrates the need for new working methods, and especially network management (a need that is also stressed in the next section): where the environment of the CAP and the FADN become more dynamic, a 'bureaucratic' approach (in the positive meaning of the term) does not fit anymore, and a move has to be made to a style of network management.

In such a network the role of the partners should be clear. The discussions in this study revealed that there is an interesting relation between subsidiarity (do things at the lowest level possible) and standardization (to do things comparable). The current farm return is based on the idea that national FADNs are autonimous and difficult to harmonize; therefore detailed data are made available to A.3 so that at a central point (A.3) new, harmonized, indicators can be calculated and published. This provides not much incentive for changing national systems, and it leads to the strange situation that A.3 is responsible for publishing the income data of a national member state. In a time where Europe integrates to an extent that national member states abolish their currencies for the Euro, and member states have more interest in data from neighbouring countries, it makes sense to improve harmonization by subsidiarity: the national member states should be made responsible for publishing representative data on their national farm sector by using harmonized definitions. They are the 'owner' of the data and cannot refer users to A.3 for explanations on definitions or quality. Of course the national FADNs can in addition also publish their national indicators. Reality will learn that this extra national work is the first to be in danger with budget cuts.

		Dynamics environment	
		Low	High
Complexity environment	High	Bureaucracy	Network
	Low		Entrepreneurs

Figure 4.1 Network management: why?
Based on Norton et al., 1988.

A special remark is needed on the meaning of the term 'farm return'. It is a word coming from the punch form years, translated from the French 'fiche' that describes the data collected on the farm (that means all data that describes the farm). The term has not much meaning to FADN users (who talk on indicators and data coverage). Some FADN managers tend to see the farm return as the data collected in the farm (that means the data that is asked from the farmer), where the RICA unit (and this report) also include individual data on the farm (e.g. subsidies) collected from another source. The choice in data source can only be made economically in the region, the FADN manager is responsible for this choice and delivering all the data. The distinction between data and indicators is also arbitrary by history. Indicators are calculated from the farm return on individual farms (to be weighted to regional/farm type sta-

tistics later) and are just a bit more aggregated than the data in the current farm return (that is however also aggregated from e.g. the payments that a farmer makes).

4.3 Conversion

National farm returns differ largely between member states and it is not feasible to oblige member states to harmonize them on the short term: national farm returns are based on national charts of accounts, which are sometimes written in law. There is no European tradition in (farm) accounting: each country has its own methods and indicators; until now the implementation of e.g. IASC methodology is low and national tax systems influence the methodologies greatly. In some countries the national government buys the data from accounting offices and cannot change the working methods of accountants without facing very huge bills and creating biases in the sample. The European Commission is not in a position to influence this easily, as it pays only a fraction of the total costs of the RICA network. This lack of harmonization in data collection means that the conversion process can not be eliminated.

Not only for this lack of harmonization it should not be tried to eliminate this process. In future there will be more data sources than now (due to the need for new types of data, and due to information technology developments creating databanks) and conversions from these data sources (e.g. from IACS – the integrated agricultural control system) can be more attractive than data collection at the farm.

To conclude it less defensive: the core of the RICA business is conversion. Conversion is data-enrichment by carrying out data management. The FADN network could better learn to do conversions as perfect as possible than to try to abandon it and learn to master the tools that are available or can be made to become an expert in conversion.

Nevertheless the EC should support the adoption of common farm accounting methods, e.g. by supporting IASC statements, concerted actions and using a consistent set of indicators in its own policy documents and published data for (policy) research. It is most likely that (future) member states with not much tradition in farm accounting and not much interference with tax accounting will adopt such common methodology quicker and swing the balance in favour of using common methods. However, this is a long term investment. The common farm typology is case in point: now available from the EC and Eurostat for twenty years and at least one of the old 12 member states is still using its national typology in national publications, and some others use variants of the common one.

Conversion can be carried out at several places. Carrying out the conversion process totally by the Commission (or a central organization contracted by the Commission) is not realistic. This would mean that DG6 A/3 would get data or (access to databases) in 15 (and after enlargement even more) member states, with different code systems, definitions and sometimes a lack of documentation. This would require an amount of know-how on national farm returns (in national languages) and the regular updates in these returns that is not manageable. In a number of cases the data cannot be harmonized at the end of the pipeline by recalculating national data into a common denominator. In such cases national farm returns have to be adapted to provide harmonized data. Conversion in Brussels would then not create

any incentive for member states to adapt their national farm return to RICA demands. The current attitude of looking first to national needs and then 'throw the data over the wall' to Brussels would be supported in stead of penalized. Current performance problems would increase. It can be concluded that conversion should be carried out in the member state. Although at first sight a licence to keep national farm returns in place, this division of work creates an incentive to harmonize.

In conclusion: data management and conversion are a joint interest, with a need for an interactive network management. FR2000+ should be introduced with a business-like approach of exchanging data between member states and with the EC and a quality program that measures the performance of member states and A/3.

FR2000+ should support the conversion process better than in the old farm return. The check of the conversion should be taken off as much as possible from the critical path in the time-management and should not be the main purpose of the control software (which it currently is). It should be replaced as much as possible by providing clear definitions, a help desk, compliance audits in member states, test data, software certification etc.

Also this approach requires much more a network-management work management (visits, help desk, workshops, organizing pressure on liaison agencies) than in the current situation. This job can partly sourced out (creating more time for policy analysis in A/3). For the part it is carried out in A/3 it demands new skills (to be the change agent towards such a new culture).

4.4 The need and scope for accounting data

Individual accounting data are also in the future the (main) basis, to get the micro-economic data which are needed in DG6 A/3 and the member states. There are a number of reasons for this. The income situation stays to be a main policy objective, and income can not be easily measured by surveys. Accountancy data, historically efficiently available, provides this information. Accounting automatically provides a quality system at the level of data gathering.

Individual data are needed to perform policy analysis. Aggregated statistics do not provide enough detail to be manipulated for these analyses.

The FADN managers however should realize that other data sources are becoming more and more available in databases (e.g. IACS). The use of such administrative data becomes an important issue, also because such data is sometimes faster than the slow, history-oriented accounting process. Such data is sometimes even more accurate and coherence problems can sometimes be sowed by conversion.

As the CAP reforms, new types of data are needed, and accounting systems will not be the only source for micro-economic data. Accounting systems should not preferably be used to gather data on new topics (like the environment). The only criteria to gather such data in the FADN is if the policy makers are interested in the relationships within the farm between e.g. policy measures (subsidies, quota, intervention prices) on one hand and the effect on income and (e.g. environmental) performance/behaviour of the farm at the other hand. If one is only (!) interested in environmental issues, and not in the relationships with income policy, farm management or the CAP measures, other methods of gathering data could be more efficient.

Gathering such additional data in the FADNs could burden the farmers as well as the collection system too much, with the effect that a severe risk of collapse for the whole system exists.

However, in a number of cases applying the just formulated criterion learns that this information is needed for policy makers, as they need to understand the relationship between policy interventions, income and farm management. For such cases, innovation in FADNs should be encouraged. Some FADNs (especially of the Type Y [Poppe and Beers, 1997] as in the Netherlands, UK, Belgium or Italy) have low marginal costs to gather such additional data. Available information from such systems should be exchanged internationally and these examples should be used to learn other countries to innovate in such domains, to take away incorrect impressions of the possibilities to collect such data in an FADN. Of course also alternative methods to gather such data within the FADN network should be encouraged. Not the method of collection but the quality of the data should be the criterion in usefulness of the data.

Accounting data can be exchanged on 4 levels:

- basic data (e.g. Farmer X has paid EUR 150,- on April 5 2003 to buy 300 kg of fertilizer for his sugar beet crop);
- the level of the current farm return: aggregated basic data per type of transaction (e.g. value of opening stocks, production, sales, closing stock, farm consumption of wheat in table K);
- standard statements (like a profit and loss account etc.) with a detailed level of information (e.g. output of common wheat, received LFA subsidies, costs of pesticides);
- standard statements with a rather high level of information (e.g. crop output).

The farm return should be based on the accounting statements (balance sheet, profit and loss account, enterprise margins etc.) which are familiar to accountants. This is also the form in which the data are published, but the collected data should be at a bit more detailed level than published at the moment (the so called level I and II). Thus it is proposed to use in FR2000+ the above mentioned third in stead of the second level. The gathering of the data at farm level should of course still be based on the basic data.

The first advantage of this approach is that data-items that are only gathered for calculations of indicators (e.g. stocks of individual crops in table K) can be dropped: simplification and less errors. More important is that the member states become familiar (subsidiarity) with the calculation rules used for FADN indicators (e.g. output beef, livestock units), which has a number of important advantages. First of all it provides an incentive to use harmonized indicators in their own publications; Secondly, the member states and regional accountry offices can calculate these indicators and publish them directly when they finish their own accounting year (or when they calculate pre-eliminary results) and data plus publications can be sent to A/3; This speeds up the availability and national member states can answer questions why indicators on the WWW site of A/3 are different from national WWW-sites (which is another incentive to change national habits) and websites can be linked. It should be noted however, that the unit A/3 can have the feeling that it looses some freedom to publish (not: to calculate internally) new indicators without consent in the RICA committee that an indicator has to be added. This is the direct effect of network management.

4.5 Flexible in voluntary participation

The EC has not many possibilities to require data which are not yet gathered in member states. The EC pays only a small amount of the costs of keeping accounts. In principle the current fee could be lowered for data that are available anyway and the budget could be used to pay for new data items. This would be an incentive at least in some member states, and should be done, but it will not provide enough money to pay for the collection of e.g. gross margins on all 60.000 farms. Stakeholders in member states and EC have made clear that no new money is available, also seen the current performance problems.

Stakeholders have also made clear that lowering the number of farms and using the budget for new data would lower representativity too much. In countries that have more data nationally than for the EC it could be tried to convince FADN managers to take this road (also to harmonize national and EU results).

The biggest chance to ask member states for data on new policy items, is to couple regulation that obliges countries to collect the data to policy proposals, e.g. to monitor Agenda-2000 and the national envelope (see also below). This solves at least the cases where FADN managers are mainly against innovation due to lack of budget. A de-coupled proposal in the RICA committee to make data gathering on new items obligatory is in such cases much more risky.

Survey	Topics	Current tables	Reference for harmonization
HARD CORE			
Farm structure statement	esu, uaa, awu, crops areas, lu	A, B, C, D, K	farm structure survey
Farm profit and loss account	inputs, outputs in euro oly	E, F, K	EU accounting directives, IASC
Farm subsidy statement	subsidies per regulation	J, M	CAP regulations
Farm flow of funds statement	cash flow, investments	G	EU accounting directives, IASC
Farm balance sheet	capital, liabilities		EU accounting directives, IASC
VOLUNTARY			
Mineral balances	nitrate and others		concerted action Elisa
Costs of production	gross margins, physical data	F, K	classex 44 on sgm
Diversification on the farm	organic production		
	processing on the farm	K	
	agri-tourism	K	
	landscape maintenance	J, M	concerted action Elisa
	forestry	K	concerted action Mosefa
Activities outside the farm	non-farm activities		Kshatriya study
	non-farm income/capital		Kshatriya study, OECD ewg2, B. Hill

Figure 4.2 Structure of the new farm return (FR2000+)

Survey	Topics	Countries with data		Countries that have data available, at least for subsamples in some years														
		available	gathering feasible	B	Dk	D	G	E	F	Irl	I	L	NL	A	P	Fin	S	UK
Mineral balances	nitrate and others	6	12							x		x	x	x		x	x	
Cost of production	gross margins, physical data	11	13		x			x	x	x	x	x	x	x	x		x	x
	cost of production	8	11	x	x				x		x	x			x		x	x
Diversification on the farm	organic production	9	14	x	x	x					x	x	x	x		x	x	
	processing on the farm	9	13	x					x	x	x	x	x	x		x	x	x
	agri-tourism	9	13	x					x	x	x	x	x	x		x	x	x
	landscape maintenance	5	9	x					x	x		x					x	
	forestry	7	11		x	x		x	x				x	x		x	x	
Activities outside the farm	non-farm activities	5	9		x								x	x		x	x	
	non-farm income/capital	7	13		x	x							x	x		x	x	x

Figure 4.3 Data availability (details in appendix 4)

In conclusion: the most likely strategy is to take in all which is available, and to try to convince member states to shift their own resources to gather the data that the EC and other member states would like to have. Methods for convincing are (besides reallocation of budget) helping them to innovate (e.g. by organizing workshops in the network), by giving individual data on new topics in other countries only if they also provide such data, and by providing policy makers results with blank columns for countries who do not supply data (showing the performance of the member states).

The need for a flexible approach makes it necessary to design FR2000+ with an obligatory 'hard core' (obligatory for all 60.000 farms on an annual basis) and a flexible, voluntary part. The hard core should be a number of accounting statements that are together a simplified version (with improved data definitions) of the current farm return. These data are available and this approach supports an easy transition from the old farm return to FR2000+.

Figure 4.2 provides an overview of the statements in the hard core. The table also contains a proposal for surveys (statements) that will be voluntary. This is based on results of the survey. The criterion for inclusion has been that at least 5 member states have already such data available, at least for sub samples in some years. This also means that a number of items will not be included in FR2000+ in the first years. These are environmental data on pesticides indicators, energy consumption, water-balances, and deforestation as well as data on integrated production and precision farming (although in all these cases about 50% of the member states think there is an interest for such data, and that it is technically possible to gather such data) and data).

Harmonization of data and methods can partly be based on external standards (e.g. IASC rulings), which makes the harmonization process easier and promotes comparability of data with other sources. Therefore harmonization criteria are included in figure 4.2, which does not mean that such sources also provide enough rules for standardization. Figure 4.3 provides information on data availability in the member states. The quality of this data is unclear, but obviously the member states find this data useful. The quality program can document this (see chapter 9).

The split between hard core and voluntary data implies a mechanism to transfer know-how on accounting from one member state to another: regions can learn how to gather e.g. non-farm income data from those that do; thus innovation is supported. A disadvantages is that data management in A/3 becomes more complicated.

4.6 Connect the FADN to the policy making process

Obligatory data should contain at least all the details needed for the FADN objective of monitoring income. Voluntary data are additions to make the data more useful for the FADN objective policy research, especially on specific policy issues where policies are still being developed. Monitoring is related to evaluating established policies, where policy research often deals with new policy proposals and identifying policy issues. This is often on topics where policy making is in a more exploring stage.

For voluntary data, there is less need to be 100% representative for the total FADN field of survey, but of course member states should endorse these data as the best available. Sub-

samples could be used as a source. For some countries this would provide an opportunity to base the voluntary data on less representative databases which are now outside the national FADN. Or the EC could even ask competing national organizations for such data. (In both cases than also the hard core data have to be delivered on those farms). A minimum quality level and quality documentation should be needed.

Although the current legislation mentions both objectives and the second one is the most important nowadays, the surveys from the member states learn that several FADN managers see the FADN as the representative sample for monitoring income, and associate voluntary data on subsamples as 'outside the FADN', so terminology is important here. The objectives should officially be recoined as 'monitoring of income and other policy objectives' and 'policy research'.

For a number of data-items, the link between policy making and data gathering can and should further be strengthened. Once that a regulation is passed to hand out subsidies (e.g. agri-environmental), to install quota's etc (e.g. Nitrate directive) the member states can (in the same package deal) also be obliged to provide obligatory data on these items through the FADN. This has a number of advantages. It leads to a closer link between FADN and users (policy making and policy evaluation), it is a method to oblige member states to invest in their FADN and thus improves decision making on the FADN. It is then not the FADN committee that decides to gather new data (who will often reject due to budget problems not due to unwillingness) but other management committees (e.g. on sugar). However all amendments should be written into one set of FADN regulations and commission decisions.

In this respect the distinction between voluntary and obligatory data is in line with the life-cycle of policy making: it starts with policy research on new topics (using the best data available, but often voluntary and not fully representative data) and after a regulation is passed there is the (obliged) stage of monitoring the effects.

It could be argued (as some delegations often do) that the EC should not pay for obliged data used for monitoring, as they are part of policy package deal; that makes the budget available to provide incentives for voluntary data.

The analysis on the link with policy making also makes clear why the FADN should be managed in DG6: Core activity of the A3-unit is on using micro economic data for policy studies for the Commission. As the FADN is the main supplier of this data, it is for DG6 important to be involved in its management: this brings the FADN close to its users and gives DG VI access to national know-how on policy studies.

Timing

The planning of data gathering and policy research could further be improved by using an agenda on future decision making and its effect on data gathering (e.g. the sugar policy is up for revision in 2001, so a taskforce has to do policy research in 1999 and thus FADN has to gather extra sugarbeet data in 1998).

Also for the publication of data from the FADN, the policy process should be the determining factor, not the fact that data are available for all member states. This implies that data have to be released at least in October on the previous year, and as soon as possible (but before Christmas) on the current year.

Obligatory data should be in as soon as possible and therefore they should not be too detailed. 60% should be in after 6 months, 100% after 9 months. More voluntary details for policy research can be sent in later, if this supports the performance in the member states. (Preeliminary) Final results should be made available to the public in October. In case some member states are too late, their 'columns in the tables' should be left blank, providing an incentive to perform better next year.

The obligatory data, should be of such a quality that an improved RFS can be applied. The data should be specified enough to make a joint pre-eliminary/forecast report (RFS) in the second week of December.

There is nearly no experience in the FADN with gathering data before the end of the year. Therefore it makes no sense to include in the FR2000+ possibilities to deliver quarterly cash flow data or harvest estimations. A test can be done in one of the member states if quarterly data is possible and makes sense for policy making.

4.7 Structure of the new farm return

The current farm return (soon to be called the Old farm return) is a paper manual with tables that resemble punch forms. The new farm return should be based on an information model approach, leading to a data dictionary, that describes the FR2000+. This is good practice in information technology and makes it possible to publish the FR2000+ (also) in electronic form (CD-ROM, Internet). Such a structure makes methods and definitions explicit and maintenance more easy. It also means that parts of FR2000+ can be included in software for accountants and users at the national level. This approach however can ask for some extra training in countries or national liaison agencies that are not used to manage the construction of software with current professional standards.

The new farm return should be modelled in such away that it supports transition from the old system to the new farm return and makes new definitions over time possible. This is done by giving all data-items (entity types) a time-stamp, so the farm return can have an instruction on the profit and loss account from 1975 – 2002 and one on the profit and loss account from 2002 onwards.

The new farm return should be modelled in such a way that new statements can be added without changing the software that contains the new farm return. This will make it possible to include in e.g. 2005 a special statement on landscape maintenance or CEEC-cooperatives without changing the data dictionary and the database. Such an approach (which will be worked out in chapter 7 of this report) is also attractive as it is more abstract, and therefore easier to build with less maintenance costs, if a good datamodel is designed. It asks however for a professional data management in the FADN, to manage the flexibility (so that it is not misused and creating problems).

The new farm return should be modelled in such a way that it supports the conversion process from the national farm returns to FR2000+. This is done by providing a possibility to note down for each FADN indicator also per member state the national codes used and the formula used for conversion. This has a number of advantages: documentation on the conversion process will be created (now a large problem) and the conversion formulas can be

checked (compliance audit) before data are transmitted. This eliminates the largest part of the current control process.

An additional advantage is that differences between national data definitions and FR2000+ can be documented and thus differences in methods are made explicit. The FADN system should be open to the fact that there are a lot of definitions (e.g. on Livestock Units !) and it should be made clear that the FADN can not always harmonize them, nor in the DG6 itself nor in Europe.

A joint software program can be build that supports the conversion process by reading the national code and the conversion formula from the FR2000+ database, reading the national database and then creating an e-mail message with the farm data in a flat file to A/3.

This approach is only feasible if member states use this structure (fill in the tables with national codes). It's the prize they have to pay if they use national codes and want a good conversion. By providing a joint conversion program (that should be able to work with different national databases like Oracle, Sybase, MsAcces, Gemstone etc.) and making this available before member states have to convert to the EURO in 2001 (it is not expected that farmers change their accounts before that date), this is thought feasible.

The new farm return should be modeled in such a way that it supports the use of several languages, as the farm return has to be available for all local accountants. Such a structure will also make it easier to make the data definitions in a RICA multi-language working group.

4.8 Harmonization of related aspects

In addition to the data content of FR2000+, a number of other aspects of the data should also be harmonized better. First of all there is the definition of a farm. Roughly the definition can stay the same: e.g. as forestry data is voluntary, it makes no sense to enlarge the definition of the field of survey to include farms with forestry only. However aspects like holdings with different locations, rented out farms etc. should be better discussed (even if member states don't see this as an issue).

The accounting years differ at the moment. This leads to uncomparable data, especially in specialized intensive livestock farms (now more important than 25 years ago). Therefore at least a strong preference should be stated for a January-December (civil) accounting year. Farms with another accounting year should be replaced by January-December accounts, unless this creates a clear bias. A different accounting year should not be an excuse to deliver data later than 30 September. It should be noted however that a few countries (of which some announced a change towards the civil year) will have a problem with such a harmonization and for Germany (having a July-June accounting year) the date 30 September seems not feasible.

In some cases (e.g. land values and stocks) the need for more harmonization in valuation (not taking tax-data but fair value) should be discussed.

A number of member states have made clear that they are uncomfortable with the current typology. The FADN database (also with FR2000+) makes the calculation of a lot of alternative typologies for policy research possible. The lead for creating a new standard typology is with Eurostat and the FSS, or at least a special project and is not part of a new farm return.

The new farm return should include data items to exchange data on the weighting factor of the farm. The current method in which A/3 calculates weighting factors looks at first sight harmonized but has the problem that it does not take care of sample methods which member states are explicitly allowed to use (leading to large overestimation of variables like e.g. milk quota in some countries). This would even be more the case in future as also weights for voluntary data have to be calculated, for which member states themselves should make clear the representativity. It is in line with the idea that member states should [also] be responsible for publication of results on their own country with (audited) EU methodology (subsidiarity) that they are responsible for good weighting factors, that have to be checked (compliance audit). Using the same weighting factors nationally and at EU level will also decrease differences between different publications.

4.9 Maintenance and publication

The proposed structure for FR2000+ means that this farm return will never be ready or complete. *It is (and will forever be) a process.* At any moment new indicators, statements, languages etc. can be added under the procedures established in the creation of FR2000+. This means that this study will not try to harmonize all the details. This will in the coming years be an ongoing process and the new farm return is only feasible if the development and maintenance is organized as an ongoing process, mainly to be carried out in task forces. The process should include the instalment of new indicators, and even new statements, or making statements (like gross margins) part of the hard core.

The FR2000+ should be an Internet application that shows all the instructions and guidelines in a database format. Such an application shows always the most up to date version available and is easier to use than a paper manual, as it can be used in software and when data are published on WWW or CD-ROM. Such an Internet site can be enriched by facilities like discussions platforms for users with questions and remarks. Partly it can be password protected, to give FADN managers and task forces a tool for joint discussions and for maintenance of the farm return and its conversion formulas.

4.10 Feasibility

In section 4.2 the need for a new farm return has been discussed, followed in the rest of the chapter by the new working methods in the FADN network that will be supported by the new farm return. Rests the feasibility question. It has already been argued in section 4.2 that a new farm return without new working methods is not feasible, as it does not satisfy the stakeholders. But how about the feasibility of a the new farm return and the new working methods? This question can be broken down into a number of points:

- *feasibility of the data content*: as the hard core data are an improved and slimmed down version of the current data set, the collection of this data is feasible. The exchange of voluntary data is also possible, at least as far as the member states have an interest in this. The quality of this voluntary data is not clear at the moment, but that is of minor

importance now. Apparently the member states find the quality high enough to use the data nationally, and the quality can be described in relation to its (partly at the moment unclear) future use in the quality program;

- *organizational feasibility:* here are a number of aspects. First of all it seems that most FADN managers have become convinced that change is needed – the alternative is a stand still resulting in large budget cuts in coming years due to underperformance. Secondly in several member states software is old, the Euro is coming, and the application of new information technology options is on the agenda. Third, but perhaps most important, the suggestions for FR2000+ as presented in this chapter makes it possible to introduce the new farm return in an incremental way, where the member state can choose the exact date, e.g. with a national change in software or the introduction of the Euro in 2001.
- *technical feasibility:* this largely depends on the technical infrastructure in DGVI.A.3. The RICA 1-3 projects will deliver an up to date IT environment (including data dictionary driven database software that could include the data model of the new farm return). This makes an electronic farm return and new working methods as described in this chapter possible;
- *financial feasibility:* it seems to be a precondition that the budget for the operation of the FADN should not grow. The concept of voluntary data is based on non-payment, the reward for member states being access to data from other member states. If necessary the Commission could try to link data gathering to policy measures, or take the position (like UK and Germany) that it makes no sense to pay for an obliged task. Revision of software in member states is needed anyway due to upgrades and the introduction of the EURO, and can be paid by the member states. The development costs of the new farm return will have to be paid by the European Commission. This will be paid back by better information;
- *legal feasibility:* the current legislation will have to be updated, partly at the beginning of the development of a new farm return (better description of current objectives, announcement of the end of the current farm return) and partly during the development. With a flexible farm return it will be hard to lay down all the details of the farm return in formal regulations. With a good framework regulation and good network management, this does not seem to be problematic.

Overall it can be concluded that a new farm return and the new working methods are feasible. However, there are a number of risks involved:

- development of skills for network management in A.3 (to be developed by training, partly on the job with the task forces);
- current reputation of the FADN (to be supported by public relations around the renewal of the farm return, and providing quick access to the public for aggregated data on the internet);
- technical feasibility (to be worked out in pilot projects and prototypes, with external reviews);
- work load of A.3 (to be supported by using knowledge and capacity of member states in task forces);

- continuity of data series (to be supported by first converting the old database to the new database).

A good project management will make these risks manageable.

5. A short story on 2002

If a major change in a system is needed, one has to break away from the current situation towards an uncertain, but desired, future situation. That's not easy, for the reason that human brains are not trained to support such a process. It is therefore very useful to have a clear mental and emotional map of the desired situation, and not only a rational analysis.

The next story tries to provide this by describing some of the effects of the proposed FR2000+on the working methods in the FADN. All names, examples and even the date in this science fiction are hypothecical.

September 8, 2002

Supports EU enlargement

Special Surveys

User access

Harmonization process

7.00 hours, Budapest: it starts as a promising late summer day, when G., the Hungarian FADN manager, leaves the steep stairways of the oldest continental metro and crosses Kossuth Ter to his office. With the Finnish he is one of the first to start work in the FADN network. Today will be busy. Last days G. compared his national data with those of the EU FADN. Candidate member states have started data exchange in 2001, using the new farm return and negotiations are now on both sides supported by micro economic analysis. The new return had not been too difficult and its definitions could easily be used in teaching farmers. G. walks into the ministry of agriculture to give a presentation. Negotiations are progressing slowly, but at least the information available at micro level is now much better than in the time that Austria entered, when FADN data were available but not comparable. But no time for reflection: his mind springs to the problems he has to solve this afternoon, when he has to call some of his CEEC colleagues on the voluntary FADN statement they are making to survey large cooperatives. Happily the implementation in the database will not be a problem, whatever they propose. Imagine that with all this work you also had to find IT people (still in short supply these days) to solve such problems.

08.00 hours, Stuttgart: A few hundred kilometres and two hours west, P., responsible accountant for the FADN in Baden-Württemberg, starts working. The computer standard starts with his Baden-Württemberg world wide web site. For the first year it shows the results from alternatively calculated with EU definitions. Now that the good old D-mark has been replaced and the EC made the calculation rules on its indicators available, he had decided to feel responsible for all FADN data published on Baden-Württemberg, even those in Euro with European in stead of BML definitions. The need for it became clear when some users started to ask difficult questions on German Testnet and EU FADN data

that were both available on the Internet, both calculated in Euro and sometimes even with comparable German-language names. Not that all differences had disappeared, as he had more farms in his own dataset. But at least he understood them.

More use in reserach

09.00 hours, Braunschweig: Over coffee WWW is also the topic that W., senior researcher and his trainee C. are discussing at the German Federal Research Institute. C. has created a nice map with a geographical information system, feeded by aggregated regional data from the RICA's website. It shows cost prices of milk. Nice that research productivity had gone up over the last twenty years so strongly. If you recalled how much time his director had to spend in the seventies to do such a study with time consuming fact finding missions! And now the website provided not only the data but also the definitions of the data, the methods used and even remarks on the quality: some countries made clear that they were on some smaller points providing data that are not totally harmonized. In the past everybody gossiped about that, without really knowing the deviations. Now you could at least take them into account, and send in errors if you found them.

Quality management

10.00 hour, Rome. G., the IT manager of the INEA, was late this morning. For some reasons software programming takes always more time than expected. Nevertheless he took his mobile phone with a good mood, to call G. who had updated the national accounting software. They had included a number of new variables, to collect more data on organic farming. Yesterday evening (true, this night would be a better expression) he had checked it and found it o.k. The conversion rules in the central FADN database on the Internet had also been updated. Now he could ask C., the FADN manager, to call Brussels for an EDP audit of the software. It made no sense to wait till the software would be used to transfer data, as they did in the past. This would lead to delays, and this would badly influence his performance in the balanced score card, that was part of the yearly quality publication. And that runs the risk of a cut in the payments INEA received for its data from the Commission.

Audit

Financial incentives

10.30 hours, Zaventem. RICA's network-manager takes his language from the conveyer belt. Flight SA305 from Athens was not too bad. Now quickly to the office to report his boss on the preparations he made in Greece for the next public relations event of the FADN. To make the network more visible, there is every year a press conference with the Commissioner for Agriculture to honour the best performing farmer and to elect the accounting office of the year. This year it will be in Delphi, together with the yearly user-conference. The Commissioner will give a speech on simplification and monitoring the national envelopes, now a big debate. Greece was not a random choice. It intends to help the Greek FADN system to put some pressure on its finance ministry to release a budget for gathering voluntary data on cost prices of tabacco. In the office

Public relations

Network management

new problems would wait. A., one of his colleagues of the micro-economic desk has informed on progress with organizing the task force for the next forecasting exercise and he does not yet know if E., the French FADN manager, is willing to chair this task force this year. And he has to check the electronic discussion on the FADN Internet site that he moderates. T., one of the other colleagues in the micro-economic desk, has done an internal study and then launched a discussion on the calculation of a better cost price indicator for integrated pig farms. Perhaps it needs some support; he could ask an accountant with expertise on the IASC's fair value methodology to react. In the taxi to the Berlaymont he wondered what the attractiveness of this trouble-shooting network management was; at least he liked the communications aspect.

Improved use policy making

11.00 hours, Edinburgh. R., the Scottish FADN manager, welcomes his minister for agriculture and rural policy and his staff, and meanwhile routinely starts his power point presentation. He has been asked to brief the cabinet on the latest EU policy proposals on sheep, that this time contain special premiums for heather conservation with a potential top-up of the premiums paid by the national exchequer. It's more work but also more fun now than in former days: a few years ago he would have put a transparency on the overhead with a graph of the development in management and investment income. The minister would understand it, but referring to the calculations would have little impact outside the UK. This time it will be different. The EU policy document contains several tables with income development in the sheep sector, using net value added and family farm income as main indicators. The paper also suggests that the proposals will have an impact on income of -5% or less, and that this can be set off by better management or local grants per ha. His own calculations this time use the same indicators and show that this 5% is correct, but that the acreage payments are most likely to disappear to absentee landlords. That is a result that his minister can use in preparing the UK point of view in London. Explaining the concept of family farm income to his audience, he wonders if it would not be appropriate to include this indicators in the Scottish FADN publication.

Incentive harmonization

12.00 hours, Madrid. C., the Spanish FADN manager, is going through his mail. Some signed contracts from the accounting companies that collect the data, business as usual. But also two foreign letters: it shows that all countries are now active in the network and not just the ones close to Brussels. The thick one is from A.3. Knowing the content without looking, he puts it in his briefcase to be read this evening. Its the draft report of the task force on desertification that he chairs. With the warming of the globe, this will become an important item. Therefore a task force of the Mediterranean member states has made a special survey in the farm return on desertification. Seventy percent of the data on last year were available in June, and last months were used by another

Task-Forces

taskforce of experts from member states and two policy analysts from A.3's micro economic desk to make a fact finding report. The second letter is unexpected. It turns out to be a request from N., an FADN expert in Belgium. She once again stresses the request towards Spain to participate in a voluntary exchange on horticulture, together with Belgium, Denmark and Holland. C. is interested as it is interesting for the RECAN, but has to check this in MAPA. It's perhaps politically sensitive, there has to be a budget and he has some doubts about the comparability of open air horticulture and glass house horticulture. On the other hand, growers might be interested now that they are building more glass houses to control the temperature in summer. Well, let's first have lunch.

Network approach

13.00 hours, Brussels, T. and D., responsible in the A directorate for policy analysis, use their lunch in office and go over the final draft of the policy proposal on the beef-sector they will send tomorrow to CSA. In finishing the final policy issues, they make sure that some FADN issues are also kept in mind. The paper contains a table with FADN data on cost prices of beef. Two member states did not provide data and are shown with blank columns; in the text it is assumed that they have the lowest cost price and need headage premiums for only 30 animals per farm. Most likely this will provide an incentive for collecting the data. T. and D.'s proposal makes it possible to pay premiums to beef farmers for the first 120 animals, if the farmer has an environmental monitoring system. They are keen to include a clause that obliges member states to collect data in their FADN on the environmental performance of beef farmers, to provide a benchmark and monitoring tool for the Commission and other member states.

Closer link policy making

14.00 hours, two floors lower in the Berlaymont, Brussels. Returning from lunch the FADN data manager checks his e-mail. Two messages this time. The first is from two colleagues in Eurostat. They have access to the FADN database to make statistics and to use the data in the regionalized SPEL model. They would like to use the expertise of the data manager on gross margin definitions: comparing the FADN data on gross margins and the -now available- detailed standard gross margin calculations from Eurostat, they wonder how levies on using groundwater for the irrigation of maize are treated: is this a variable cost or overhead? The data manager checks the Internet farm return and replies that this is indeed unclear. He volunteers to send and E-mail to the FADN managers to query their methods. The second E-mail comes from a student that used the FADN Internet-site. It seems to be a routine question on Nordic subsidies that can best be answered in Helsinki or Stockholm, so he forwards the mail to J., the Finnish FADN manager, and informs the student with a standard message. Time for a meeting with some of his colleagues of the micro-economic analysis desk, to discuss some of the problems they have with using the indicators. They are nowadays fully

Data management

Access by users

Better service in DG6

Quality

Control software

In time delivery

Member states network

concentrating on policy research, and leave the old 'horizontal' tasks of data management to the RICA desk. Sometimes they work a few weeks on this desk to complete a special task, but there is seldom time for it. The policy makers in DG6 like to use their expertise on micro-economics, and are a bit jealous on the excellent network that they have with national FADN managers and FADN users in universities and research centres. It provides golden opportunities to do a job with a clear impact on policy making and policy evaluation. Every year the list in the quality report on the studies that have been carried out, grows. Critisms that the FADN is a hole in which money is thrown to collect data, without a proper investment in the use of the data have ceased.

15.00 hours, Kent. Just before tea, in the office of an arable farm in the neighborhood of Wye College. A. the FADN datacollector, is about to finish the accounts of the farm. On her portable she runs the English control software, that includes the tests issued by the RICA desk. Two error messages, of which one error is corrected; the other message seems to be false. She enters a small text to make clear that she checked the error message and why it proved to be o.k. and starts the EU's conversion software. This is the biggest improvement in her work in recent years. The software builds up an Internet connection with the public database of the EU's FADN through the Internet (her PC has a GSM connection), reads the UK conversion-formula's and sends the farm's data to Brussels, with a copy to MAFF in London. After a minute her screen shows a message that the EU workflow management software accepted the farm, having no error-1 mistakes. It is like ordering a book at Amazon.com. She switches off her portable: where are the times you had to wait with transferring the data by magnetic tape only after London had its database for a new year operational ? Time for tea and a chat with the farmer's wife.

16.00 hours, Valby. S., the Danish FADN manager, has once again found time to study the competitive position of the potplant holdings in Europe. This is now much easier than five years ago. Then he had to call his Dutch and Belgian colleagues to send him national FADN data on paper. They were happy to provide it and it made him understand Dutch. Now he can easily use the password protected FADN database in Brussels. These comparisons are so popular in Denmark as well as in the other countries, that his Belgian colleague even has decided to provide to the FADN free of charge also the data of farms that were previously only in the national database.

17.00 hours, Brussels. Just before going home the database manager checks the daily statistics of the database. It is September now, and 80% of the hard core data of the farms is in. His colleagues are already studying pre-eliminary results, now that they are back from holiday. The screen shows that today 300 farms have been sent to the

Workflow management

Audit

Innovation support

database since yesterday. Twenty of them have been rejected as containing errors type 1, or errors type 2 without an explanation. Such farms can only be sent in once again by national liaison agencies. The other 280 come from all over Europe and arrive by Internet one by one. Tomorrow morning he will have a look at them, and then add them to the database. Happily the payments have not to be done to all the persons who send in data: that is done only once a year to the national liaison agencies.

18.00 hours, 10 kilometres somewhere above France. Flight attendants on flight SAS-311 from Stockholm to Lisbon serve another vino verde. G., the Swedish FADN manager, is on his way to lead a compliance audit of the Portuguese FADN. In four days the international team will review all the activities of the FADN, using the check list they made two years ago. The FADN data manager, a Portuguese professor in agricultural policy, the Irish FADN manager and an IT expert of the Austrian FADN will join his team tomorrow. He knows that R., the Portuguese FADN manager prepared the visit well. As the Portuguese FADN develops its own software and is planning a new release, they asked to have M., the Austrian IT expert, in the audit team. His advice could be beneficial. Another advantage for R. is that the report of the audit can perhaps be used to the benefit of the FADN unit in the coming reshuffling of the organizational chart of the Ministry. However, the audit report will most likely also contain some critical remarks.

19.00 hours, Zevenhuizen the Netherlands. After dinner K., the Dutch FADN manager, checks his e-mail from home. There is an e-mail from C. in Rome, with congratulations for his birthday. K. starts smiling when he reads that she wonders if he has re-read the RICASTINGS report from 1998 and counted which things have been improved successfully in the FADN and which not. He had not, but he certainly will do that tomorrow. Could be useful, now that he is preparing with the PACIOLI group a proposal on the exchange of micro-economic data with other OECD countries. As the WTO negotiations seems to be endless and only supported by macro-economic models that not always reflect the first shock of changes to farmers, and neither test the effects of direct payments on production, this seems to make sense. But first of all its time for a birth day dinner.

6. Content of Farm Return 2000+

6.1 Introduction

The following sections present the proposals for each area of content of the FR 2000+. They are based on the analysis in chapter 4 and the ideas issued from the survey on FADN managers, interviews of different stakeholders and the two meetings with DG6-A3 and RICA members in Brussels. Appendix 2 gives additional tables showing the answers collected.

A new farm return means obviously new definitions of different items desired. It has been underlined by quite all member states that there is a need of clarification in the FADN definitions, and harmonisation with national ones on several points. This will be worked out in task forces in the coming years, using new software tools (especially the data dictionary). That will also improve internal compatibility of the farm return this chapter identifies the main issues to be discussed in this harmonisation. First attention is paid to items that are relevant to the 'hard core' data-set, then to the voluntary items. As argued in chapter 4, the forecasting exercise will not be supported by FR2000+. There is also no need to pay special attention to statistical applications of the data-set, other than the weighting. All statistical applications can be carried out by users using the database and statistical software. This should be kept in mind in the new farm return.

6.2 Hard core

The obligatory statements are the farm structure survey, the farm profit and loss account, the farm balance sheet, the flow of funds statement and the farm subsidy statement. Appendix 4 provides detailed remarks concerning the data to be deleted from, to be added (compared to current tables) or to be improved in documentation.

Farm definition
For most countries, the farm definition given in the current farm return is not a real problem. It has not to be changed, even for including activities non or semi-agricultural, or forestry. The EC has the impression that nevertheless farm definitions are not very well harmonized between member states (e.g. renting out, several locations, etc.), so this should be discussed in more detail.

The definition has to precise if activities like forestry have to be included (and in which way). It should also give a clear view on large legal holdings, and what should be done in case of several locations. The proposal is to make forestry and non agricultural activities voluntary data, and keep the actual definition as obligatory.

Some elements in the table A and B have to be deleted (items 40, 41, 42 for example). And some have to be added : more details on the type of occupation (UAA utilisation, number of parcels, biological production, nature of a farm).

Field of survey

Linked to this subject, the minimum and maximum sizes of a farm can be discussed. For the minimum size, it is now harmonized in such a way that at least 90% of production is represented. As the farm definition is not or only marginally changed, there is no reason to change the field of survey. For large legal holdings, there is a need to take into account the maximum size of a farm, which is used in the member countries, and implications for weighting has to be discussed. The new farm return could use national weighting factors, making member states responsible for the quality and representativeness of their data.

In perspective with accession of Central and East European countries, the question on maximum size becomes of even more importance and their accession will have to be taken into account in updating the definitions.

Regional breakdown

Due to the sample, most countries indicate that data provided in the FADN are not representative at a regional level, or in small production sectors. For some analyses, FADN information needs to be geo-referenced (e.g. structure funds-regions). The development of Geographical information systems (G.I.S.) provides a relevant answer for getting data available at a regional level. For those reasons, it doesn't seem necessary to introduce new data with geographical aspects in the Farm Structure Statement of the farm return, if the lowest regional level (community) can be identified.

Labour force

Often mentioned as a problem in the current farm return, this domain has to be redefined. While there are many remarks on the actual labour definitions and implementation of them, it is necessary to reconsider this; this regards mainly regular/casual work as well as the calculation of AWU. The question is what kind of information is desired. At least economic information is required (labour costs, paid and unpaid). As too much details are asked now, some data items could be skipped.

Although it has been suggested to include data on labour input in non-farm activities in the Farm Structure Statement, it is advised not to do so, and to make this a part of the voluntary dataset in non-farm activities.

Economic indicators

A number of issues are relevant in the field of economic indicators (besides cost of production, to be treated later).

Each country uses its own indicators, with specific definitions, which seem to be clear at a national level. But this is a great handicap when European indicators (which names are often the same) are used, because there is no data standardisation, no harmonisation between definitions. So it is not clear enough, and explains sometimes why European data are not used at a national level. More information is needed to explain European concepts used in the analysis.

New definitions should have to integrate conversion rules between European and national indicators in order to give comparability to the results.

The income calculation is a major source of lack of understanding. For two main reasons: first it is not clear enough which sort of income should be calculated (farm income from primary production, farm income including non agricultural activities, total income of the household, see § 3.3); in case of large legal holdings, family income has often no sense. So it seems necessary to calculate several income indicators. Each one has to be clearly defined. The second reason is that especially the use of AWU/FWU is questionable, and should be dropped in income-indicators.

Several tables from the current farm return related to the income calculation should be renewed in the new return : tables D and E on livestock, table G on land and buildings, table H on debts, table K on production. For those tables, items have to be redefined more precisely, and several of them are can be dropped.

Estimating the effect of subsidies and levies (and production rights) is an important topic. In order to give such information, it seems useful to re-organize the data on such domains. For example, in the case of purchasing quota, interest and depreciation are important issues, and if the quotas are sold, the receipts are needed. In the current farm return, the two tables on subsidies and quotas give a lot of problems (difficulties for distinguish received and due subsidies, identification of quota initially allocated or purchased in earlier years, ...). The identification subsidies should be classified to the EU Regulation on which they are based and the harmonisation of the hard core statements (especially the farm balance sheet, the profit - and loss account and the flow of funds statement) could benefit from using the IASC - standards and the EU accounting directives as a bases. This includes the new Exposure draft from the IASC on agriculture. Its proposed valuation method (fair value) could be roughly in line with the current FADN concepts of market value and replacement costs. Definitions have to be improved.

Other elements in the hard core

Other elements that the task force on the hard core should pay attention to are the differences in accounting year and the weighting factor. These are part of the instructions on the hard core and should be part of the Farm Structure Statement.

6.3 Voluntary statements

The data currently available in the member states makes it possible to quickly broad the data coverage of the FADN with a number of voluntary surveys. This concerns mineral balances, gross margins and physical production data, cost of production, organic farming, processing on the farm, agri-tourism, landscape maintenance, forestry, non-farm activities and non-farm income. Appendix 4 provides more details on countries with data and countries that think data gathering and data exchange feasible.

Gross margins and costs of production

Nearly all countries would like to get information on production costs and (or) gross margins. In the current farm return, data exist on allocated livestock costs and farm produced feed costs. Beside that, several countries would like to get more specific information, such as a split of variable and fixed costs to different products (especially for crops). Most countries agree with the idea to collect data on gross margins per enterprise and physical data for costs calculation. However many countries have these data only for subsamples and at least in one member state the gross margins approach is not regarded as feasible. Therefore it is proposed to make this item voluntary and use it as a pilot for the voluntary surveys. This is based on the knowledge that DG6 needs these data more than others to improve the quality of current cost of production estimates. It is also suggested as an additional option to ask Eurostat to make (member states make) the details of their standard gross margin calculations available in an Internet accessible database.

In order to improve cost production methods, it is suggested by some countries to use smaller networks of farms outside the FADN, or to cooperate with other institutes. The harmonisation of gross margins is not thought to be very difficult. The task force can base its work on classex 44 used to calculate standard gross margins. Enterprises are already defined in the Farm Structure Statement and in the current farm return (crops in table K). Eurostat's handbook on price statistics can be useful to see which technical elements play a role in defining physical characteristics (eg. EUROP classification with pigs).

Environmental indicators

The domain is very often mentioned as necessary in the future. From managers and stakeholders point of view, environmental issues could be useful in the future farm return fiche. Especially for mineral balances, pesticides indicators, and energy (consumption, production). Especially in this domain, it is necessary to define precisely what kind of data are required, not only financial, but also physical data. The best approach here is to bring the relevant member states together, perhaps in co-operation with some experts from concerted actions like Elisa. A start could be made with mineral balances.

Diversification on the farm

This topic could lead to several voluntary surveys in the FADN. Organic production, processing on the farm, agri-tourism, landscape maintenance and forestry. The current farm return is not very helpful to support the harmonisation in this field. With the exception of landscape and forestry, where concerted actions on harmonisation and data exchange are active, there is not much reference for harmonisation either. The best solution is therefore to bring the member states together that have data for a certain statement.

Non agricultural activities and income

Non agricultural activities/income is another domain where discussion is important. Here much work has been done a few years ago in a study by a contractor ms. Kshatriya. It was concluded that a split should be made in a survey on non-agricultural activities and on non-farm income Memberstate agreed nearly all to deliver such data. In addition the TIAH-project of Eurostat could be used as a reference.

6.4 Conclusion

The task forces to be installed to provide the data manager with harmonized data definitions, should start their work with a working plan. This working plan should contain the references to be used and the material available from the surveys in Ricastings and previous FADN studies on harmonisation. Appendix 4 summarizes the results from this project that can be used to write the working plans.

7. Information technology options

7.1 Recent trends in IT

Computing power has dramatically improved within the last years, both in terms of hardware and software.

On the hardware side this resulted in:

- PCs have become cheaper than ever (a good PC can be bought for about 1,000 ECUs), but the increase in CPU performance and speed has not stopped;
- a server using a standard operating system (Windows NT, Unix etc.) with large hard drives and a relevant number of terminals connected is very cheap and provides computing power comparable with that of yesterday's minicomputers;
- Internet servers and associated hard- and software are introduced and cheap.

The major improvements are, however, on software. Operating systems have become more reliable and the adoption of advanced user interfaces is ubiquitous. Network operating systems like Windows NT Server can provide full client-server capabilities without tremendous computing skills from local area networks managers or end-users. Powerful RDBMSs (relational database management systems) are now available at a reasonable price (i.e. Access, SQLServer, Oracle) and connectivity to any database through the ODBC standard is possible at any time. Furthermore, the development of shareware or free software has not decreased: full functional operating systems (i.e. Linux) or software tools are available for free or at a very low price.

The third aspect to be considered is, of course, the development of telematic systems. Internet access (only for the e-mail or for browsing web pages) is available in all offices and even in some farms. Not only this makes communications easier, but it allows a quick transfer of files (in any format) and even access to remote databases from a PC connected to the network.

All in all, therefore, IT should not be regarded as an obstacle or something to cope with, but as a great opportunity for the development of an advanced, interactive, quick and up-to-date FADN system.

7.2 The data dictionary

The design of databases is nowadays professionally carried out by designing and implementing a data dictionary. Based on a conceptual (or logic datamodel, a table structure is defined. Often this datamodel is based on a relational datamodel (objected oriented being one of the alternatives). The new farm return should be designed as a datamodel for a dictionary (see chapter

4). This implies that a common data dictionary is built and adopted as a common standard for the FADN partners.

This could require an initial effort, but the advantages of such an approach highly overcome it. Any database created within the agreed standard should therefore store information on the same entities, regardless of the accounting system, methodology for data input or analysis and software.

At present the situation concerning methodologies for data collection are quite diversified, both in terms of software and of organizations involved. While adopting a common software standard is certainly a clear advantage over the present situation (and will lead, in a number of years, to the development of a unified system for data analysis) there is no guarantee that the organizational diversification on data collection will be harmonized; on the contrary, it will probably increase, due both to the participation to FADN of new EU members and to regional datasets that in some countries will probably be required.

Developing a common data dictionary is therefore the only guarantee to build a sufficiently harmonized FADN system for the future.

7.3 The adoption of the SQL standard

Although the current situation of information technologies can be seen more as an opportunity rather than an obstacle for the developed of the new FADN system, at this stage a few strategic choices need to be done.

The first concerns the typology of software on which the new system should be built. At present, state of the art databases are built using RDBMSs (Relational Data Bases Management Systems), in which data are stored in tables, related to each other. The user can then define simple or advanced queries, using a common query language (SQL, Structured Query Language).

Choosing a RDBMS and SQL presents a number of advantages over any other system, among which the most relevant certainly are:

- freedom in the choice of the server software (SQL Server, Oracle, Informix, Sybase, DB2 - to mention only a few);
- possibility of having the same software under various platforms (i.e. Oracle 8 is today available for 92 server platforms), thus selecting the best hardware platform for any local situation and scaling the server according to the users' needs, the number of queries and the size of the database;
- possibility of establishing an ODBC connections from other software (like (Excel, Access, SAS, ArcInfo - or any piece of software with ODBC connectivity) to datasets stored in a RDBMS;
- data delivery to Web application servers, and support of thin clients for local data input;
- more openness in general.

SQL is not always a logical choice if the number of input operations is low and the database is huge (as in the current situation of the FADN). However this would change if data are

delivered on a day-to day basis through the Internet and voluntary datasets are added. An alternative would be an object-oriented tool.

7.4 Centralized vs. decentralized databases and systems

Keeping a SQL-based system in mind, three problems need to be examined:
- how data should be transferred to the central database;
- how and for how long should be performed the transition to the new phase;
- how the central database should be built and where should it be located.

Concerning the first two problems, although the new FADN system will probably be built around a core dataset much simplified with respect to the current one, and keeping in mind the adoption of a common data dictionary by all FADN members, still the number of national and local situations which might occur is extremely diversified. In some countries, for instance, data are collected by accounting offices managed by local extension services or farmers' organizations; in others there is a direct link with universities or research centres; in others there even is involvement of private accounting companies.

The situation is even more complicated by the presence of 'legacy' systems, based on obsolete software and hardware platforms, but for which it might be too complicated or expensive the sudden transfer to the new technologies.

The complexity of the system, apart from being a strength of the whole FADN (since data are collected as close to the farmer as possible), may become a weakness in terms of data input, control and transfer to the centralized database.

The problem can be solved by flexible procedures for data collection, with the aim of conforming the final result both to the definitions of the data dictionary and to the structure of the database. In this context, there could be a transition phase, in which data are treated in the usual way by regional or national organisms and converted to the new standards before they are sent to the central database. Meanwhile, all 'legacy' systems should be converted to the new standards. Since standards have been defined and established, abandoning the old system and switching to the new one could be simplified.

The new system could be therefore:
- flexible in term of data input, which could happen at local, regional or national level, using both the current systems and the new ones;
- evolving to the new standard in a limited number of years.

The last problem is deciding whether to adopt a centralized or decentralized databases: in the first case European data are stored in a single location, in the second one the EU database is 'virtually' built at any moment by adding all the national databases.

From a technical point of view, building a 'virtual database' is feasible, particularly considering what can be the evolution of databases and communication technologies in the next years. From a privacy/ownership point of view, it could be attractive.

However building a centralised database is at present the best solution in terms of security of control to access of data, since access policies could be centrally defined and controlled

in a much simpler and safer way. Whenever needed, this centralized database could be very easily mirrored and duplicated.

7.5 The impact of the new system on national FADNs

As outlined in the previous paragraph, adopting a common data dictionary and a documented standard for the centralized databases should simplify data conversion and import of data from national databases. Those systems based on mainframe software should already use SQL-like data base management systems, and therefore conversion to a common SQL standard should be simple and straightforward.

On the other hand, also at PC level there is a constant trend in using software with a certain degree of SQL-like features, or, at least, the possibility of exporting data.

Also, as a consequence of the establishment of the new system at EU level, the implementation of new systems at national level should be easier and could be done at a faster rate.

National FADN units would have therefore two choices:

1. maintaining their own systems, with the development of routines to translate data to the new EU system;
2. developing a new system according to EU guidelines.

Concerning this last solution, it should be outlined that investing in a new system means not only buying hardware and software, but also developing from scratch a new structure of the database with new input and control routines. Since this part of the overall investment has already been carried out (and paid) for the EU system, the total investment on a new system by the national FADN point could be less than expected.

7.6 The documentation system

In the current system, there is a serious lack of documentation on the data dictionary, on the structure of the databases and on tools for queries. The adoption of a new system could easily overcome these weaknesses. First of all, the new structure of the data dictionary should be made available at least to national FADN members: this should lead to a quick and harmonized development of new national FADN software. Secondly, the structure of the new databases should be distributed to all the entities interested in making queries to the centralized databases. Modern SQL software have advanced tools for data documentation, providing information on single elements of tables and in their relationships. Of course the documentation should be updated whenever necessary, but this process may be highly automated.

7.7 Links with other software

The central database can easily be linked or integrated with most types of programs. The most simple and obvious one is the possibility of querying the database by remote users using a web-like interface. Using modern web interfaces this does not require much programming effort or computing powers; the major care should have to be on impossibility, for the end user, to access data of single farms.

Other possibilities, however, can easily be seen:

- integration with other databases, i.e. statistical datasets from various data sources or national databases on agricultural subsidies;
- implementation of geographic information systems, integrating FADN datasets with various geo referenced layers of information;
- development of multimedia systems, in order to teach FADN methodologies to people in charge of data collection, using real datasets.

7.8 Data encryption and security

Since the database will contain individual data on single farms, the system will need a to implement facilities in order to ensure both data encryption and access to single data.

There are two possibilities of having access to individual data:

- during data transfer from nation FADNs to the central system;
- with queries to the central database.

Concerning the first item, the solution is encrypting files using a double-key encryption system. Many software are available on the market, in the absence of a specific standard. One of the most simple solutions (yet allowing an excellent degree of protection of files) is based on the PGP - Pretty Good Privacy system.

For what concerns single queries to the database (and, in the worst cases, data extraction) a mix of solutions should be implemented:

- protecting the local area network in which there is the computer with the central database with a firewall, thus preventing unauthorized access;
- defining a number of user profiles, with differentiated access to single data; (like in the French system for researchers);
- logging all accesses to data, in order to determine the use.

7.9 Advantages and disadvantages of the new system

In conclusion, the adoption of a data dictionary approach with an SQL architecture, due to the development of IT in the last few years, is compatible with budgetary constraints and limitations and provides a great number of extra features and opportunities:

- input software independent;
- diversified adoption (in time and in software tools) by FADN members;
- connectivity to other databases and software;
- mixed input tools (once they are SQL compatible);
- control of access to the databases;
- improved documentation of the system;
- central 'core' databases and decentralized local databases.

The only drawback (a serious one) is the need of a precise and stable definition of the core database. This phase implies both aspects related to agricultural accounting and information technology; however it is a prerequisite for any further action in this field.

7.10 The final system

Based on what has been presented so far, the final system could be developed with the contribution of:

1. a central unit for coordination and development of the system;
2. national FADN units;
3. local units for data collection;

as follows (in parenthesis the involvement of each partner):

- definition of a data dictionary and of the structure of the database (1,2);
- implementation of the database on a centralized system (1);
- distribution of the structure of the database to national FADN units (1);
- definition of control procedures (1,2);
- definition of procedures for data transfer (1,2);
- definition of procedures for data collection (2,3);
- implementation of software to transfer data to the new system using existing procedures (2,3);
- implementation of new local systems for data collection and control.

7.11 Conclusions

The FADN system is characterized by a fragmentation of points and procedures of data collection and by the need of gathering all the information in a uniform and harmonized dataset. Information Technologies can play a key role in produced a more advanced, versatile, up-to-date and flexible system.

The key task to be performed is definition in advance of the data dictionary and, consequently, of the structure of the database. This information can then be transferred to national FADN units and to data collection organisms, which can conform to the new system either by developing tools to translate their current datasets to the new ones or developing totally new systems based on the new standards.

8. Information analysis

8.1 Introduction

Designing a new farm return is heavily connected with the creation of software. Software engineering has become a science in itself, of which the methods are not fully standardized between countries and companies. The next section provides some background to the methods used in this report. They are based on the method of Information Engineering that is used in the Dutch Agro-Sector. Experts using other methods will not have much problems to understand them. That is not by definition the case for outsiders, who tend to see the creation of information systems not so much as an engineering project (comparable to e.g. designing and building a house) than as turning on a computer and starting to write a program. The latter leads to inflexible information systems with high maintenance costs.

After an introduction into methodology, we discuss the information architecture for the FADN network and DG6 A/3, with a focus on the data management with the farm return. The chapter ends with a discussion of a prototype, that has been created in the project to show the advantages of data modelling.

8.2 Stages of information engineering

Developing information systems can be divided into four major steps:

- *information strategy planning* (also called a quick scan or a feasibility study). In this stage the mission and strategy of the organization are translated into the strategy for the information systems. If for instance the analysis of the strategy of DG6 learns that policy topics are changing more rapidly, this asks for more flexible information systems. In the strategy planning stage the major activities (functions) of the organization are described, as well as the main data items ('objects'), which results in business areas (like data management, policy analysis). For the FADN/A-3 this is done in the next sections;
- *business area analysis*: the detailed analysis of all the activities (processes) and data that are part of a certain business area. Central is the 'what-question': what data are needed and what activities are carried out. How this is done (by hand or a computer-device) is not important, and an error-free world is assumed. This makes the analysis easier and results in a model that is stable over time, as it is not dependent on technology but only on the strategy of the organization in relation to its environment.
  Data modelling is an important tool in this step. In the case of relational data bases a conceptual data model (entity relation diagram) is created.
- *Business system design*: a detailed design of the procedures and data in a certain business area, with an eye to the working methods that will be installed. Choices of technology options, in relation to expertise available, are important. The 'how-question' is central

(figure 8.1). Sometimes alternative procedures for the same process are developed (e.g. sending data on paper or by Internet). For computers the system design and the screen dialogue are important issues. For manual tasks, handbooks with instructions have to be written. The assumption of an error-free world is abandoned in this stage, and prevention methods (like control programs, instructions for back ups) are designed for man and machine.

- *Technical development and construction* (followed by maintenance): this step involves the realisation with activities like purchasing hard- and software (if available on the market), installing and programming.

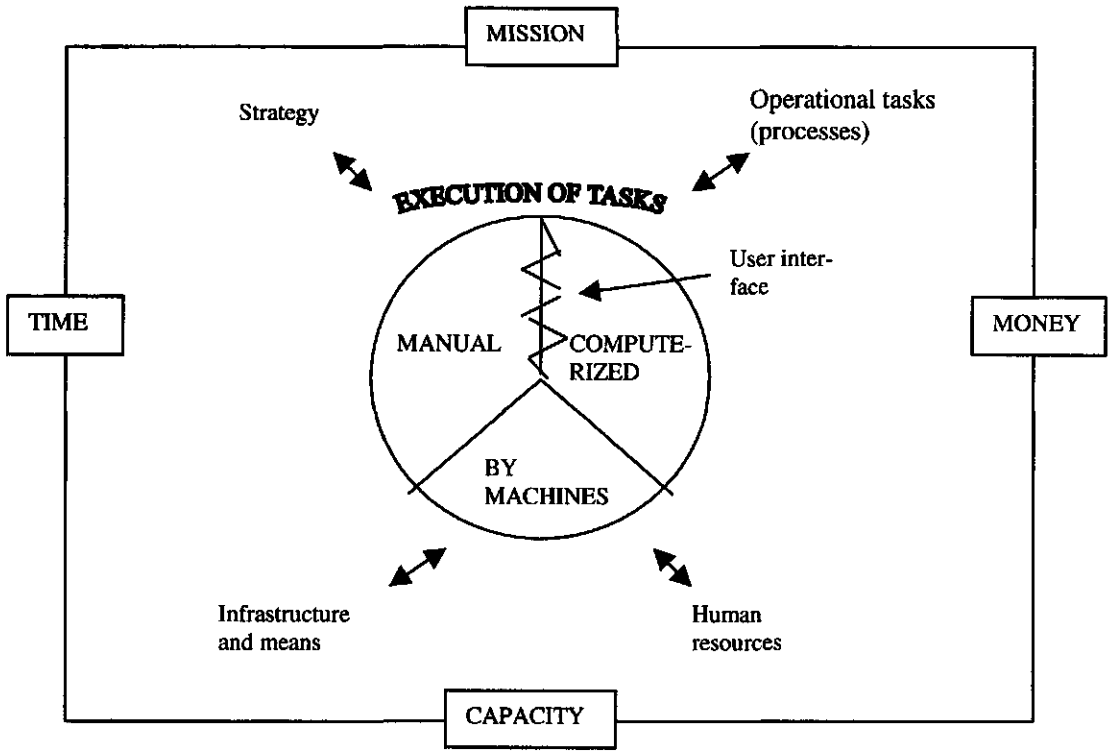

Figure 8.1 Influences on the design of the execution of tasks
Source: Based on Vellekoop & Meesters, Hoevlaken.

It is clear that the main objective of a feasibility study like RICASTINGS is to provide a clear view on the information architecture that is needed in the coming years. As the FADN is an established system, the Information Strategy Planning can be integrated with the revision of the main Business Area of the FADN system, the farm return. This implies that this study also touches other aspects of the work of DG6 A/3. In discussions with A/3 this has been encouraged, leaving the detail of harmonising indicators for the new farm return to the maintenance stage of the flexible system. This has the advantage that DG6 can use the presented information architecture to control the interfaces between the farm return (data management) and the other business areas (like the software used for RFS, the FSS part of the database, the software for policy analysis).

8.3 Function decomposition diagram

The function decomposition diagram (figure 8.2) describes the major activities in the unit A/3 and (with an eye to the use of the farm return) at the level of data collection. The decomposition diagram has been based on an analysis made with A/3 in 1996 [1], that has been adapted to the findings in this study and to which the data collection level has been added. Main changes concern the introduction of a function 'network management' (which includes activities from operational management regarding the management of the FADN network) and the introduction of 'database management' (which compromised the functions receiving data and weighting data). Appendix 3 provides explanatory definitions for the processes from the function decomposition diagram [2].

As set out in the previous chapters, the core functions of A/3 are on the right site of figure 8.2: carrying out policy analysis ('the micro-economic analysis desk'). Strategic planning,

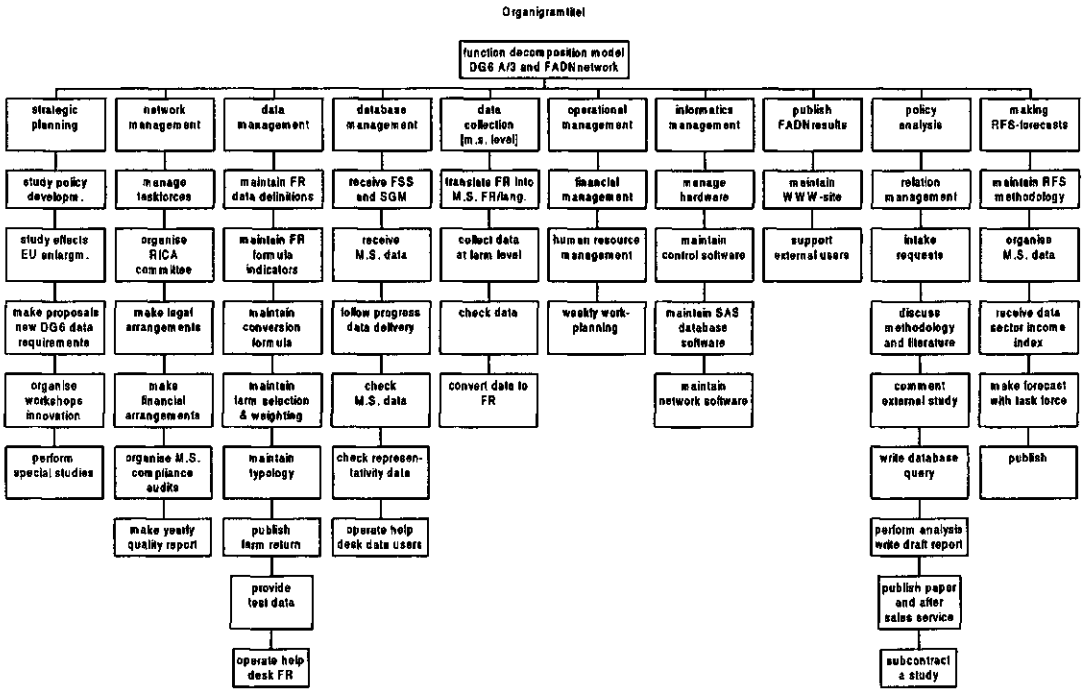

Figure 8.2 Function decomposition diagram DG A/3 and the FADN network

[1] See G. Beers, K.J. Poppe and H.C. Pruis (eds.); PACIOLI 2 Accounting and managing innovation - workshop report.

2 In the function decomposition a few adaptations to the methodology have been made, in order to reflect the character of the FADN network: as control and conversion can not be abolished totally, these processes have (already) been added. In the definitions of the processes, sometimes some remarks have been added on the working methods ('by taskforce') or technology ('WWW site') for explanatory reasons only.

operational management, and informatics management are support activities for the unit, and mainly for carrying out policy analysis. The network management, the data management, the database management and the publish-FADN results function could together be labelled 'the RICA desk' and also provides a support function ('the back office') for the core business of the micro-economic analysis desk. Within the RICA desk the network-management, data-management and the publish-FADN results are mainly needed to help the member states to organize themselves in this network. To put it bluntly: if the member states data collecting units were able to organize themselves as commercial market-research companies, A/3 could eliminate these three support functions and buy the database.

8.4 C/U matrix and IT implementation

To get a better understanding of the processes a c/u matrix has been made (figure 8.3) in which for each process it is listed which data-items are created (C), read (R), updated (U) or deleted (D). This matrix is helpful to identify business areas (like the farm return) and to keep an eye on sthe links between business areas (and hence software programs). Definitions of the objects (entity types) identified in the c/u matrix (including some attributes) are given in appendix 3.

In line with the function decomposition, the c/u matrix identifies the following business areas:

* *Strategic planning*. The most important object created in this area is 'data requirement'. The application of ICT (information and communication technology) is not very important in this area. A good handbook and a word processor could support the processes cost effective;
* *Network management*. Also this business area needs not a high investment in ICT. Standard office suites (word processing and e-mail to support contacts in the network) are enough. An exception is the database with the documentation on the names, addresses, expertise, languages spoken etc. of all the institutes and persons that are relevant to the FADN network. This core know-how (several DG6 officials are envious of the network that A/3 has) should be well documented. Note that information on contacts are also created in other business area's, so this software
should be group ware that is accessible at several desks. In addition to software, a good (electronic) handbook should be available, especially on activities like the management of taskforces, the organization of compliance audits and the yearly quality report.
* *Data management*. This business area will be discussed in more detail in the next sections. A data dictionary together with a good handbook are pre-requisites for a proper execution of these processes. In addition a WWW application is needed to publish the farm return, and to make it (password protected) available to national FADN managers to enter member states data on national indicators, conversion formulas and national translations.
* *Database management*. The execution of these processes ask for a good handbook and a database management system to store the data described in the data dic-

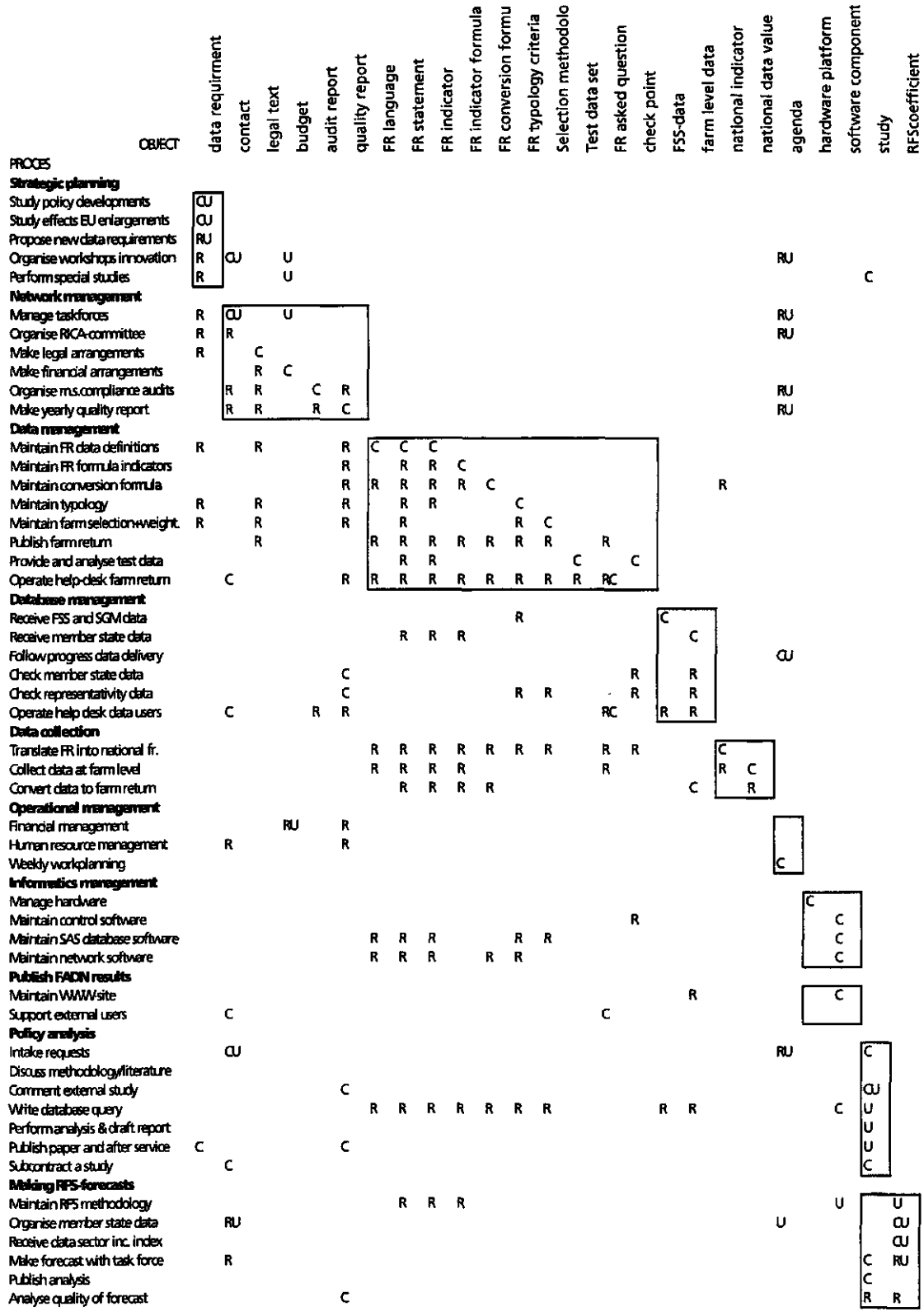

Figure 8.3 C/U matrix DG A/3 and the FADN network

tionary. The checking of data also creates a contribution to the yearly quality report. These types of 'C' (figure 8.3) can be handled by filling in a small report that can later be used in writing the quality report.

* *Data collection.* This business area is carried out in the member states, and will be supported by national handbooks, a national database management system at the liaison agency and national accounting software. For the FADN network and A/3 two points in this area are of importance: a] the EU farm return should be available in such a form, that it is extremely easy to include it in the national farm return and b] joint software can be developed to convert national data values to (EU) farm level data on the basis of the conversion formula included in the farm return 2000+.
* *Operational management* asks for the software currently available in DG6 for budget planning etc. MsOffice and MsProject (or equivalents) can be used to keep track of work planning.
* *Informatics management* keeps track of the hardware and all the software(versions) that are used in A/3 or has been made available to the FADN network. The re-use of already developed SAS software or presentation software can be attractive. As long as library management is restricted to a low number of software-editions, no special software has to be installed.
* *Publish FADN results* asks for a good WWW site from which the public can download aggregated data, legal texts, quality reports, the farm return, frequently asked questions, an A to Z etc. It is advised to involve a task force of FADN managers in this work, to promote the links with national sites, and to involve them in answering questions from the public. A good handbook (including a style guide) for the editorial board of the WWW site is necessary.
* *Policy analysis*: The ICT support to these activities are MsOffice (a word processor, spreadsheet and presentation software), a statistical analysis package like SAS and a geographical information system (GIS). The current platform in A/3 seems adequate for this. Some member states use a handbook to steer quality control of these activities. With the new farm return it could be seen if it becomes attractive to upgrade the work and make more use of (simulation or optimalization) models, like several member states do.
* *RFS forecasts*: these tasks resemble those of Policy analysis (and network management as it is suggested to carry out this task more by using a task force from the member states) and the ICT support is equivalent. A good handbook is here of crucial importance, as also the member states have to contribute.

8.5 Information model Data-management

This section discusses in more detail the information model for the business area Data-management. The activities in this function have been discussed above.

As discussed in chapter 4, the farm return should be based on the form in which the data are published, but the collected data should be at a more detailed level than currently published (at level I and II). The main advantage to choose this option are simplification (and hence less

errors), subsidiarity, transparency (the member states become familiar with the calculation rules used for RICA indicators like output beef and livestock units and can explain them to users), speed (member states can calculate indicators when these close the accounts), comparability (there are external standards from e.g. the IASC for accounting statements) and harmonisation (there is an incentive for member states to harmonize as the national indicators are going to be additional to EU indicators in stead of the other way around).

There are two types of data-models imaginable that support such a farm return. The first type explicitly contains all the statements that are part of the FR2000+. Figure 8.4 provides a list of entity types that are part of such a data model. The advantage of such a model is that is clear what the data model describes, and it is perhaps easier to check the quality of all the details of such a model.

Reference entity types (entity types that describe the data *)		**Data value entity types (entity types that contain data values)**
Member State (name, abbreviation, currency, name FADN responsible)	Region (name, code, LFA status, reference yield cereals etc.)	Holding
		Accounting year
Balance sheet (name, period valid, description, harmonisation base)	BS indicator (name, definition, instruction, code old Farm Return etc.)	BS data value (identifier BS indicator, value)
Profit & loss account	P&L indicator	P&L indicator data value
Gross margins	GM indicator	GM indicator data value
Non farm income	NFI indicator	NFI indicator data value
Farm structure	FS indicator	FS indicator data value
Mineral balance	MB indicator	MB indicator data value
Geografic information	GEO indicator	GEO indicator data value
Crop category (name, description, instruction, code old Farm Return)	Animal category (name, description, instruction, LU-value, code old Farm Return)	
Type of product (name, description, definition, code old Farm Return)	Type of subsidy (name , description, instruction)	
Type of labour (name, instruction)		

Figure 8.4 Examples of entity types of a data model with a detailed listing of all relevant statements
*) Between brackets: some examples of attributes.

However the disadvantages of such a model are not be overlooked: it is a relatively large model to make, to realise in a database and to maintain. This is especially true if also entity types are added to support different languages and conversion (see chapter 4). Another main disadvantage is that it is inflexible: if a number of member states would like to exchange data in 2003 on e.g. water use or CEEC cooperatives, the data model has to be adapted to make this possible. For this reason it is advised to create a data model on a more abstract level, by

grouping all the entity types of statements (see figure 8.4) together in one entity type 'Type of statement', those of indicators in 'Statement indicator', and those of data values 'Indicator data value'. Of course the higher flexibility and lower development costs have a price: the system becomes now so flexible, that central data management can more easily make mistakes or introduce new statements and indicators to easily (e.g. without thoroughly discussing the harmonisation and collection issues with the member states). This asks for a qualified data manager and organizational procedures. Where in the past inflexible systems secured the risk of thoughtless introduction of new indicators, organizational procedures (handbooks, documentation, quality management, task forces, decision taking in the RICA committee) will now have to do their work.

A first version of such a flexible data model is given in figure 8.5. Definitions of entity types and some attributes are given in appendix 3. Central entity types are Type of statement, Statement indicator and Indicator data value, as discussed above. Data values can be numbers (normally), text, or domain values (a choice from a limited list of -text- values). For the moment one entity type Category has been added, as a reference table for crop category, animal category, enterprise category (for gross margins), product category and type of subsidy. Statement indicators can than refer to such a category. Category itself has subcategories to document aggregation (cereals is the sum of wheat, barley etc.). For the purpose of this report this is more than enough to check the approach advised, but for the implementation it should be checked if this is consistent as well as flexible enough. Otherwise the table should be normalised.

The attributes of Type of statement and Statement indicator provide possibilities to connect the references to a certain period. So it is possible to identify entities for Type of statements like Balance sheet old farm return (valid 1.1.1975 - 31.12.2002), Balance sheet family farms FR2000+ (valid from 1.1.2000 onwards), Balance sheet limited companies FR2000+ (valid from 1.1.2003 onwards) etc. This supports conversion as well as flexibility.

Indicator data values are provided for a certain Accounting year for a certain Holding. As there are a limited number of accounting year types (preferably only the civil year) these have been added and have been identified per member state. Geographical information could be made available in a type of statement (with indicators like postal code, altitude, LFA status etc.). A special entity type Region is than not needed. However, some information is at the moment gathered at the regional level, like reference yields. For this reason this entity type has been included.

To support the language problem (the farm return has to be easily accessible for everybody working in the FADN), an entity type language has been added, that co-identifies all entity types that include text. This is not a 100% solution (although a huge improvement over the current situation): the data model itself is in one language (preferably English to communicate with IT experts and to use texts from e.g. the IASC) and hence words like Type of Statement and 'name' (thus the labels of the entity types and the attributes) are in the main language English. However the texts in the data dictionary (Balance Sheet as an example of a name), can be stored in any language including future relevant ones.

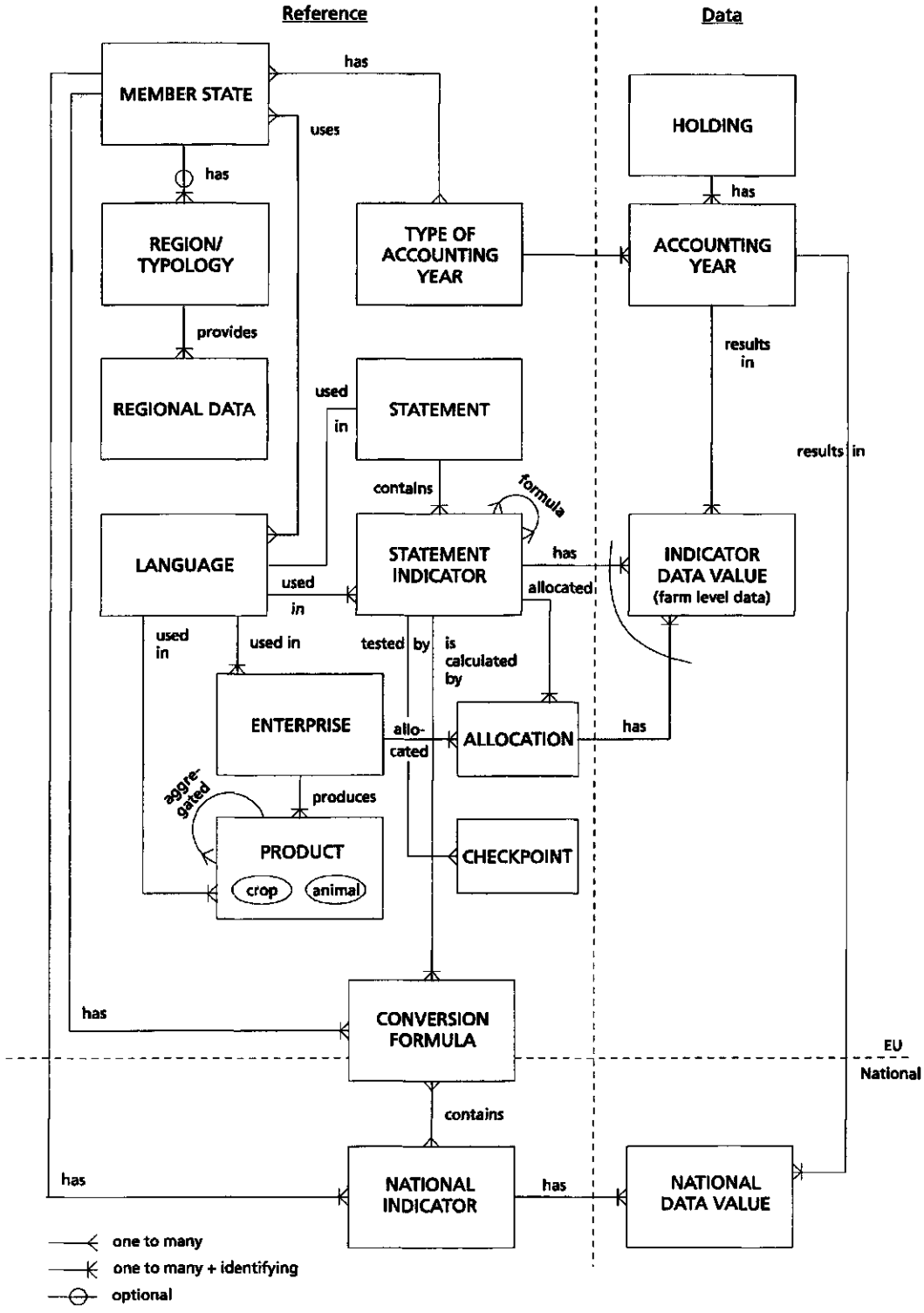

Figure 8.5 Data model Data management

Conversion will be supported by the entity type Conversion Formula. For each member state the Statement indicator has a Conversion Formula that links it with one or more national data items (which have a national data value). This also gives the possibility to keep track of data that are nationally available and how their definitions differ from the European ones. This relation is deterministic, so in principle software can be written to calculate an EU FADN Indicator data value on the basis of the Conversion Formula and access to the national database. As these data bases differ, this software needs to have several versions or other provisions to read in databases like Oracle, Sybase, MsAccess, Gemstone etc.

Responsibilities

This leads to the discussion who should undertake the work to fill such a database: it is quite a task to translate instructions from the farm return and to store all the information on the conversion formula. Although this is at an early stage, it is important to face this question. It not only concerns the feasibility of such an approach, but also helps to throw a light on the unclear responsibilities of the current situation. Also based on the discussions in the workshop with FADN managers, figure 8.6 makes a suggestion for the division of work.

To make responsibilities clear ('if many persons are responsible, nobody is') the member state input has been split into four types: the local accountant, the national liaison agency, national experts (mostly from that agencies) that cooperate in task forces and the FADN management committee. This is counterbalanced by A/3 which has been split in 3 'sub-units': the management (head of unit and e.g. staff functions like informatics management), the A/3 RICA desk and the A/3 Micro-economic study desk. This list makes also clear that some persons play sometimes several roles, which can be confusing, but also efficient.

Strategic planning, Operational management and Informatics management are mainly out of the scope for the farm return and have been attributed in figure 8.6 to the A/3 management. Policy analysis have been attributed to the A/3 Micro economic study desk, with some authority (e.g. on releasing a study to a client) with the management. It can be attractive to tap the expertise of national experts. The same is true for the RFS forecasts, but here the role of national liaison agencies (providing data) and a task force makes it more a cooperation with member states. The authority for releasing the results however is not the decision of the FADN committee, but of the A/3 management. This in contrast to the publishing of final FADN results: there it is suggested to see the national member states as 'owner' of the data of their country that they have to calculate with EU methodology. Authority for publication is therefor with the FADN committee, with a task force to do the work and A/3 facilitating by being responsible.

The FADN committee has been pictured in figure 8.6 as a body that 'only' has an authoritative role ('rubberstamping decisions that have been prepared by the RICA desk with task forces'). It is not wise to give this committee the role of responsibility for organizing activities: a whole committee can not be project leader, and this job would then fall to the A/3 management that chairs the committee. As task forces have a limited lifetime, they are also not in the position to carry out this task. For this reason the responsibility has been attributed to the RICA desk: with this desk A/3 facilitates the cooperation between member states in pro-

org.unit PROCES	local accountant	national liason agency	task forces national experts	FADN management committe	A/3 RICA-desk	A/3 Micro-econ.study desk	A/3 management
Strategic planning				C			**RAEW**
Network management					**RAEW**		
Manage taskforces			C				
Organise RICA-committee				C			
Make legal arrangements				A			A
Make financial arrangements				C			
Organise m.s.compliance audits		C	EW	A	R		
Make yearly quality report			EW	A	R		
Data management			**E W**	**A**	**REW**		
Maintain FR data definitions			EW	A	REW	E	
Maintain FR formula indicators			EW	A	REW		
Maintain conversion formula		RAEW					
Maintain typology			EW	A	REW	E	
Maintain farm selection+weight.			EW	A	REW	E	
Publish farm return			E	A	EW		R
Provide and analyse test data			EW		RA	E	
Operate help-desk farm return		EW			RAEW		
Database management					**RAEW**		
Receive FSS and SGM data					RAEW		
Receive member state data					RAEW		
Follow progress data delivery					AEW		R
Check member state data					RAEW		
Check representativity data					RAEW	E	
Operate help desk data users		EW			RAEW		
Data collection							
Translate FR into national fr.		RAEW	E		E		
Collect data at farm level	EW	RA					
Convert data to farm return		RAEW			E		
Operational management							**RAEW**
Informatics management							**RAEW**
Publish FADN results			**EW**	**A**	**R**		
Maintain WWW-site			EW	A	R		
Support external users		EW			RAEW		
Policy analysis		**E**	**E**			**RAEW**	**A**
Making RFS-forecasts						**RAEW**	**A**
Maintain RFS methodology						RAEW	
Organise member state data						RAEW	
Receive data sector inc. index		EW				RAEW	
Make forecast with task force			EW	C		RAEW	
Publish analysis						RAEW	A
Analyse quality of forecast						RAEW	

Figure 8.6 Suggestions for the division of work between member states and A/3
Symbols: R= responsible (person functions as projectleader, looks after quality and progress); A= authority (organization/person takes formal decision); E= expertise (person/organization provides know-how); W= work (person carries out that activity); C= consultation (due to the network character of the FADN network, a person/organization that is consulted).

viding harmonized data. The A/3 RICA desk carries out database management and important parts of data management and network management. However member states provide expertise and carry out most of the work (for which financial arrangements have to be made). The liaison agencies are solely responsible for the maintenance of the conversion formula in the farm return and for the translation into their national language. The software of A/3 supports this and their incentive is that this supports the conversion process as the software for conversion needs these conversion formula. At the moment national systems are improved or changed (e.g. with an eye to the EURO) there is a good incentive for member states to carry out this maintenance task.

This situation is roughly in line with the current regulations on the FADN. However, in practice the support of data supply and data publication by A.3 has been overshadowed by managing the conversion and checking of data at the end of the pipeline. This needs to be replaced by a quality program, based on stakeholder interaction for stimulating 'user defined quality' of the data and a peer-review system for exchanging expertise and experiences between member states.

For operating the new system three tasks will be available at EU level:

- a database manager for the technical assistance in inserting data by the member states and making the data accessible for users;
- a data manager for maintaining the definitions in de data dictionary and identifying new data requirements in DG VI;
- a network manager for co-ordination of member state activities, especially for initiating and facilitating task forces that concentrate on the quality system and standardisation of especially the voluntary data sets.

These tasks are not new, but especially data management and network management become more important. It is advised to make explicit functions for them, freeing policy analysts from these tasks.

8.6 Prototype

To illustrate the (abstract) data analysis in a business area analysis and to test the feasibility of the ideas proposed, it is possible to develop a prototype. Such a prototype can not be used as a real application (most checks on inputs are not implemented and no attention is paid to distribution over several work places), but it shows with a simplified user interface how the system might work.

For this feasibility study a prototype has been build in MsAcces. The prototype is explained and documented in a working document. Special attention has been paid in the prototype to the separation between data management (the maintenance of the reference tables in the left part of figure 8.4) and the data collection (the right part). The entity type Language has also been implemented, as well as a simplified version of Enterprise, Product and Allocation (called category in the data model of the prototype). The conversion formula has not been tested as this would include the time consuming building of a formula editor. A test of this idea has been made in the system development of new software for the Dutch FADN.

From the tests with the prototype it can be concluded that the proposed concepts are feasible. A demonstration for some key – persons from the unit A/3 revealed that such a method of data management has huge advantages above the traditional farm return paper manual.

9. Quality management

9.1 Introduction

The FADN managers and the stakeholders have indicated that the quality in FADN is not sufficient and the quality in different Member States is not documented. Hence, when producing data a lot of time may be spent on how to measure and estimate statistical characteristics. When using data a lot of time may be spent on how to interpret data. In both cases financial resources are wasted. Harmonization and standardization in FADN can increase cost effectiveness. This makes it possible to improve quality and/or reduce costs! This is the background to this proposal on Quality Programme for a new farm return.

First of all, quality has to be defined. The most relevant norm for definition of quality is the ISO 8402, which in fact, is used explicit or implicit by all statistical organizations. This norm states that: *"Quality is the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs".*

This definition of quality can be used for formulation of a broad *quality concept* for the new farm return. Although the FADN provides not only statistics but also, and more important, a database for policy research, the European Statistical System provides an excellent reference for quality management, also because FADN data have as much as possible to be comparable with statistical data.

If information on quality and on cost is available for all phases (or almost all) of the statistical production process, it is possible to design an optimization model. This leads to more effective management of follow-ups, data editing, imputation, etc. This kind of information would be the appropriate base for allocation of the budget.

Below a summary of the different parts is given concerning quality guidelines, yearly quality reports, training of staff, exchange of information and standardization of documentation. A more detailed description with references can be found in a working paper.

9.2 Quality guidelines

A precondition for a successful quality work is a well-defined quality concept, and that goals are set for each quality aspect. The quality concept proposed for a new farm return is built on the recent developed quality concept for statistics from the European Statistical System and focuses on seven main components:

- relevance;
- accuracy;
- timeliness and punctuality;
- accessibility and clarity of the information;
- comparability;

- coherence; and
- completeness.

Each of the main quality aspect can be divided into a number of sub-components. The quality aspects described below can be used as input for standards and recommendations on definitions, statistical methods, quality controls etc. in a new farm return.

Below the main aspects/areas are pointed out for which detailed quality guidelines can be worked out in a new farm return.

Classification of users and the strategic importance of the users

In PACIOLI 2 the classification and importance of the FADN stakeholders were discussed. In order to compare between Member States the following subjects were analysed: Provision of data, Finance, Determination of contents and Users of the data. This is a tool for describing stakeholders. Other sources for describing users of FADN data are the survey and the interviews in this feasibility study.

Methods to measure users' needs

The relevance of the FADN and areas for improvement have to be measured on a regularly basis. Different methods and sources can be used, for example: publication sales, frequency of references to FADN material balanced score card, and number of enquiries. By asking users to grade services and products along a number of different items it is possible to measure what quality aspects are of the most importance for them. By the use of Quality Satisfaction Performance (QSP) models it is possible to put numerical values on the satisfaction, so called *customer satisfaction index*, and to calculate the relative importance of different quality factors. Depending on user category different kind of methods can be used and different kind of information asked for.

Sampling errors

The procedures for selecting farms according to the different stages of probability/ non-probability sampling and calculation of sampling errors (for example the variances and the coefficient of variations for the most important statistical measures). Also the principles for describing the sample fractions for each stratum and the balance of the sample within each stratum compared to the population have to be worked out.

Non-sampling errors

Principles for evaluation and calculation of frame errors (over and undercoverage according to threshold misclassification), measurement errors (reporting units, medium and interviewers), processing errors (due to data capture, data codification, editing etc.), non-response errors (reasons for non-response, patterns of non-response, unit-and item non-response rates, rate of absence form administrative files, non- response rates for different stages of substitution, weighted response rates, methods for adjustment etc.)

Standardized way to collect provisional data

Without a standardization it will not be possible to achieve comparability between Member States (an important task is to evaluate the accuracy of data with different concepts for data collection).

Information on production processes

Data for description of the national production processes (for example dates for data collection and quality checks) and the EU production processes (dates for transmissions, quality checks, adjustments, availability in database, and publications).

Dissemination processes

Forms for dissemination of statistics (paper dissemination, general digests, CD's, Internet, etc.), additional documentation (see 9.5), clarity of the publications and the information services in Member States and at EU level.

Comparability over time

Description and evaluation of direct changes (in for example laws, new regulations, and new methods for data collection) and changes in structure (for example mergers/demergers of farms).

Comparability over space

Description and evaluation of divergences of the national statistical concepts from European concepts. An example is differences between Member States in reference periods. Those differences disturb the comparability. The main reason for differences in reference periods are differences in farmers accounting years to some extent depending on taxation rules.

Capital cost is an important part of production costs. Inventories and valuation of machinery and buildings, models for calculating depreciations heavily influence the results. Measuring methods for labour input, definition of AWU, pricing of stocks etc are other important issues.

Coherence with other statistics

Coherence of FADN statistics with Farm Structural Surveys, IAHS and EAA. Probably the coherence between FADN statistics and FSS is fairly good, but the recalculation in FADN of type and size of farms can cause differences between FADN and FSS.

The need for comparisons and linking between FADN and IAHS can be an important question in future. An important task is to harmonize definition of holdings and income sources. Non farm income in IAHS can perhaps be coherent with farm income in FADN!

In principle FADN statistics can be coherent with EAA. If the FADN sample is big enough and representative FADN data could be grossed up to macro level.

Definitions on a farm, typology, AWU and other basic concepts ought to be co-ordinated between DG VI and Eurostat. A task force is proposed for

working out quality guidelines for FADN. It could also try to improve the harmonization in agricultural statistics.

9.3 Yearly quality reports

Most of the information asked for in such a quality report can be used as indicators of quality and relative easily derived from the processes for production of statistics, for instance from the selection and implementation plans. However, for some of the quality aspects special evaluation studies have to be conducted (mainly for quantification of the non- sampling errors)

in order to be in a position to give quantitative assessments of the quality. There is a strong link between the quality of statistics and the resources available to produce them. An assessment of costs should be kept in mind during the quality evaluation process. Therefore, some of the requested information can be gathered on a yearly basis, while other information has to be collected on a multi-yearly basis.

Costs for fulfilling the needs for quality measurement in each Member State have been estimated to 12 man days each year (routine costs) and to 65 man days if all the information should be collected a specific year (intermittent costs).

At the end of the year Member States deliver input to A3 including:

- results from user satisfaction surveys;
- progress in quality work (contents, accuracy, timeliness etc.);
- selection plans and reports on implementation.

A task force should be installed to work out the content and routines for the Quality Report for FADN.

9.4 Training of staff

An important quality aspect is organization of training in the member states of the persons working in the collection, checking, processing, analysis and transcription of bookkeeping data for farms in the FADN sample. This may involve field workers, accountants, IT staff, agricultural economists and managers. Exchange of experiences from the quality work in FADN between the member states is also an important tool for harmonization. The following activities could support the training of staff and exchange of information:

- a handbook for FADN courses for training of staff in the member states can be worked out. The courses can be led by a person from A3 and national FADN experts. Two or more member states could suitably co-operate in courses;
- workshops in connection to FADN Committee-meetings concerning quality work in FADN can be a useful tool to achieve a learning organization;
- compliance audits are organized to foster the exchange of information, to identify strong and weak points of the national FADN and to check if the member state applicates the EUs FADN instructions. A compliance audit could be organized for a member state approximately every 5 years (like visitation committees of universities). The audit team could be a mix of 3 to 5 experts from DG VI, other member states' FADNs and a local (non-FADN) expert. An audit could take 3 to 5 days (depending on the size and complexity of the national FADN).

9.5 Standardization of documentation

Common complaints from users concerning the services have been related to documentation (metadata), because of insufficient or non-existing documentation.

For the users of FADN data it is essential to have information on data quality. This could be obtained by maintaining a *data dictionary* with well- structured documentation, easy accessible for users.

To be able to document statistics in a standardized way, a standard set of metadata (data about data) and paradata (process data) could serve as an instrument. Such a set of data gives the opportunity to use standard labels and texts when documenting data. This implies the needs for standard classification of data contents and standard labels for methods for measurement, but also standards for explanatory notes etc.

An electronic system for documentation facilitates the burden for producers for documentation and provides user of databases with direct access and up to date information.

A standardized system for documentation should aim for:

- user friendly interface;
- flexibility concerning revision, up-dating of information;
- flexibility concerning systems for production and dissemination registers/ databases;
- completeness of information for producers and to satisfy users needs.

Two parts of the documentation system can be separated:

Product system documentation - A tool for the producers of the statistics for organizing data throughout the different steps of the production process (data collection, data processing, estimation, analysing, system descriptions (data flows, data models etc.). This kind of documentation has the purpose to serve the staff that produces the statistics with sufficient information.

Observation system documentation - A system for documenting the final data sets from the FADN (for dissemination) that satisfy the needs for information for the user of the statistics.

The system for documentation could contain:

- product descriptions (administrative information);
- publication plans and publication catalogues;
- quality reports;
- observation system documentation;
- production system documentation;
- a classification database.

A simple computerized tool, similar to PCDOK in Sweden can be created in order to facilitate the documentation. The tool should be technical simple and embedded in for example Microsoft Word for Windows.

The technical part of the system should be compatible with modern PC- based environments. Powerful relational database management systems are now available (for example Access and SQL-server). If the SQL standard is chosen, certain parts of the metadata are highly structured and can easily be stored in the SQL databases. Less structured parts of metadata can be treated as free text. The electronic tool for documentation can be designed to support formalization of variable description tables, so that user could automatically be transferred to SQL databases.

Internet offers great possibilities for users to get access to data and metadata through a numerous software products.

9.6 Quality control, quality assurance and TQM

The above proposal for measuring the quality is similar to *quality control*. The quality is checked after the production. The statistics can then be either cancelled when the expected quality level (expressed by standards etc.) is not reached or accepted with few direct actions for improved quality. Types of problems are noted and give the possibility for future improvement of quality.

The proposed work out of quality guidelines is close to *quality assurance,* where the aim is to produce statistics with a constant (high-) level of quality. Adapting the production process, the work environment, and improving communication it is generally assumed that the achieved quality level is higher. Standards for quality assurance exist in many countries, and have now become popular under the label ISO 9000.

Further than quality assurance, *Total Quality Management* considers all aspects that may contribute to satisfy users needs. Aspects that, for instance, concern team work, training of staff and exchange of information. One of the fundamental rules in TQM is to create an environment for continuously quality improvement.

Quality assurance and TQM could be further steps, after realising the proposed quality control. ISO 9000 and TQM, although practices by some of the FADN participants, seems at the moment not feasible for the total EU FADN.

10. Plan for realization

10.1 Introduction

This chapter describes a proposal for the activities to be carried out in order to realize the new farm return and the effects it has on other aspects of the FADN. This proposal will be the point of departure for a draft call for tender, which is also to be submitted to DG 6 A/3 in this project.

10.2 Tasks

To solve the performance problems of the FADN as indicated by the stakeholders and to realize the new farm return FR2000+ the following activities have to be carried out:

A. Selecting, purchasing and installing a data dictionary
The data model of the farm return that has been sketched in the Ricastings report will be worked out in detail. Based on this model, the Ricastings-study and the information systems policy of DG6, criteria for a data dictionary package need to be defined. Software companies will then be invited to make an offer and a package will be selected and installed. The reference entity-types will be installed in the data dictionary, and the access to the data dictionary through the FADN's WWW server will be realized.

B. Filling the data dictionary with data definitions of the hard core dataset.
Based on the Ricastings report (especially chapter 6) and the material mentioned in it, a task force will make the definitions and instructions in English for the farm structure statement, the profit- and loss account, the balance sheet, the flow of funds statement, and the subsidy statement. The definitions will be recorded in the data dictionary.

C. Migration from old farm return to FR2000+
In this activity the data from the old database are converted to the new one, by adding to the data dictionary the conversion formulas from the old farm return ('member state 0') to FR2000+. This activity is then also a pilot test for the conversion concept.

D. Development and test conversion-software generator
When the data dictionary is filled with the conversion formulas of one member state (e.g. member state 0 = the old farm return) the generation of conversion software will be build and tested.

E. Pilot production for a member state
When the system works for the hard core statements and the old database has been migrated to the new one, member states will be encouraged (with support of DG6) to translate the data definitions and instructions to their own language(s) and to fill in the conversion formula's. One member state will act as a pilot, with several workshops for

other member states to learn from this pilot. It is important to have this activity finished before 2002, as member states will then have an incentive to use the FR2000+ in the update of their software towards the EURO.

F. Pilot for a voluntary data set: gross margins

Based on the Ricastings report (especially chapter 6) and the material mentioned in it, a task force will make the definitions and instructions in English for the first voluntary survey, the gross margins statement. The definitions will be inserted in the data dictionary and member states will be invited to translate definitions and fill in the conversion formula's.

G. Development of Internet applications

Three applications using Internet technology have to be developed and tested:

- transporting data from accounting offices/member states to the EU database in Brussels;
- WWW site with access to the data dictionary for maintenance and use;
- WWW site with a user-interface for the database;
- There should be a high level of similarity in tools and techniques for these applications, and privacy aspects are important.

H. Development of the quality system

As the current control program becomes obsolete, it has to be replaced by audits and other elements of the quality system. A task force has to write a guideline for the quality program and test the system in at least one member state.

I. Development of the RFS

Rapid data is not a part of the new farm return and it has been argued in this Ricastings study that a task force should yearly report on the estimated income in the current year. This asks for improved procedures for the Rica Forecasting System.

J. Start of production

As soon as the hard core data set is in the data dictionary and tested (activity E), the system can be taken into production. Because conversion tables from the old farm return to FR2000+ are available, the FADN is not depended on adjustments in software in the member states: if they wish, they can still deliver the old data set (without simplifications) to the unit, which can then convert it to the new system.

The activity also includes the creation of handbooks for the data management, the database management, the network management and the maintenance of the WWW site.

K. Public relations

One of the biggest risk during the next years, is the lack of support from users and data providing member states. The users made it clear that current performance is problematic. Carrying out the activities above has the risk that the performance will become even worse. This can be solved by making data available as soon as possible on the WWW site and by a good public relations policy. This is also needed to inform the FADN managers and other persons in the member states. A short briefing twice yearly in the RICA committee is certainly too little. A monthly (electronic) newsletter and some brochures are needed. At the end of the project, the booklet 'An A to Z' has to be re-issued.

Some of the items above (especially parts of G, H, I and K) have a broader impact than the farm return as such. They result from the performance problems identified by the stakeholders in the member states and DG6.

L. Legal aspects

This activity should include the revision of all legal texts, based on the Ricastings study (e.g. new objectives). New legal texts should not contain more details as necessary, as the new system will be much more flexible.

10.3 Timetable and project management

The critical path of the project is, in the sequence of the activities: A, B, D, G, J. Concerning the outsourcing of the activities (figure 10.1), several options are open. DG6 could tender out all activities (A to L) in one contract (of course making a database manager, data manager and network manager available as project-employees), could tender for each activity (and perhaps do some of them internal) or could tender the IT activities (A, D, G) in one contract, and the others in a second contract. It should be realized that for some activities very specific FADN expertise is required. This means that probably only the IT, the organizational and the secretarial functions could be tendered out, where the work of the task force (FADN managers plus A.3) should be organized along the new working methods proposed in this report.

In choosing between these options, the following criteria should be considered:

- time available with A/3;
- speed of knowledge spill-over of the new system towards A/3 staff;
- costs;
- coordination risks between the tasks;
- involvement to promote acceptance of the new system by member states and A/3 staff.

The decision on the choice of these options will be the basis for a draft call for tender.

In all options it will be necessary to install an authorotive steering committee (e.g. chaired by the director of DG6 A Mr. Ahner, and with two persons from member states liaison agencies) to which all project activities report. It should meet (for two hours) at least once a month, review progress and take decisions on the time spent for the project in relation to day-to-day work.

Task	**Expertise needed from A.3**	**Expertise needed from outside**	**Starting date**	**Date ready**
A. Data dictionary	IT manager Data manager	IT expertise FADN managers with expertise datamodelling	Jan. 99	July 99
B. Definitions hard core	Data manager	Task force FADN managers	Jan. 99	Nov. 99
C. Migration	Data manager Database manager	Somebody from Task force FADN managers	Jan. 2000	June 2000
D. Conversion software	Database manager	FADN manager with expertise data modelling, IT experts	Oct. 99	April 2000
E. Pilot member state	Database manager Network manager	FADN manager member state involved	Febr. 2000	June 2000
F. Gross margins	Data manager Network manager	Task Force FADN managers	Jan. 2000	Nov. 2000
G. Internet applications	Network manager	Task Force FADN managers, IT experts	Jan. 1999	Dec. 2000
H. Quality system	Network manager	Task force FADN managers	Jan. 2000	Nov. 2000
I. RFS	Network manager Policy analyst RFS	Task force FADN managers	April 2000	Dec. 2000
J. Production	Network manager Database manager		June 2000	Dec. 2000
K. Public Relations	Network manager	Task force FADN managers	Jan. 1999	Dec. 2000
L. Legal aspects	Network manager	Task force FADN manager	Jan. 1999	Dec. 2000

Figure 10.1 Indications on the expertise needed for the activities identified in the previous section. Information on the time schedule has been added

10.4 Relation with RICA 1, 2, 3 and 4

To keep the old software and database running, DG6 A/3 recently started a number of information technology projects. The main purpose of these projects is to install more user friendly user interfaces on the software in DG6 A/3.

RICA 1 intends to redesign the collection and control program on the mainframes of the Commission (currently Amdahl in Luxemburg, migrating to DG6 in Brussels), to replace the existing control program and to hand out a multi-lingual new one to the member states, and to set up a new interchange agreement with the member states.

RICA 2 covers the maintenance and evolution of the existing database and analysis system, and its integration with the systems developed in RICA1 and RICA2.

RICA 3 intends to construct a data diffusion system for the FADN.

RICA 4 provides a kind of help desk to support the member states with the current conversion process, as well as the unit A.3 and CEEC FADN's under construction.

These projects will be informed with the results of the RICASTINGS study and will be instructed to take into account as much as possible the effects of the RICASTINGS-follow up. The following effects are suggested:

RICA 1: the redesign and redevelopment of the collection and control program on the mainframes from Luxemburg to the UNIX environment in Brussels and the replacement of the existing control program should be carried out to improve efficiency of the database manager's task. A potential analyses of the control processes in the member states could be useful also for FR2000+ and the quality program. However making available a control program in a multi-lingual version to the member states on the old farm return seems a high investment for a short pay-back period. Expanding the task to develop a new interchange agreement seems more useful. This would be equivalent to the first task under item G above: an Internet application to send in a flat file with data from an individual farm, secured by pretty good privacy;

RICA 2: concerns the current farm return and has therefor no direct effects. However, the data dictionary used currently/selected in RICA-2 could be considered as the first candidate to store the data definitions of the new farm return. If this data dictionary fits the criteria developed in task A above, this task can be simplified to the creation of the data model and this evaluation of the current database against the criteria;

RICA 3: this is, from the point of view of the renewed working methods in the FADN, a very important system. It solves one of the main performance problems of the current FADN, the inaccessibility. RICA 3 is comparable to the third item under task G. With the support of some member states that have experience available at this point (and who could also help to run the help desk of the WWW-site to prevent that A.3 will be drowned by questions on data definitions and data quality) such a site could be build in a few months time. To clients in and outside DG6 this would quickly show the new attitudes of the FADN. The coordination with RICA 1 (see the remarks on task G) should be looked after;

RICA 4 [1]: most likely no effects. As the FR2000+ will provide data on the hard core for accounting year 1999 (in 2000) or 2000 for some member states for the first time, it is attractive to have capacity to speed up the data transmission for the years 1996-2000. As the current staff will see persons disappear to tasks in developing FR2000+, there is an extra argument to carry out RICA 4. In advising CEEC FADNs of course the FR2000+ developments have to be taken into account.

In conclusion, it is clear that the effects of the introduction of the new farm return on RICA 1-4 are small and manageable. Two tasks (RICA 3 and 4) support the introduction of the new farm return excellently. The other two are partly needed to keep the current system running and to adapt the existing data dictionary to the new farm return requirements. RICA 1 and 2 are therefor also a building stone for the new farm return.

[1] RICA4 has been postponed due to a lack of tenders of good quality.

A special point of attention will be the management of all these projects, and their interaction. The information analysis carried out in chapter 8 (and especially the c/u matrix) can be beneficial to guard the boundaries between projects, and to secure that the software will be integrated as much as possible. Nevertheless it is clear that running all these projects, in addition to the normal work process of A3 (with potentially new demands for Agenda2000, EU enlargement, WTO-negotiations and more emphasis on policy evaluation, to name a few) will be challenging. A mutual effort and intensive cooperation with know-how available in the member states on these points will be beneficial, which brings home once again the main message of this report: to survive the FADN network and all its participants will have to learn new working methods in order to improve its performance.

Appendix 1 Stakeholders interviewed

Stakeholders

L. Panholzer	Wien
Dr. H. Pfingstner	Wien
D.M. Hellmayer	Wien
Dr. Schmotzer	Wien
Dipl. ing. A. Astl	Wien
D. van Lierde	Brussels
L. van Orlé	Brussels
P. Vandebecq	Brussels
A. Mottoulle	Brussels
J. de Schrijver	Brussels
J. Ikonen	Helsinki
O. Rentala	Helsinki
E. Hiiva	Helsinki
Prof. M. Ylätalo	Helsinki
M. Sütonen	Helsinki
E. Chantry	Paris
D. Hairy	Paris
C. Sechet	Paris
Ph. Boullet	Paris
L. Bourgeois	Paris
A. Neveu	Paris
S. Taxis	Bonn
M. Kortegast	Bonn
Dr. J. Hauser	Bonn
Dr. P. Maier	Bonn
E. Kammler	Bonn
A. Vaïnas	Athens
Dr. K. Tsimboukas	Athens
T. Stauros	Athens
T. Sklavos	Athnes
M. Roche	Dublin
S. Mc Philips	Dublin
B. Fingleton	Dublin
P. McDonald	Dublin
C. Abitabile	Rome
Dr. G. Serino	Rome

R. Giordani	Rome
A. Fiorini	Bologna
Mr. G. Pütz	Luxemburg
R. Kayl	Luxemburg
R. Ley	Strassen
A. Schmit	Luxemburg
K.J. Poppe	The Hague
G.G. van Leeuwen	The Hague
L. Rietema	The Hague
ms. A. Burrell	Wageningen
J.H. Chomel	Brussels
V. Morard	Brussels
R. Flies	Brussels
D. Ahner	Brussels
E. Williams	Brussels
B. Bufferia	Brussels
J. Vonthron	Brussels
R. Ribeiro do Rosario	Lisbon
O. Baptista	Lisbon
N. Siquiera	Oeiras
C. Noéme	Lisbon
C. Garcia Penas	Madrid
J. Calatrava Requena	Granada
V. Flores Redondo	Madrid
G. Larsson	Örebro
K. Wahlgren	Jönköping
P. Persson	Jönköping
A. Lindall	Uppsala
H. Andersson	Uppsala
E. Fahlbeuk	Uppsala
B. Sjöholm	Stockhölm
M. Insulander	Stockhölm
R. Haynes	Edinburgh
S. Walker	Newbridge
D. McRae	Edinburgh
D. Grieg	Edinburgh

Interviewers

G. Beers and K.J. Poppe (the Netherlands)	in Brussels DG VI and DG IXX
C. de Bont (the Netherlands)	in Scotland (United Kingdom)
E. Chantry (France)	in Belgium
W. Kleinhanß (Germany)	in Austria
G. Larsson (Sweden)	in Finland

B. Meier (Switzerland)	in Germany
S. Møllenberg (Denmark)	in Sweden
L. van Orlé (Belgium)	in Luxemburg
F. Pennacchi (Italy)	in Italy
M. Roche (Ireland)	in Denmark
R. Ribeiro do Rosario (Portugal)	in Spain and in Greece
C. San Juan (Spain)	in Portugal
N. Taragola (Belgium)	in the Netherlands
P. Wadin (Belgium)	in France
N. Williams (United Kingdom)	in Ireland

Appendix 2 Answers collected

Answers from FADN managers to the questions on the collect of new data:

1- Do you think there is a interest to collect data on ...?
2- Are such data available at national level or from other data collectors in your country?
3- Do you think it is possible to collect such data?

	Interest		**Availability of data**		**Possibility to collect the data**	
ECONOMIC INDICATORS	**NO**	**YES**	**NO**	**YES**	**NO**	**YES**
Effect of subsidies and levies on income	**1**	**13**	**5**	**9**	**3**	**11**
Effect of selling and leasing quotas	**2**	**12**	**6**	**8**	**3**	**11**
Improved indicators for large legal entities:	**6**	**9**	**9**	**5**	**4**	**10**
ENVIRONMENTAL DATA						
Mineral balances	**4**	**11**	**9**	**5**	**2**	**12**
Pesticides indicators	**5**	**10**	**12**	**2**	**3**	**11**
Water balance	**10**	**5**	**13**	**1**	**5**	**9**
Energy (consumption/production)	**5**	**10**	**11**	**3**	**4**	**10**
Waste management	**8**	**7**	**13**	**1**	**6**	**8**
Deforestation	**11**	**4**	**14**	**0**	**5**	**9**
COSTS OF PRODUCTION						
Gross margins per enterprise	**2**	**14**	**4**	**11**	**1**	**14**
Allocated costs for costs prices	**2**	**14**	**5**	**10**	**2**	**13**
Physical data for costs calculation	**3**	**13**	**4**	**11**	**1**	**14**
PLURI ACTIVITY AND NON FARM INCOMES						
Forestry	**5**	**10**	**6**	**8**	**2**	**12**
Organic production	**3**	**12**	**5**	**9**	**0**	**14**
Integrated production	**5**	**10**	**11**	**3**	**5**	**9**
Agri-tourism	**4**	**11**	**6**	**8**	**1**	**13**
Landscape maintenance	**8**	**7**	**9**	**5**	**4**	**10**
Processing on farm	**4**	**11**	**6**	**8**	**1**	**13**
Good farming practice systems	**7**	**7**	**13**	**0**	**4**	**9**
Activities outside the farm	**6**	**9**	**9**	**5**	**4**	**10**
Income from non-farm activities	**5**	**11**	**7**	**8**	**5**	**10**
Data of households per farm	**5**	**10**	**10**	**4**	**4**	**10**

Stakeholders' needs (results based on 53 interviews)

Do you find it is desired to expand the data content of FADN on (one or more) of the following items:	**YES**	**NO**
Nature of a farm (type, location, regional conditions ...)	8	1
Labour on the farm (full time, part time, level of education ...)	14	4
Costs of production and Gross margins	**19**	1
Way of production	14	4
Of which: organic production	10	
Marketing of products	10	2
Processing of products on the farm	11	3
Environmental issues	**25**	3
Other concerns (veterinary/fytosanitairy, labour conditions ...)	5	5
Forestry	14	3
Other activities on the farm	**17**	1
Of which maintenance of landscape	3	
Of which agri-tourism	9	
Activities outside the farm	14	6
Income outside the farm	**16**	6
Total income of the farm household	8	1
Use of income (consumption, investments, taxes, savings ...)	8	3
Financial position of the farmer and family	8	4
Subsisied and levies on products	12	2

According to the stakeholders, the collection of data should depend on:

- the **quality** of data;
- the **relevance** of data;
- the **cost** of data;
- the **availability** of data;
- the possibility to use **other sources;**
- the willingness of **farmers** to cooperate.

Appendix 3 Information architecture

A3.1 Definition of processes

Strategic planning	The planning process that adapts the organization (A/3 and the FADN network) to the needs of its stakeholders in order to secure long term viability
Study policy developments	Study developments in (agricultural) policy, especially the CAP
Study the effects of EU enlargements	Study the developments in EU and CEES to broaden the work of A/3 and the FADN network to CEES countries
Make proposals for new DG6 data requirements	Decide which new micro economic data are needed to fulfil the tasks of DG6 in general, and A/3 in particular and decide if this can be guaranteed by the FADN network or that other sources should be called upon
Organize workshops on innovation	Organize activities in the FADN network to encourage in the longer term innovation and standardisation (e.g. discussions on effects of information technology, IASC standards)
Perform special studies	Outsource special studies on new (strategic) topics (e.g. Ricastings)
Network management	Organizing the interaction between the unit A/3, the FADN managers and other stakeholders in the network
Manage taskforces	Organize task forces to carry out data management, compliance audits, quality report, making RFS forecasts and publishing results
Organize RICA committee meetings	Organize meetings of the management committee of the FADN (RICA), mainly to vote on final results produced by taskforces
Make legal arrangements	Provide legal texts that secure the working of the FADN
Make financial arrangements	Provide finance and define allocation according to performance
Organize member state compliance audits	Choose member states to be visited for a compliance audit and organize audit
Make yearly quality report	Make and publish the yearly quality report, including performance data (balanced score card), audit reports and selection reports
Data management	Develop and maintain the meta data (data dictionairy) of the FADN
Maintain farm return data definitions	Maintain the definitions and instructions of FR2000+
Maintain farm return formula indicators	Maintain the formulas and their description used in FR2000+ to calculate indicators
Maintain conversion formula	Maintain the conversion formula that are used to recalculate member state data into FR2000+
Maintain farm selection and weighting	Maintain the criteria on which member states have to recruit the participating sample farms and their relation to the census (field of survey)
Maintain typology	Maintain the names and formula on which farms are standard classified into farm types, regions, size classes etc.
Publish farm return	Make the farm return available to member states, the data collecting accountants, data users and the public, preferably by a WWW site
Provide and analyse test data	Provide data to some selected local accountants, to test the standardisation in the FADN and analyse the results
Operate help-desk farm return	Provide explanations on FR2000+ to interested persons

Database management	Exchanging the FADN data with data-suppliers and data-users including a guarantee of the integrity of the database
Receive FSS and SGM data	Collect data from the Farm Structure Survey and Standard Gross Margins for weighting and typology
Receive member state data	Receive data from the member states, mainly individual farm data
Follow progress data delivery	Reporting the actual and planned status of the database
Check member state data	Check data received from the member states, including a comparison of trend equivalence between member states
Check representativity data	Check the representativity of the data, especially at EU level
Operate help desk data users	Provide explanations on the data (e.g. strange values) and on the availability of data to (potential) users
Data collection	The gathering of FADN data in the member state
Translate farm return into national language and national farm return	Translate FR2000+ (including formula's for indicators and check points) into the national language and into the national farm return or national data collection software
Collect data at farm level	Recruit farmer, collect his data, check it and provide data to national database
Convert data to farm return	Convert the data from the national farm return to the FADN's FR2000+ format
Operational management	The planning and realisation of day-to-day management support in the unit A/3
Financial management	Manage the available budgets and payments
Human resource management	Manage the well being of the employees
Weekly work planning	Plan the day to day activities of the employees
Informatics management	Manage the hard and software system
Manage hardware	Manage the hardware platform
Maintain control software	Maintain and distribute the software used to check the data received from the member states
Maintain SAS database software	Maintain the software of the central database and the queries (user applications) written in it.
Maintain network software	Maintain and distribute the software that is used to convert the national data into the FADN's FR2000+ format with the conversion-formula's
Publish FADN results	Making EU FADN results available to the member states (individual data) and to the public (aggregated data)
Maintain WWW site	Making the EU FADN results available
Support external users	Provide explanations and additional data to the users
Policy analysis	Carrying out micro-economic analysis to support the policy making process in DG6
Relation management	Maintenance of relations with policy makers who are (potential) clients for policy analysis, deriving their information needs and show the potential usefulness of the FADN.
Intake requests	Communicate with (potential) policy makers in DG6 on their need for analysis and formulate their needs as clear as possible
Discuss methodology and literature	Decide on the methodology that will be used to answer the policy question, taking into consideration the relevant literature, the data and models available, (with the FADN database or other data) and making the best use of the network of FADN relations.

Comment external study	Provide the DG6 policy makers with comments on a study carried out outside the unit A/3 (be it subcontracted by A/3 or at the own initiative of the external researcher)
Write database query	Make a software program to extract the data from the FADN database in such a form that the policy question can be answered.
Perform analysis and write draft report	Analyse the data (with or without cooperation from member state expertise) and write a draft report
Publish paper and after sales service	Carrying out the quality control of the research (peer review or otherwise), reporting the results to the policy maker and answer his questions ('after sales service')
Subcontract a study	Outsource a study for which DG6 has an interest, but not sufficient means to carry it out and where policy considerations do not restrict out sourcing
Making RFS forecasts	Update FADN results to make the monitoring of income more actual
Maintain RFS methodology	Maintain the methodology and software of the Rica Forecasting System
Organize member state data	Plan the provision of update-coefficients by the member states
Receive data sector income index	Collect the data of Eurostat's sector income index
Make forecast with task force	Make an update of the FADN results to forecast the income in the current year (and the next year under the assumption of normal growing conditions) with the help of a task force
Publish analysis	Make the results of the RFS update simulation available to policy makers (and the public)
Analyse quality of forecast	Compare the results of the RFS update with the final FADN results to learn the weak and strong points of the update methodology.

A3.2 Description of objects

In the C/U matrix in chapter 8, the main entity-types (objects) of the FADN/A-3 have been given. Below the objects are described with a definition and the main attributes. This description is given for explanatory reasons only, and only with an eye to present the position of the new farm return in relation to other information systems in the unit. For building the systems, a more detailed data analysis will be needed.

Name	**Definition**	**Some attributes**
Data requirement	Description of a type of micro economic data that is or could be interesting to gather (through the FADN or otherwise) for the purposes of DG6	Name Description Needed for
Contact	Institute or person relevant to the FADN or A/3	Name Address Expertise available Languages spoken
Legal text	Text published or to be published in the Official Journal	Short name Text Date OJ
Budget	Amount of money	Heading Amount

Name	Definition	Some attributes
Audit report	Report on the FADN system in a member state and its compliance to the acquis communautaire of the FADN	Title Member state Author Date Text
Quality report	Yearly report on the performance of the FADN network	Title Date Text
FR language	Language in which the content of the farm return 2000+ is available (in principle all working languages of the EU)	English name (e.g. Spanish) Native name (Espagnol)
FR statement	Survey carried out by the FADN network, that includes a number of indicators on the topic of the survey	Name (e.g. balance sheet, gross margin statement) Description Reference for harmonisation (e.g. IASC, FSS) Valid period
FR indicator	Description of a data-item	Name FR statement Unit (e.g. ha, kg, EUR) Definition Explanation Instruction on data gathering Valid period
FR indicator formula	Calculation method with which one data-item can be calculated from the basis of other data items	Name FR indicator(s) Description Formula
FR conversion formula	Calculation method with which a FR2000+ indicator can be calculated from the basis of one or more national indicators	Name FR indicator Description Difference with EU standard Formula
FR typology criteria	Predefined lists of variables used to classify data (e.g. regions, member states, size classes, etc.)	Name Description Source Array with names domain
Selection methodology	Description of the methods that have to be or have been used to select farms from which data is collected	Name FR statement relevant Text

Name	Definition	Some attributes
Test data set	Data provided to local accountants in order to test the level of harmonisation in the FADN	Name Description
FR asked question	Question that has been raised on the farm return or the data described by the farm return	Description Contact asking Text question Contact answering Text answer
Check point	Description of a method that is applied to check the correctness of the data	Descriptive name Relevant indicator Description
FSS data	Data from Eurostat's Farm Structure Survey	Name data item Value data item
Indicator data value	FADN data from an individual farm	Relevant holding Relevant accounting year Relevant indicator Data value
National indicator	Description of a data-item according to a national farm return	Name
National data value	FADN data from an individual farm in the national database	Relevant holding Relevant accounting year Relevant indicator Data value
Agenda	Planned activity	Name activity Date
Hardware platform	An Information/Communication Technology device, relevant to A/3	Name Specification Location
Software component	A computer-program (incl. e.g. SAS files for data retrieval), relevant to A/3	Name Specification Location
Study	A research activity (and its report)	Name Date finished Author(s) Status (public/internal) Text
RFS coefficient	Data value to update the value of a farm return indicator to the current or next year	Relevant indicator Relevant accounting year Relevant typology Value

Appendix 4 Detailed remarks for new statements

Remarks below are taken from the survey of FADN managers.

Abbreviations used for member states and DG6-A/3:
A=Austria, A3=DG6-A3, B=Belgium, D=Germany (Deutschland), Dk=Denmark, E=Spain (España), F=France, H=Greece (Hellas), I=Italy, IRL=Ireland, L=Luxemburg, NL=Netherlands, P=Portugal, S=Sweden, SF=Finland (Suomi), UK=United Kindom

Farm structure statement	
Member states with data	*All (old farm return)*
Task force	*TF Hard core*
Hard core /voluntary survey	*Hard core*
Reference for harmonisation	*Eurostat's farm structure survey, CAP policy regulations, old farm return (in that order)*
Relevant data old farm return	*Tables A, B, C, D, K, M*
Suggestions for data to be deleted	*Remarks*
Working hours	Difficult to measure [IRL]
Animal cat. 31	Not available in IRL
Days of grazing in mountains	Is not used [NL], Definition Almen questionable [A]
Altitude	Is not used [NL], implementation difficult [SF, S]
Difference manager/holder	Not applied [A], too many details in labour [S]
Goats and sheep	[A]
Cattle sex and age classes	[P]
Rabbits and bees	[A]
Cull dairy cows	[UK]
Average number of pigs	Difficult to implement [S]
2, 40,41,42	[SF]
Suggestions for data to be added	*Remarks*
Forestry area	Is now included in income but not in UAA [IRL]
Machinery	Number, type and power [I]
Relations with cooperatives	[I]
Organic production yes/no	[I]
Number of fields/locations	[I]
On farm processing yes/no	Or type of activities [I, NL]
Other rural activities yes/no	Or type [I, NL]
Commodate (use without charge)	[I]
Detailed data family members	[I]
Detailed data casual unpaid labour	[I]
Number of units regular paid labour – others	[I]
Gender (sexe)	[I]
Hours for contract work	[I]
Labour for land investments	[I]

Livestock categories	Donkeys and race horses should be seperated [IRL], seperate horses from other equines [SF] bees, rabbits, ostrich, aquaculture [I]
Quota	[I]
Geographical data	More data on Structure funds like 5B [NL] and with better definitions [A, P]
National weighting factor	[NL]
Hours worked outside farm	To check reliability hours inside farm [NL, P]
Type off farm occupation	[P]
Data items to be harmonized or better documented	
Farm/holding	Improve definition regarding renting in/out [IRL], different locations [NL, I], joint exploitation, contract farming, coherence with official registrations [I], large legal holdings [I, S], rural activities [I, NL, A, S], separation from forestry [I,P,A, S], outsourcing animal rearing [P], crop associations [P], share cropping [UK]
Livestock units	Include alternatives used in different CAP regulations
AWU, FWU	Improve definition and give practical examples for calculation; regular and casual labour difficult to implement [I, NL, P, SF, UK]; regular unpaid labour [A, P], part-time workers and labour providing agencies [NL]; correction for disablement [NL], Holder/manager: what to do with farmer's wives that are manager, sometimes for fiscal reasons [NL], seasonality [S, P]
VAT-system	Include VAT-system, make clear what to with 2 systems on one farm (in one year). Discuss if a calculations with the real VAT-system on the farm would not provide better data.
Type of occupation	Change type of occupation in direct/with paid labour/in share cropping/others and type of ownership in ownership/rent/commodate [I]
Pigs	Definitions sows and fattening pigs in kg. [L] Piglets are defined by 25 kg and 50 kg class breeding sows not used [NL]
LFA-region	What to do if a farm is in two regions [NL]
Type of crop code	From table K: difficult to understand [NL] hard to implement as some codes are not crops [UK], excessive detail in trivial areas [UK], "not regularly marketed" is a very vague term [UK]
Voluntary set aside	Current farm return extremely difficult [NL]
Total area/Land rented for less than one year	National definition quite different [P]
Energy forest (Salix)	Nationally a permanent crop [S]
Specification of cattle to breed	Autochtonous breeds, major crossbreedings [P]
Types of accounting year	Wider range [UK]
Crop areas in horticulture	Several crops per year: difficult to gather and recalculate [NL]

Farm profit and loss account	
Member states with data	*All (old farm return)*
Task force	*TF Hard core*
Hard core /voluntary survey	*Hard core*
Reference for harmonization	*EU Accounting directives, IASC exposure draft Agriculture, old farm return and indicators (in that order)*
Relevant data old farm return	*Tables E, F, K*

Suggestions for data to be deleted	**Remarks**
AWU, FWU	Are problematic in income indicators
Rental value	Not used [IRL, NL, A, SF, UK]
Interest costs	Interest farm/non-farm cost difficult to split [NL], cannot be split up [S], Costs of credit are possible without loans [A]
taxes and insurance	Allocation to land and buildings [NL]
Allocation of costs to forestry	Should be done in gross margin calculation [NL], not used [SF]
Car expenses	As a separate item [NL]
All internal (farm produced items)	[UK, S] Fodder crops not included [IRL] silage maize is treated as grassland, that is not valued [NL] evaluation of certain types of pastures and forages for farm produced feedings stuffs [P], difficult but not "too" [SF]
Farmhouse consumption	Details should not be given [NL]
Output categories like beet tops	Too detailed and not used [NL]
Forestry items	Are not included in agriculture [SF], are not handled consequently in farm return [S]
Details like quality wine/table wine	Should be optional or deleted [A]
Opening/closing valuation	Details should not be given, certainly not per crop [NL]
Suggestions for data to be added	**Remarks**
Euro	All member states convert data to Euro
Livestock	Categories see farm structure statement: coherence table D and E old farm return [A]; number of births, dead [I, A]
Detailed costs for crops	[I]
Costs for agri-tourism and farm processing	[I]
Costs pension funds	[I]
Product codes	More detailed [I]
Production for repeated UAA	Second harvest or second crop ? [I]
horticulture products	Sometimes more details in products is needed [NL] Other vegetables is missing under vegetables [A]
Potatoes	Should be split in ware/seed/starch [NL]
Quantities for sales, purchases and opening valuation	[I], but potentially not in line with more general level of information exchange
Disaggregation of costs	[P]
Allocation of costs to activities	[P] –see gross margins
Sales of fodder crops in store	Difficult to implement in current farm return [UK]
Assesment of stock values and self-consumption	[P]

Data items to be harmonized or better documented	
Car expenses and depreciation	[IRL]
Receipts from occasional letting (leasing out)	e.g from quota and land excluded in UAA [IRL]
Missing value codes	More codes needed [I]
Cost for animals rearing by third parties	[L]
Share cropping arrangements	[UK]
Item 99	Difficult to understand what is required [UK]
Land charges	Rates [UK]
Implementation 146, 147, 150, 151	Difficult [S]

Wages and social security costs	[S]
Family labour	Receive sometimes an unrealistic low wage, although they are registered as regular paid labour [UK]

Farm balance sheet	
Member states with data	*All (old farm return)*
Task force	*TF Hard core*
Hard core /voluntary survey	*Hard core*
Reference for harmonization	*EU Accounting directives, IASC exposure draft Agriculture, old farm return and indicators (in that order)*
Relevant data old farm return	*Tables D, G, H*
Suggestions for data to be deleted	**Remarks**
Circulating capital	Should be calculated with optional normative formula [IRL] separation from family/non-farm activities difficult [NL]
Land improvements	[I] can be included in value [NL]
Allocation of loans to assets	[S] In practice this does not take place [L] Loans are provided to the total farm: a mortgage on the land for the new kitchen [NL] Impossible [A], difficult [P, SF, UK]
Separation of quota purchased and quota initially allocated	After many years of trade not distinguishable [UK]
Acquisition costs	Can be included in value [NL]
Market value of land	Implementation difficult [I, A], national values are historical cost [L], lack of clear rules in land market [P]
Suggestions for data to be added	**Remarks**
Euro	All member states convert data to Euro
National quota	Values should be added [NL], only milk quota available [A], should be all quota [UK]
Separation of short term loans and credits from suppliers and the state	[P]

Data items to be harmonized or better documented	
Buildings and land improvement	Are only gathered if subject to depreciation [IRL]
Separation from family debts	Overdraft facilities/loans [IRL], difficult to obtain information [P]
Circulation capital	Definition not clear [I]
Informal family loans	Definition not clear [I], difficult to obtain information [P]
Short term	Definition of short term should be changed in 'less and equal than one year' [I]
Valuation animals	Probably not harmonized [NL]
Quota value	Not valued [A], information difficult to obtain at farm level [P], implementation too difficult [S], separation from land value not clear [S], definition of quotas and other rights not clear

Farm flow of funds statement	
Member states with data	*All (old farm return)*
Task force	*TF Hard core*
Hard core /voluntary survey	*Hard core*
Reference for harmonization	*EU Accounting directives, IASC exposure draft Agriculture, old farm return and indicators (in that order)*
Relevant data old farm return	*Tables ???*

Suggestions for data to be deleted	**Remarks**
Suggestions for data to be added	**Remarks**
Euro	All member states convert data to Euro
Data on national quota	e.g. environmental quota [NL]
Data items to be harmonized or better documented	
Sales of quota	[NL]

Farm subsidy statement	
Member states with data	*All (old farm return)*
Task force	*TF Hard core*
Hard core /voluntary survey	*Hard core*
Reference for harmonization	*EU Accounting directives, CAP-regulations; discuss in task force how data can be received from EAGGF/IACS system*
Relevant data old farm return	*Tables J, M*
Suggestions for data to be deleted	**Remarks**
Allocation set aside to crop	[L]
Reference yield	Is not a farm-level data item [NL] arable subsidies in the framework of the regionalisation plan and its different productivities [P]
Codes 112, 115, 116	Should be optional [A]
Allocation to crops	[A, P], not possible completely [SF]
Allocation to animals	Not always completely possible [SF]
Suggestions for data to be added	**Remarks**
Euro	All member states convert data to Euro
CAP-regulations	Classify subsidies to CAP-regulations. [I, NL] Provide reference yields and % national topping up etc. per region.
Subsidies on investments	Should be written down with asset [L]
Actual amounts received	At least for types of cattle/crops [IRL]

Data items to be harmonized or better documented	
Due value	Depends on grant type [IRL]; definition not clear [I], too difficult as unknown at farm level [A], implementation too difficult [P], as received basis would lead to less inaccuracies [UK] are gathered on an as received basis [S]
Disaster	Should be defined: official decree or relative to farm situation [NL]
Subsidies in general	Practical adaptation to local situation [P]
Subsidies included in land rent	[NL]

In the voluntary tables below, countries have been characterized as 'member state with interest and feasible data gathering' if they think that data gathering is at least for subsamples technically (not necessarily also financially) possible, and when they indicated an interest in exchanging such data.

Mineral balances statement	
Member states with data	L, NL, A, SF, S, IRL
Member states with interest and feasible data gathering	I, P, UK
Task force	TF Mineral balances
Hard core /voluntary survey	Voluntary survey
Reference for harmonization	FAIR-concerted actions, e.g. Elisa
Relevant data old farm return	None

Gross margins and physical data statement	
Member states with data	B, Dk, F, I, L, NL, A, P, S, UK, IRL
Member states with interest and feasible data gathering	
Task force	TF Cost of production
Hard core /voluntary survey	Voluntary survey
Reference for harmonization	Eurostat's Classex 44 on sgm, old farm return
Relevant data old farm return	Table D, K (for definition enterprises)

Cost of production statement	
Member states with data	B, Dk, F, I, L, P, S, UK
Member states with interest and feasible data gathering	NL
Task force	TF Cost of production
Hard core /voluntary survey	Voluntary survey
Reference for harmonization	Eurostat's Classex 44 on sgm, old farm return
Relevant data old farm return	Table D, K (for definition enterprises)

Organic production statement	
Member states with data	B, Dk, D, I, NL, A, SF, S, L
Member states with interest and feasible data gathering	IRL, P, UK
Task force	TF Organic production
Hard core /voluntary survey	Voluntary survey
Reference for harmonization	CAP regulation
Relevant data old farm return	

Processing on the farm statement	
Member states with data	B, F, I, L, NL, A, SF, S, UK
Member states with interest and feasible data gathering	P
Task force	TF Processing on the farm
Hard core /voluntary survey	Voluntary survey
Reference for harmonization	
Relevant data old farm return	Table K

Agri-tourism statement	
Member states with data	B, F, I, L, NL, A, SF, S, UK
Member states with interest and feasible data gathering	P
Task force	TF Agri-tourism
Hard core /voluntary survey	Voluntary survey
Reference for harmonization	
Relevant data old farm return	Table K

Landscape maintenance statement	
Member states with data	B, F, L, NL, S
Member states with interest and feasible data gathering	I, P

Task force	TF Landscape maintenance
Hard core /voluntary survey	Voluntary survey
Reference for harmonization	FAIR-concerted actions like Elisa, Farm subsidy statement
Relevant data old farm return	

Forestry statement	
Member states with data	Dk, D, E, F, A, SF, S
Member states with interest and feasible data gathering	IRL, I, P
Task force	TF Forestry
Hard core /voluntary survey	Voluntary survey
Reference for harmonization	FAIR-concerted action Mosefa, CAP-regulations
Relevant data old farm return	Table K

Non-farm activities statement	
Member states with data	Dk, NL, A, SF, S
Member states with interest and feasible data gathering	I. P
Task force	TF Activities outside the farm
Hard core /voluntary survey	Voluntary survey
Reference for harmonization	Katsada study, Eurostats TIAH
Relevant data old farm return	None

Non-farm income and capital statement	
Member states with data	Dk, D, NL, A, SF, S, UK
Member states with interest and feasible data gathering	I, P
Task force	TF Activities outside the farm
Hard core /voluntary survey	Voluntary survey
Reference for harmonization	Katsada study, Eurostats TIAH, OECD ewg-2
Relevant data old farm return	None