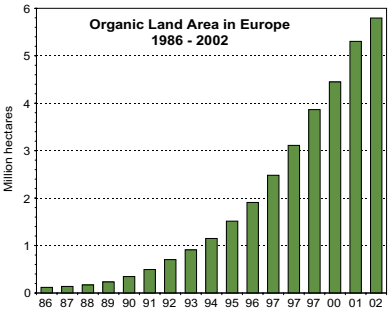
PROCEEDINGS

EISfOM European Information System for Organic Markets
A European Commission funded Concerted Action Project

Development of a European Information System for Organic Markets – Improving the Scope and Quality of Statistical Data

Proceedings of the 1st EISfOM European Seminar, held in Berlin, Germany, 26-27 April, 2004



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The EISfOM Partnership

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Foreword

The project European Information System for Organic Markets (EISfOM) is a concerted action funded by the European Commission under key action 5 (Quality of Life) of the 5th Framework Programme for Research and Technological Development (QLK5 2002-02400).

The main aim of the project is to develop a framework for the collection and processing of relevant, timely, reliable and comprehensive data on organic production and markets. The project integrates researchers, official and commercial agencies and stakeholders, in order to meet the data needs of policy makers, regulators, farmers, processors, traders, retailers and other interested parties.

The first European EISfOM seminar "Development of a European information system for organic markets" took place in Berlin, Germany, on the 26th and 27th of April 2004. A second seminar will take place in October/November 2005 in Brussels. It will define a framework for a European Information System for Organic Markets.

The first EISfOM seminar was a major opportunity to discuss the first results of the EISfOM project and to debate future directions. In order to achieve the seminar's objectives, much of the work of the seminar took place in six working groups: farm structures and production; farm incomes and prices; supply chain and trade; retailers and consumers: supply balances; policy evaluation.

The proceedings of the seminar provide coverage of the papers presented as well as the outcomes of the individual working groups and the final conclusions of the seminar.

Special thanks are due to all those who made the first seminar possible. In particular, our thanks go to the European Commission (DG Research) and the German CMA (Centrale Marketing-Gesellschaft der deutschen Agrarwirtschaft) for financial support, furthermore to the speakers, session organisers, chairpersons and rapporteurs for their contributions to the seminar and to these proceedings. Special mentions are due to the University of Kassel team for the programme co-ordination, to Markus Rippin and Susanne Lux and the ZMP team for the venue arrangements and administrative support, and to the University of Wales for financial administration. Not least, thanks are due to all the participants who played a major part in the discussions and thereby contributed the success of the event.

Guido Recke[1], Helga Willer,[2] Nic Lampkin[3], Alison Vaughan[4]

Witzenhausen, Frick, Aberystwyth, June 2004

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Plenary Session

Chairs: Markus Rippin[5] and Raffaele Zanoli[6]

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Welcome address

Massimo Burioni[7]

Mr Chairman, ladies and gentlemen,

First of all, on behalf of the Directorate General for Research of the European Commission, I would like to thank you for your participation in this first European seminar organised by the EU-funded Concerted Action EISfOM.

The original organic market philosophy, based on local production for the local market, is now facing the challenge of the global market. Sales of organic products are growing rapidly in Europe and all over the world, but, for how long can this expansion continue? In a market-driven economy, no production sector can survive – let alone develop and thrive – without taking into careful consideration all the multiple aspects of the market.

The market is made by consumers who are, in general, fickle and react emotively to information they receive from the media, as in the recent past when food scandals have certainly contributed to the increased demand for organic food. And for the organic sector this was a clear benefit. However, will this demand one day reach a certain stability to make the European organic farming sector self-sustainable in a 'real' open-market economy?

In our modern society, where consumers are often bombarded with contradictory information about risks and benefits represented by different food products and food production systems, the demand is subject to frequent and often sudden shifts of priorities. Therefore, flexibility and diversification of the offer are two key words for the survival of any production sector in ever more dynamic markets.

Closely monitoring market trends and consumers' attitudes is a basic requirement to ensure the prompt response and adaptation of the production systems to the changing market needs. But an increasing demand should be supported by increasing production, without penalising the good quality of the products. Therefore, from the farmer's point of view, the survival of a production system depends ultimately on its efficiency in ensuring yield capacity and, at the same time, maintaining high quality standards, two aspects that make the difference when it comes to the economic viability of a production system in a competitive market.

In 2002, when EISfOM was still a proposal, the independent experts in charge of the evaluation said in their report: "This is a timely initiative and the results will contribute significantly to the understanding of organic market dynamics and development. The project will produce information on organic markets that will also contribute to further development of the CAP".

I would personally add that, considering the high quality and the recognised competence of the participants, the EISfOM Concerted Action has the potential to provide the Organic farming sector with both the necessary information and the recommendations on how to exploit this information for developing better future strategies and promptly adapting the sector to the market needs.

As the representative of DG Research, I am sure you will allow me to take a few words to explain how the Commission is taking seriously the challenges represented by the organic food and farming sector. As most of you already know, DG Agriculture is preparing a European Action Plan for Organic Food and

7 Mr Massimo Burioni, Scientific Officer, European Commission, DG Research, SDME 8/33, B-1049 Brussels, Tel.+32 2 2959653, Fax +32 2 296 029, E-mail: massimo.burioni@cec.eu.int

Farming, a structured document that will provide the sector with the necessary framework of recommendations for its future development at European level.

The Action Plan will also include a chapter on research and will call for more common efforts to support actions on organic farming. Personally, I am of the opinion that research at the European level can play an important role in improving production efficiency for crops and livestock, enhancing the quality of produce and in exploiting the potential for increasing yield – or reducing loss – thus helping to create a more competitive organic farming sector.

In Framework Programme 4 (FP4) the Commission funded research actions in organic farming to a total of 12 M€. In FP5 (Quality of Life) which recently came to an end, the EU contribution to organic farming projects amounted to a total of 33 M€[8].

After the first Call of the current FP6[9], five projects have been funded for a total of 20 M€, and after the second Call (results are still confidential) I can anticipate that project proposals addressing issues of relevance to organic food and farming have performed quite well, and new research actions will certainly be funded.

In conclusion, I am confident that, like many other research actions carried out at the European level within the Community programmes, the EISfOM Concerted Action will contribute significantly to the further development of organic farming in Europe.

I thank you for your attention and I wish you a fruitful seminar.

8 Information on EU-funded agricultural research activities is available at http://europa.eu.int/comm/research/agriculture/index_en.html

9 Information on the 6th Framework Programme is available at http://fp6.cordis.lu/fp6/home.cfm

Introduction to the European Information System for Organic Markets and the aims of the 1st EISfOM European Seminar, Berlin, April 2004

Nicolas Lampkin[10]

Aims and context of the EISfOM concerted action

The European Information System for Organic Markets (EISfOM) is a concerted action funded by the European Commission under Key Action 5 (Quality of Life) of the 5th Framework Research and Technological Development Programme (QLK5-2002-02400)[11]. The main aim of the project is to develop a framework for the collection and processing of relevant, timely, reliable and comprehensive data on organic production and markets, integrating researchers, official and commercial agencies and stakeholders, in order to meet the data needs of policy-makers, regulators, farmers, processors, traders, retailers and other interested parties.

The EISfOM initiative is a result of the rapid expansion of the organic sector of European agriculture. By the end of 2002, organic farming in Europe accounted for 5.8 million hectares on 190 000 holdings[12]. This represents 4% of European agricultural land area, with 10% or more in some countries, and an annual retail market currently valued at more than €10 billion. The current scale and future potential of the sector is now such that new approach to statistical and other data is required.

EISfOM builds on the past experience of researchers, market information and statistical agencies working with limited data of uncertain quality and reliability, in particular as part of other European-funded research projects (OFCAP[13], OMIaRD[14], EU-CEE-OFP[15]). From these experiences, a range of common problems and issues have been identified that need to be addressed at European level, including methods, quality management and capacity building. The concerted action provides a framework for those working in the field (from different backgrounds) and stakeholders to share experiences and develop collaborative initiatives. It is not a research project, and does not involve collecting data directly, but where results are available, the project will assist with their dissemination. But EISfOM does need the active participation of national and international agencies to succeed in developing and implementing a long-term approach for organic farming statistics.

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[11] The views expressed are those of the author and do not necessarily reflect the views of the European Commission, nor do they in any way anticipate the Commission's future policy in this area.

[12] See www.organic.aber.ac.uk/stats.shtml for source data

[13] Organic Farming and CAP Reform (FAIR3-CT96-1794, http://www.uni-hohenheim.de/~i410a/eu_org/Fair3_Index.htm)

[14] Organic Marketing Initiatives and Rural Development (QLK5-2000-01124, www.irs.aber.ac.uk/OMIaRD)

[15] Further development of European organic farming policies, with particular emphasis on EU enlargement (QLK5-2002-00917, www.irs.aber.ac.uk/EUCEEOFP)

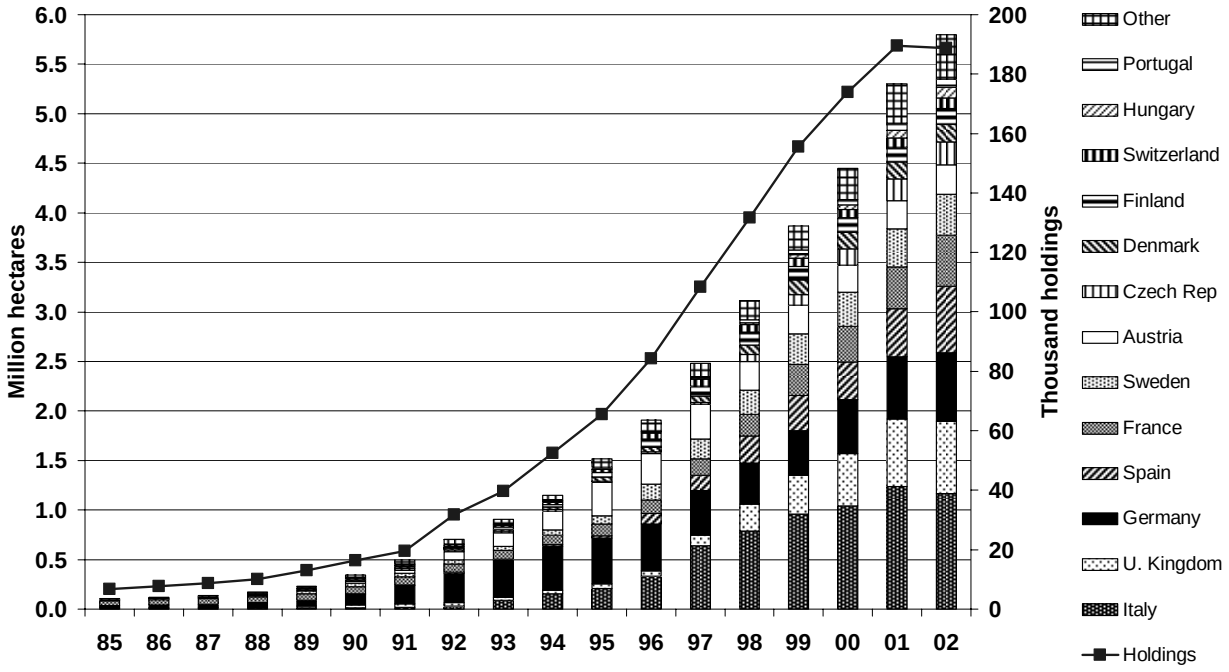

Figure 1: Growth of organic farming in Europe, 1985-2002

The EISfOM partnership

EISfOM has nine core partners, responsible for different tasks as well as for regional co-ordination activities in 32 countries. The partnership includes research groups involved in the collection of data on organic farming at national and European level, in some cases for more than 20 years, as well as a market information agency (ZMP) with extensive involvement in the field and an agency directly responsible for official organic data collection at national level (LEI). The partners are:

- the University of Wales, Aberystwyth (UWA), Wales (Partner 1, responsible for GB, IE, FR);
- the Research Institute of Organic Agriculture (FiBL), Frick, Switzerland (Partner 2, responsible for CH, LI, TR);
- the University of Innsbruck (UI), Austria (Partner 3, responsible for AT, SI, RO, BG);
- the University of Kassel (UK), Witzenhausen, Germany (Partner 10, formerly Partner 4, responsible for HU, CZ);
- Zentrale Markt- und Preisberichtstelle (ZMP), Bonn, Germany (Partner 5, responsible for DE, SK, ES);
- the Polytechnic University of Marche (UPM), Ancona, Italy (Partner 6, responsible for GR, IT, PT, MT, CY);
- the Danish Institute of Agricultural Sciences (DIAS), Foulum (Partner 7, responsible for DK, SE, FI, NO, IS);
- Warsaw Agricultural University, Poland (Partner 8, responsible for PL, EE, LV, LT); and
- LEI/WAU, the Hague, Netherlands (Partner 9, responsible for NL, BE, LU).

In addition, key international agencies are involved in steering the project. These include the European Commission (Eurostat, DG Agri and DG Research), FAO, OECD and the Internal Federation of Organic

Agriculture Movements (IFOAM) EU Group representing stakeholders. Informal contacts also exist with the European Environment Agency and DG Environment. The role of these international agencies is to guide and contribute to project with the long term aim of building on or integrating their own systems with the EISfOM initiative, as well as supporting the project partners by encouraging national administrations and stakeholders to participate constructively in the development of EISfOM and its activities.

EISfOM's main tasks and objectives

The main tasks and objectives, reflected in the individual work packages (WPs) are to:

- review current conventional and organic data collection and processing systems (WPs 1, 2 and 3) – this work is nearing completion and is due to be published in summer 2004
- develop proposals for harmonizing data collection and processing methods and improving data quality, including this first European seminar (WP4)
- co-ordinate and evaluate pilot data collection and processing systems at national level (WP5)
- prepare a framework for the development of a Europe-wide database for organic markets, including the second European seminar, Brussels, in autumn 2005 (WP6)
- communicate and disseminate results and recommendations to the EU and others in order to secure an operational system for the future (WP7)

Further information about the project and the partnership can be found at the project internet site: www.eisfom.org. This site gives access to project publications, links to statistical information, e-mail news updates, an intranet facility for internal communication between the core partners and project management, as well as the project 'membernet'. The membernet is open to all interested agencies and stakeholders, including all official contacts and seminar participants. It provides the main forum for discussing issues arising during the project as well as access to unpublished project deliverables and background information on participation in the European seminars, in particular the relevant working papers and seminar presentations.

Aims and structure of the first EISfOM European seminar, Berlin

This seminar is the first major opportunity to discuss the first results of the EISfOM project and to debate future directions. The specific objectives of the seminar are to:

- review the current state of organic data collection, including the preliminary results of the national surveys conducted as part of the project
- identify problems, issues, challenges and development opportunities
- identify the potential for integration of organic with general agricultural statistical systems
- review quality assurance and international harmonisation issues
- identify options for future systems development and pilot case studies
- identify potential barriers to the implementation of improved data collection and processing systems (DCPS).

In order to achieve the seminar's objectives, much of the work of the seminar will take place in six small working groups, which have been arranged to reflect different levels of statistical data collection relevant to the organic sector:

- farm structures and production, co-ordinated by DIAS (Partner 7);
- farm incomes and prices, co-ordinated by LEI (Partner 9);
- supply chain and trade, co-ordinated by UI (Partner 3) and UPM (Partner 6);
- retailers and consumers, co-ordinated by FiBL (Partner 2), WAU (Partner 8) and ZMP (Partner 5)
- supply balances, co-ordinated by UK (Partner 10)
- policy evaluation, co-ordinated by UWA (Partner 1)

The discussions in each working group follow a similar pattern, with the focus on the first day on current problems and opportunities for development, while on the second day, the focus shifts to data quality and harmonization issues, with the aim at the end of the seminar to identify the key points for further development.

The proceedings of the seminar provide coverage of the papers presented as well as the outcomes of the individual working groups and the final conclusions of the conference.

The current situation of data collection and processing of organic farming and marketing across Europe

Toralf Richter[16]

European markets for organic products have developed rapidly in recent years. EU research projects such as OFCAP[17] and OMIaRD[18] dealt for the first time with a European approach to gathering, processing and analysis of organic production and market data. The project results have indicated that, in many countries, regional or national data gathering takes place but there is less systematic collection, processing and publishing of data concerning organic farming. Furthermore results from the OFCAP and the OMIaRD projects showed a high public and private demand for organic production and market data.

Based on this pre-knowledge, the EISfOM concerted action aims to build up a framework for reporting valid and reliable data for relevant production and markets in the European organic sector in order to meet the needs of policy-makers, farmers, processors, wholesalers and other actors involved in organic markets.

Firstly a review of existing data collection and processing systems (DCPS) was carried out by surveying the most relevant statistical institutions in 32 countries using a two stage approach.

In the first stage, all known providers of statistics (private and public statistical bureaux, market research companies, inspection bodies, etc.) were contacted in all the countries and asked about the DCPS which focus on the organic sector or parts of it, or at least offer the opportunity to enhance the collection of organic farming data.

In the second stage, the statistics providers received more detailed questionnaires concerning the actor level which they cover with their data collection (farm level, foreign trade level, wholesaler / processor level, retailer level, consumer level). The results of the second questionnaire provide an inventory of existing European DCPS, their statistical backgrounds and their individual strengths and weaknesses. It indicates furthermore:

- which DCPS include organic data,
- in which DCPS organic data are distinguishable from the total data set,
- which types of data are collected (sales and production volumes, sales and production values, price data, structural data, etc.),
- whether data quality management systems are operated or not,
- how frequently data are collected, processed and published, and
- which segmentation variables are used to break down the total data set.

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[17] Organic Farming and CAP Reform (FAIR3-CT96-1794, http://www.uni-hohenheim.de/~i410a/eu_org/Fair3_Index.htm)

[18] Organic Marketing Initiatives and Rural Development (QLK5-2000-01124, www.irs.aber.ac.uk/OMIaRD)

Figure 1 indicates the project approach to obtaining parallel information about existing DCPS on different actor levels. The results allow a rough grouping of the studied DCPS on the basis of whether they provide:

- a total data set, which does not differentiate between conventional and organic farming data,
- a total data set, where organic farming data are integrated but distinguishable and
- an exclusive organic farming data set.

Figure 1 indicates furthermore that in Workpackages 2 and 3 each EISfOM project partner took responsibility for reviewing the existing DCPS for several countries. The same methodological approach was applied for each country.

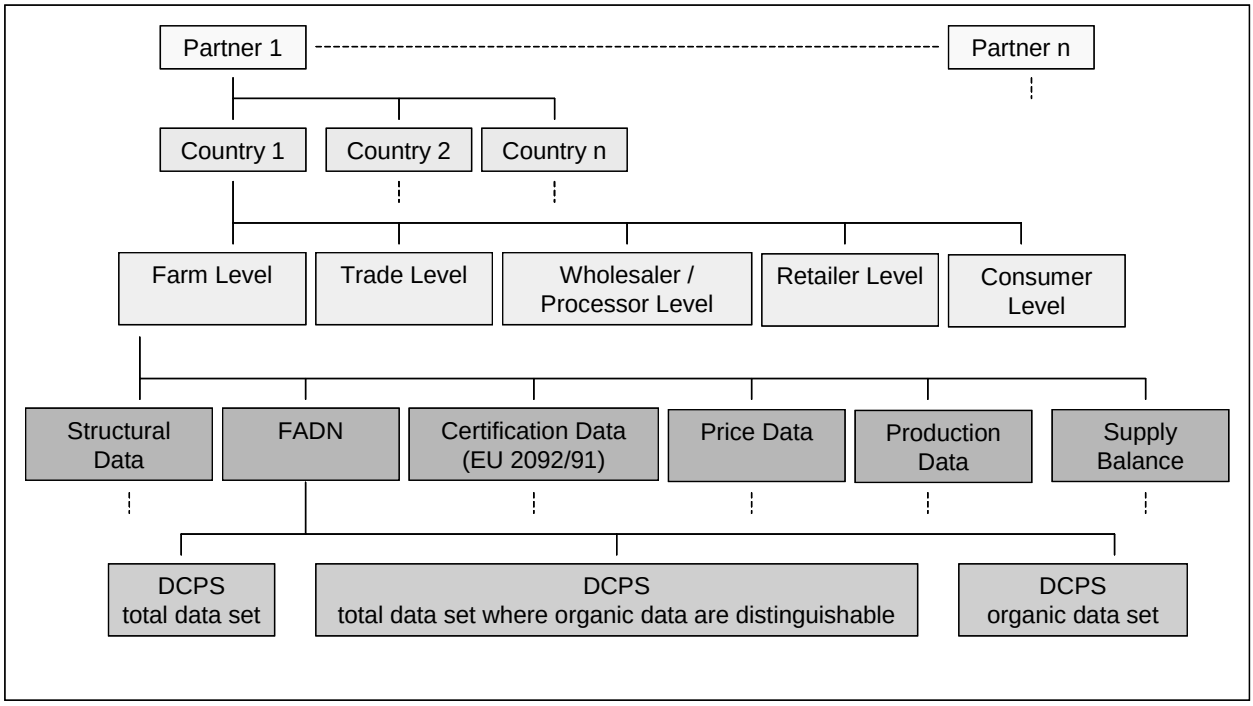

Figure 1: Project approach to obtaining information about statistics in existing DCPS on different actor levels

The results presented in the report reflect the state of the art of available information about DCPS across Europe, which is constrained by the willingness of the contacted national statistics providers to respond and cooperate with the EISfOM project partners. In some countries none or very few of the providers of statistics who were contacted took part in the survey. This means that for some countries there are probably more DCPS for the studied actor levels, but it was not possible within the given resources and the project structure to include this information.

The results of the survey for each country studied were used to analyse the current situation for DCPS which contain organic farming data by actor level with regard to the following questions:

- Is there at least one DCPS per country with organic data collection?

- Is there at least one DCPS per country where organic data are integrated into a total DCPS and distinguishable?
- Is there at least one DCPS per country which allows a direct comparison between organic and total data?
- Is there at least one DCPS per country with organic data which is based on a census or representative approach?
- Is there at least one DCPS per country where organic data collection is carried out at least once per year?
- Is there at least one DCPS per country with organic data where data / reports are disseminated at least once per year?
- Is there at least one DCPS per country with organic data which run data quality management systems?

Furthermore the analysis of the results indicates which DCPS with organic farming data can be considered as a European benchmark and focussed upon for the evaluation of pilot applications of DCPS improvements in selected countries in Workpackage 5[19] (see figure 2).

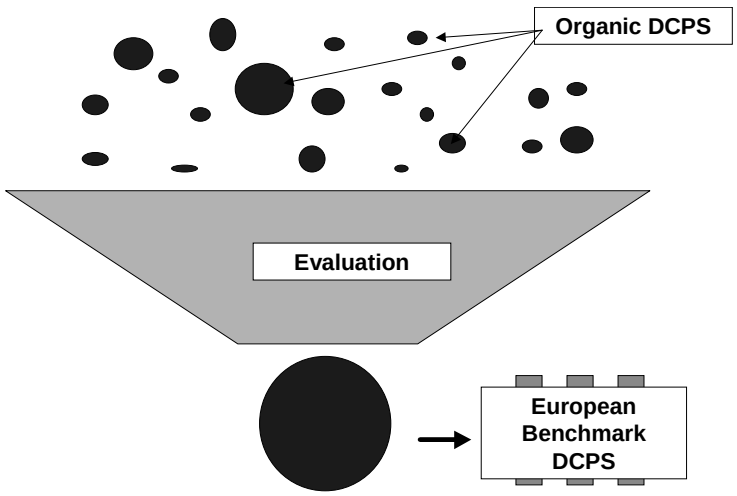

Figure 2: Evaluation of existing DCPS which contain organic farming data per actor level in each country

The analysis by country leads to a heterogeneous picture across Europe. Both the comparison by actor level between the countries studied, as well as the comparison by country between the different actor levels studied, indicates that there are many gaps in the data on organic farming data all across Europe.

In countries like Austria, Denmark, Finland, Germany, Italy, The Netherlands, Norway, Switzerland and the United Kingdom, most organic farming data are available, regardless of the actor level of data collection. In these countries it is currently possible to draw - at least on the production and the consumption side – a fairly complete picture of organic farming. In countries with emerging organic

[19] The aim of work package 5 of the EISfOM project is to co-ordinate and to evaluate pilot data collection and processing systems at national level.

markets, such as Bulgaria, Hungary, Poland, The Baltic and some Mediterranean countries, there are very few data available on organic farming and the organic market. However, in some of these countries activities are now starting in order to improve the availability of data.

Regarding the institutions which currently collect and process organic farming data, it must be said that these are mainly private bodies driven by economic aims. Until now public data collection has focused only on structural data of organic farms. Private institutions mainly focus on data about organic consumption and sales. In some countries public institutions buy these data; in other countries these data are only bought by private companies and are not disseminated widely.

Furthermore, organic farming data collection in many countries is undertaken by many separate institutions which are seldom linked to each other. In this situation it is mainly scientists, market consultants and marketing experts in organic farming associations who are trying to collect the data from different sources in order to draw a national picture of the organic farming situation.

Regarding the actor level of data collection, most organic farming data are available on the farm level (farm structure data, FADN data, price data) as well as on the consumer and retailer level. There is very little information available on the level of foreign trade or on the processor or wholesaler level. Due to the lack of foreign trade data on organic products it is not possible to generate a supply balance sheet for organic products.

Most of the data available on organic farming activities concern the number of certified organic farmers and processors, the utilised organic area and numbers of organically kept livestock. The data come from the Farm Structure Survey or in some countries more precisely from certification bodies for organic holdings. However certification bodies are not obliged to report their data about certified organic farms. Currently certification bodies disseminate the data freely only in a few countries.

Often, there are only rough estimates for organic trade, production and consumption volume in many European countries. Standardization on a European level, and even also often on a national level, is missing and data are seldom comparable (between countries or on the national level between product groups). Furthermore, detailed information on production and foreign trade volume for specific commodities is missing for the organic farming sector.

This situation leads to "blind" decision making on investments by market actors or and on support schemes by policy-makers. Because of the lack of data, politicians do not know whether it would be better to support production or consumption, or alternatively to solve problems in the supply chain.

Based on the review of DCPS for organic farming across Europe, consideration must be given to how best to improve the availability and quality of organic farming data.

Currently there are few public DCPS on an international level exist concerned with the organic agriculture and food sector. At a global level the main statistical activities are carried out by OECD and FAO. Within the European context, Eurostat co-ordinates all cross-country activities in the area of statistical affairs. Furthermore Eurostat publications often also include comparisons with selected non-European countries like Switzerland, the USA or Japan, and in this way can provide a global data view.

Between OECD and EUROSTAT interfaces exist in many statistical scopes with regard to integration and harmonisation of variables and meta-data.

Currently all three institutions include little or no specific data about organic agriculture. Given the dynamic growth of the organic sector and the public support for this sector in recent years and the enormous demand for organic structural, production and market data from policy-makers, market actors, the media, scientists, the advisory sector and farmer, consumer and environmental associations (to name

just the most demanding groups) there is at present a significant lack of data and information available on the organic sector.

In view of the lack of data on one side and the demand for organic sector data on the other, the non-governmental organisation IFOAM[20] has begun several data gathering activities (annual data gathering and reporting of the number of organic farms and organic UAA[21]).

Various activities have begun on the European level, or will begin soon, to bring existing data together. Within the so-called "Organic Action Plan" DG Agri wants to institutionalise regular organic market observation. Within the "Food Safety" task force, Eurostat wants to implement regular data collection on organic farming beginning at the production level, but also including trade data and long-term consumption data for organic food. More and more national governments express their wish to support these European activities or at least to collect more data on a national level, so that market and political decisions can be based on a reliable database in the future.

It would be most effective and efficient if all the activities which the different institutions have in the pipeline were coordinated to ensure the maximum benefit. This could lead to a more reliable and comparable organic farming data information system all over Europe.

However, the response to the public demand for organic data is currently based only on statements and action plan points, which are theoretical rather than real. It is seldom clear how new data collection activities should be financed in the context of budget cuts in many national statistical offices.

Over the next two years the EISfOM project intends to assist in all new national and international efforts to improve organic data collection and to disseminate these activities to provide statisticians, market and policy actors, with maximum transparency concerning the further development of organic farming data collection and processing systems in Europe.

[20] International Federation of Organic Agriculture Movements (IFOAM)

[21] Utilized Agricultural Area

Problems and solutions for the collection of data on organic markets: experiences from previous research projects

Ulrich Hamm[22]

Problems identified in previous EU-funded research projects

There have been two EU-funded research projects in which comprehensive data collection and analysis for the most important organic products have been undertaken in 18 and 19 European countries respectively. The first data collection took place within the EU-funded project "Effects of the CAP reform and possible further development on organic farming (OFCAP, FAIR 3-CT96-1794)". The purpose of this first Europe-wide market analysis, using the same method of data collection in all 15 EU countries, the Czech Republic, Norway and Switzerland, was to analyse the market impacts of national policies and the contribution of organic food and feed markets to the general policy objectives (Michelsen et al. 1999). As there were no official statistics on the organic market in any European country, data collection was carried out by national experts who interviewed the most significant market agents in their countries, i.e. market actors in organic farmers' organisations, processors and wholesalers, governmental or semi-governmental marketing agencies, inspection bodies, market researchers, etc. The data collection covered the year 1997 and, in a few cases, 1998. The results of the data collection were rather poor in many European countries. Incomplete data and rough estimations made it impossible to detect inconsistencies, e.g. by drawing up supply balances for most of the countries.

The second and the third Europe-wide market data collection and analysis were carried out within the EU-funded project "Organic marketing initiatives and rural development (OMIaRD, QLK5-2000-01124)" using a very similar methodological approach to the previous study. This time 19 European countries were included, i.e. the same 18 countries as in the previous study plus Slovenia. Data were collected in two rounds for the year 2000 (Hamm et al. 2002) and 2001 (Hamm and Gronefeld 2004). The data availability was slightly better than in the 1990's, however it was far from being satisfactory when compared with statistics on the total market. Whilst in many countries data on the organic area and on organic livestock - and in some countries also on average yields - were available, data availability on organic sales, consumption, prices and foreign trade was very poor. However, within this study a lot of quality checks were undertaken by drawing up supply balances for the 12 most important organic products. Further, there was an intensive discussion of inconsistencies in data with wholesalers and exporters of organic products at the Biofach Fair in Nuremberg, Germany. Two consumer price surveys were also carried out in all of the 19 countries surveyed in 2001 and 2002.

Public interest in these market studies was overwhelming. Books have been sold in more than 40 different countries, demonstrating a significant need for such market analyses.

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Objectives for collection and analyses of organic market data

Generally, there are two central objectives for market data collection and analyses:

- to supply market actors with the necessary information about major market developments to allow investors (and credit grantors) to judge if and where investments in the organic market would be promising or not.
- to supply agricultural policy-makers with the necessary information to decide which support measures are best for enlarging the market (support for production or demand or marketing of organic products) and to permit market analyses which pinpoint opportunities and threats for future agricultural policy measures.

Just how necessary market transparency is for market actors and politicians can be illustrated by some of the main results of the market studies referred to above. All three studies have shown a greater imbalance of single markets. Whilst on the one hand there was an ongoing oversupply in Europe of organic milk, beef, sheep meat, wine and olive oil, supply of poultry, pork and vegetables was continuously too low to cover demand in the last five years. The oversupply of some products caused severe problems for organic farmers who had to sell their organic products at conventional prices. Therefore, it was no surprise that some farmers, particularly organic farmers in grassland regions, reconverted their farms from organic to conventional agriculture in the second half of the 1990's in Austria and North-East Germany and more recently in Denmark. The same thing has happened of late in parts of Italy (especially for olive groves and vineyards). In the Michelsen et al. study (1999) and more clearly in the study of Hamm et al. (2002), the imbalance of organic markets was ascribed to maladjustment of governmental area-based subsidies.

Proposals for better availability of organic market data

According to EU Reg. 2092/91 and 1804/1999 all organic products which are sold as organic, are subject to a certification process from farmers via processors to wholesalers or retailers. Within this process inspection bodies must validate all the market data along the supply chain. They have to compare production with sales on the farmer level and purchases, processing activities and sales on the processor level to prove the accuracy of the organic sales figures. In most cases, data from single inspectors were not collected systematically by the inspection bodies, although this could be done quite easily if all inspection bodies used the same form for documentation and were obliged to deliver these data to national offices. Such documentation, which would have to be done by several private firms in all EU countries (e.g. slaughterhouses, dairies, mills, etc.), would also open up the possibility for a complete monitoring system in Europe to detect market actors selling conventional products as organic, as has sporadically been the case in some countries. Whilst there is no compulsion to provide complete documentation, it will be hard to obtain "hard data" about organic markets. One possible solution could be to oblige private firms at the processors' or wholesalers' level to report data on organic sales to national statistical bureaux. By combining these data with other statistical registers it is possible to create new information on organic markets. This system has been introduced in Denmark by Statistics Denmark (Larsen 2004[23]). However, in Denmark and other Scandinavian countries this could be achieved more easily than in other European countries because all private firms have a single identification number in all statistics.

If all inspection bodies according to EU Reg. 2092/91 and 1804/1999 were obliged to collect their data on production and sales of organic products systematically and to deliver them to national organisations and statistical bureaux, a lot of information on organic markets could be made readily available:

[23] See the paper by Poul Henning Larsen: "Statistics on organic farming and organic products in Denmark" in these proceedings

- all data on organic production
- data for on farm use of organic products and organic sales
- data on processing
- data on stock changes in farms and processing plants
- data on losses at farmers' and processors' level
- data on organic imports to the EU, if third countries on the third countries list (EU Reg. 2092/91, Art. 11(1) and (2)), inspection bodies in the EU (Art. 11(6)) and inspection bodies in third countries (Art. 11(7)) are also obliged to record their data.

However, there are some important data for market actors and politicians which could not easily be taken from the reports of inspection bodies. These are:

- most data on intra-EU-trade
- data on exports from EU countries to third countries
- data on consumption
- data on producer and consumer prices.

The missing data about international trade can only be obtained by using a data recording system similar to the one for the conventional sector where one additional digit (organic/non-organic) could be introduced to the records. Consumption of organic products could then be calculated using these data and those reported by the inspection bodies. Data on producer and consumer prices for organic products could be obtained from price surveys of conventional products by introducing an additional digit (organic/non-organic). As consumer prices are generated mainly through household diaries, there remains the problem of a clear identification of organic products which is difficult in many European countries where a well-known and widely-used government label for organic products does not exist. Organic producer prices would have to be made available through additional price surveys.

Conclusion

If the urgent need for valid statistical information on organic market data, as a basis for political decisions and to achieve market transparency in order to avoid inappropriate investments in the organic market, is recognised by agricultural politicians, the easiest way to obtain these data would be to oblige private and government inspection bodies to report their data to statistical offices. Answers to the additional questions

- how to develop a uniform reporting system for all EU countries
- whether and how to compensate inspection bodies for their additional expenses in collecting and reporting data
- how to develop quality assurance systems for organic data collection

could easily be found, if there were a political will to improve the information situation for organic markets.

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Current Eurostat initiatives on organic farming statistics

Ana Martinez[24]

Following the priorities established by the European Commission in 2002, Eurostat[25] created a new unit responsible for rural development and food safety in July 2002. In April 2003, that unit was given the responsibility for co-ordinating organic farming statistics inside Eurostat. Since then, the team responsible for food safety statistics has taken on the co-ordination role.

Food safety and organic farming

The object of food safety statistics is to provide a framework for the quantitative evaluation of data on the safety of products used for human or animal consumption on the territory of the Member States, irrespective of whether these products are manufactured within the EU or imported. Products that carry a label which indicates a type of soil or cultivation method, where the product was produced, processed and marketed etc. are also included. They are described as "products with distinctive marks" and include organic products, together with Genetically Modified Organisms (GMO) and products with other quality labels (Protected Denomination of Origin, etc.).

The first action taken by Eurostat in the domain of food safety statistics was to make an inventory of data available in Member States and Candidate and EFTA countries. This inventory covered all issues related to food safety, including organic products. Also in 2003 some priority areas and a first timetable to analyse them were defined. One of the priority areas to be extended in 2004 is statistics on products with "distinctive marks". A Task Force has recently been set up to analyse how to improve the statistics available on this type of product. The first meeting took place in Luxembourg, 22-23 April and its first conclusions are described below (see Task Force on "products with distinctive marks").

Revision of classifications

The United Nations is carrying out a revision of the Classification of Economic Activities (ISIC). The consultation process started in 2002. The Classification of Economic Activities used within the EU (NACE) is directly linked to ISIC and is also under revision at the moment and a new version of both classifications should be available in 2007. Within this context Eurostat asked Member States if "organic farming" should be considered as an economic activity on its own and if both ISIC and NACE should be modified accordingly.

The majority of countries were not in favour of identifying "organic farming" as an economic activity. However, most of them considered that it was important to make such a distinction in the present classifications of products used to collect statistics: Combined Nomenclature and CPA (Classification of Products by Activity).

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[25] Eurostat, the statistical office of the European Communities, is one Directorate General of the European Commission

Availability of data

Eurostat, in co-operation with DG Agri, collects the number of registered organic operators, organic crop area and crop production, organic livestock and animal products, and industrial organic production.

Number of registered organic operators

Member States provide the number of organic farmers (producers), the number of organic processors and the number of importers of organic products as well as the number of organic operators involved in more than one of these three activities. For each group they also provide the number of new operators within the reference year and the number of withdrawals.

The table below provides an overview on the data available at the beginning of April 2004:

Table 1: Number of registered operators

	2002	2001	2000	1999	1998	1997
European Union ☹	:	:	:	:	:	:
Belgium	✓	✓	✓	✓	✓	✓
Denmark	✓	✓	✓	✓	✓	✓
Germany	✓	✓	✓	✓	✓	✓
Greece	:	:	✓	✓	✓	✓
Spain	✓	✓	✓	✓	✓	✓
France	✓	✓	✓	✓	✓	✓
Ireland	✓	✓	✓	✓	✓	:
Italy	✓	✓	✓	✓	✓	✓
Luxembourg (Grand-Duché)	✓	✓	✓	✓	✓	✓
The Netherlands	✓	(✓)	(✓)	(✓)	(✓)	:
Austria	(✓)	✓	✓	✓	✓	:
Portugal	:	✓	✓	✓	✓	✓
Finland	✓	✓	✓	✓	✓	✓
Sweden	✓	✓	✓	✓	✓	✓
United Kingdom	(✓)	:	✓	(✓)	✓	:
Norway	✓	✓	✓	✓	✓	✓

✓: Only organic producers (organic farmers)

Organic crop area and organic production

Member States provide the organic crop area both under conversion and fully converted. This information broken down by crop should also be provided. Unfortunately only one country provides information on organic crop production. The table below provides an overview of the data available at the beginning of 2004.

Table 2: Organic farming area, by crop

T: total area. No break down by crop.

	2002	2001	2000	1999	1998
European Union ☹ ☹	:	:	*(T)*	*(T)*	*(T)*
Belgium	✓	✓	✓	✓	✓
Denmark	✓	✓	✓	✓	✓
Germany	*(T)*	*(T)*	*(T)*	*(T)*	*(T)*
Greece	:	:	✓	✓	✓
Spain	✓	✓	✓	✓	✓
France	✓	✓	✓	✓	✓
Ireland	✓	✓	✓	*(T)*	*(T)*
Italy	✓	✓	✓	✓	✓
Luxembourg (Grand-Duché)	✓	✓	✓	✓	✓
The Netherlands	✓	✓	✓	✓	✓
Austria	*(T)*	*(T)*	✓	✓	*(T)*
Portugal	*(T)*	*(T)*	✓	✓	✓
Finland	✓	✓	✓	✓	✓
Sweden	✓	✓	✓	✓	✓
United Kingdom	✓	:	✓	*(T)*	*(T)*
Norway	✓				

Industrial production (processors, by economic activity)

Member states should provide the number of organic processors broken down by economic activity, e.g. processing and transforming meat and meat products, manufacture of dairy products, processing of fruit and vegetables, etc. The breakdown is based on NACE (Classification of Economic activities used within the EU). Seven countries provide this type of information.

Availability of data in candidate countries

The table below summarises the information available in candidate countries. This table was constructed on the basis of the inventory made by Eurostat and corresponds to the situation at the end of 2003. This data is not yet available at Eurostat.

Table 3: Availability of data in Candidate countries

	Operators	Crop Area	Crop production	Livestock
Czech Republic	X	X	X	X
Estonia	X	X	X	X
Latvia	X	X	X (vol +val)	X
Lithuania	X	X	X	X
Poland	X	X		
Slovenia	X	X	X	X
Slovakia	X	X	X	X
Bulgaria	X	X	X	X
Romania	X	X	X	X

Task Force on products with "distinctive marks"

The objectives of the Task Force set up by Eurostat were to complete the inventory of data available and its methodology, to select relevant information, and to propose statistical indicators and a common methodology to build them.

The Task Force met for the first time in Luxembourg, 22-23 April 2004 and will continue its work in order to construct some proposals to be submitted to the working group on food safety statistics in November 2004.

From the methodological information provided by the participants in the Task Force it appears that, in most cases, the information comes from administrative sources. It is provided by the certification bodies and covers all registered organic operators. Data is collected annually. Information on organic crop area and livestock is widely available while information on trade, consumption and prices is almost non-existent.

The current practices in the countries point to some possible alternatives to improve the availability and quality of statistics on organic products, whilst trying to avoid any unnecessary burden on respondents and to minimise as far as possible the costs of the data collection. They include optimising the use of registers, re-using the information which is already available or adding questions to existing surveys.

Some issues should be analysed in depth: is it really necessary to modify the classifications of products to collect good quality statistics on organic products? The conclusions of the Task Force were:

Objective for 2004: consolidate and improve quality of data available

- Organic operators
- Organic farming area: definition, level of detail
- Complete data on livestock
- Necessary improvements: crop production, animal products
- Production and trade: should the classification of products be revised? If yes, at which level of detail?

Objective for 2005: analyse the possibilities for collecting information on the consumption of organic products.

Organic agricultural statistics and information at the United Nations Food and Agriculture Organisation: initiatives, opportunities and challenges

Robert Mayo[26]

Background

The United Nations Food and Agriculture Organisation (FAO) has a variety of initiatives underway related to organic agricultural statistics and information. This paper provides an overview of what is on-going in developing an organic agriculture information collection system and improving the national and international classification of organic agricultural commodities.

Organic agriculture information management system (Organic-AIMS)

Initial work to develop an organic agriculture information collection system began in FAO during 2001/2002. A draft questionnaire on organic production and trade was developed and tested in selected countries. An electronic 'virtual' questionnaire is currently being developed for organic agriculture data collection from FAO member countries.

The FAO developed an organic agriculture website (www.fao.org/organicag) that provides a gateway to FAO and other information resources. The general aim of this system is to:

- assist member countries, including both the public and private sectors, to rapidly and easily access a global and up-to-date picture of the state of the art of organic agriculture, including both textual information and statistics;
- provide support to the organic community through the reciprocal exchange of data and information on organic agriculture in different countries; and
- serve as a 'home' for FAO statistics on organic production and trade.

The Organic-AIMS database was developed for input, storage and analysis of existing country data on organic agriculture. Organic-AIMS has been designed to include both textual and statistical information.

FAO's role in Organic-AIMS is to create a platform for global data collection and retrieval on organic agriculture. After the release of the first version of Organic-AIMS, FAO will establish a network of national, regional and international partners that will be responsible for maintaining their part of the system. In areas where FAO is operating an organic agriculture project, it has started building capacity in order to transfer the responsibility for updating country profiles (including also national organic agricultural statistics) to the competent public agency. International institutions that have a comparative advantage (and interest) in this system could become partners in the form of data providers. FAO will coordinate data processing and information management to assist collaborating institutions, which will maintain and update their region/country information in the longer term.

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The development strategy of Organic-AIMS is based on the implementation of a single global information system that will promote, in a second phase, the development of national information systems with similar structures, linked by a communication network. In the long term, end users (i.e. producers, operators, traders, researchers and institutions) will be able to access the network through their own national system. FAO aims to link with initiatives on organic agriculture statistics at all levels, with a view to ensuring consistency and communication between different information systems.

Task force on harmonization and equivalence in organic agriculture

A task force comprising FAO, United Nations Conference on Trade and Development (UNCTAD) and the International Federation of Organic Agriculture Movements (IFOAM) was established to review existing organic agriculture standards conformity assessment systems; formulate proposals for harmonization, market access, etc.; and provide advice and information to stakeholders.

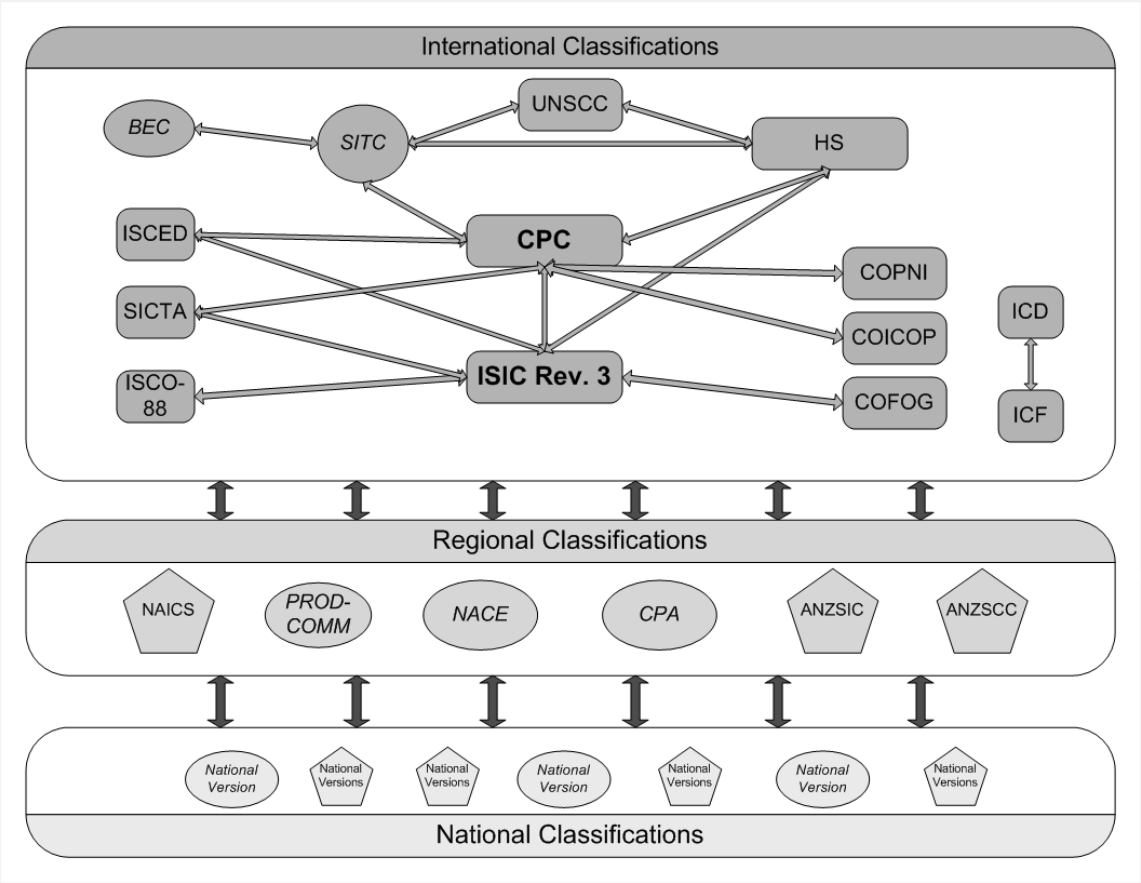
International classifications and organic agriculture

The international family of economic and social classifications is comprised of reference classifications that have been registered into the United Nations Inventory of Classifications, reviewed and then approved as guidelines by the United Nations Statistical Commission or other competent intergovernmental board on such matters as economics, demographics, labour, etc. It also includes those classifications on similar subjects that are registered into the Inventory and are derived or related to the reference classifications and are primarily, but not solely, used for regional or national purposes. Currently, organic agriculture is not included in any of the international classifications. There are possibilities for the inclusion of organic agriculture in the following international classifications on product or activity for production and trade of agricultural products:

- International Standard Industrial Classification of All Economic Activities, Revision 3.1 (ISIC)
- Central Product Classification Version 1.1 (CPC)
- Standard International Trade Classification, Revision 3 (SITC)
- Harmonized Commodity Description and Coding System (HS)

The United Nations Statistics Division is the custodian for ISIC, CPC and SITC. The World Customs Organisation is the custodian for the HS. Figure 1 provides an overview of the relationships of the international classifications family.

Figure 1: International classifications family



Maintenance of international classifications

The maintenance of the United Nations classification family is coordinated by the Expert Group on Classification, with the technical work being carried out by the Classification Technical Subgroup. The Expert Group ensures harmonization and convergence among classifications in the family; and recommends, examines changes/updates and adopts schedules for updates. The Expert Group reports to the United Nations Statistical Commission. Changes to the ISIC, CPC and SITC are carried out by these groups in consultation with countries and international organisations. The World Customs Organisation is the custodian of the Harmonized Commodity Description and Coding System (HS) and manages the changes/updates. The above-mentioned organisations or groups would be the contact mechanism for submissions on organic agriculture to be included in these classifications.

The Expert Group on Classification has been reviewing the ISIC and CPC for several years, with the revision process to be completed by 2007. The draft versions of the revised classifications will be circulated to countries for comment later in 2004. The issue of organic agriculture has been discussed extensively with the Expert Group on Classification and the Classification Technical Subgroup. The Technical Sub-group considered that organic agriculture could possibly be supported on an activity basis in the ISIC classification; however no evidence was available that this distinction is supported at the national level. Separate identification of activities at the national level would be necessary. Discussions regarding organic agriculture and the CPC will be held later in 2004.

FAO and classification of organic agriculture

The most widely-used definition of organic agriculture in the FAO comes from the Codex Alimentarius Commission (1999):

> "Organic agriculture is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems.
>
> This is accomplished by using, where possible, agronomic, biological, and mechanical methods, as opposed to using synthetic materials, to fulfil any specific function within the system."

The Codex aims to protect health, ensure fair practices in food trade and be a collection of internationally adopted food standards presented in a uniform manner. The Codex definition describes the organic production process, rules of production and preparation, criteria for substances allowed in organic production, etc.

Opportunities and challenges for organic classification

The major challenge for organic classification is that there is no standard classification of organic agriculture. There are definitions at the national level, but these vary between countries. The CODEX definition of agriculture, whilst it provides an activity basis for classification, provides no criteria to measure the activity. The custodians of international classification systems such as ISIC and HS require that a minimum level of the activity be demonstrated before it will be considered for inclusion in the classification system. Currently, in both quantity and value terms organic agriculture generally accounts for less than five per cent of the total production in each commodity for a country.

Consolidation of national definitions of organic agriculture is a high priority. This consolidation must also include the development of criteria for measurement, as well as implementation of consistent measurement systems and processes. For organic agriculture to be included in the various international classification systems, a strong case will need to be developed based on statistical evidence of the levels of production and trade.

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Stakeholder perspectives on the need for data and the role of private and public institutions

Victor Gonzálvez[27]

Abstract

Organic food and farming offer real benefits for the environment and health. Organic farming has an important contribution to make, alongside other sustainable farming methods, to the future prosperity of our society and the choices available to consumers. The expansion of organic agriculture needs an adequate policy framework which supports the promotion of organic food consumption. Until now, the greatest efforts to develop organic markets have been made by producers' and consumers' organisations which value organic production methods and are prepared to pay a premium for food produced to organic standards.

Although the area devoted to organic production has increased rapidly in recent years and, in most European countries, organic farming receives additional financial support, it is difficult to obtain accurate data about organic markets from the official statistics. The first efforts to compile worldwide statistical data on supply and demand for organic foods were also made by organic "stakeholders", in cooperation with some researchers. If we want to continue promoting and developing organic markets, more transparency and accurate statistical data on organic and conventional markets will be needed. This can only happen with the collaboration and participation of all organic stakeholders.

Introduction

Until now, the successful development of the organic markets has been a result of strong stakeholder involvement (producers, processors, traders) in the promotion and dissemination of this kind of product, with very little official support. Organic farming and food offer real benefits for the environment and many consumers value organic production methods and are prepared to pay a premium for food produced in accordance with organic standards. This shows the commitment of the organic farming stakeholders to ensuring a sustainable future.

On the other hand, there are currently several organic actions plans at national or regional level which try to ensure that organic farmers can take advantage of the opportunities offered by the rising consumer demand for organic food. In these plans some support actions are directed at enhancing organic markets.

The first initiative to compile global statistical data and general information on organic agriculture came from organisations linked to organic sector (Willer, 1998). Since then global organic statistical data have been revised and published on an annual basis (Willer/Yussefi 2004). The methodology used to gather and process the statistical data started in a simple way with a survey of IFOAM members' organisations, certifications bodies, producers, individual experts and researchers connected to IFOAM, who were asked to contribute statistical data for their countries. The most important aspect of this particular system is the involvement of the stakeholders (certifiers, producers and researchers). This statistical data is now being

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used by several governments and authorities to support regional or national actions plans (Junta de Andalucia, 2001). This is an example of the importance given to statistical data by the organic movement. In some cases this initiative has stimulated the authorities to start to compile statistical data on organic farming.

Other researchers linked to the organic movement (Foster & Lampkin, 2001), have made some attempts to document organic production patterns in Europe, in cooperation with organisations in the organic movement. International organisations (CCI/ICTA-UNCTAD, 2001), have recently published some global data on organic markets.

Why do we need statistical data?

Without market data the stakeholders (producers, processors, traders, etc.) cannot identify deficits and oversupply in the markets and, hence, which products are worth producing and selling. If there are no data available, the producers and marketers may not perceive demand where it may actually exist. This is particularly important as the supply of organic products cannot be increased quickly because of the lengthy conversion period.

An important pre-condition for the development of the organic sector is market transparency, which helps stakeholders to act and react adequately to changes in the market. The lack of market transparency hinders market analyses and forecasts. Furthermore, the lack of statistical data often results in ongoing levels of reduced competition and adds an extra cost for market stakeholders in obtaining the information (Michelsen et al., 1999). In some small and immature markets transparency is absent and this situation promotes different, and sometimes higher, price levels in the market.

On the other hand, policy-makers are taking decisions on matters like *conversion support*, *action plans*, *regulations,* and they need also quality data in order to achieve the desired results.

Statistical data helps to define the potential for developing the environmental, ethical and regional product characteristics of organic farm outputs. The data will also help to contribute to the development of marketing institutions and strategies that correspond to the growing consumer demand.

If we want to develop organic agriculture as a real alternative for food production we have to increase the share of organic products in the food market. In order to increase the share both at the production and the market level, more marketing skills are needed. Most stakeholders in the organic sector (producers, processors, certifiers, trader, retailers, etc.) currently have only limited access to raw data, and no access to quality data. A system that combines best access with the participation of all stakeholders will assist in developing organic markets.

Requirements of a statistical data system

Accurate and regular trade statistics remain a key element for those seeking out market opportunities. The statistical data must be of good quality (accurate, reliable and significant). Therefore in order to give some significance to the data, you will always need some stakeholders - and not just specialists - working together in the collection and processing of statistical data and asking the right questions.

Very often at the farm level the data only make sense when different levels are combined and when the farmers interpret them themselves. At this level, producers could also benefit from this data by comparing the efficiency of their farm with other farms.

To stimulate and involve more stakeholders in the process of gathering, collection, analysis and dissemination of statistical data, we also need adequate participatory tools for the task. This means that the tasks must be easy to carry out, and the questionnaires need to be relevant for the stakeholders and not be targeted only at researchers' aims.

Especially in very small markets, some traders and producers are unwilling to exchange their knowledge about organic farming. Companies engaged in the processing or marketing of organic food are normally reluctant to provide market data that might be useful for competitors.

If stakeholders have a better understanding of the use of this data, there will be greater cooperation. If stakeholders are treated only as a source of information, without understanding what it is needed for, they will not cooperate in this task. It is therefore important that stakeholders are involved in the process of establishing an information system for organic markets.

The role of IFOAM[28]

As described above, the private organisations from the organic sector - with the participation of the stakeholders - have played an important role in developing statistical information systems for organic markets on the supply side. The **IFOAM EU Regional Group (EURG)** as an independent regional group within IFOAM, formally constituted in February 2000, represents some 300 IFOAM members in the EU (of the total 700 member organisations in over 100 countries worldwide), covering the complete range of organic professional organisations and consumer associations, including producer associations, research institutions, certification bodies, consultants, development organisations, processors, wholesalers and retailers.

Some of the aims of the Group are related to "general information systems" including statistical data for organic markets. This aims are: t*o enable the exchange of information both between IFOAM members in EU countries and with other bodies worldwide, to assist in the coordination and dissemination of research in organic food production throughout the EU, and to work towards the establishment of common policies within the Group in relation to the above.*

Therefore the EURG has agreed to participate in the Steering Committee of the EISfOM Project. Our role in organic research projects or concerted actions, like this one, is to participate especially in the dissemination of the results. But we are also working to achieve an effective "European" Organic Action Plan and, in the longer term, working with other like-minded organisations to lobby for a more sustainable Common Agricultural Policy (CAP). To contribute to both aims, i.e. to develop organic markets and to gain more support for organic agriculture from the CAP, we also need a European information system for organic markets.

We also welcome the intention to develop a network for reporting quality data on organic food production, trade and consumption in the European Union, to meet the market analysis needs of food producers, processors, distributors and retailers considering investments/conversion, and the needs of regulators and policy-makers to monitor the impacts of this rapidly growing sector, including traceability and sustainability indicators.

The specific objectives of this project are to provide relevant recommendations to the EU in order to better prepare and support data collection - including the evaluation of current data collection systems for organic and conventional markets, the development of tools and pilot data collection studies, as well as

[28] IFOAM = International Federation of Organic Agriculture Movements

processing and quality management systems for various levels and national conditions – and this is therefore an interesting initiative in which we are very happy to be involved.

There are also some other initiatives linked to the IFOAM EURG, which need more cooperation in order to avoid potential overlap. This is the case for the **European Network of Organic Farmers (ENOFO)** who wish to establish a price observatory, operating from Italy, to gather and exchange information on organic market prices (Pinschof, 2004) for different products in the EU. The aim is also to achieve more transparency about prices and volumes of trade in organic food. Operating criteria for this kind of initiative must be sought to ensure that the farmers' interests are taken into account and that the system is comparable and complementary.

The **International Observatory for Organic Oliviculture** is also working on data collection in order to offer comparable reports on the situation of organic olive oil products in several Mediterranean countries. This Observatory, established in 2002 in Bari (Italy), as a cooperation network of different institutions and organisations[29], including the IFOAM Mediterranean regional group Agribiomediterráneo, aims to gather and offer continuously up-dated statistical data (Biol, 2002). The initiative is an example of the cooperation of public institutions and private stakeholders in the management of statistical market information.

Some other initiatives from municipalities or private stakeholders are being launched via the internet, especially with the aim of gathering and sharing information about organic market prices for different products, such as the one in Lleida (Spain) in cooperation with conventional marketing institutions which shows how stakeholders can be involved in gathering and providing information using simple and accessible tools (Gonzálvez, 2003).

At BioFach 2004 in Nuremberg, the **IFOAM Trade Forum** was founded as a global network for the organic business companies. Its objectives are to create growth in both international and local trade in organic products worldwide and to develop and encourage ethical and sustainable business practices. A board[30] of five persons was elected.

The IFOAM Trade Forum wants in particular to promote the global sharing of market information, the influence of traders in political questions like support, action plans, regulations of organic food and farming and the improvement of ecological and social circumstances of food production, trade and consumption (Thimm, 2004). So far few members have joined the initiative.

The role of public institutions

The official data which is published usually includes the total agricultural production without differentiating between conventional and organic farming. Data about the amount of production, consumption, foreign trade, consumer and producer prices are not always available in every market or country, even in the EU. In some countries, the authorities have taken the initiative to gather and process organic statistical data to evaluate the growth of the organic supply, but the data are not included in the general statistical information system of conventional farming (MAPA, 2000). But in every country official data are being gathered for the conventional agri-food sector by the public institutions, and this should facilitate the integration and collection of organic market data through introducing small changes into these systems and increasing stakeholders' participation.

[29] Università di Bari, IFOAM-AgriBio Mediterraneo and the Instituto of Rural Development from Andalusia

[30] Board members are: Mrs. M. Gardfjell, Coop Sweden (chair), Mr. M. Retzloff, Aurora Dairy, USA (vicechair), Mrs. C. Haest, Delhaize Consultant, Belgium, Mukesh Varma, Trader, India, Mr. C. Thimm, Germany.

The competent authorities or official and impartial institutions could make it obligatory for certification bodies to provide more information about the organic markets.

Public institutions must work together with the certification bodies, organic stakeholders and other interest groups, to collate and publish sector by sector data on organic production and manufacturing as well as the wholesale and the retail market. This will benefit the agri-food industry through more comprehensive knowledge of the precise nature and scale of organic trade, which will also help to identify the opportunities for producers to increase their market share.

Conclusions

Although the area devoted to organic production has increased rapidly in recent years and organic farming now receives additional financial aid in most European countries, it is difficult to obtain accurate data about organic markets from the official statistics (Hamm et al., 2002). To analyse the organic markets, some **quality statistical data** are needed, but at present there are no official data in most countries. Therefore it is desirable to collect and process detailed data on organic farming and to integrate them with conventional statistical data.

To obtain quality statistical data (accurate, reliable and significant) on organic agriculture we also need more involvement (and not only competition) from all organic stakeholders in all the tasks from gathering to processing the information.

Since it is expected that organic farming and organic food will have an important contribution to make to the future prosperity of our society and the choices available to consumers, public institutions must cooperate more closely with private stakeholders in order to gather information on the organic market. Due the fact that organic food and farming will play an important role in the further development of a sustainable food chain, public institutions must cooperate and support joint actions with private stakeholders to establish policies targeted at the positive development of organic farming.

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Quality assurance issues in DCPS for agricultural commodities: an analysis of the theoretical and analytical tools and methods used in the assessment of data quality

Guido Recke[31]

Introduction

Quality assurance is a central issue for national and international statistical institutions dealing with agricultural commodity data. This paper focuses on the methodology related to data collection and processing. In section two a short definition of quality is given. In section three, general quality assurance concepts are introduced. Recent approaches to quality assurance in national and international statistics are also analysed. In section three. The experiences of Statistics Denmark are described. In the last section offers some concluding remarks.

Definition and dimensions of data quality

There is a general ISO 8402-1986 definition of quality:

> Quality is defined as: "the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs".

The OECD quality framework states that there are now other important dimensions in addition to accuracy, which was formerly the main issue. Quality is a multi-dimensional concept. There are special definitions of quality from several statistical institutions but the one which is most relevant for the EISfOM project is Eurostat. This definition is based on the following six points:

1. Relevance

Relevance is described as the degree to which statistics meet current and potential users' needs. It refers to whether all the statistics needed are produced and the extent to which concepts are used (definitions, classifications etc.) which reflect user needs.

2. Accuracy

Accuracy in the general sense denotes the closeness of computations or estimates to the exact or true values (Marriott, 1990).

3. Timeliness and punctuality

Timeliness of information reflects the length of time between its availability and the event or phenomenon it describes. Punctuality refers to the time lag between the release date of data and the target date when it should have been delivered.

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4. Accessibility and clarity

Accessibility refers to the physical conditions in which users can obtain data. Clarity refers to the statistics' information environment: appropriate metadata provided with the statistics; graphs, maps and other illustrations; availability of information on the statistics'; quality; assistance offered to users by the NSI.

5. Comparability

Comparability aims at measuring the impact of differences in applied statistical concepts and definitions on the comparison of statistics between geographical areas, non-geographical domains or over time.

6. Coherence

Coherence of statistics is therefore their adequacy to be reliably combined in different ways and for various uses.

Problems may arise because there is a trade-off between these components. For example, there can be a trade-off between accuracy and timeliness. The other international statistical institutions like OECD, Statistic Canada etc. in most cases use similar definitions or dimensions of data quality. These definitions are not static and will change over time as new issues arise. In addition, cost-efficiency is an important factor that has to be considered in the possible application of quality dimensions.

Indicators are given for every quality dimension in the table below.

Table 1: Quality dimensions and selected indicators

Quality dimension	Indicator selected
Relevance	User satisfaction index
Accuracy	Coefficient of variations for key statistics
	Unit response rate
	Item response rate
	Editing rates and ratio
	Imputation rates and ratio
	Frame error rate
	Revision rate
Timeliness and punctuality	Punctuality of time schedule of effective publication
	Average time between the end of reference period and the date of the first results
	Average time between the end of reference period and the date of the final results
Accessibility and clarity	Number and types of means used for disseminating statistics
Comparability	Number and proportion of the statistical products that have indicated differences in concepts or/and measurement from the European norm
	Length of comparable time series
Coherence	Differences between annual and short-term statistics

Source: Eurostat (2003), Handbook "How to make a quality report"

To get an easy to handle index of quality, these quality dimensions (Figure 1) have to be weighted to arrive at an overall quality index.

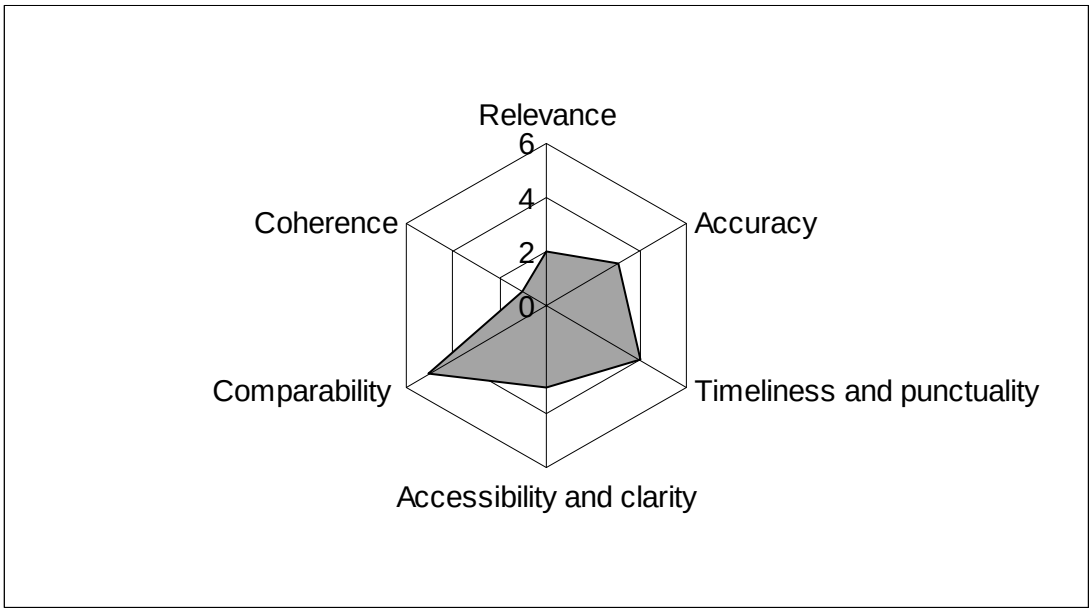

Figure 1: Quality dimensions

Source: Own illustration

A big problem with a quality index like this is that not all indicators can be measured and reduced to numbers because they are qualitative. Proxy quantitative measures have to be incorporated, but as a result the definition of the measures has an impact on the quality index. Such a quality index should therefore be limited to internal use in the statistical institutions.

Quality assurance concepts

In management literature a whole range of quality management concepts are described. These are concepts that are adapted to the needs of the national statistical institutions. Most of the national statistical institutions take total quality management (TQM) as an approach to improve the quality of their statistics. TQM is an approach that can be used in several organisations to continuously improve the quality of all processes, products and services. The strength of TQM lies in taking an overview of the processes aimed at adding value to the customer through continuous improvement, in which all the organisation's members should be involved. However, it is possible to apply this approach in practice in many different ways. TQM offers no guidance on its practical implementation. Furthermore, this concept has to be adapted to the situation where there is a statistical chain between individual countries and international institutions like Eurostat. This weakness means that other models should be considered.

The EFQM Excellence model: the European Foundation for Quality Management (EFQM) developed a TQM-based quality model. This is an applied model with 9 criteria and 32 sub-criteria covering all aspects of TQM.

Other approaches are the Balanced Score Card (BSC), a tool to measure the quality of an organisation, ISO with a focus on documenting, certifying and checking, Business Process Redesign (BPR), an approach used for fundamental changes in organisation, and Six Sigma, an approach based on continuous improvement to shorten cycle times and increase yields.

These approaches can be the basis for the development of a quality assurance concept for organic data in agriculture. This should follow from discussions about the standardisation of methods used to improve the overall quality of the statistics. The choice has to be made on the best current methods, minimum standards, quality guidelines on what is and is not important, and recommended practices described in a handbook giving examples of good practice.

Practical experiences of Statistics Denmark

Poul Henning Larsen of Statistics Denmark describes the way quality control is carried out on a micro and macro level by Statistics Denmark for turnover data on organic products in retail shops for the year 2003 (see paper by by Poul Henning Larsen in these proceedings).

Micro Level

On the micro level, Statistics Denmark has reports from ten respondents, of which seven are supermarket chains and three are wholesalers. When they record volume and value for specific products, the price per volume is calculated. Average prices for all respondents by product are then calculated and the deviance from the average price per product for each respondent is checked. If the deviance is too big, they contact the respondent.

Furthermore as a rule, wholesaler prices must be lower than supermarket prices.

Prices and assortment are checked against the supermarket's weekly advertising. If there is a discrepancy, the respondent is contacted. So far all respondents have been very positive when they asked to supply further information.

Information is subsequently transformed into volume and value on the retail level.

Macro level

On a macro level they check their information with various sources:

- Information from various stakeholders
- The new Statistic on Foreign Trade of Organic Products from Statistics Denmark
- National Account from Statistics Denmark
- Household Budget Survey from Statistics Denmark
- Statistical information from various sources: The Danish Dairy Board, The Danish Veterinary and Food Administration, OMIaRD report (Hamm et al., 2002)
- etc.

In most cases the data from these sources cannot be used directly for validation purposes, but after calculation assessment, it gives an impression of the quality of the data and, if necessary, then how to impute data from some of the sources mentioned above.

As this small example shows, Statistics Denmark faces the problem in organic agriculture that very little information is available and often there are insufficient resources to carry out a good analysis.

This seems to be a general problem in organic data collection and processing which we have to deal with. This leads to the problem of data harmonisation. The advantages and disadvantages of harmonisation are compared in table 2; it shows that harmonisation has great advantages like comparability and reliability of data, but also disadvantages like the high cost of additional data collection and difficulties in modifying existing surveys or establishing new ones.

Table 2: Advantages and disadvantages of harmonised data

Advantages	Disadvantages
Harmonised data	
Data sources normally are well known	Many data gaps exist
Data comparability normally is high	High costs of additional data collection
Cross checks between data from different countries are possible (e.g. intra-EU trade)	Difficult to modify existing surveys or to establish additional surveys
Data reliability is high	
Data availability in the future is assured	

Conclusion

This paper gives an overview of the definition of quality in statistics and the criteria which can be used. It then shows that quality assurance concepts can be important for improving the quality of data collection, processing and dissemination. In many statistical institutions, such as Eurostat, quality assurance concepts are used to improve the overall quality of the services they provide. TQM, EFQM and other concepts are an integral part of quality management. The experiences of Statistics Denmark show that easy and robust quality controls can be used to get reliable and accurate data. But the key question will be to decide on which level data quality assurance should be implemented in the national statistical institutions. An easy-to-implement quality control system with low cost should be the basis for development into a complete TQM concept with a standard above the minimum. This will be an important part of creating a harmonised system in an enlarged Europe with Eurostat as the central statistical unit. As elsewhere in public administration, budgets have been cut in recent years. Therefore the questions of how to implement a new system for organic products and the appropriate quality assurance approach must be debated by the politicians and responsible statisticians.

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Data received from Member States in accordance with Regulation 2092/91

Per Ahle[32]

In principle the Commission receives four groups of data from the Member States:

- List of inspection bodies and operators (Article 15)
- Import authorisations (article 11.6)
- Seed (1452/2003, article 12)
- Production: crop (hectare) and animal production (number) or if possible in kg. (Not required in the regulation)

1) The list of inspection bodies is published once a year in the Official Journal. The list of operators is not published.

2) The import authorisations granted according to article 11.6 are listed in the online database OFIS[33]. The database covers imports from all third countries except Argentina, Australia, Israel, Costa Rica, New Zealand, Switzerland, EFTA countries. The database is open to all.

The following information is registered: country of origin, inspection body and certification body, importer, exporter, start date and end date, type of product. This system will probably be changed during 2005.

3) The competent authority of the Member State shall, before 31 March each year, send a summary report covering all authorisations to the Commission and to the other Member States. The information shall also be published in the database of the Member State.

For each species and variety for which an authorisation to use non-organic seed has been granted, the report must indicate the number of authorisations and the total amount of seed (kg). The purpose of the reports is to inform seed producers about the need for organic seed in the different Member States and to ensure that the inspection bodies apply the regulation in a similar way. The first report will be available in 2005.

4) Even if this is not required according to Regulation 2092/91, the Commission has agreed with Member States that they should submit an annual report with data about the area (number of hectares per crop and, if possible, also the total yield per crop). From 2000 similar information on the animal production should be submitted. Most Member States are able to submit the information about the number of hectares and animals but not about production and yields.

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Group 1: Farm Production - Farm Structure Survey (FSS) and administrative (2092/91) data

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Results from the Community farm structure survey and Council Regulation (EEC) No. 2092/91 reporting: organic farming data and derived agri-environmental indicators

Koen Duchateau[36]

Abstract

The paper discusses the data related to organic farming which is collected by the Community farm structure survey (FSS) 1999/2000 and under the reporting requirements of Council Regulation (EEC) No 2092/91 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs. The methodology of data collection and the main difficulties in the interpretation of the results are described for both data sources. A proposal for an agri-environmental indicator related to the organic farming area, based on data from these two sources, is presented.

Introduction

Over recent years there has been an increasing demand for statistics related to organic farming. To respond to this request, several initiatives have been launched to improve the current situation. Amongst others, since the 1999/2000 survey the Community Farm Structure Survey has contained a variable on organic farming (or conversion to OF). Since the early 90's DG Agriculture has collected yearly administrative data from the Member States related to organic farming production according to Council Regulation (EEC) No, 2092/91.

Methodology/Methodological issues

Community farm structure survey

The purpose of the Community farm structure surveys is to obtain reliable data on the structure of agricultural holdings in the European Union, particularly regarding land use, livestock farming and labour force. Community farm structure surveys have been carried out regularly since 1966/67 at roughly two-yearly intervals. Approximately every ten years a full survey is carried out in the form of an agricultural census. The 1999/2000 survey was the third for the EU-15. It was carried out in the form of an agricultural census and provides results at regional as well as national level. More detailed information on the methodology of the structure surveys can be found in 'Farm Structure Survey 1999/2000 – National Methodological Reports'.

The advantage of including a variable on organic farming in the FSS is that the variable can be cross-linked to all the other variables in the survey, opening up a wide range of possible analyses. Therefore, in

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the FSS 1999/2000 for the first time a variable (C/05/a) on organic farming (or conversion to) was included in the survey under the heading 'type of tenure'. The choice of answer was limited to yes/no. The definition of the variable was fixed as follows:

> *'Information is to be collected on whether or not the holding practises agriculture according to certain set standards and rules specified in Council Regulation 2092/91, as last amended by Commission Regulation (EC) No. 1488/97 or, where applicable, the most recent legislation, on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs, and/or the equivalent Community or national rules for organic production of livestock. The regulation sets up a harmonised framework for the labelling, production and control of agricultural products bearing or intended to bear indications referring to organic production methods. According to the regulation's rules the production must take place such that the land parcels, and production and storage locations are clearly separated from those of any other unit not producing in accordance with the rules of organic farming. This means, in general, that the field cultivation on the whole holding has to convert to this practice'.*

The main difficulties in the interpretation of the FSS 1999/2000 results were:

- When a holding answered yes to the organic farming variable, it was unfortunately not known if the whole or only a part of the holding was under organic farming (or conversion to).
- Although clearly defined, some Member States gave a different interpretation to what had to be collected under the heading 'organic farming (or conversion to)'. This has an impact on the comparability of the results across Member States.
- In certain Member States there was some confusion with the optional variable (C/05/b) on other low input farming systems or practices.

For the FSS 2003, 2005 and 2007 the variable on organic farming was modified to:

- C/05/a: The utilised agricultural area of the holding on which organic farming production methods are used – in ha/a
- C/05/d: The utilised agricultural area of the holding that is under conversion to organic farming production methods – in ha/a
- C/05/e: Is the holding applying organic production methods also to the animal production? – totally/partly/not at all

The definitions of the variables were modified to:

'Information is to be collected on whether or not the holding practises agriculture according to certain set standards and rules specified in Council Regulation (EEC) No. 2092/91, as last amended by Commission Regulation (EC) No. 473/2002 or, where applicable, the most recent legislation, on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs, and/or the equivalent national rules for organic production. The regulation sets up a harmonised framework for the labelling, production and control of agricultural products, bearing or intended to bear indications referring to organic production methods. According to the Regulation's rules, the production must take place such that the land parcels, and production and storage locations are clearly separated from those of any other unit not producing in accordance with the rules of organic farming. In the case where organic farming production methods are only applied on part of the utilised agricultural area or livestock of the holding, only those specific areas and livestock are to be recorded here.

C/05/a: The utilised agricultural area of the holding on which organic farming production methods are applied. That part of the utilised agricultural area of the holding on which the production is fully compliant with the principles of organic production at farm level as set out in Annex I to Council Regulation (EEC) No. 2092/91. The Regulation makes a difference between areas that are in full compliance with the set rules and

those that are still in a conversion period. Only produce that originates from areas that have been fully converted to the principles of organic production can be marketed with a label that refers to the organic production methods. Under this item are recorded only those areas that have gone through the whole conversion period (see C/5(d)).

C/05/d: The utilised agricultural area of the holding that is under conversion to organic farming production methods. That part of the utilised agricultural area of the holding on which organic farming methods are applied, but where the necessary transition period to be considered fully compliant with the principles of organic production at farm level as set out in Annex I to Council Regulation (EEC) No. 2092/91 has not yet been completed. Under this item there are recorded only those areas that have not gone through the whole conversion period (see C/5(a)).

C/05/e: Holdings applying organic production methods also to the animal production. Holdings where all or part of the animal production is fully compliant with the principles of organic production at farm level as set out in Annex I to Council Regulation (EEC) No. 2092/91 or is in the conversion period to reach such compliance. The Regulation states that normally all animal production on a holding must be reared in accordance with rules on organic production. Only in cases where the buildings, parcels and species are clearly separate, can a part of the animals be raised under different rearing.'

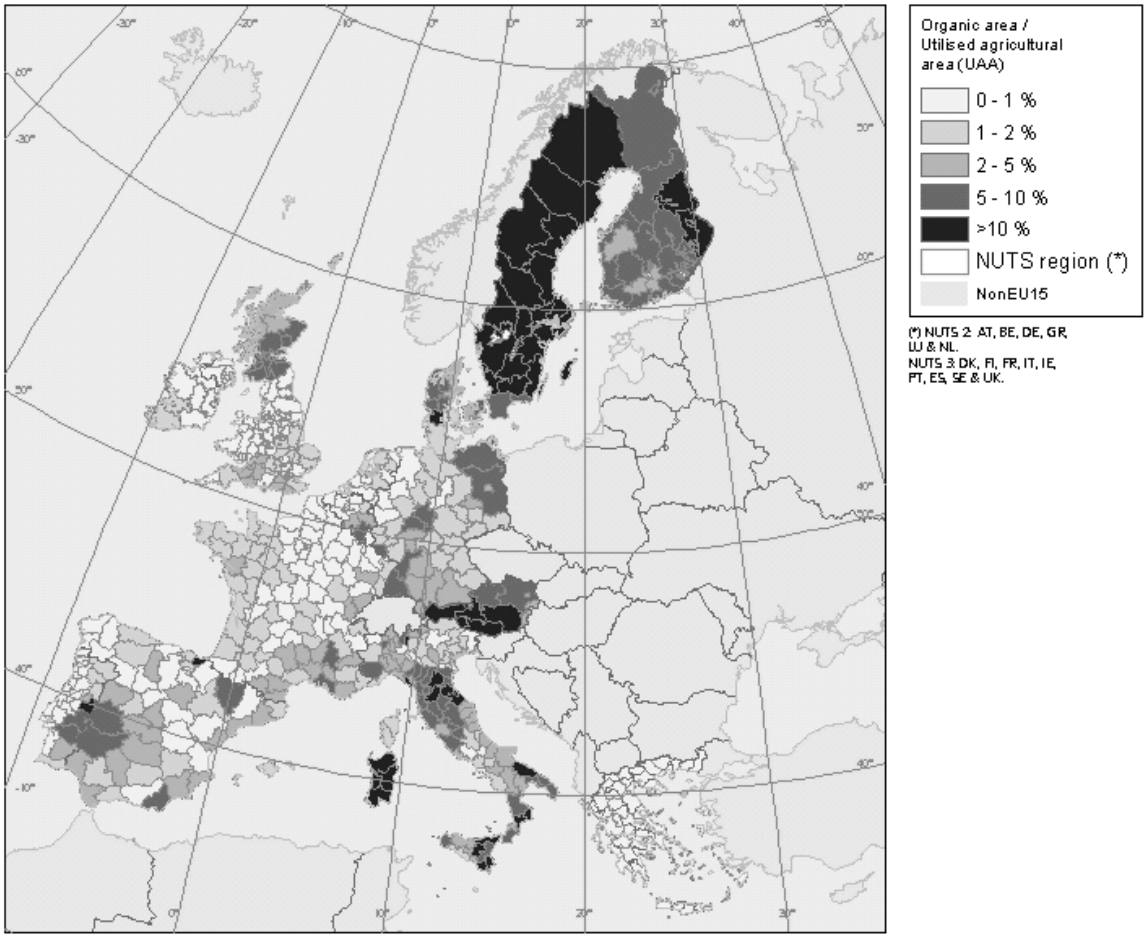


Figure 1: Regional map on the share of organic farming area in the total UAA in 2000.
(For some Member States this also includes areas not certified under Council Regulation (EEC) No. 2092/91)

Source: Community farm structure survey 1999/2000, DG Eurostat

The main difficulties in the interpretation of the FSS 2003 results (available early 2005) might be:

- Representativity of the sample survey may not be assured in the Member States where the share of organic farming in total utilised agricultural area is still small.
- The organic or in conversion areas will be known, but when only a part of the holding is under organic farming, it will not be possible to know which crops are produced organically and which are not.

Council Regulation (EEC) No. 2092/91 reporting

Farming is only considered to be organic at EU-level if it complies with Council Regulation (EEC) No. 2092/91. In this framework, organic farming is differentiated from other approaches to agricultural production by the application of regulated standards (production rules), certification procedures (compulsory inspection schemes) and a specific labelling scheme, resulting in the existence of a specific market partially isolated from non-organic foods. It does not deal with other types of low-input farming, for example integrated production. Council Regulation (EC) No. 1804/1999 supplemented the above regulation by including livestock production.

The organic farming regulation obliges Member States to submit yearly official information on the number of organic operators and the area under organic farming, certified under Council Regulation (EEC) No. 2092/91. Since Member States in the early 1990's used varying formats when submitting data related to organic farming, DG Agriculture, in collaboration with DG Eurostat, drew up a questionnaire with harmonised tables and guidelines in order to facilitate comparison and aggregation at EU level. The yearly organic farming questionnaire asks for information at national level on organic operators (producers, processors and importers), crop areas/yields, livestock production and products and the economic activity (NACE). Recently DG Agriculture launched the Organic Farming Information System (OFIS), containing, amongst others, the reporting tables. OFIS was set up in order to facilitate the electronic reporting via the web. DG Eurostat's unit D6 (Health and food safety) handles the data submitted to DG Agriculture by the Member States.

The main difficulties with the Council Regulation (EEC) No. 2092/91 reporting data are:

- No legal act exists to impose collection of more detailed information related to organic farming
- Different degree of completion of the questionnaire by Member States
- Timeliness of the official data, although this situation is improving

Results

In the framework of the IRENA[37] operation, managed by the European Environment Agency in close collaboration with DG Agriculture, DG Environment, DG Eurostat and DG Joint Research Centre of the European Commission, both data sources are used to compile an agri-environmental indicator related to the organic farming area. This indicator is one out of a list of 35 Commission agri-environmental indicators taken up in COM(2000)20 – Indicators for the integration of environmental concerns into the Common Agricultural Policy - and COM(2001)144 – Statistical information needed for indicators to monitor the integration of environmental concerns into the Common Agricultural Policy.

[37] Indicator Reporting on the Integration of Environmental Concerns into Agricultural Policy

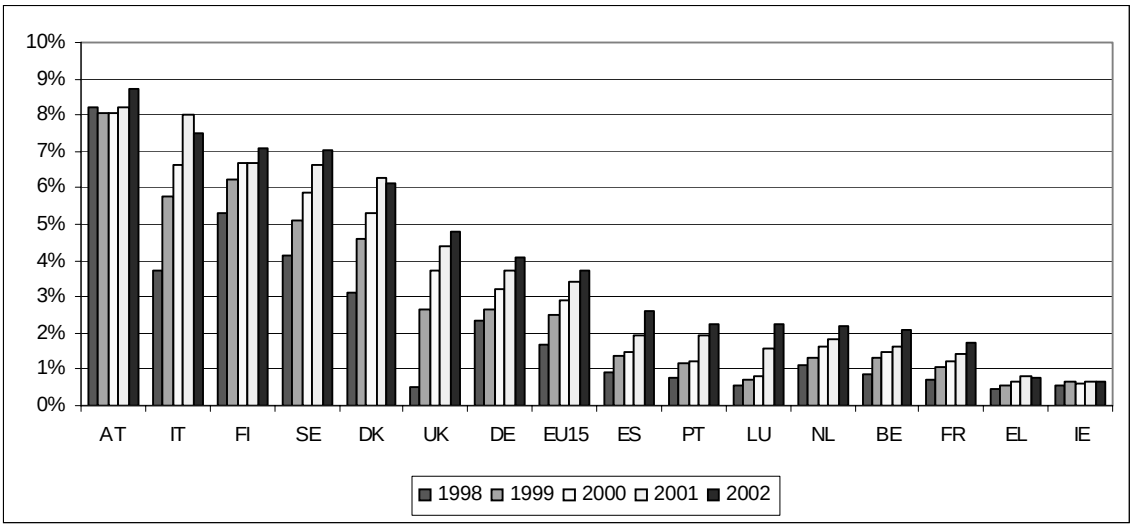
Community farm structure survey

The FSS 1999/2000 results show a considerable regional variation of the indicator on organic farming area within the Member States. The share of the organic farming area in the total UAA in 2000 is higher than 10 per cent in almost the whole of Sweden and in some regions of Austria, Italy and Finland.

Council Regulation (EEC) No. 2092/91 reporting

In 2002, the area devoted to organic farming (sum of organic and in conversion area) covered 4.8 million ha in the EU-15, while in 1998 it covered only 2.3 million ha. This represents an increase of 112 per cent over the period 1998-2002. The organic farming area reached 3.7 per cent of the total UAA of the EU-15 in 2002, up from only 1.8 per cent in 1998. A quarter of the EU-15 organic farming area in 2002 was located in Italy. The United Kingdom had the second largest area, followed by Germany, Spain and France. The Member States with an increase in organic farming area in the period 1998-2002 above or close to the EU-15 average were United Kingdom, Luxembourg, Portugal, Belgium, Spain, France and Italy. Austria maintained the status quo in its organic farming area due to the saturation of the organic market.

Figure 2: Share of organic farming area (sum of organic and in conversion area), certified under Council Regulation (EEC) No. 2092/91, in total UAA



Source: Organic farming questionnaire - DG Agriculture, data treated by DG Eurostat; ZPA1 database – DG Eurostat
Estimates for EU15 (2001, 2002), Greece (2001, 2002), Portugal (2002) and Ireland (2002)

The share of the organic farming area in the total UAA of the Member States varies considerably. The Member States that were front-runners in organic farming in 2002, i.e. where the share of the UAA was higher than or equal to the EU-15 average (3.7 per cent), were Austria (9 per cent), Italy (8 per cent), Finland and Sweden (both 7 per cent), Denmark (6 per cent), United Kingdom (5 per cent) and Germany (4 per cent). The other Member States' shares remained below the EU-15 average share. All Member States have seen a more or less pronounced increase in the UAA share over the period 1998-2002.

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Compilation of basic statistical data on organic farming in Europe and worldwide - challenges and opportunities

Minou Yussefi[38], Santiago Olmos[39], Helga Willer[40]

Introduction

The Institute of Rural Sciences of the University of Wales, Aberystwyth (IRS, UWA), the Foundation Ecology & Agriculture SÖL and the Research Institute of Organic Agriculture FiBL have been collecting statistical data on organic farming (land area and number of operators) at a global and a European level for several years. This paper presents their experiences in relation to compilation of basic organic sector data. Information gained in the course of the EISfOM project is also included, specifically the country reports.

The institutions

The German Foundation Ecology & Agriculture SÖL has worked on organic agriculture since 1975. SÖL is a charity. It supports numerous projects and studies related to organic agriculture. An important aim is the effective dissemination of the knowledge gained. SÖL has compiled basic statistical data for Germany, documenting the development since 1973. Towards the end of the 1990's SÖL started to collect European data. Since 2000, SÖL has also gathered data at the global level, an activity initiated by the organisers of Biofach, the world's largest organic trade fair.

The Institute of Rural Sciences (IRS) at the University of Wales, Aberystwyth has a long history of research in agricultural economics and organic farming and conducts a wide range of teaching and research in agriculture and related subjects. It is responsible for the Farm Business Survey (FADN) in Wales and conducted the earliest British economic evaluation of organic farming in 1978-1981. The Institute's expertise has been recognised through the establishment of the Organic Centre Wales (OCW) in 2000, a knowledge transfer initiative funded by the Welsh Assembly Government. IRS and OCW have significant involvement in the collection and dissemination of British and European statistical data on organic farming. Collection of European statistical data on organic farming commenced in the mid-1990's, largely as result of the IRS organic research group's involvement in EU-funded research projects. In terms of 'basic' data (land area, number of holdings), the database at Aberystwyth covers most European countries for the period 1985-2002. The data is collected from multiple sources – statistical agencies, agriculture ministries, private organisations, certification bodies as well as organic sector NGOs. In the context of the European EU-CEE-OFP[41] project, data at regional level is being collected for the period 1997-2002. The main variables covered are organic land area, broken down by crop type/land use,

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[41] Further Development of Organic Farming Policy in Europe, with Particular Emphasis on EU Enlargement (EU-CEE-OFP) (QLK5-2002-00917), EU-funded Research Project under the 5th Framework Programme

livestock numbers, and number of producers. A database is currently under development and a first statistical report will be completed in April 2004.

The Swiss Research Institute of Organic Agriculture FiBL is the largest organic farming research institute in the world and its activities include research in almost all fields of organic farming, as well as extension, international development cooperation and publication activities. FiBL provides data and statistical information at the Swiss, European and global level (in collaboration with SÖL). This happens either as part of European-funded projects or as part of FiBL's general organic farming dissemination activities. FiBL also provides market data.

Data collection at a global level

The sixth edition of the annual study "The World of Organic Agriculture", which presents worldwide statistics on certified organic farming, was published in February 2004 (Willer / Yussefi 2004). Here the research methods and experiences in the compilation of global statistical data, carried out by SÖL, are presented.

Data sources

Except for Europe there are very few countries where statistics on organic farming are compiled because of a state regulation. In most cases the organisations in the private organic sector provide the data. In some countries data from the various certification bodies which are active in one country, need to be summed up (e.g. Tanzania, India, Guatemala, Peru). Additionally, for each edition an internet search and a literature search are carried out.

Data quality

The quality of the data varies. Sometimes figures can only be estimated. In some cases we had different figures from different sources and had to decide what seems to be the most reliable data. As an update of the study is conducted each year, we discovered that in many countries (especially in Africa, Asia and Latin America) the data is not updated annually. Although our requests for data seemed to be clear, many people had difficulties in answering the questions and we had to approach them several times.

Data accessibility

In general our experience is that people react very co-operatively on receipt of our request for data; if the individual approached is not the right one to contact, they usually try to help us with useful addresses. But for many African and Asian countries addresses were not correct or had changed, and in many cases we never received an answer although we tried to contact people by e-mail, fax and telephone. We assume technical problems could be one reason for this. Language was not generally a problem, although in a few cases documents received were in languages we do not know (e.g. Korean). The languages generally used were English, German, Spanish and French.

Development of accessibility of data

For many countries it is still difficult to find precise and up-to-date figures on the state of organic farming, although it has become easier compared to when we started the survey in 1999. However, in

many cases no figures were available at all. In some countries (e.g. USA, Canada, Argentina, Australia, New Zealand) good collaboration with the experts has been developed, and this facilitates the work. The study is now well-known internationally, and some people have approached us themselves to supply data. In other countries it has not been possible to obtain data for some years – e.g. Japan, Korea and many African countries.

Results of the 2004 survey

According to the 2004 edition of "The World of Organic Agriculture" survey, certified organic farming is practised in approximately a hundred countries of the world. Furthermore, it can reasonably be assumed that uncertified organic farming is practised in even more countries. Its share of agricultural land and farms continues to grow. More than 24 million hectares are currently managed organically world-wide. The area of certified 'wild harvested plants' adds at least another 10.7 million hectares. Currently, the countries with the largest organic areas are Australia (10 million hectares), Argentina (almost 3 million hectares) and Italy (almost 1.2 million hectares). In total, Oceania / Australia holds 42 per cent of the world's organic land, followed by Latin America (24 per cent) and Europe (23 per cent).

Data collection at the European level

It should be noted that the information given here is based on the experience of FiBL and OCW/IRS with the collection of European statistical data on organic farming. The results of the country reports produced in the EISfOM project were taken into account, but the information given there might not always reflect our experience with data accessibility.

Data sources

In the countries of the European Union organic farming statistics are usually compiled by state bodies. The contacts for accessing the data are, however, not always the Ministries or the authorities in charge of compiling the data. Access may be granted though state bodies or governmental or semi-governmental agencies in charge of dissemination of such information (e.g. Germany, France), through inspection and certification bodies (e.g. Sweden, Belgium, Czech Republic, Switzerland), or through the organisations in the private organic sector (e.g. Greece, Austria, Estonia, The Netherlands).

Data depth

The depth of the data available varies from country to country. All EU countries are required to supply basic data to the European Commission on registered organically managed land in accordance with Member States' reporting obligations under EU Reg. 2092/91. Member States typically provide figures on land area (in some cases, by conversion status and/or broken down by crop types or categories), livestock numbers, and the number of registered operators (farms, processors and importers). The data supplied in connection with 2092/91 reporting is at Member State level. Some countries provide detailed information – e.g. on farm structure – and/or statistical data at regional level in publicly available reports. For countries such as Spain and France it is possible to access data at NUTS 3 regional level from annual statistical reports.

The data which is reported via publications by ministries, organic sector bodies, and other agencies is not 'standardised' – and therefore not easily comparable across countries, as the variables used are not always

consistent with those from the 2092/91 returns which are submitted to the European Commission. In the publicly available reports of some countries there are inconsistencies, for example, in how various crops are or are not 'grouped' (e.g. potatoes and root crops as one category; clear distinction between temporary and permanent grassland not always made, etc.). Reporting on livestock is also inconsistent: some countries report on the number of livestock producers, while most countries report on livestock numbers in heads (very few provide a breakdown of in-conversion and fully-converted). As the regulation pertaining to organic livestock production (EU Reg. 1804/1999 supplementing Reg. 2092/91) is more recent, for many countries it is not possible to find official figures on organic livestock for the period before 2000.

Data accessibility

The accessibility of data has improved substantially in recent years and continues to improve. As recently as the late-1990's, data compilation on organic farming in Europe depended on contacts with individual actors in the private organic sector (with contradictory information often being obtained, depending on who supplied the data). This situation has greatly improved. It is still however, not satisfactory, as

- For many countries the data are still not publicly accessible
- Not all countries make their information available on the internet
- Most countries make their information available only in their national language
- Many countries make their information available only at a very late stage, i.e. the data for the end of the previous year are only available at the end of the current year.

In our view a very good example in terms of quality and accessibility of data is Spain, which presents a highly detailed report on organic farming statistics every year around February via the internet site of the national Ministry of Agriculture, Fisheries and Food. For Denmark, detailed data is available on-line via the internet site of the Danish Plant Directorate, covering the period 1995 to 2002. In the case of Italy, detailed data – with breakdown by crop types, regional distribution – is available for 2000 to 2002 on the internet site of the Ministry of Agricultural and Forest Policy. These are only a few examples of organic farming statistics which are easily accessible on the internet. In all of these cases, however, the statistical reports or documentation available on-line are presented in the national language of each of the countries. While this is entirely appropriate and suitable from the point of view of data users from those countries, making the statistical reports available in English and/or other European languages would be a positive step toward improving accessibility and use of the data at the European level. A compilation of web-addresses with statistical information is available in the annex.

Results of the current survey in Europe

Since the beginning of the 1990s, organic farming has rapidly developed in almost all European countries. However, growth has recently slowed down in some of the countries where the organic sector is more 'established'. According to OCW / IRS, by the end of 2002, more than 5.5 million hectares were managed organically by more than 160 000 farms in the 25 countries of the European Union. This constituted almost 3.4 per cent of the agricultural area and 1.7 per cent of the farms in the EU. If other European countries (EU applicant countries and the EFTA countries) are included, the number of farms is around 190 000 and the land under organic management just over 5.8 million hectares in 2002. Compared to the previous year, this is an increase of 9 per cent in the 25 European Union countries, mainly due to strong growth in France, Spain and the United Kingdom. The number of organic farms decreased, however,

mainly due to a decrease in Italy. There are also substantial differences between individual countries. According to FiBL more than 11 per cent of the agricultural land is organic in Austria, and 10 per cent in Switzerland. Some countries (e.g. Ireland) have yet to reach 1 per cent. While the proportion of land area under organic management is relatively small in a country like France (1.75 per cent in 2002), in absolute terms this land area is significant: more than 500 000 hectares, which is considerably more than the organic area of Austria and Switzerland combined. The country with the greatest number of farms and land area is Italy (over 1.1 million hectares and approximately 50 000 operators). Nearly one-quarter of the EU's organic land and more than one-third of its organic farms are located there.

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Annex

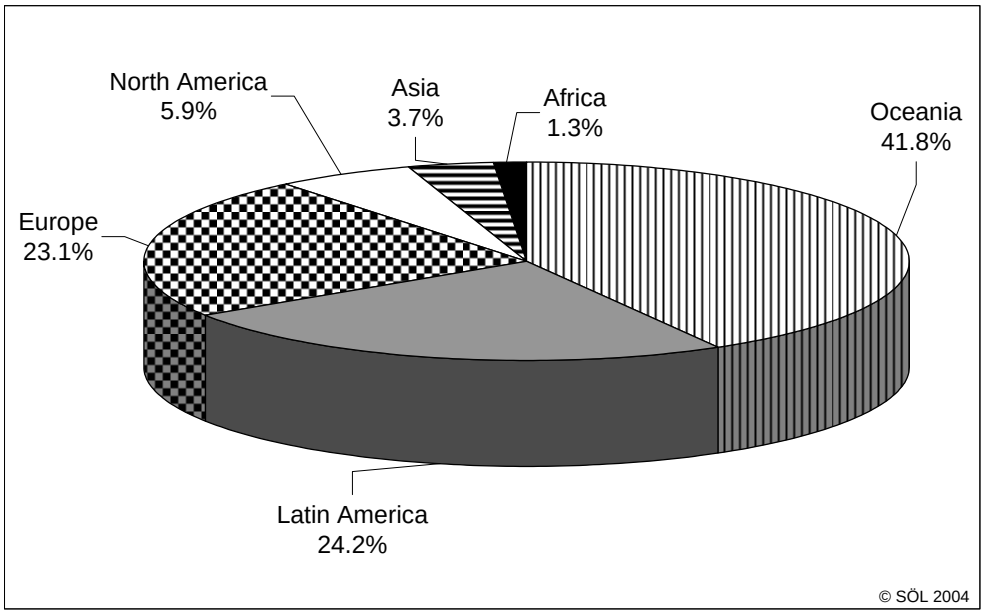

Figure 1: Share of global organic land by continents 2004, © Minou Yussefi, SÖL, 2004

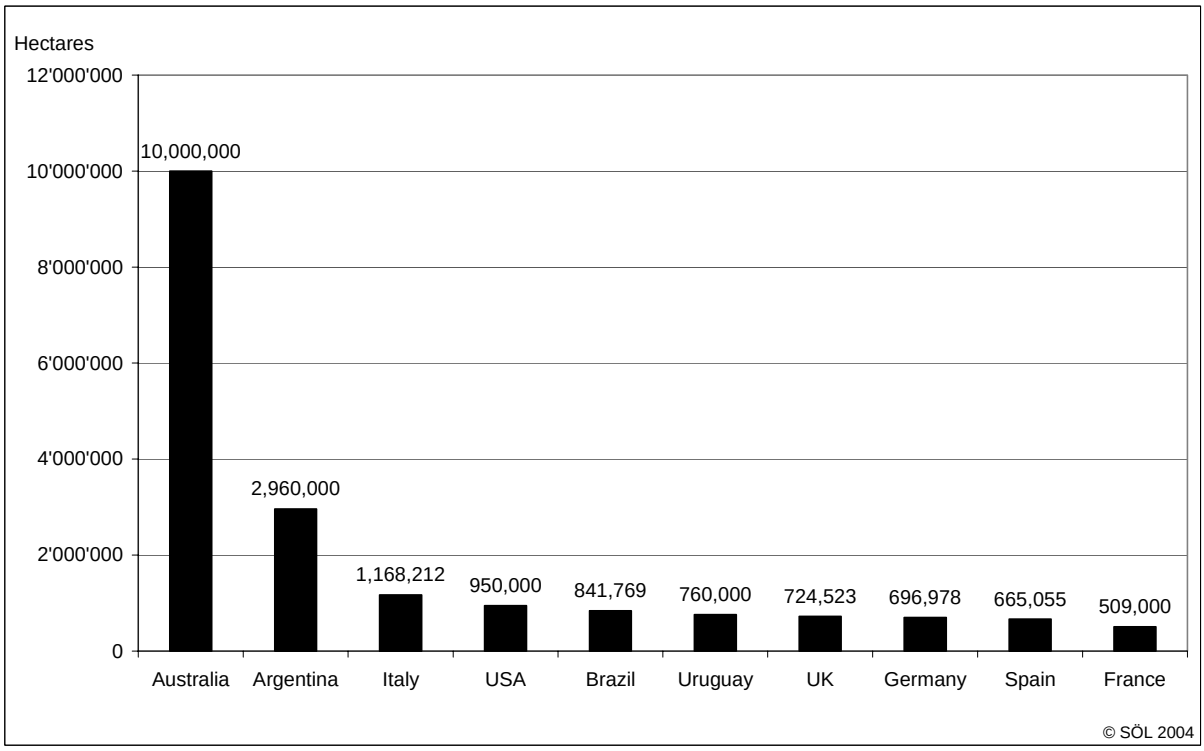

Figure 2: The ten countries in the world with the largest organic areas 2004. © Minou Yussefi, SÖL, 2004

Problems regarding the official statistical survey on organic agriculture in Italy

M. Adua and A. Pallotti[42, 43]

1 Introduction

In Italy, various institutions, agencies and organisations are interested in organic agriculture and in a variety of ways they produce statistics and evaluations and publish data, studies, news and comments on the organic sector.

The National Institute of Statistics (ISTAT), - after a careful consideration of the results from a working group which looked into the feasibility of a statistical survey on organic agriculture - decided to set up a survey on the development of organic agriculture.

In this paper two data collection systems in the field of organic agriculture are introduced:

- the collection of specific information by including questions in existing surveys
- the annual specific administrative survey on organic agriculture (according to EU regulation 2092/91).

2 Finding information by using other surveys

2.1 The Fifth Census of General Agriculture – 2000

For the first time, the Fifth General Census of Agriculture has revealed information about the area (divided into ten categories) and the number of livestock (in seven categories) under organic management. The data was collected by face-to-face interviews with farmers.

The census rules for the survey laid down that a farmer had to declare whether he was working organically, but not whether he / she was in the regional official list of farmers certified according to EU regulation 2092/91.

The problems connected to the Census data survey on organic agriculture are the following:

- because of the census instructions, it is not possible to decide whether the organic farm was listed in the Official Regional List of organic operators (the lists have not been provided by all regions);
- even though the definition of organic farming in the case of the census was broader than that of EU-regulation 2092/91, according to the census there were approximately nine thousand operators fewer than shown in the data on organic farms and operators made available by the Ministry of Agriculture on 31 December 2000;
- the definition of an agricultural farm does not correspond exactly to the one used for the administrative information, compiled by the Ministry of Agriculture from the data of the certifying bodies;

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- the criteria for the measurement of the organic area is not always the same as those used in the survey of the administrative data;

It will therefore be necessary carry out an in-depth comparison of the farm micro data from the census with the corresponding administrative information.

2 Survey on the structure and production of main permanent crops 2002

The sample survey on the structure and production of the main permanent (tree) crops supplies regional data and is carried out every five years in accordance with the requirements of the European Union. In the 2002 survey, data on the main agricultural tree crops (fruit and citrus) under organic management were collected.

Data were collected by surveyors through direct interviews with farmers. Also for this survey the instructions for the collection and the criteria for the measurement of the organic area are the same as those of the Census.

The following problems were found:

- according to this survey the area of organic fruit and citrus fruit was lower than the figure published by the Ministry of Agriculture;
- the data for this sampling survey is not completely in line with the data collected for the Census; in particular, the fruit area turned out to be much lower than the area according to the census data.

The main methodological problem is connected to the relationship between the sample and the total population.

2.3 The farm structure and production survey 2003

The survey on the structure and the production of agricultural farms 2003 - based on the Community regulations for surveys - has for the first time revealed data at regional level regarding organic crops and livestock. The data has been collected via direct interviews with organic farmers. The survey supplies regional data with more than 300 variables.

For this survey the instructions regarding organic agriculture corresponded perfectly to the regulations in force. In fact, EU regulation 1444/02 regarding the Community farm structure survey requires that, in the case of organic farming, it must be indicated whether the farm works in compliance with the standards and norms specified in EU regulation 2092/91.

The survey on the farm structure is currently being carried out. The correspondence between the surveyed farms with those complying to EU regulation 2092/91 will permit better data quality checks.

2.4 Surveys on agricultural inputs 2003

The annual survey on agricultural inputs in 2003 showed the distribution of seeds, fertilizers, phytosanitary products and feedstuffs used in organic agriculture. The census surveys are carried out amongst all wholesalers. The survey supplies regional and provincial data for agricultural inputs.

The survey problems are:

- the data shows the distribution (and for feedstuff also the production) of products allowed in organic agriculture; these inputs are, however, also used by farmers who do not work organically;

- the introduction of questions about organic inputs does not present particular problems; the results will make it easier to follow the market development of the technical means allowed in organic agriculture.

2.5 Other surveys

In future other official surveys could contain questions on organic products. In particular, it will be possible to collect information on foreign trade and household consumption. Potential new questions will be carefully considered on the basis of past experience and the robustness of the results.

3 Survey on organic agriculture

According to instructions in the National Statistical Plan (PSN), ISTAT has now begun an experimental statistical survey on organic agriculture based on administrative information at 31 December 2002, with the aim of collecting official statistical data on organic farms.

3.1 The aims of research

The survey covers all organic farms and their crop area, livestock numbers, both organic and in conversion. Therefore, based on existing administrative information, the survey is targeted at the number of farms, the area and production of organic crops, and organic livestock.

Its main aims are:

- to disseminate and update the official data, both on a provincial and regional level, on the number of organic farms, the organically managed area, crops and livestock;
- to calculate the provincial and regional share of organic production compared to all farms and the utilised agricultural area;
- to overcome the deficiencies in the official statistical data on organic farming;
- to integrate and harmonise statistics and methodologies used on the European and the international level.

3.2 The characteristics of the survey

The main characteristics of the survey are as follows.

- The survey uses information available in the data bank "BIOL", which was established by the Ministry of Agriculture
- Annual survey (referenced to data at 31 December of the year under consideration)
- Coverage of all organic farms working to EU regulation 2092/91
- The survey is included in the National Statistical Program
- The processing of useful administrative information contained in "BIOL" into statistical data after careful examination, control, verification, processing of data, checking of incomplete answers and comparison with other sources, in particular with the regional official lists of organic producers
- Cooperation with the Ministry of Agriculture, regions and the certifying bodies

3.3 Problems of the survey

The annual survey uses administrative data with statistical aims.

This kind of data provides a low cost database for statistical purposes, but there are some limitations attached to this type of survey.

The use of administrative data allows data collection on all organic farms.

In Italy there is no organic agricultural data base that allows simple access to the administrative data as this information is owned by various organisations.

The Ministry of Agriculture manages activities connected to the creation of an efficient database (ruled by the law DL220/95). There are two main information sources: the regions and the certifying bodies,

The certifying bodies carry out a primary farm evaluation and auditing, and they manage information.

The regions maintain a farm register and control the certification bodies and the organic farms.

The Ministry of Agriculture collects and processes data. There is some inconsistency in the data between the national and regional administrations and the certifying bodies.

All published data on organic agriculture come from the certifiers' database and are transmitted to the Ministry of Agriculture. There are two information flows to the Ministry of Agriculture, this and the flow from the region. The regional data is more relevant because the region has to verify the existence of an organic farm.

Thus, two types of archives exist: the central one (in the Ministry of Agriculture) and the local one (in the region).

This type of centralisation causes some fragmentation of the existing data; in fact, to make administrative data useful it must be cross-linked by, for example, the tax identification number, so that the information in different files can be allocated to the same individual.

The regions do not have a standardised system for information collection and often they do not give the Ministry of Agriculture the same data from the certifying bodies. The BIOL database cannot re solve the deficiencies of the regional information systems.

The problems that ISTAT has to face are also concerned with the quality of data collection.

In the light of this ISTAT is planning measures (with the Ministry of Agriculture) to improve the quality of data collection, the data quality, and the information flow. The proposals include:

- the definition of criteria, instruments and methods of collecting information from various sources;
- selection of one methodology to harmonise primary administrative data and their transformation into statistical data;
- the addition of interesting information, for instance on the area of particular crops and on animals under organic management.

The specific survey on organic agriculture carried out by ISTAT represents a first step, but the process of transformation of administrative information into statistical data is not easy and presents numerous problems particularly with the extent of the information.

However it seems obvious that, in order to achieve reliable statistical results, better collaboration between the institutions involved is necessary, especially in exact determining exactly what information farms should be asked for by the certifying bodies.

4 Conclusions

ISTAT, in collaboration with other interested institutions, wants to address the lack of official statistical data on organic farming both with the introduction of specific questions into existing surveys and the development of a specific annual survey based on the administrative data on organic farms.

In order to evaluate the same variable in various surveys it is necessary to refer to the same analysis unit measured with identical criteria. Only in this way can data be comparable with between sources.

The comparability between data from administrative sources and from the regional official lists of organic producers must be improved.

The administrative survey is not so easy. Turning this data into statistical official data poses different problems that have to be overcome using different methodologies.

Greater collaboration between the institutions involved and the use of clear, correct and well-defined content and the completion of the administrative form using the same classifications, and nomenclatures as the official statistics are all necessary.

The introduction of information in a unique European system of comparable data will allow the collection of more accurate statistical data.

The role of the European Union and Eurostat is fundamental in moving all the Member States in the same direction.

Participation in the EISfOM project is important for the resolution of these problems.

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Opportunities for the development of organic data collection and processing based on Finnish experiences

Sampsa Heinonen[44]

Register of organic farms geared to IASC Problems

The Plant Production Inspection Centre (KTTK) is one of the Finnish state authorities in charge of implementation of the inspection system laid down in Council Regulation 2092/91. It keeps the register of all organic farms and co-ordinates the inspection work managed by regional control bodies (the Rural Departments of Employment and Economic Development Centres). Since 1997 the register of organic farms has been geared to the Integrated Administration and Control System (IACS); the database is usually used for the management and control of EU agricultural subsidies. The access to IACS is a unique tool not only for managing the control of organic agricultural production but also in serving information needs on organic production such as statistics.

Earmarking organic farms as part of general agricultural surveys

Over the years the Plant Production Inspection Centre has created a good relationship with the Information Centre of the Ministry of Agriculture and Forestry. The Information Centre has published general statistics on organic farms as part of the Yearbook of Farm Statistics - the Official Statistics of Finland - since 1997. This co-operation has led to more ambitious projects where earmarking of the organic farms has played an important role (the Plant Production Inspection Centre provides the Information Centre with the registered holding numbers).

Agricultural Census 2000 and EU Farm Structure Survey 2003

The Agricultural Census is taken at ten-year intervals as a worldwide statistical survey. As a comprehensive survey, the census seeks to reinforce the foundation of agricultural statistics and to provide a wide-ranging and clear picture of agriculture and recent trends in the sector. In the 2000 Agricultural Census information was requested about livestock on farms, use of arable land, labour force, other farm enterprises, farmer's education, and machinery and appliances. The actual data gathering took place by statistical survey and by collating the data held in registers. One of the registers used was the register of certified organic farms. The "earmarking" made it possible to take a fresh look at organic farms and farmers.

A separate report was prepared jointly by the Information Centre and the Plant Production Inspection Centre. The organic farms turned out to be bigger and more diverse in entrepreneurship than conventional farms. Organic farmers were younger and better educated than conventional farmers. Statistics showed no difference in technological advancement between the production methods, but organic more often than conventional farmers shared machinery with other farmers. The organic farms were earmarked once again in the EU Farm Structure Survey of 2003.

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Statistics on yields

The sample size of the annual yield inquiry conducted by the Information Centre is about 10 000 farmers. Since 1999 the sample has included 700 certified organic farms which are sent a questionnaire about the harvest of the most common organic crops. Therefore the Plant Production Inspection Centre has been able to publish annual yield levels and estimates of the production of organic plant products.

Organic statistics as indicators of changes in society and environment

Development of organic production reflects wide-ranging changes in society and the environment.

EU regulation 2092/91 defines one of the aims of organic production as the "the conservation of the countryside". How do we measure that? The study *the Finnish Project for Indicators on Rural Development*, started in 1997 and implemented by Statistics Finland, set territorial indicators as the sensors for rural change and development. The indicators can be used to condense comprehensive statistical data into key figures. An indicator database was created within the project. The proportions of organic farms and area are used as indicators. Regional data on 452 municipalities has been provided by the Plant Production Inspection Centre.

One of the guiding principles of the strategy until 2010 for the sustainable use of renewable natural resources of the Ministry of Agriculture and Forestry is that organic production has established its position in terms of both domestic consumption and exports and 15 per cent of the arable area is under organic farming. Therefore the proportion of organic area is one of the indicators of the sustainable use of renewable natural resources.

Opportunities and challenges

- Increase availability of the statistics, not only in table form but also the metadata as, for example, Excel and html files for further processing. Also the visual presentation of the statistics should be improved.
- There should be a better link between providers and users of the statistics. Regular analyses on changes and trends are urgently needed. The producers of the statistics are not always the best people to explain their meaning.
- Earmarking should be improved in order to make the data collection more effective and to avoid duplication.
- Production statistics (areas, numbers, volumes, quality) should be combined with market statistics (volumes, prices, sales).

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The « Observatoire » of French organic production: data collection since 1995 and future developments

Katell Guernic[45]

Abstract

The French Observatory of organic production was created in 1995 by representatives of organic producers, processors and the Ministry of Agriculture and collects information every year on organic farms. The data are bought from the six accredited French organic certification bodies, which provide files with the information required following the standards and the nomenclature defined by the steering committee of the Observatory. National statistics are then compiled and, once they have been validated by the steering committee, the Agence BIO (French State agency for the development and promotion of organic farming) publish the results each year. Since 2002, Agence BIO has also been in charge of the management of the notification procedure and has developed the questionnaire sent to operators in order to obtain more information, for example about volumes, trade channels, turnover, etc. The inclusion of this information will make the Observatory more complete.

1 Introduction

France was a leader in the development of organic farming in Europe in the eighties, but has experienced a decline in the growth of this type of production in the nineties in comparison with many other European countries.

In order to obtain information about the state of national organic production, the French observatory of organic agriculture was created in 1995. The driving force behind it came from organic producers and processors, and also from the French Ministry of Agriculture, who needed better data on this sector in order to forecast future production and to promote organic agriculture. A steering committee was created, composed of the following members:

- the Ministry of Agriculture;
- APCA (the permanent assembly of French Chambers of Agriculture) and Civam BIO: organisations for agricultural development
- producer representatives: FNAB (the national federation of organic farmers and growers in the French regions);
- organic processor representatives (Bioconvergence);
- the French accredited organic certification bodies.

Since its creation in 2002, Agence BIO has managed the Observatory.

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2 Methodology/Methodological issues

2.1 The collection of data

Inspectors from the six French organic certification bodies (OCB) visit certified operators at least once a year, gathering information for their own use. These data are then bought every year by the Observatory, using public funds. Every January, each organic certification body sends the Observatory files with the information collected by its inspectors during year n-1.

The six organic certification bodies follow the specifications defined by the steering committee of the Observatory, ensuring that the information sent meets the Observatory's requirements. A product nomenclature has also been created by the steering committee to facilitate aggregation of the data and this is also followed by the organic certification bodies. The data sent are anonymous, and each organic farm is designated a code (N° enterprise) which is defined by the organic certification bodies.

2.2 The extraction of statistical data

A common file (Access) is created with the files sent by the six organic certification bodies. In this file the information is presented as shown in Table 1.

Table 1: Example of presentation of the information in the common database

OCB code	Year	Depart-ment	Enterprise number	Product code	Variety / Breed	Organic category	Area	Quantity	Unit code
1	2003	01	00018	3	Cézanne	4	2,310		6
6	2003	03	02098	202	Charolaises born in 2002	2		11,00	8

Line 1 stands for 2.31 hectares of in conversion (2nd year) soft wheat produced in the department of Ain;
Line 2 stands for 11 suckler cows (Charolais breed) bred in the department of Allier.

Since 1995, the information extracted from this common database for the annual report released comprises:

→ *details by type of crop production:*

cereals; protein crops; oilseeds crops; vegetables; fruits; vineyard; aromatic, medicinal and culinary plants; fodder, pasture and meadows; other crops.

For each, detailed information includes the numbers of organic farms undertaking this production and the organic and in conversion area for each French region.

At the national level, some crops are categorised by type of crop, like cereals, protein and oilseed crops or fodder, pasture and meadows.

→ *details by type of animal production:*

dairy cows; suckler cows; sheep (breeding female), goats (breeding females); pigs; poultry (broilers, laying hens, others); organic fish production (since 2002).

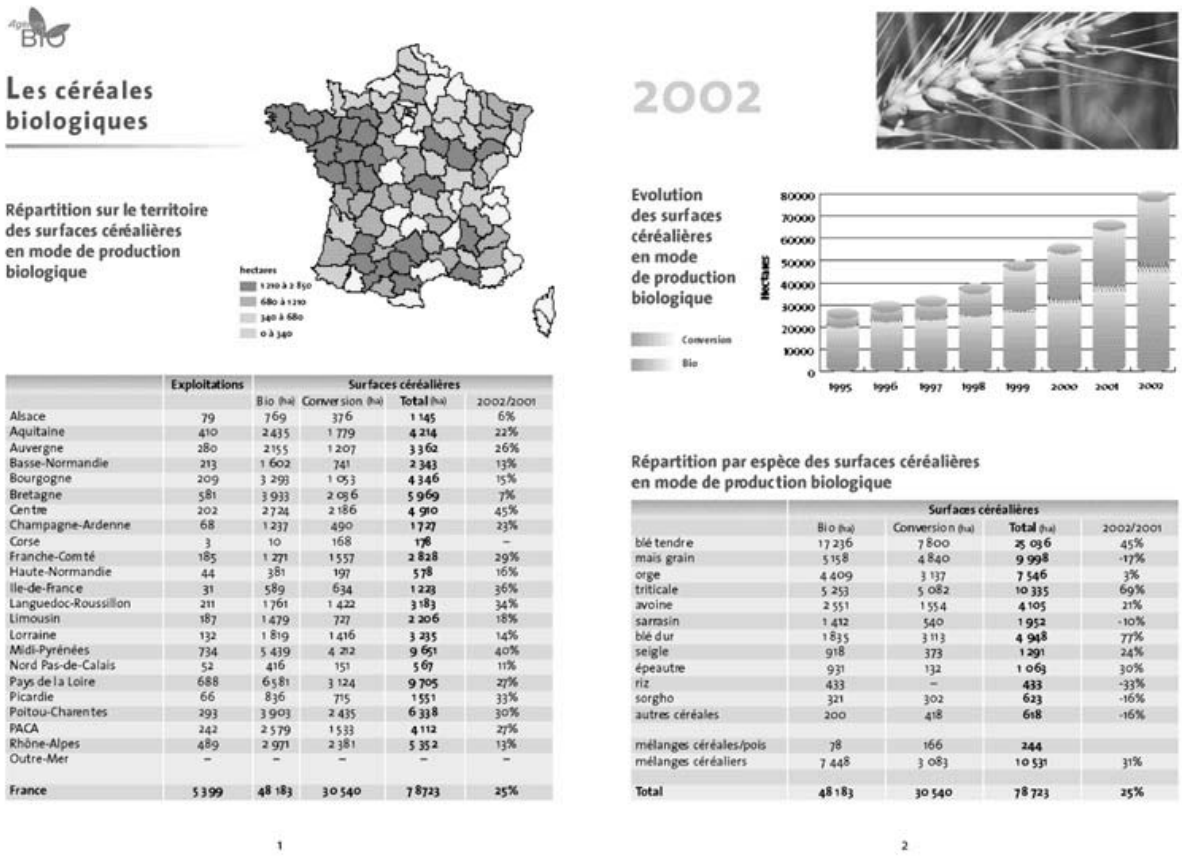
→ *details by French region:*

All the information above is categorised by French department, and the evolution since 1995 is recorded.

Before their publication, the steering committee, composed by a group of specialists in every sector of French organic production, validates those data.

3 Results

A first estimation of French organic production is presented in February or March, including the national organic and in conversion area, the number of organic farms, livestock production (number of dairy cow, suckler cows, sheep, goats, broilers and laying hens) and the number of processors certified organic in year n-1.



	Exploitations	Surfaces céréalières			
		Bio (ha)	Conversion (ha)	Total (ha)	2002/2001
Alsace	79	769	376	1 145	6%
Aquitaine	410	2 435	1 779	4 214	22%
Auvergne	280	2 155	1 207	3 362	26%
Basse-Normandie	213	1 602	741	2 343	13%
Bourgogne	209	3 293	1 053	4 346	15%
Bretagne	581	3 933	2 036	5 969	7%
Centre	202	2 724	2 186	4 910	45%
Champagne-Ardenne	68	1 237	490	1 727	23%
Corse	3	10	168	178	–
Franche-Comté	185	1 271	1 557	2 828	29%
Haute-Normandie	44	381	197	578	16%
Ile-de-France	31	589	634	1 223	36%
Languedoc-Roussillon	211	1 761	1 422	3 183	34%
Limousin	187	1 479	727	2 206	18%
Lorraine	132	1 819	1 416	3 235	14%
Midi-Pyrénées	734	5 439	4 212	9 651	40%
Nord Pas-de-Calais	52	416	151	567	11%
Pays de la Loire	688	6 581	3 124	9 705	27%
Picardie	66	836	715	1 551	33%
Poitou-Charentes	293	3 903	2 435	6 338	30%
PACA	242	2 579	1 533	4 112	27%
Rhône-Alpes	489	2 971	2 381	5 352	13%
Outre-Mer	–	–	–	–	–
France	5 399	48 183	30 540	78 723	25%

	Surfaces céréalières			
	Bio (ha)	Conversion (ha)	Total (ha)	2002/2001
blé tendre	17 236	7 800	25 036	45%
maïs grain	5 158	4 840	9 998	-17%
orge	4 409	3 137	7 546	3%
triticale	5 253	5 082	10 335	69%
avoine	2 551	1 554	4 105	21%
sarrasin	1 412	540	1 952	-10%
blé dur	1 835	3 113	4 948	77%
seigle	918	373	1 291	24%
épeautre	931	132	1 063	30%
riz	433	–	433	-33%
sorgho	321	302	623	-16%
autres céréales	200	418	618	-16%
mélanges céréales/pois	78	166	244	
mélanges céréaliers	7 448	3 083	10 531	31%
Total	48 183	30 540	78 723	25%

Figure 1: Example of presentation in the annual report for French organic cereals production in 2002

The complete results categorised by type of production and by region (subdivided into departments) are released during the year (spring/summer). The publication comprises tables and maps to show the geographic distribution of organic farms, land use etc. (see figure 1).

4 Perspectives of development

According to EC regulation, each certified organic operator has to notify his / her activity to the competent authority. Agence BIO has been in charge of the management of this notification procedure since 2002.

Agence BIO developed the questionnaire sent directly to operators to obtain more information about volumes, trade channels, turnover, etc. The treatment of this information should allow the Observatory to be completed.

The procedure developed in 2004 is rather onerous for the operators (numerous questions). It has been explained to the operators that this effort needs to be made for this first year of the "new" questionnaire. Indeed, in 2005, the aim is to pre-fill the questionnaire sent to each operator, as far as possible.

Besides the statistical purpose, another main aim is to identify producers by type of activity. Such lists will allow the Observatory to make targeted surveys. For that purpose, the "new" notification questionnaire has been designed together with the SCEES (French official agricultural statistics office), who also wish to better identify organic producers for their own studies.

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Organic production in official agricultural statistics of Germany

Torsten Blumöhr[46]

Introduction

In official agricultural statistics, agricultural holdings that practise organic production and that are subject to the inspection system according to Regulation No. 2092/91 have been covered since 1999. Before the agricultural structure survey of 2003, the survey was limited to the following general question asked to the farmer: “Is your holding subject to the inspection system according to Regulation (EEC) No. 2092/91 on organic production?" The "type of farming” is a character of the general part (determination of the holding units) of the agricultural structure survey. This general information did not include data on the kind and extent of cultivation. However, by combining it with data material from the agricultural structure survey it was possible to derive information on the structure of holdings and on the lines of production of organic holdings. Additionally all characteristics, that are important in economic terms, can be assessed separately for “conventional holdings" and those that use organic methods. Compared to 1999 and 2001, the agricultural structure survey of 2003 was conducted with an extended programme of questions on organic production. Now questions are asked on the extent of organic cultivation of the agricultural area and on the animal species kept organically. This makes it possible to describe more exactly the production structures, while at the same time it is possible to compare the data with those of previous surveys. However, there is still one restriction. As it is not possible to subdivide the species of cattle, pigs, and poultry into various lines of production (for example, dairy cows or pigs for fattening), their representation is limited. This is relevant for the coverage of so-called "mixed holdings" in livestock farming, with both organic and conventional production. It would be necessary here to strictly separate the two forms of farming within the holding.

In addition to the data of official agricultural statistics, data on organic production are also provided by the register-based statistics of the Federal Agency for Agriculture and Food. Many of these data are limited to the number and area of holdings practising organic production. Differences between the results of the notification procedure of the European Union Member States according to Regulation No. 2092/91 and the data of the agricultural structure survey on the numbers of holdings and the cultivated areas are due to different reference dates and the methodological bases of the agricultural structure survey. The agricultural structure survey is conducted in May, whereas the EU covers all data reported during the year in a cumulated figure for the reference day 31 December. The data obtained through the inspection system of the individual countries are based on all certified holdings, whereas the agricultural structure survey covers only the organic holdings within the scope of coverage defined in the agricultural statistics law. These are holdings with a minimum of 2 hectares of agriculturally used area or a minimum stock of animals (for example, eight cattle or pigs). For special cultivations, smaller areas are applicable.

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Data from the agricultural structure survey

In the following, selected results will be presented on organic production from the agricultural structure survey conducted in May 2003. A total of 421 400 holdings participated in the survey. Among other things, the farmers were asked about their type of production. The results are currently provisional. Final results of the agricultural structure survey will be published in the third quarter of 2004. The results give a brief overview of organic production in the whole of Germany. Due the differences in the holding structure between the former territory of the Federal Republic and the new Länder, the results are also published separately for the two areas in the publications of official agricultural statistics. The results may also be shown separately for the Länder and in a breakdown by holding size classes.

The data from the agricultural structure survey show that the importance of organic production in Germany has continued to increase in 2003. According to the results of the agricultural structure survey of 2003, there were more than 13 700 holdings with organic production, constituting 3.3% of all holdings. That was an increase by over 4 100 holdings compared to the census of agriculture conducted in 1999.

Those 13 700 holdings used an agricultural area of 729 900 ha. The area used for organic production rose by about 240 800 hectares compared to 1999. Table 1 illustrates the development of holdings with organic production and their agriculturally used area with organic farming in Germany.

Table 1: Holdings with organic farming production methods and agriculturally used area in Germany

	Unit	1999	2001	2003[1)]
Holdings	1 000	9.6	11.6	13.7
Agriculturally used area	1 000 hectares	489.1	606.5	729.9

1) Provisional result¨

So in 2003 4.3% of the total agriculturally used area was cultivated by 3.3% of agricultural holdings (see figure 1).

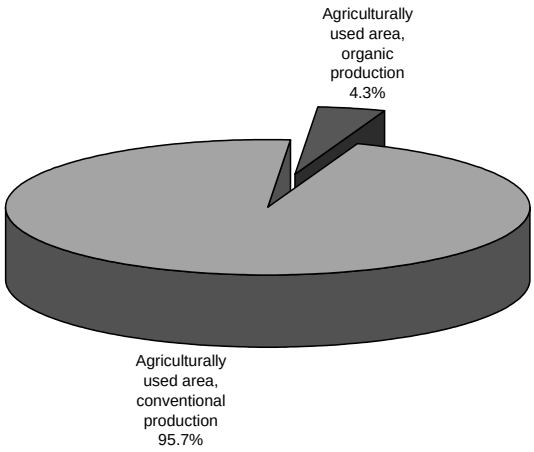

Figure 1: Agriculturally used area in Germany, 2003 (provisional results)

A new characteristic covered by the agricultural structure survey in 2003 is the subdivision into areas converted and areas undergoing conversion. 87.4% of the 729 900 hectares of agriculturally used area were converted. The areas undergoing conversions had a share of 12.6% (see figure 2).

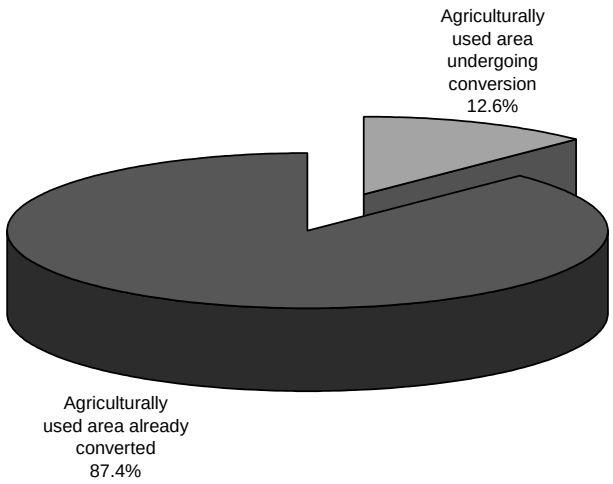

Figure 2: Agriculturally used area of organic production in Germany, 2003 (Provisional result)

The average size of holdings with organic production was 53 hectares of agriculturally used area, which was about 2 hectares more than in 1999. Compared to all holdings (on average, 40.5 hectares of agriculturally used area), the organic holdings had a larger average area, as was the case in the previous years.

The increase in agriculturally used area of the organic holdings in the survey year is due, among other things, to a marked rise in the share of permanent grassland (+63 %) since 1999. Organically cultivated arable land also increased, by 38% compared to 1999. Permanent crops in organic production maintained an almost constant area (see table 2).

Table 2: Agriculturally used area of holdings with organic farming production methods (000 hectares)

Cultivations	**Germany**		
	1999	**2001**	**2003[1]**
Agriculturally used area	489.1	606.5	729.9
Including:			
Arable land	252.8	293.5	348.6
Permanent crops	7.0	7.6	8.0
Permanent grassland	229.1	305.2	372.9
Wooded area	43.9	53.9	73.6

1) Provisional result

The cultivation structure regarding arable land is similar in 1999 and 2003 (see table 3). Grain accounts for the largest share of area under cultivation, followed by fodder plants and fallow land. The share of fallow land in arable land rose especially in the course of time.

Also, pulses are an established component in crop rotation schemes. The small importance of areas cultivated with oil-producing plants and root crops is shown by a comparison between 1999 and 2003. For oil-producing plants, the share in arable land decreased in the reference period.

Table 3: Areas of the organically cultivated arable land (1000 hectares)

Areas under cultivation	1999	2003[1)]
Arable land	252.8	348.6
Cereals	123.9	181.6
Including:		
Wheat	40.7	59.6
Rye	32.0	38.5
Winter barley	7.9	11.2
Spring barley	13.6	16.5
Oats	13.0	22.0
Pulses	19.3	33.9
Root crops	8.0	9.2
Forage plants	48.2	58.7
Industrial plants	.	13.1
Fallow land	26.5	45.1

1) Provisional result

In the survey year 2003, more than 11 000 organic holdings kept productive livestock, including 77% cattle, 21% pigs and 18% sheep (see tables 4 and 5). 44% of the holdings with cattle kept dairy cows; cattle keeping thus continues to be the most important branch of meat production in organic holdings with animal production. Compared to 1999, the number of organic holdings with cattle rose by nearly 50%.

One reason for the strongly growing number of organic holdings keeping cattle is the establishment of Council Regulation (EC) No. 1804/1999 supplementing Regulation (EEC) No. 2092/91 on organic production of agricultural products to include livestock production.

This also involves a rise by 43% in the number cattle and by 28% in the number of pigs. The stock of pigs for fattening and breeding sows shows the relatively small importance of organic pig-keeping in Germany. What is also surprising is the large share of organic-production holdings with sheep.

Table 4: Livestock on holdings with organic farming production methods

	Unit	Germany		
		1999	2001	2003[1)]
Holdings, total	1 000	7.6	9.4	11.2
Of which:				
Cattle keeping				
Holdings	1 000	5.9	7.3	8.6
Average number of animals	number	*63*	*65*	*61*
Of which: dairy cow keeping				
Holdings	1 000	2.9	3.3	3.8
Average number of animals	number	*30*	*31*	*29*
Pig-keeping				
Holdings	1 000	2.4	2.4	2.4
Average number of animals	number	*49*	*59*	*62*
Of which:				
Fattening pigs				
Holdings	1 000	1.8	1.7	1.7
Average number of animals	number	*28*	*33*	*36*
Sows for breeding				
Holdings	1 000	0.7	0.8	0.8
Average number of animals	number	*16*	*19*	*18*

Provisional result

Table 5: Livestock on holdings with organic farming production methods (Large animal units in 1 000)

	Germany		
	1999	2001	2003[1)]
Livestock, total	320.5	407.8	462.2
Cattle	276.9	351.3	395.1
Of Which:			
Dairy cows	85.3	102.5	111.0
Pigs	13.5	16.2	17.2
Of which:			
Fattening pigs	7.7	9.1	9.8
Sows for breeding	3.2	4.2	4.5

1) Provisional result

In holdings with organic production, 41 500 persons were employed in the survey year 2003. That was an increase of some 6 000 workers compared to 1999. The share of family labour was over 50%, which was due to the large share in the former territory of the Federal Republic.

Developing the data collection system for organic farming in Poland

Marta Wroblewska[47], Ewa Szymborska[48]

Problems/Aims

Interest in organic farming in Poland caused an increased demand for statistical data in that field. This is why the Central Statistical Office (CSO) in co-operation with the Main Inspectorate of the Agricultural and Food Quality Inspection (AFQI) and scientists from the Warsaw Agricultural University have undertaken works aimed at building an information system about the Polish organic product market as an integral element of the European system. CSO and AFQI have also undertaken efforts to use the same identifiers /keys for organic farms in their systems, which significantly facilitates further co-operation in building an organic farming information system.

Methodology

In the year 2002 an agricultural census was conducted, which provided a wide range of information about all farms, including organic farms. Because there was no question in the census that made it possible to distinguish organic from conventional farms, it was necessary to find a way to separate organic farms from all recorded farms.

The census form used for the description of the organic farms is a major advancement toward building an information system for organic farming. Features describing farms can be divided into thematic divisions including: surface area of the holding, ownership structure of the agricultural land of the holding, income structure, activity of the farm, persons employed on the farms, cultivated area, other land, livestock, disposal of agricultural production, infrastructure of the holding, buildings and structures, storage facilities, fertilisers and pesticides on the farm, agricultural machinery and equipment and selected expenditure incurred by the farm.

AFQI collects general information about organic farms from the certification bodies, including their addresses. CSO receives the list of farms, according to the rules described earlier, from AFQI, which carries out the actual work connected to the creation of the register of organic farms. The addresses received from AFQI make it possible to identify the organic farms from all farms recorded in the agricultural census. This fact makes it possible to create full descriptions of the organic farms.

Some difficulties in matching the data from the agricultural census with the data from administrative sources have appeared. The main problem is to match the address data of the farms surveyed in the agricultural census of 2002 with the administrative data gained from the organic farms list. The list of organic farms contains the typical address: street, house number and post office locality (name of the locality) together with the user's name. In case of the locality, custom names are often used, and it is

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impossible to codify them. Data on the farms' addresses in the 2002 agricultural census are more accurate and codified with the territorial classification TERYT. In the future organic farms will be identified by the accurate address according to the CSO classification (voivodship, powiat, commune, town, village (outlying settlement), house number, dwelling number) and the following numbers: PESEL (personal identification number), REGON (economic activity identification number), NIP (tax identification number), IACS.

As the building of information systems about organic markets will also demand the identification of warehouses and shops where farmers sell their products, it was decided to carry out a pilot study on organic farming in one of the voivodships in year 2004. The voivodship Swietokrzyskie was chosen because of a considerable number of organic farms and a big interest in organic production among the farmers from that region (there are 261 farms with certification, constituting 20.3% of the organic farms in Poland; 121 farms are in the first or the second year of conversion, which corresponds to 12% of all farms in conversion). CSO together with Warsaw Agricultural University will prepare the form for the survey. That form will comprise basic questions which characterise farms in a way which will make it possible to describe changes that happened on the organic farms in last two years since the agricultural census.

In the coming years, information about organic farms will be gained from the farm structure survey (FSS), which will be carried out by CSO according to the Eurostat calendar and requirements in the years 2005 and 2007. These will be representative surveys, but as the number of organic farms is not large (currently there are just above 2000 organic farms in Poland), it is planned to include all certified and in-conversion farms. The features describing organic farms on the basis of the FSS will be similar to those, which were used to characterise all farms in the agricultural census of 2002. In the future, the farm structure survey will verify current data and show changes in the development of organic farming.

The system of control and certification of organic farming introduced by Polish law is a state and private system. According to the law, the following institutions are responsible for its enforcement:

1. The Minister of Agriculture and Rural Development authorizes certifying bodies to perform inspections, and subsequently to issue and withdraw certificates of compliance.
2. The Main Inspectorate of the Agricultural and Food Quality Inspection (AFQI)., is the supervisory institution over the certifying bodies who are responsible for the certification of organic production.
3. Certifying bodies keep records of the organic farms and processing plants, issue certificates of compliance and carry out inspections. They can also enforce sanctions.

Within his / her supervision activities the AFQI chief inspector:

- performs an analysis of the data provided by the certifying bodies,
- controls the certifying bodies,
- may require from the certifying bodies any additional information necessary for the effective supervision of organic producers,
- may control organic producers.

By 31 of January all certifying bodies send to chief inspector:

- a list of producers subject to their inspection as of 31 December of the previous year,
- report on their inspection activities.

The Main Inspectorate of the Agricultural and Food Quality Inspection (AFQI). participates in the PHARE project PL 01.04.04 "Organic Farming". The project is undertaken with Italian experts. Within the project a *Computer system of record, certification and inspection for organic farming* is being developed. It will:

- enable the recording of organic farms and companies with the following kind of activities:
    - plant and animal production
    - processing
    - import of organic products
    - collection of wild plants
    - marketing of organic products.
- support the process of issuing and recording of certificates of compliance;
- register (by the certifying bodies) annual plans of production in the field of plant and animal production, processing, collecting, import;
- support the planning and carrying out of the inspection of farms and organic companies as well as the recording of inspection results;
- enable the transfer of information required for realizing the programme of payments for organic farming from the certifying bodies to the Agency for the Restructuring and Modernization of Agriculture (ARMA) ;
- enable the transfer from the certifying bodies to AFQI the data necessary for the elaboration of different kinds of reports.

Location: The software will be installed at each certifying body and at Main Inspectorate of Agricultural and Food Quality Inspection (Warsaw).

Results

The Polish national statistic got involved in developing an organic data collection in 2003. The primary statistical data collection will be covered by the FSS (all organic farms). Additionally there will be a pilot study (prior to the FSS) in Swietokrzyskie voivodship in 2004 to identify possible difficulties in organic data collection at farm level. The FSS will be used to verify the data gathered via administrative sources.

Organic farming data according the 2092/91 regulation will be gathered by AFQI.

- Starting date for developing the database: 01.10.2003.
- Finishing date of the assignment: 18.08.2004.

The analysis of all research activities in the field of organic farming which were undertaken by the mentioned institutions make it possible to define the development indices and specifics of Polish organic farms. The database developed by AFQI will cover all operators in the organic food chain, starting with producers and ending with retailers (e.g. canteens). To build up a reliable system all system users will be trained. There will be future co-operation between CSO and AFQI to match the data from various systems in order to achieve a full description of different features of organic farms.

References

Agricultural Census 2002 schedule

International data harmonisation - learning from UK experiences

Rob Haward[49]

Since 1998 the Soil Association has produced the Organic Food and Farming report. The annual report charts the development of organic food and farming in the UK at all levels – production, processing, food manufacturing, imports, retail and consumer attitudes. The last six years of production have highlighted a number of problems associated with cumulating reliable market intelligence data at these levels.

Harmonization problems

Consistency of production data received from sector bodies: different sector bodies collect and input key production data under different categories, creating problems in collating to give consistent national data. For example crop data and geographical regions vary considerably.

Absence of livestock data: this is developing, but in previous years no livestock data have been available. The Soil Association currently collects this data direct from abattoirs.

Absence of data on projected use of land on completion of conversion: it is important to have a projection of intended use of land on completion of conversion. This need not be in great detail but is particularly important in times when a considerable amount of land is in conversion.

Availability and 'up to date nature' of the data: the Soil Association Organic Food and Farming report is released on an annual basis including information and analysis of all parts of the sector - producer, wholesaler, processor, retailer and consumer. While this approach is invaluable to the sector we believe that it also important for basic production statistics to be made available on a much more regular and up to date basis.

There is no official means for collecting import and export data.

How can these problems be solved and can this de adopted across Europe? A number of measures can be adopted to overcome the problems described.

Harmonization solutions

Development of consistent data collection categories between sector bodies and Member States: this would need to be driven by legislation with some recognition of the time and database requirements that such a change would mean to the certification bodies.

Collection of livestock data by the sector bodies: species and category data could be added to existing data collected either by obtaining this data at inspection or requiring it to be submitted on annual returns.

Collection of data on intended land use on completion of conversion: farm management plans submitted at application include plans for intended use on completion of conversion. This data could be

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inputted to the computer in a fairly simple format to give an indication of what is coming on stream in the future.

Develop a system to collect import export data. Possible options include working with port authorities or collecting this information from importing and exporting licensees.

Making the data available from sector body data holding systems: once collected it is important that this important data is easy to access. This will require some modifications to the systems currently used by the sector bodies particularly for handling livestock data, and projected use of land in conversion. The ideal would be to have a linked up data handling system across Europe that enables users to extract production, processing and import/export data.

Steps to harmonising data collection

1. Review existing systems
2. Propose standard data requirements - what do we need?
3. Propose a standardized system for collecting this data – e.g. crop categories etc.
4. Develop a pan EU database that can hold, handle and release this data.

Data collecting and evaluation of the organic agriculture system in Turkey

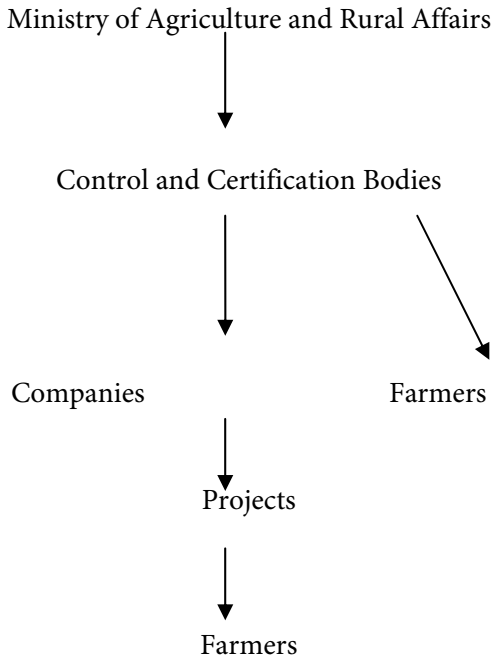
Erdal Süngü[50]

The contribution of national level data collecting methods to the development of EISFOM

The presentation of the organic agricultural production system and data collecting methods in Turkey as well as the evaluation of the different issues related to organic farming can provide a contribution to the harmonization, development and quality assurance of the statistical data.

How the organic system is working

In Turkey the work and processes related to organic agriculture is carried out by a department under the Directorate General of Agricultural Production and Development which is connected to the Ministry of Agricultural and Rural Affairs. The Ministry established an organic agriculture committee which includes representatives from different general directorates of the Ministry. This committee makes decisions in order to develop and spread organic agriculture in Turkey. This committee also has the authority to inspect the control and certification bodies in Turkey. The Ministry gave the control and certification bodies the authority to inspect and control the organic producers and companies in Turkey. The work of registration, inspection, control and follow-up of the producers and the certification processes of the product is completed by the control and certification bodies. The ministry is responsible for ensuring that the control and certification bodies' activities are according to both national and EU regulation. The scheme below shows the working process in Turkey.



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Organic Agriculture is a new development in Turkey. Therefore a data collection and processing system is currently being developed. Work is ongoing to constitute a database. The basic resources for providing data of organic agriculture are the control and certification bodies. However, efforts are also made to collect data through the organic agriculture units within the provincial agricultural directorates, which are currently being established. In Turkey organic agriculture is carried out under contracts. The processor makes a contract with the producers and applies at the control and certification body on behalf of the producers. Hence the control and certification body registers and monitors the producer groups and companies which are declared. If a producer wishes to produce on his own he applies to a control and certification body, and this body registers and monitors the producer.

The data related to the producer and processor level are being prepared by the control and certification bodies.

In Turkey organic agriculture is mostly crop cultivation. The production is usually small-scale and fragmented; hence there are some difficulties in collecting and evaluating data. Organic livestock production is very limited.

Producer level data

The evaluation is based on the information collected by the control and certification bodies. The data which are recorded at the producer level include type of crops, area (hectares) and quantities. This data helps to identify the number of producers, the organic area as well as product type across the country and their distribution according to the geographical area. The problem here is that the number of farmers and the land under organic management might not always be clear, especially if various crops are grown in the one field, because then the same field might be recorded more than once the database. The same problem affects also the farmers. When a farmer cultivates different type of crops in the same field each crop type is recorded in the database under a different farmer, and again this can cause some repetitions. But all these problems will be solved with the database program which is currently being developed, but to organise the data will need some effort.

Table 1: Organic farming in Turkey: Number of Farms, area, production (tons)

Year	Number of farmers	Area (hectares)	Production (ton)
2002	12 428	89 827	310 125
September in 2003	13 044	103 190	291 876

Farm level data

In the existing data collecting system every single producer is evaluated at the farm level. In organic agriculture the use of inputs at farm level is limited. The recording of data on the input level cannot be implemented yet.

Processor level data

Processor information, including activities and quantities, are sent to the Ministry of Agriculture and Rural Affairs by the control and certification bodies. The certification of the products processed by the company makes it possible to have information of the quantity of processed fresh, dry, frozen, canned and concentrated products.

Data of Retailer and Consumer level

Data will be able to be collected at this level after establishing organic agriculture units in the provincial agriculture directorates of the Ministry of Agriculture and Rural Affairs. Organic product consumption in the internal market is at the moment very low, hence most products are exported. This situation affected the data collecting at the retailer and consumer level negatively, but with the increasing domestic demand it will be possible to collect data more effectively.

Data of trade/export/import level

Data on exports can be obtained through the export certification documents, which are prepared by the control and certification bodies. Currently in Turkey the Aegean Exporters Union registers all the exported organic products.

Table 2: Exportation figures for the years 2000 to 2003

Year	Quantity (tons)	Value (US $)
2000	13 128	22 756 297
2001	17 556	27 242 407
2002	19 182	30 877 140
2003	21 083	36 932 995

Table 3: 2003 exportation figures according to product type

Product	Quantity (tons)	Value (US $)
Raisins	5 677	7 055 594
Dried figs	2 026	5 166 126
Dried apricots	1 687	4 734 220
Hazelnuts	1 246	4 508 479
Apple juices	2 572	3 055 263
Frozen fruits	1 211	1 982 684
Cotton	870	1376 141
Lentils	1 446	1 024 975
Chickpeas	1 166	829 597
Processed hazelnuts	157	598 361
Frozen vegetables	841	572 770
Dried vegetables	112	507 286
Total	**18 147.66**	**31 411 501.25**

The prices of organic products depend on the market conditions in Turkey. This means there is no price intervention.

Up to now there has not been any support for organic agriculture. However, the Turkish government implemented a discount on loans for organic agriculture in February 2004. There is a big effort to develop organic agriculture and the internal market. There is also an effort to lower the difference in consumer prices between conventional and organic products.

Conclusion

Various data collection systems related to organic farming and organic products exist in Turkey, and there is a need for harmonization, quality improvement and further development. Having knowledge of the problems in other countries should be helpful for finding a solution.

Results of Group 1: Farm Structure Survey (FSS) and administrative (2092/91) data

Lizzie Melby Jespersen[51] and Helga Willer[52]

The main issues of the session

In this session, general and specific problems regarding data collection and processing on the national and the EU level were discussed, including issues regarding the harmonisation of the farm structure survey (FSS) results and the returns according to EU regulation 2092/91. Good examples of organic data collection systems and of combining FSS and 2092/91 data were given (e.g. Finland, France and Poland). Furthermore the dissemination of information was discussed. The working group concluded with recommendations.

Brief summary of the presentations

The group looked at various examples of data collection and processing in the European Union.

Koen Duchateau from Eurostat showed that, with the European Farm Structure Surveys (FSS) 2000 and 2003, comprehensive information on organic farming in the EU has been made available.

According to Torsten Blumöhr of the Statistische Bundesamt (Germany), the inclusion of the question in the German FSS about whether a farm was working according to EU-Regulation 2092/91 provides in-depth and high quality regional and structural information on organic farming in Germany.

Minou Yussefi of SOEL (Germany) and Santiago Olmos of the University of Wales Aberystwyth said that the accessibility of data had improved substantially both on the global and the European level, but that further efforts were needed. Harmonisation of the 2092/91 returns at the European level was seen as another problem.

Mario Adua of ISTAT presented the Italian situation: here organic farming data are collected as a part of several different surveys; however, the problems of harmonisation within Italy are substantial.

Katell Guernic of Agence Bio presented the French system, where a harmonised and efficient method of data collection of the 2092/91 returns is in place, and this facilitates timely and regionally accurate access to the figures. Delivery of the data in response to one common questionnaire is obligatory and financial compensation is provided to the six certifying bodies; France provides an example of an effective approach which could be adopted in other countries.

Sampsa Heinonen of KTTK (the Plant Production Inspection Centre) said that the system in Finland is similar. Additionally, all farms must quote their farm code number and therefore data from the 2092/91 returns can be combined with those of the FSS and the data are harmonised.

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Marta Wroblewska and Ewa Szymborska explained that in Poland the close cooperation between the national statistics office and the competent authority means that in future it may be possible for detailed data on organic farming to be collected. The Farm Structure Survey results and the returns of EU regulation 2092/91 are combined through matching the operators' address. A database is currently being set up.

Rob Haward of the Soil Association explained that the Soil Association puts great effort into compiling a detailed annual report on the organic farming situation in the UK.

Problems identified during the discussions

Problems related to organic data collection as part of *the national and EU farm structure survey (FSS):*

- No distinction is made between organic and non-organic production in cases where only a part of the farm is managed organically.
- The FSS is a sample and not a census survey.
- Only farms that are bigger than a certain size - varying from country to country - hectares are considered.
- The results are only available every two years.
- Unlike administrative data collection, the financial year is used rather than the calendar year.
- Except in a few cases, there is no harmonisation with the EU regulation 2092/91 returns; sometimes the results are contradictory.

Problems related to organic data collection as part of the returns according to *EU regulation 2092/91:*

- In some cases the returns from the certification bodies are not harmonised within one country (e.g. Italy, Germany) and they are often incomplete.
- There is no financial compensation for inspection bodies for producing data (with the exception of France).
- There are inconsistencies in classification between the various countries, for example, in how various crops are/are not 'grouped', or in the classification of livestock.
- There is no legislation to impose the collection of detailed information relating to organic farming.
- The extent to which the yearly organic farming questionnaire from DG Agri is completed varies between Member States.
- In some cases the data is provided only very late in the year.
- With the exception of a few cases (e.g. Finland), there is no harmonisation with the FSS results.

Accessibility of information *(FSS and administrative data according EU regulation 2092/91):*

- Information is either available in part or not at all.
- Information is available only in the national language.
- Data are not available for further processing.

Development opportunities and recommendations

- There should be improved collaboration between the certification bodies and authorities responsible for the Farm Structure Survey and EU regulation 2092/91 returns. Setting up a common system should help to avoid overlap and to harmonize definitions and methodology.
- Reporting to EU regulation 2092/91 should be mandatory; the methodology and definition of categories should be harmonized. Reporting should be supported by public bodies.
- The EISfOM project should justify the need for these data for inspection and development purposes.
- The process should be facilitated by the development of electronic data collection tools in order to ensure data quality and also to reduce the workload of data collectors and operators.
- A harmonized reporting system is also needed for the dissemination of (electronic) reports. The results should be made more widely available, and this should be supported by public funding.

Group 2: Farm Incomes and Prices

Chairs: Krijn Poppe[53] and Jürn Sanders[54]
Rapporteur: Johan Bakker[55]

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Information systems on organic farming: FADN and market statistics

Krijn J. Poppe[56]

Introduction

This paper aims to set the stage for a discussion in the EISfOM seminar on the way established agricultural information systems like Farm Accountancy Data Networks (FADNs) and market statistics deal with organic farming. For those who are not familiar with these data systems:

- FADNs gather farm income data to monitor and analyse CAP and related policies in professional agriculture;
- Market/price statistics gather price data of standardised representative goods and services to calculate price developments and to improve market transparency.

In the seminar sessions following this contribution, a number of examples are presented on how managers of those established systems successfully implemented data gathering on organic farming. These cases show best practices. As the EISfOM project uses the assumption that established systems have difficulty in including organic farming, these are useful examples.

However, many participants in the EISfOM project, at least implicitly, signal that managers of established systems are not always willing to reorganise their system and to include organic data. Since there is a perceived need for more data on organic farming for analysis and to support the sector, I decided to focus in this contribution less on the technical side of the data gathering (the examples provide interesting material on this) and more on some theoretical notions that could help us to reflect on innovation in policy information systems. I approach this from two angles: the development of information systems as studies in information science, and the role of the government in such information systems (as studied in public administration).

These insights are presented in the next two sections. They are based on 15-years' experience in managing innovation in European FADNs (see, for example, Abitabile et al., 1999) and leading the PACIOLI-network (www.pacioli.org) which is a platform for those who work on innovation in farm accounting and FADNs.

The development of information systems

Information systems have particular objectives. For instance, the objective of the European FADN is to measure farm income in a representative way and to provide a tool for policy analysis, especially in the CAP. Statistics are a by-product of this and not the main goal. It is important to realise this, since it means that proposals to gather data for another objective are likely to fail.

The main objective of an information system will depend upon the strategy of the organisation involved. Figure 1 provides a framework of the steps to be taken to create a working information system that is in

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line with the business strategy: the so-called Information Engineering Approach developed by James Martin (1982).

It suggests that the strategy of an organisation (e.g. in the CAP the change from product support to direct payments with cross compliance) should be translated into a strategy for the information system (e.g. gather less product data and more data on nature management). Then an information analysis can be done (resulting in a data model), to be followed up with technical design, software writing and introduction of the system.

This framework demonstrates that requests to make significant changes to systems should be dealt with at the business strategy or information strategy planning level, and not as annual maintenance questions in the production stage. It also shows us that including organic farming in data sets is not an IT issue as such, but deals is a question of the objectives of the system managers. Therefore, any request to integrate organic data should support the objectives of the system and of the system's owner.

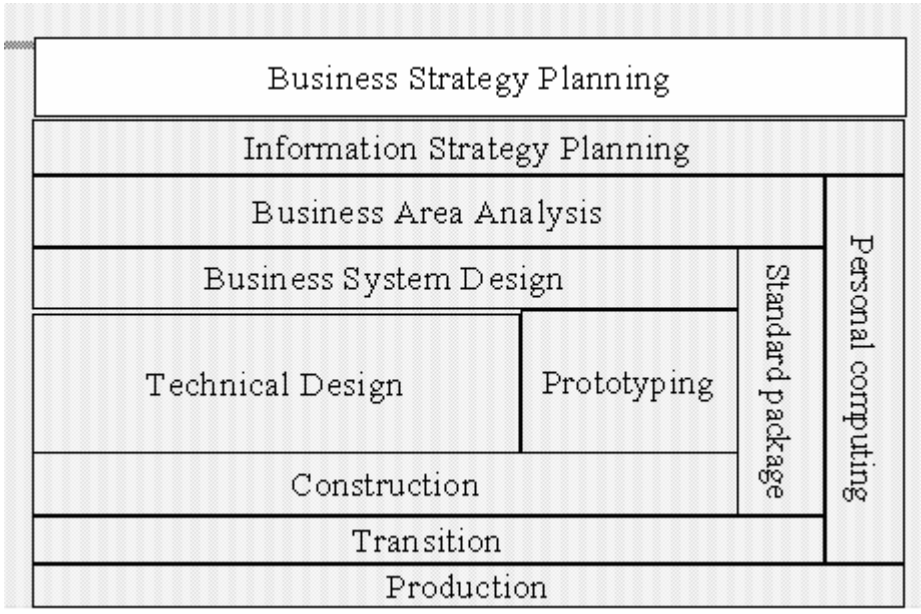

Figure 1: Development Information Systems (according to James Martin)

Role of government in information systems

Information can be provided by the market sector as well as by government agencies. An example of provision by the market sector is the market information that companies like ACNielsen provide to retail companies and producers of branded goods. Information from governments is often provided in the form of statistics by statistical agencies like Eurostat.

The rationale for public information systems is based upon two objectives:

- to support government decisions;
- to provide market transparency as a public good.

In cases where the government intervenes in markets (as in the Common Agricultural Policy), or attempts to do so (as in policies on competition), or needs to allocate budgets within the administration, it must

have appropriate information to take such decisions. And these are just a few examples. In all such cases, data gathering (directly or in the form of statistics) makes sense. An example for organic farming is monitoring whether policy objectives are being achieved, such as the safety of organic food products.

Support government decisions

Concerning the needs of the government, it is important to recognise which stage the government decision-making process has reached. The former Dutch Minister for the Environment, Pieter Winsemius (currently with the McKinsey Company in Amsterdam) has defined four stages (figure 2). The data needs of the policy-makers are different at the various stages.

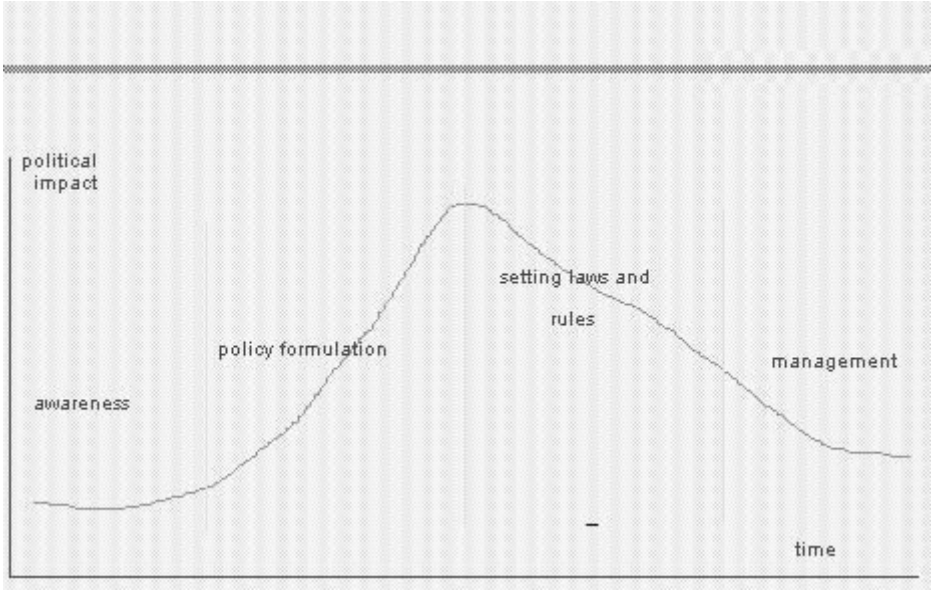

Figure 2: Government Decisions (Winsemius' policy cycle)

In the awareness stage, the political impact of the issue is still small. The focus of policy-makers is on problem definition ('what is the situation we are facing?'). It is likely that the only information available at this point comes from a few case studies is all and there are, as yet, no resources committed to large representative sampling and other forms of data gathering. It is enough to show that organic farming can contribute to sustainability for people, the planet and the profit dimension.

At the policy formulation stage, the political impact is increasing. Researchers are probably asked to illustrate the bottlenecks in organic farming: are they problems to do with conversion, with the marketing channels (specialist shops, farmers markets or large retail outlets), or with consumer demand?

In the next stage (making laws and regulations) researchers are asked to carry out ex-ante policy analysis, for example, to calculate support measures or the effect on sustainability. Here, more representative data quickly becomes an issue. Once regulations have been put in place, the policy impact quickly declines until a new related issue comes up and the cycle starts again.

In the policy management stage, monitoring is important. Indicators on the human, financial and environmental aspects of organic farming (in relation to conventional farming) are important to measure whether the policy objectives are being achieved (ex-post analysis).

This policy cycle should be kept in mind when discussing how to include organic farming in agricultural information systems. The concept suggests that if organic farming is not on the agenda (or still in the stage of awareness) there will not yet be much support for fully representative sampling of, for example, organic farms in the FADN. As suggested in paragraph 1.2, the discussion is then still at the 'business strategy level'. In other words, it is difficult to impose a new concept of farming on a country by altering its information systems.

The policy cycle also provides an explanation of why, in some countries (as we learn from the papers on the Swiss FADN and the EU FADN in this session), organic farms are over sampled in the FADN. In these countries the policy cycle on organic farming is probably somewhere towards the end of the policy formulation or the beginning of the law and regulations stage, which results in a high demand for data on organic farming.

Market transparency as a public good

The second rationale for setting up or changing information systems can be that it improves the working of the markets. If, for example, farmers have difficulty in assessing the market prices for organic products, and therefore prices are too cyclical or farmers take the wrong production and investment decisions, then better price information would improve the decision making process for market participants. Farmers themselves would probably not invest in information systems (and if only the large traders and retailers were to do so, farmers would be at a disadvantage). This can lead to cases of market failure, where it makes sense for the government to provide the information (or, as has been done in Germany, for organisations such as ZMP to provide the information by levying a small tax on all sales so that the sector finances this itself).

Initially the government has to define its own information needs, and I will return to this in the next paragraph. Then the government has to take into account the needs of the private sector. I have the impression that these needs have shifted in recent years in regard to organic farming:

Typical questions from farmers/advisors:

	trend in importance
is conversion profitable	-/-
planting decisions	+
sales decisions	++
benchmarking (difficult)	?

The role of the government in providing information as a public good is changing, especially in view of the trend for the reorganisation of agricultural supply chains from bulk products in open markets towards differentiated products sold on contracts within closed supply chains. In such cases governments have a smaller role to play. Here are a few examples to stimulate debate, both in the field of FADN and price statistics:

- farmers can improve management and income by better benchmark information. This led in the past (1960s and 1970s) to the obligation to keep management accounts when one applied for interest subsidies. Nowadays farmers are better educated and commercial accounting offices can offer benchmarking services. It is debatable whether the old obligation worked at all, and whether, in the current situation, such an obligation would still make sense;
- farmers are the weaker party in contracts and sales. Historically this led to price statistics to improve market transparency and such price data were even used by stock markets to quote future prices. In

many supply chains there is now a more integrated chain approach, moving away from bulk products to niches and contracts. This implies a trend to proprietary information. In the Netherlands there are only two big dairy companies, one of which pays a price based on the prices of five other European benchmark companies. This makes a price statistic on a Dutch milk price nearly impossible and not very useful. For vegetables, we observe that product differentiation is taking place and trade is moving away from the auctions to direct contracts between producer groups and retail chains. This makes it hard to determine price statistics (like in the Bordeaux wine market), and they probably do more to undermine new established contract systems then to support farmers.

Conclusions

In this session of the seminar there are a number of papers that reflect on best practice in gathering data on organic farming using established information systems, and it is useful for the EISfOM project objectives to promote such data gathering.

In some countries organic farming is already over sampled in FADNs. However, the papers do not tell us why such data gathering is lacking in other cases. Sometimes it is because of practical difficulties that can be solved by following the best practice outlined in the papers discussed in this session. However in many situations we have to reflect on the reasons why the data are lacking before demanding change. This paper suggest that the objectives of the system, the stage of the policy cycle and the organisation of the organic supply chain can explain the lack of interest in gathering data on organic farming. In such situations it will be difficult to gather such data and the best we can do is to move the discussion on from the data systems to the strategic (policy) level.

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Summarizing results from earlier EISfOM activities on farm incomes and farm level prices

Sjaak Wolfert[57]

Introduction

This report gives a European overview and analysis of data collecting and processing systems (DCPS) at farm level with special attention to potential of organic data in DCPS, describing what material from previous activities is used and the method of analysis. The results are presented and discussed, and finally some general conclusions are drawn.

Material and methods

The following information was available from previous activities, and is used for the analysis in this section:

- Basic results of Questionnaires 1 and 2 that were sent out in 32 European countries.
- Country reports based on these results and additional research carried out for each country.
- Country tables at farm level, summarizing most important results

Concerning the country tables, questions 1, 2, 4 and 7 were considered to be the most important ones to get a European overview of the state of the art. These questions were:

1. Is there at least one DCPS which represents the listed statistic scopes or methodologies at farm level? (e.g. FSS)

2. Is there at least one DCPS where organic data are integrated into a total DCPS, and are they distinguishable from the total data?

The next questions only had to be answered when all questions 1, 2, 3 apply for at least one DCPS per country!

4. Is there at least one DCPS which is based on a census or representative approach (that means, does the sample represent the total population)?

7. Is there at least one DCPS running data quality management systems?

For each of these questions a table was prepared, giving an overview of all 32 countries that were involved and of the total numbers of DCPS. After that, a summarizing table was prepared at the aggregated European level.

From the country reports general remarks, problems, strengths, weaknesses and opportunities on DCPS at farm level are inventoried.

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Results

European overview of DCPS with organic data

The results are summarized in tables 1 – 5 which follow.

Table 1: European overview of 32 countries on presence of DCPS that include organic data and cover the most relevant product groups or farm types, categorized by several types.

A capital 'X' indicates that the DCPS is harmonized to an international system; a small 'x' indicates that it is not harmonized. Both in one column means that as well harmonized as non-harmonized systems exist.

	Farm Accountancy Data Network (FADN)	Farm Structure Survey (FSS)	EU Reg. 2092/91	Production Statistics	Price Statistics	Supply Balance Sheet
Austria	X	X	X	x	x	
Belgium	X	x				
Bulgaria		x		x		
Cyprus						
Czech Republic		X				
Denmark	X	X		x	x	
Estonia	X	X	X			
Finland	X	X	X	x	x	
France		x				
Germany	X/x	X/x	X/x	x	x	
Greece		x				
Hungary		X				
Iceland	X	x	x			
Ireland		x				
Italy	X	x			x	
Latvia		X				
Liechtenstein	X	x		x	x	
Lithuania		x				
Luxembourg	X	x	X			
Malta						
Netherlands	X	X/x	X		x	
Norway	X	X		x	x	
Poland			x			
Portugal						
Romania		x				
Slovakia		x				
Slovenia		x				
Spain		x				
Sweden	X	X	X	X	X	X
Switzerland	X	x			x	
Turkey		x		x		
United Kingdom	X	x		x		
Totals	15	28	9	10	10	1
Harmonized	10	11	7	1	1	1
Not harmonized	6	19	3	9	9	0

Table 2: European overview of 32 countries on presence of DCPS in which organic data is distinguishable, categorized by several types. EU Reg. 2092/91 is left out because this is by definition an organic DCPS.

	Farm Accountancy Data Network (FADN)	Farm Structure Survey (FSS)	Production Statistics	Price Statistics	Supply Balance Sheet
Austria	x	X	x	x	
Belgium	x				
Bulgaria					
Cyprus					
Czech Republic		X			
Denmark	x	X	x	x	
Estonia	x	X			
Finland	x	X	x	x	
France					
Germany	x	X	x	x	
Greece					
Hungary		X			
Iceland	x	X			
Ireland					
Italy	x	X			
Latvia					
Liechtenstein	x	X	x	x	
Lithuania		X			
Luxembourg	x				
Malta					
Netherlands	x	X			
Norway	x	X	x	x	
Poland					
Portugal					
Romania					
Slovakia					
Slovenia					
Spain					
Sweden	x	X	x		
Switzerland	x	X		x	
Turkey					
United Kingdom	x				
Totals	15	15	7	7	0

Table 3: European overview of 32 countries on presence of DCPS based on a census or representative approach, categorized by several types. (This means that the sample represents the total population)

	Farm Accountancy Data Network (FADN)	Farm Structure Survey (FSS)	EU Reg. 2092/91	Production Statistics	Price Statistics	Supply Balance Sheet
Austria		X	x	x	x	
Belgium	x					
Bulgaria						
Cyprus						
Czech Republic						
Denmark	x	X				
Estonia		X				
Finland	x	X	x	x	x	
France						
Germany	x	X	x	x	x	
Greece						
Hungary						
Iceland						
Ireland						
Italy		X				
Latvia						
Liechtenstein						
Lithuania		X				
Luxembourg	x					
Malta						
Netherlands	x	X				
Norway	x	X				
Poland						
Portugal						
Romania						
Slovakia						
Slovenia						
Spain						
Sweden		X		x		
Switzerland	x	X			x	
Turkey						
United Kingdom	x					
Totals	8	11	3	4	4	0

Table 4: European overview of 32 countries on presence of DCPS that run data quality management systems, categorized by several types.

	Farm Accountancy Data Network (FADN)	Farm Structure Survey (FSS)	EU Reg. 2092/91	Production Statistics	Price Statistics	Supply Balance Sheet
Austria	x	X	x	x	x	
Belgium	x					
Bulgaria						
Cyprus						
Czech Republic						
Denmark	x	X				
Estonia	x	X				
Finland	x	X	x			
France						
Germany	x	X	x	x	x	
Greece						
Hungary						
Iceland						
Ireland						
Italy	x	X				
Latvia						
Liechtenstein	x	X		x		
Lithuania						
Luxembourg	x					
Malta						
Netherlands	x	X				
Norway	x	X				
Poland						
Portugal						
Romania						
Slovakia						
Slovenia						
Spain						
Sweden		X				
Switzerland	x	X			x	
Turkey						
United Kingdom	x					
Totals	13	11	3	3	3	0

Table 5: Aggregated results over 32 countries, summarized from tables 1 – 4.

	Farm Accountancy Data Network (FADN)	Farm Structure Survey (FSS)	EU Reg. 2092/91	Production Statistics	Price Statistics	Supply Balance Sheet
DCPS that include organic data	15	28	9	10	10	1
Harmonized to international system	10	11	7	1	1	1
Organic data distinguishable	15	15	n.a.	7	7	0
Representative sample	8	11	3	4	4	0
Quality management system running	13	11	3	3	3	0

General remarks, problems, strengths, weaknesses and opportunities

Below several issues are listed, that were mentioned in several country reports and that are important for developing a European information system:

- Data is not always made publicly available or is not reported at all.
- In some cases there was no consistent definition of organic farming used.
- The organisation of organic farming in a country can be difficult and complex; parties, especially certifiers are sometimes not willing to co-operate in providing data.
- In several systems small farms (usually < 2 ha) are not taken into account, which sometimes means that a substantial part of the organic farming activities is left out.
- Some systems do not distinguish many product groups, which makes them less valuable.
- Data is not always very up-to-date.
- The fact that data are often not representative is often a problem, even in harmonized Eurostat systems like FADN; theoretically they should be representative, but in reality this is sometimes hard to accomplish.
- Data quality is also a recurring problem; many systems are only visually checked by experts, but this is of course not very good.
- Data collection is not always consistent because it is sometimes on a voluntary basis.
- Some systems are able to make a distinction between converted farms and farms in conversion.
- Many systems are still in a poor electronic format, like Excel sheets. Of course this is often fine for their own purposes, but it is difficult for harmonization.

Discussion

From Table 1 (DCPS including organic data) it can be concluded that:

- The Farm Structure Survey (FSS) is represented most frequently and the Farm Accountancy Data Network (FADN) is second best.
- Only Sweden has a Supply Balance Sheet system that contains organic data (according to current knowledge).
- FADN is mostly harmonized to an international system. This is not surprising, because this is a European standard, in principle obligatory for all EU countries. For the FSS, it can be concluded that national standards are frequently used.
- Data collection according to EU regulation 2092/91 is mostly harmonized when it is available as a DCPS. This is also not surprising for the same reason, it is a European standard.

From Table 2 (DCPS in which organic data is distinguishable) it can be concluded that:

- In most FADN systems, organic data is distinguishable from the total data; this is only partially true for FSS.
- There are only a few systems for production and price statistics and supply balance sheets, in which organic data is distinguishable.

From Table 3 (presence of DCPS based on a census or representative approach) it can be concluded that:

- Again FADN and FSS are the most frequent systems that can be used the estimate the data for the whole national population.
- For the others, representative systems only exist in a few countries.

From Table 4 (presence of DCPS that run data quality management systems) it can be concluded that:

- Only FADN seems to have a quality management system most frequently. This is not surprising, because this is rather strictly managed from the EU FADN office.

From Table 5 (aggregated results over 32 countries) it can be concluded that:

- The total amount of systems that contain organic data is not very large, although it should be noted that the information is still rather incomplete.
- Of all DCPS that contain organic data, only FADN seems to be a system in which for most cases organic data can be distinguished (except for EU regulation 2092/91). It is a representative sample for the whole population and is running a quality management system.

Contents, tools and organization

The inventoried remarks from the country reports can be classified into issues concerning contents, tools and organization.

Contents: several problems are identified concerning data supply, reporting and level of discernment of data.

Tools: different software is used and many 'databases' will lack an appropriate data definition as soon as they are not harmonized to superior systems.

Organization: on-going discussions on what is organic farming, from what farm size data is taken into account, etc. inhibit the development of organic DCPS. Unco-operative behaviour is also inhibiting. It takes quite some organizational efforts to keep the data up-to-date.

General conclusions

Based on the information that was made available at this moment, the following general conclusions can be made:

- In comparison to other actor levels, for the farm level DCPS that contain organic data seem to be more developed.
- Within the farm level FADN is represented most frequently and data quality and representativeness is usually rather good. So, this system seems to be ready for a European information system.
- Harmonization can play an important role as a trigger to improve data quality and representativeness. However, this usually requires high investments into administrative efforts and organisation.
- Probably a large step forwards can be made when in other total DCPS, organic data is made distinguishable. Especially for FSS many data would become available at once.
- Incentives should be created for different parties in order to make them co-operate in developing harmonized information systems.

The main conclusion is that relatively little effort has to be made when developing a European information system based on FADN and FSS, while for the other systems, investments in organic data collection must be made first.

The question remains which information from what system is most valuable in order to set priorities.

Current and future perspectives for economic analyses on organic farming with the EU-FADN

Alberto D'Avino[58]

Abstract

The paper presents some issues concerning the availability of data on organic farming in the European Farm Accountancy Data Network (EU-FADN). The main questions discussed are the identification of organic holdings and the possibility of carrying out comparative analyses, by country or with respect to conventional farming. Finally, the current situation regarding the representativity of organic farms and the future perspectives for economic analyses with the EU-FADN are described.

Introduction

Before 2000, none of the most important statistical surveys at farm level in the EU, namely Eurostat Farm Structure Survey (FSS) and the FADN, provided for an explicit identification of organic holdings.

Following the political debate in the framework of the preparation of the Agenda 2000 reform, which led to a general reinforcement of the Rural Development aspects of the CAP, more emphasis was set on supporting sustainable, environmental-friendly agricultural practices, and on issues like food quality and food safety.

In this context, organic farming acquired a growing importance and this boosted the introduction of a relevant identification code both in the FSS and in the FADN.

Main issues

Identification of organic holdings in the FSS and the FADN

An identification code for organic farming was introduced for the first time in the 2000 Census[59].

The information detail about farm practices, available in the FSS 2000, was the following:

1. Organic farming or converting to organic or mixed
2. Non organic

In the following sample surveys 2003, 2005 and 2007[60] even more detailed information concerning organic farming is available:

1. UAA under organic production methods
2. UAA in conversion to organic production methods
3. Organic production methods also applied to animal production?

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[59] Commission Decision (EC) N. 377/98 of 18.05.98, OJ L168 13.06.98 p. 29

[60] Commission Regulation (EC) N. 143/2002 of 24.01.2002, OJ L24 26.01.2002 p. 16

a) Totally

b) Partly

c) Not at all

As far as the FADN is concerned, a project study carried out for DG AGRI in the late 1990's concerning modernisation of the farm return[61] recommended, among other things, to collect specific information related to organic farming.

The variable identifying organic farming was introduced from the accounting year 2000/01, following the modification of the FADN farm return[62]. The information concerning agricultural practices in the FADN is slightly different from that in the FSS. The following codes are used in the FADN:

1. Non organic farms

2. Purely organic farms

3. Converting to organic or mixed

In fact, with one single data code identifying organic farms, it is possible to make use and exploit the potentiality of the FADN database to analyse in detail economic results of organic farms by country and/or to compare them with conventional farms.

Representativity of organic holdings in the FADN

The table 1 compares the number of organic holdings represented in the FADN and the number of organic holdings in the FSS 2000 (Census of Agriculture), giving thus an overview on the representativity of FADN concerning organic farming.

At the EU-15 level, the number of organic farms in the two surveys is quite close, but important divergences are registered at the Member State level. For example, in two Member States (France and Ireland), no farm in the FADN has been recorded as organic, whereas in some others (Greece, Spain, Netherlands and Portugal), organic farms are clearly misrepresented.

From a general point of view, there are two main reasons that explain discrepancies in the number of organic holdings between the FADN and the FSS:

1. FADN does not represent the whole farm population, but only covers so-called commercial farms, whose economic size expressed in Economic Size Units is higher than a threshold set in the EU regulation.

2. In the FADN weighting system there is no specific factor for the farm production method, therefore there is no guarantee that the sample is balanced according to this criteria.

Another problem affecting the representativity of organic farms is the inaccuracy in the classification according to the rules of the EU typology: the classification by farm size and farm type is calculated on the basis of a set of normal Standard Gross Margins (SGMs), and not on the basis of specific SGMs related to organic production.

[61] LEI (1999), The feasibility of a new farm return for the FADN

[62] Commission Regulation (EC) N. 1122/2000 of 22.05.2000, OJ L127 27.05.2000 p. 7

Table 1: Number of organic holdings represented in the FADN and the number of organic holdings in the FSS 2000

Member State	Number of organic farms (or converting)	
	FSS 2000	FADN 2001
BEL	580	722
DAN	2520	2354
DEU	9570	14669
ELL	1460	85
ESP	17160	44070
FRA	7060	0
IRE	1560	0
ITA	45710	22251
LUX	20	25
NED	710	5372
OST	18880	15028
POR	810	5751
SUO	4900	3853
SVE	9040	5903
UKI	1690	3261
EU-15	121670	123344

The problem of the sample size of organic holdings in the FADN

Table 2 shows the sample size of organic holdings in the FADN by Member State.

Apart from the abovementioned specific problems in some Member States, the number of organic holdings in the sample is generally proportional to their relative importance.

Nevertheless, given the small share of organic farms in the farm population, the sample size of organic farms poses problems in small Member States, or even in the big ones, if a more disaggregated level of analysis is needed.

As a consequence, analyses of economic results of organic farms by Member State and those of organic farms compared to conventional farms may be jeopardised by the small sample.

Possible solutions that could be envisaged to increase the sample size for organic holdings are:

1. Introducing an additional stratification variable at Member State level, based on production methods, with a higher sampling rate for organic farms
2. Selecting a particular sub-sample of organic farms

For example, the second option is already applied in Denmark, where an additional sub-sample of organic farms, with a higher sampling rate than that used for the other types of farms, is selected every year.

However, those methods aimed at increasing the size of sample of organic holdings have the drawback that they may introduce a bias to the general representativity of the results. In fact, the weighting system

of the EU-FADN is based on individual farm weights calculated with a post-stratification procedure, according to three dimensions, namely region, farm type and economic size class.

The system is quite rigid, and it is not able to deal with particular sub-samples or with non proportional sampling rates for variables other than the three standard dimensions.

Therefore, in order to prevent the introduction of factors leading to biased results, it is not possible to integrate the Danish sub-sample of organic farms in the EU-FADN database.

The integration of a larger organic farm sample in the EU-FADN needs a complete re-think of the weighting scheme, in order to make it more flexible to handle with national stratification variables and/or sub-samples. A study in this respect has recently been launched by DG AGRI and the conclusions are expected by the first half of 2005.

Table 2: Sample size of organic holdings in the FADN by Member State

Member State	Number of organic farms (or converting)
BEL	25
DAN	82
DEU	266
ELL	2
ESP	463
FRA	0
IRE	0
ITA	725
LUX	6
NED	89
OST	306
POR	57
SUO	57
SVE	152
UKI	78
EU-15	2308

Conclusions

Apart from specific problems, organic holdings are clearly identifiable in the new farm return of the EU-FADN, which allows a high potential for comparative analyses.

On the other hand, the percentage of organic farms in the farm population being less than 5%, the sample size of this type of holdings is quite restricted. To make analyses on organic farms more solid, it would be necessary to increase the sample size.

However, in order to do so, two conditions have to be met:

1. Member States need to have the interest and willingness to make an effort to select a larger sample of organic farms

2. The EU-FADN weighting system has to be revised in order to cope with non proportional sampling rates.

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LEI, The feasibility of a new farm return for the FADN, 1999

Comparing organic and conventional farm incomes in FADN - Issues in international harmonisation and quality assurance

Frank Offermann[63]

Comparing organic and conventional farm incomes - Why?

The main user group of farm income comparisons are policy makers and interest groups. For them, depending on their goals, income comparisons can help in identifying the need for adaptations to existing policies or the introduction of new policy measures. In principle, farm income comparisons can also support the monitoring and ex-post evaluation of policy impacts on organic farming. The more detailed these analyses are the more valuable they can be, e.g. if income comparisons are differentiated by farm type, this may contribute to make policies more targeted and efficient.

Comparing organic and conventional farm incomes - How?

The fundamental question underlying most comparative studies on the income in organic vs. conventional farming is:

What profit would the organic farm make if it was managed conventionally?

Different approaches exist to arrive at an estimate for this hypothetical profit (Offermann and Nieberg 2000):

- Models
- Before conversion – After conversion
- Comparable conventional farms
- Comparable (before conversion) conventional farms

The approach most widely applied in FADN (Farm Accountancy Data Network) based analyses is the use of comparable conventional farms as an approximation of how an organic farm would look if it was managed conventionally.

What does 'comparable' mean? Generally speaking, conventional farms are comparable if they have similar production possibilities as the organic farm, in terms of both natural environment and resource endowment.

There are several problems which can arise when using this approach (compare Lampkin 1994, Nieberg and Offermann 2003), and which can have a significant influence on the results of the comparisons:

- system-dependent variables
  It is not always easy to determine which farm characteristics are system-independent and which ones are depending on the farming system and can therefore not be used to identify comparable conventional farms.

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- the `farm manager variable`
  Is there a correlation between characteristics of the farm manager and the management system? This could be the case if for example more innovative farmers are more likely to convert. It would also be an analytical problem if organic farmers do not put financial objectives so high on their agenda as the average conventional farmer, because then what we measure is the influence of farmers' characteristics on the income and not the financial impact of the management system.
- the self-selection problem
  If all farmers were well-informed profit-maximisers, then each farmer would choose the farming system which gives him the highest income. Then, for an organic farm we cannot find any comparable conventional farm, because if it was comparable, it would have converted to organic farming, too.

Despite these problems, given the current situation of the organic farming sector in Europe, the concept of comparable conventional farms can be gainfully applied if certain quality standards are respected. This is also reflected in the widespread use of this approach in many European countries.

National experiences

Income comparisons of organic and comparable conventional farms have been done and published for years in Austria, Switzerland, Germany and Denmark on the basis of the national FADN's. Similar if somewhat more limited studies also exist for the Netherlands, Italy and the UK. Figure 1 provides an overview of the quite impressive information available already.

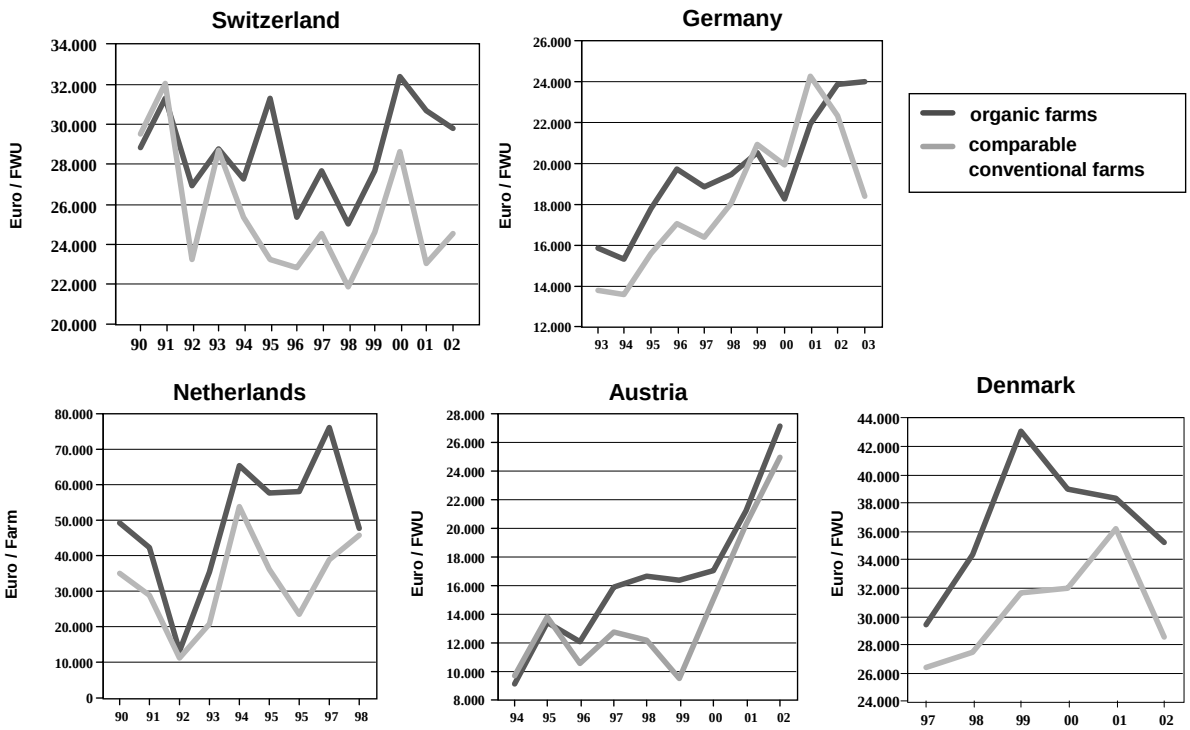

Figure 1: Income comparisons in national FADN's

Income indicator: Denmark: Gross profit (rent and interest not deducted). All other countries: Family Farm Income.
FWU = Family work unit. Source: Own calculations based on BMLF, BMVEL, DIAFE, FAT, and LEI.

The national approaches differ in many aspects:

Firstly, the variables used for selection of comparable farms differ, which sometimes is due to differences in data availability in the national FADNs. However, in some cases it must be noted that variables are used for the selection, which should probably not be used.

Secondly, the matching procedures used are quite diverse:

- some studies match groups, ensuring only that group averages are similar; most studies however look for matches for individual organic farms
- some approaches use single `partner´ farms (paired matching); others select a group of comparable farms for each organic farm
- some studies use an aggregated measure of similarity, which allows to rank conventional farms according to similarity and then select e.g. the five most similar; this approach implies a weighting of the selection variables; other studies use minimum similarity criteria, meaning that all conventional farms which fulfil the criteria are used - this may result in a different number of comparable farms for each organic farm

These differences make comparisons across countries difficult. As the methodological approach may even vary within one country for different years, it is sometimes also problematic to correctly interpret changes in relative profitability over time.

As a consequence, quality assurance for farm income comparisons should call for a careful documentation of the selection variables used for identifying comparable conventional farms. For scientific studies, in addition, a requirement for quality could be to perform a sensitivity analysis with respect to the influence of a variation of the selection variables on results.

Proposal for harmonisation: A Guideline

Within the EU research project "Further Development of Organic Farming Policy in Europe, with Particular Emphasis on EU Enlargement" (EU-CEEOFP), a guideline for a harmonised approach was developed. The objective of this guideline is to ensure a common approach to the selection of comparable conventional farms in all countries, while at the same time providing enough flexibility to allow an adaptation of the indicator specification to take account of national circumstances and data availability. The guideline specifies four mandatory areas to be covered by selection variables (similar natural production conditions, same 'region', similar endowment with production factors, similar farm type) and provides a technical guideline for matching farms.

The guideline draws on the experiences made in numerous international studies. The suggested approach was applied to EU FADN and the German FADN, providing promising, i.e. plausible and stable, results. As a conclusion, while it will obviously be very difficult to find the optimal approach for selecting comparable conventional farms, I think the guideline proposed can present the starting point of something like a 'code of good practice' for performing organic-conventional farm income comparisons.

Other aspects important for the quality of income comparisons

- Time series of identical farms
  FADN samples vary over years, with this problem being aggravated for organic farming as the number of organic farms in the samples is growing quite significantly over the years. This implies that time series not only measure changes in profitability over time but also the changes in the samples. A

solution to this is to analyse only identical farms over the years, which also further improves the quality of the results, as it allows us to confine the selection of comparable conventional farms to the first year only and then hold this set of farms constant over the years.

- Variance of results
  The variance of incomes within the organic and conventional farm samples is often very high. Therefore, this variance should always be explicitly reported, otherwise the differences in average results are overrated. As nowadays samples are usually large enough for statistical tests to be performed, application of these tests should be a made requirement for scientific studies.

Discussion points

- Harmonisation: Is the extra work really worth it?
- Who will / who should be doing it?
- Use and presentation of results

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Acquisition of participants for the FADN in Germany and practical issues of quality management

Rainer Meyer[64]

The **F**arm **A**ccountancy **D**ata **N**etwork of the European Union (FADN) was established in 1965. The aim of this network is to gather accountancy data from farms for the determination of incomes and business analysis of agricultural holdings. The legislation establishing FADN is Council Regulation 79/65/EEC of 15 June 1965. This legislation has been modified and expanded since its inception. Currently the annual sample covers approximately 60 000 holdings. They represent about 4 000 000 farms in the 15 Member States, which cover approximately 90% of the total utilized agricultural area (UAA) and account for more than 90% of the total agricultural production of the Union (15). The information collected, for each sample farm, concerns approximately 1000 variables and is transmitted by Liaison Agencies[65] of the Member States. These variables described in a farm return refer to: Physical and structural data, such as location, crop areas, livestock numbers, labour force, etc. Economic and financial data, such as the value of production of the different crops, stocks, sales and purchases, production costs, assets, liabilities, production quotas and subsidies, including those connected with the application of CAP measures.

Data are confidential

Incorporated into the founding legislation of FADN is a stipulation that all data relating to individual farms received by the Commission are to be treated with the utmost confidentiality. Consequently, data at the level of individual farms are normally not released outside the Directorate General for Agriculture of the Commission. Only aggregated results[66] for a group of farms and for farms within regions and Member States are published since, at this level of aggregation, information relating to individual farms cannot be discerned.

Liaison Agencies in the Member States collect data

The Commission does not directly collect data itself. This is the responsibility of a Liaison Agency in each Member State. This is either undertaken by the Liaison Agency itself, like in Germany, or by bodies nominated by it. For the purposes of FADN each Liaison Agency is guided by a National FADN Committee, e. g. the Ministry of Agriculture in Germany.

The need for quality control

Decisions regarding agricultural policy in the European Union must be based on sound and accurate analyses. This means that FADN data themselves must be as sound and accurate as possible. The Liaison

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[65] A list of the liaison agencies is available at http://europa.eu.int/comm/agriculture/rica/liaisonagency_en.cfm

[66] Further information is available at the European Commission's internet site at http://europa.eu.int/comm/agriculture/rica/diffusion_en.cfm

Agencies and the Commission take great care to ensure that any errors in FADN data are identified and corrected.

This chapter describes the procedures for ensuring a high quality of accounting data. The procedures used by the Liaison Agencies are outlined before the data is transmitted to the Commission in Brussels. This is followed by a description of the procedures implemented by the Commission.

Quality control procedures done by Liaison Agencies

Liaison Agencies invariably use one or more regional or national farm returns rather than the Community FADN farm return. This situation has arisen because many Member States like Germany were already running farm business/management surveys before the creation of a European network and thus had designed their own farm returns. Over time, the original farm returns may have been improved and adapted to suit the changing needs of users. They provide data firstly for the Member States' own purposes, and secondly, for FADN purposes. The objectives of the Member States may be different from those of the Commission. The Community FADN farm return is more limited in its coverage of farming activities than many of the regional and national farm returns.

National Liaison Agencies use their own control procedures to maintain a level of data quality that may be higher or lower than the standard required by the European Commission. When the data are error-free, the Liaison Agencies convert their national data to the Community FADN Farm Return as specified in Commission Regulation (EEC) and subsequent amendments. Having done this, Liaison Agencies transmit the data to Brussels and submit it for inclusion with the quality procedures implemented by the Commission.

Quality control procedures implemented by the Commission

Quality control procedures at the level of the individual farm
Coherence tests

The procedures implemented by the Commission for ensuring the quality of data at farm level are shown in the annex "Quality Control procedures"[67]. The first procedure is that of classification: all farms are classified according to European Union typology.

As detailed in the Methodology Chapter[68], to enable farm classification Standard Gross Margins (SGMs) must be applied to each of the farm's enterprises. Farms must be classified by size and type before data controls can be performed. During this stage, farms may slip from the cell in which they were originally classified for selection purposes to another cell. Such a situation may arise because, for instance, the size of an enterprise may have changed between the time the farm was sampled and the end of the accounting year, when the data were delivered to the National Agency.

The second procedure is the running of the coherence tests. These consist of several hundred tests that try to detect and identify possible errors, inconsistent data and improbable values. Several levels of error are defined according to severity. Errors can be of different types.

Error Types and probable reasons

[67] The annex is available at the internet site of the European Commission http://europa.eu.int/comm/agriculture/rica/annex001_en.cfm

[68] See http://europa.eu.int/comm/agriculture/rica/methodology_en.cfm

(1) Coding errors: due to operator's mistake

(2) Computational errors: due to mistakes in conversion programmes

(3) Errors due to missing data: due to mistakes by the office completing the Farm Return

(4) Unlikely values

- Type (4) errors - unlikely values - are identified by likelihood tests which compare the value of a variable, as given in the Community FADN Farm Return to the expected value. For instance, Liaison Agencies invariably have a good knowledge of crop yields in each region; a minimum and a maximum yield can thus be specified. The yield for each farm is compared to these expected limits. Farm returns with values that fall outside the limits are then identified and examined.
- The data quality control system operated by the Commission allows a flexible reporting of anomalies. It enables accountants and I.T. services in Liaison Agencies to locate:
  a) errors that have arisen during the conversion of the national Farm Return to the Community FADN Farm Return,
  b) errors due to misinterpretation of headings in the Community FADN Farm Return,
  c) errors and omissions made during data collection.

It enables corrections to be made to individual farm returns and also identifies those returns that have a large number of errors and which may thus be rejected from the sample.

Homogeneity tests

These tests help to create sub-samples that are appropriate for special analyses. They identify outliers, i.e. farms for which the value of one or more variables is significantly different from the mean value of the category to which the farm belongs. This may point to an error in data collection or data coding that was not found by the standard tests. Some farms may be outliers for logical reasons. For instance, in some regions pig farms generally operate on a small area of land because the pigs are permanently housed. It may be, however, that within a category of such farms there is one with an unusually large area of land because the pigs are "free-range" (allowed to graze in the fields and housed only at night). Such a farm will be identified as an outlier by the appropriate homogeneity test. When it is examined, the farm's special character will be revealed.

Quality control procedures at the aggregate level

The above section outlines the procedures applied by the Commission to individual farm data. When these have been completed, control procedures at the aggregate level are initiated. First the data are weighted and aggregated at the level of region, Member State, size class and type of farming. Continuity tests are then run. These compare the computed mean values of the standard set of variables to the expected mean values, i.e. the mean values that would be expected on the basis of previous trends.

For example, if the average land area of farms has been steadily increasing over the last three years, then it would be reasonable, all things being equal, to expect the farm area to continue to grow at a similar rate. Thus for the current accounting year, the mean farm area can be predicted (X ha) and compared to the observed value (Y ha).

Continuity tests

The continuity test then computes the percentage deviation between X and Y. If this exceeds a predetermined threshold, the computer programme generates a message giving both the percentage

deviation and the absolute deviation. The data is then examined to see if there is a logical explanation for the apparent abnormality. If not, the data is corrected at the level of the individual farm.

Correction procedure

The correction procedure is iterative during the quality procedures described above. Farm returns that need to be corrected are processed by the Liaison Agencies and may have to be referred back to the regional level or to the original accounting office. However, some farm returns may be replaced because, in certain cases, national samples are larger than those required by the Commission for FADN purposes. Rather than correcting a farm return, it may be easier for the national Liaison Agency to replace it with another return from the Member State's own sample.

Methodology

To ensure that this sample reflects the heterogeneity of farming before the sampling of farms, the Liaison Agencies stratify the field of observation, defined according to 3 criteria: region, economic size and type of farming. Farms are selected in the sample according to a selection plan that guarantees that it is representative. An individual weight is applied to each farm in the sample, this corresponding to the number of farms in the 3-way stratification cell of the field of observations divided by the number of farms in the corresponding cell in the sample. This weighting system is used in the calculation of standard results.

Standard Results

The standard results are a set of statistics, calculated from the farm returns that are periodically produced and published by the Commission. They describe in considerable detail the economic situation of farmers by different groups.

Reimbursement by the Commission

The Commission recognizes that participation in the FADN survey imposes a cost on the Liaison Agencies. A payment is made for each successfully completed farm return received by the Commission.

FADN is principally concerned with agriculture

The FADN survey covers the entire range of agricultural activities on farms. Moreover, it also collects data on non-agricultural farming activities (such as tourism and forestry).

FADN is guided by a Committee

The FADN is guided by a management committee which generally meets twice a year. The committee is known as the FADN Committee and consists of representatives of the Liaison Agencies of the Member States. It is chaired by a staff member of the Commission and amongst other duties considers all legislation relating to FADN[69].

[69] See http://europa.eu.int/comm/agriculture/rica/legalbasis_en.cfm

The integration and analysis of data on organic farming in the Swiss Farm Accountancy Data Network

Beat Meier[70]

Abstract

Since the early 1980's, the Swiss Farm Accountancy Data Network (FADN) has published results on organic farming. Over a long period, these results were produced for a small but growing number of organic farmers and their stakeholders. The increasing interest in organic farming and in system comparisons has led to the integration of "organic results" in the standard publications. However, the present weighting system does not include "organic/non-organic" as a characteristic. Therefore, the overrepresentation of organic farms leads to biased results. Within the Swiss FADN, analysis of organic farms benefits from the high level of harmonisation between the farms and over time. International comparability is achieved by converting the data according to the definitions of the EU-FADN.

Swiss FADN – an introduction

The Swiss Farm Accountancy Data Network (FADN) is run by Agroscope FAT Tänikon, the Swiss Federal Research Station for Agricultural Economics and Engineering. Data is provided by some 3000 farms. This number corresponds to a sample of 5-7% of the relevant population. Data collection is carried out by accounting offices, some of whom are (semi-) governmental bodies; others belong to the private sector.

Data dictionary and binding guidelines imply that the farms have an accounting system including direct costing (gross margins calculated for all production branches). The accounts do not only cover farming activities but also non-farm incomes and private consumption. As a consequence, key indicators like family farm income can measure profitability of the farm whereas change in net worth indicates net profit of the total farm household.

The farm sample is not selected at random. Given the high requirements and the limited budget, it is not considered possible to obtain a satisfactory response rate when sampling at random. The Swiss FADN is therefore based on farms voluntarily participating in the network. To adjust for differences in the sample composition compared to the relevant population, the individual farm results are weighted. The weights are derived from a stratification of the farms by eleven farm types, five size classes and three regions.

Results on organic farming and the Swiss FADN

Standard analysis and publications

At least since the late 1970's, organic farms have been of special interest to the Swiss FADN. For the first time in 1982, a table called "Ringtabelle" was produced for organic farms. This table is a list of anonymous results at individual farm level and allows a participating farmer to compare his results with those from

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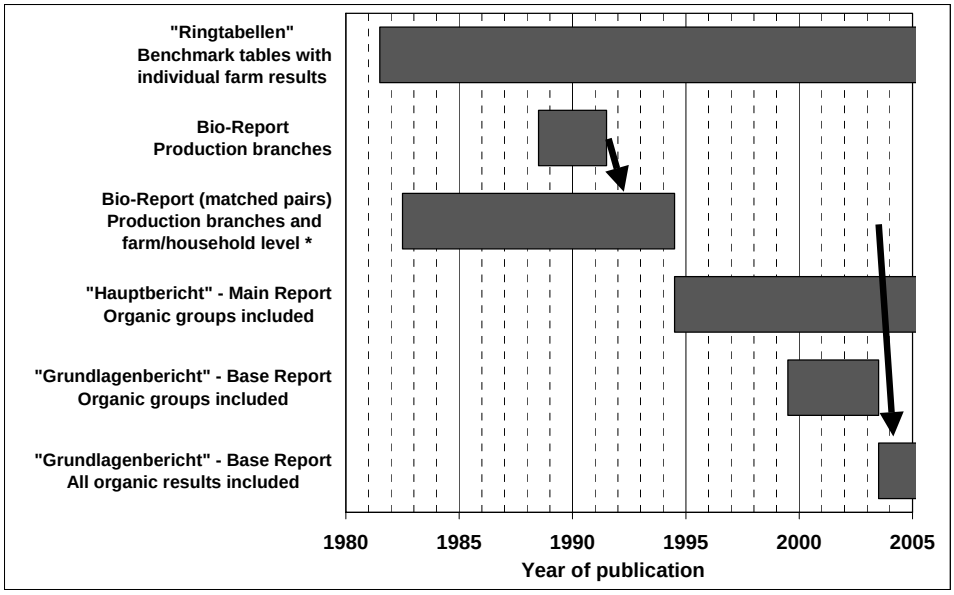
other farms. These benchmarks are an essential instrument for agricultural extension services specialised in organic farming.

In 1989, the first report including average gross margins for selected production branches (arable products, dairy, pigs) from organic farms was published. Based on publications by Steinmann (1983) and by Mühlebach and Näf (1990), another report on organic farms from 1992 onwards completed the gross margins with results at farm and household level. The concept was based on a comparison between organic and non-organic farms, carried out with matched pairs of farms with a similar structure. The non-organic farms used in this comparison at first were "conventional" farms. Later they were replaced by farms with integrated production. These publications were mainly intended for organic farms and their stakeholders. As the sample of organic farms and the demand for system comparisons increased, in 1995, we started to distinguish between results from organic farms and results from non-organic farms, also in the standard reports aimed at a broader public. With the accelerated conversion to organic farming in the late 1990's, the number of persons faced with organic farming in agricultural extension, education and administration increased rapidly. As a consequence, in 2003, the specific report on organic farming was published for the last time. As of 2004, results from organic farms at production branch, farm or household level are fully integrated in the standard reports "Hauptbericht" and "Grundlagenbericht" (see Figure 1).



* see Steinmann 1983, Mühlebach and Näf 1990

Figure 1: Standard results on organic farming in the Swiss FADN from 1980 to 2004

Specific (ad-hoc) analysis and publications

Apart from the standard results mentioned above, FAT staff and other persons carry out specific analysis based on FADN-data. For example, the effect of conversion to organic farming was presented at the 13th IFOAM conference (Mack and Hausheer 2000).

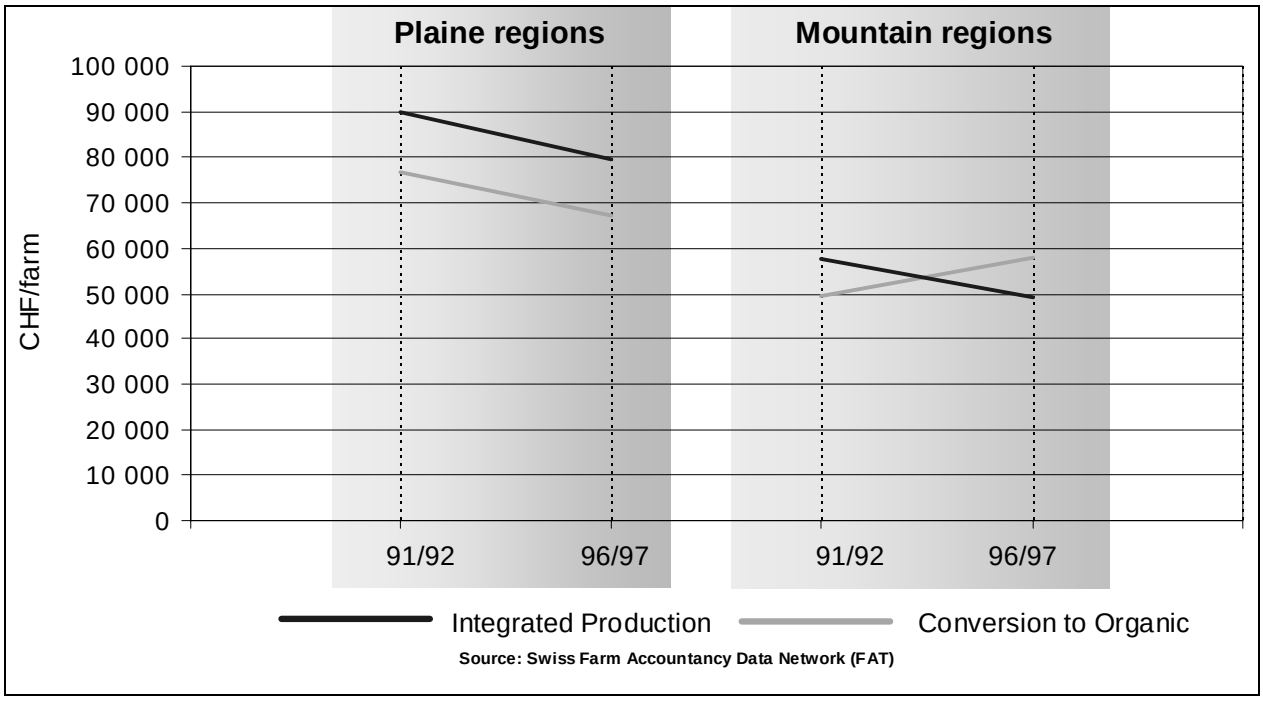


Figure 2: Conversion to organic farming and family farm income (adapted from Mack and Hausheer 2000)

Another task of the Swiss FADN consists of making the individual or aggregated results available for other scientists within our research institute or in other organisations such as the Research Institute of Organic Agriculture FiBL.

Outlook

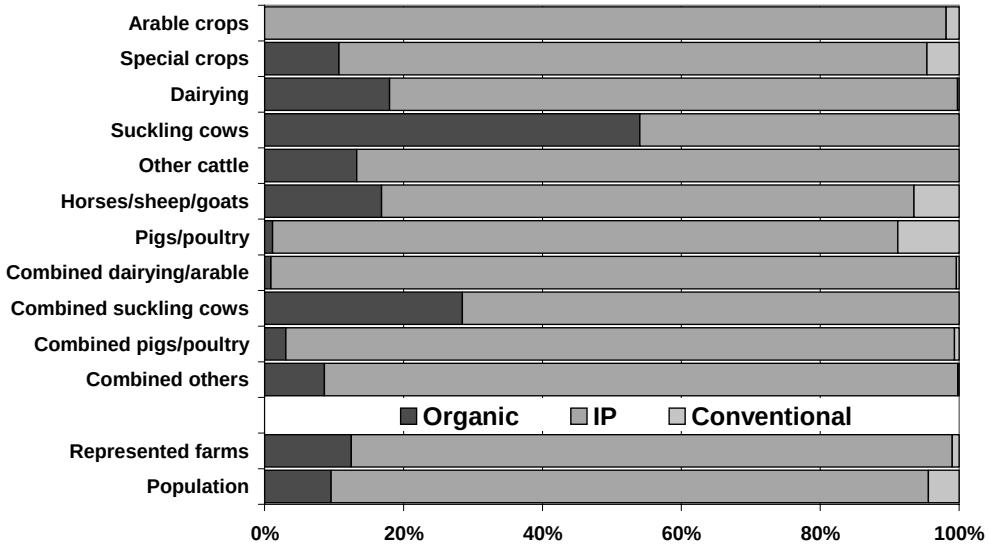
The integration of Life cycle analysis (LCA) into the Swiss FADN has been launched recently. For a sub sample of about 300 farms (organic and others), an extensive inventory of environmentally relevant inputs and practices is worked out.

Organic farming in the Swiss FADN: Strengths and weaknesses

Sampling and weighting

The present weighting system is based on a stratification of the farms by farm type, farm size and region (plain, hill, mountain). This means that differences in the sample composition compared to the relevant population are adjusted as far as these criteria are concerned. The farm characteristic "organic/non-organic" however is not taken into account. Over the past years, organic farms have permanently been overrepresented. Aggregated weighted results therefore tend to be biased. Furthermore, weighted results comparing organic and non-organic farms can be influenced by the weights derived from the entire sample. As an example, farms with suckling cows are generally underrepresented in the Swiss FADN. As a consequence these farms have very high weights to adjust for this. Assuming that in the sub sample of organic farms, the proportion of farms with suckling cows corresponds to the proportion in the population of organic farms, these high weights would lead to biased results for organic farms.

The overrepresentation of organic farms has not evolved haphazardly. The specific interest of the FADN in these farms over the past 20 years has lead to active recruitment, in some cases also supported with financial incentives. If organic farmers were more likely to adopt an accounting system with direct costing and more willing to share the results with the national FADN, this could be another reason for overrepresentation.



Sources: Reference farms: Swiss Farm Accountancy Data Network (FAT), Year 2002
Population: AGIS (Swiss Federal Office for Agriculture)

Figure 3: Share of organic farms by type of farming in the year 2002

There are three possibilities to deal with the situation:

1. Careful interpretation of the results taking overrepresentation into account.
2. Adapt sample composition to the distribution in the population (i.e.: reduce the number of organic farms in the sample).
3. Adjust the results by including the farm characteristic "organic/non-organic" in the weighting procedure.

To date, we have handled the problem at the interpretation level (possibility 1). Given the fact that the number of organic farms is still too small for many analyses on disaggregate level, possibility 2 would lead to a loss of information and considerable resistance from data users. For the third solution, several methodological problems need to be solved.

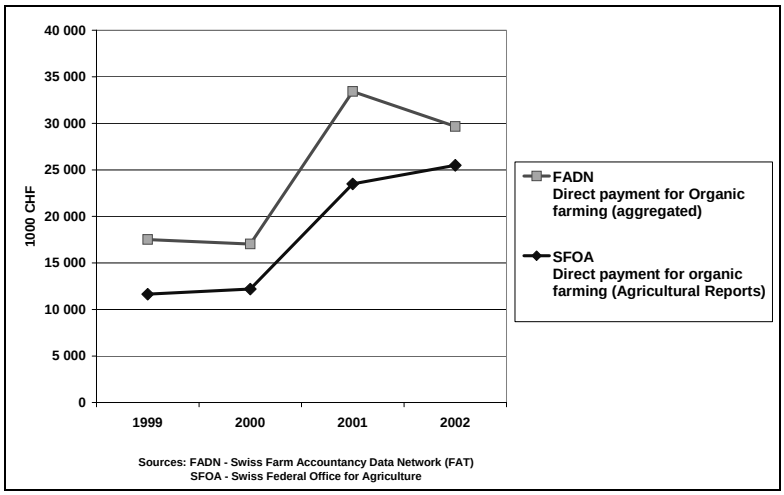


Figure 4: Bias in aggregated direct payment for organic farming due to overrepresentation of organic farms

Level of detail and data quality

Data recorded on organic farms are exactly the same as on other farms. At the moment, there are no plans to change that. However, a comprehensive revision of the data dictionary of the Swiss FADN has been completed in 2003. The new data dictionary improves information on para-agricultural activities. The new cost centres not only distinguish between different forms of agro tourism but also between different activities in processing of farm products and direct selling. The organic sector will particularly benefit from the new possibilities, as these activities are often major sources of added value in organic farms.

Information on commodity prices is available for the major products. Using farm accounts as data source, we can rely on very accurate figures on sales. It is difficult to achieve a similar quality level for the information on sold quantities. There is some evidence that an accounting system based on direct costing will yield better physical data than financial or tax accounts, as the farmer and the accountant are interested in meaningful gross margins comparable to the benchmarks produced by the Swiss FADN. Plausibility tests and training of accountants are other key elements in quality management.

No information is collected so far on specific marketing strategies like the establishment of farm shops, Internet shops, selling at weekly markets, producing for specific labels and/or organisations, creation of own brands etc. The existing data model would allow such information to be included.

With the integration of Life cycle analysis (LCA) into the Swiss FADN, we currently focus on extending the data collection to environmental aspects of the production.

How to collect new information?

There are basically two options to satisfy new information needs:

1. Establish a new, targeted survey with all the necessary elements (survey design, data collection, quality management, data management and data analysis, including infrastructure).
2. Integrate new information items in an existing framework, such as a FADN.

Strong arguments for integration into an existing FADN are the existing organisational and structural bases, trained staff experienced in meeting high quality standards, good conditions to obtain highly consistent data with many possibilities to test plausibility, a high level of harmonisation, wide range of possibilities for cross-sectional or longitudinal studies etc.

On the other hand, there are potential weaknesses that must be checked carefully: Limited flexibility including deadlines for implementation, data privacy aspects, compromise by accepting the existing framework with its own rules and definitions, representativity of existing sample or limited possibilities to alter sample composition etc.

Time series

Swiss FADN provides data for long periods and with a high level of harmonisation between the farms and over time. Longitudinal analyses with special emphasis on organic farms are possible, but one must carefully take the effects of continued conversion to organic farming into account.

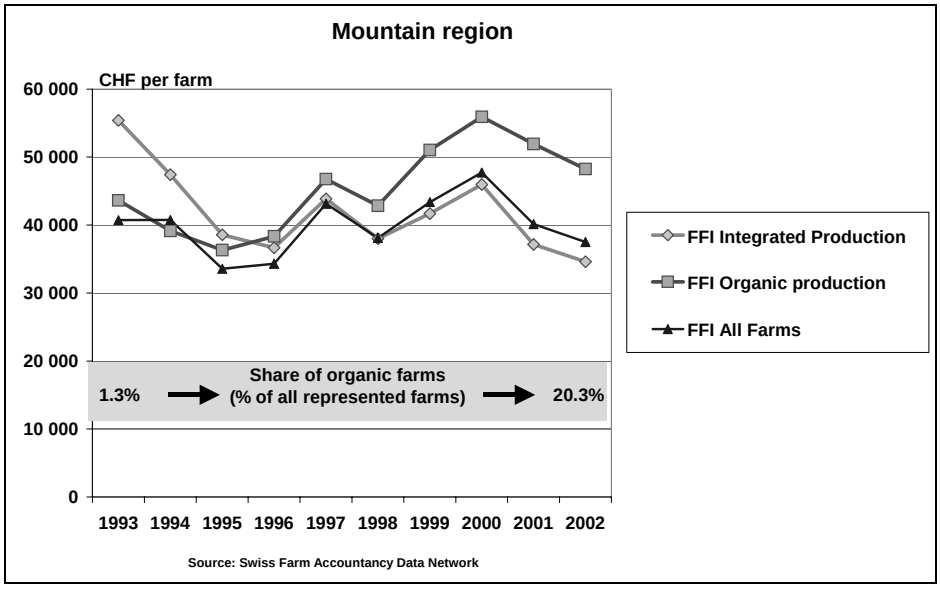


Figure 5: Family farm income (FFI) of farms with integrated production and organic farms

International comparability

Swiss FADN is not participating in the FADN of the European Union. Despite this fact and in order to satisfy the demand for internationally comparable results, we carry out a conversion of Swiss FADN data in accordance with EU-FADN methodology on our own. This conversion is concerned with differences in farm definition, valuation and depreciation, structure of the profit and loss account, farm typology, definition of the population and the weighting system (Meier 2002). As an example, figure 6 shows the results of dairy farms with a utilised agricultural area of 30 to 50 hectares for Switzerland and neighbouring regions. Of course, these results can also be disaggregated by organic or other farms. Selected results for farms in the hill-region are presented below. The variables correspond exactly with the variables of the EU-FADN.

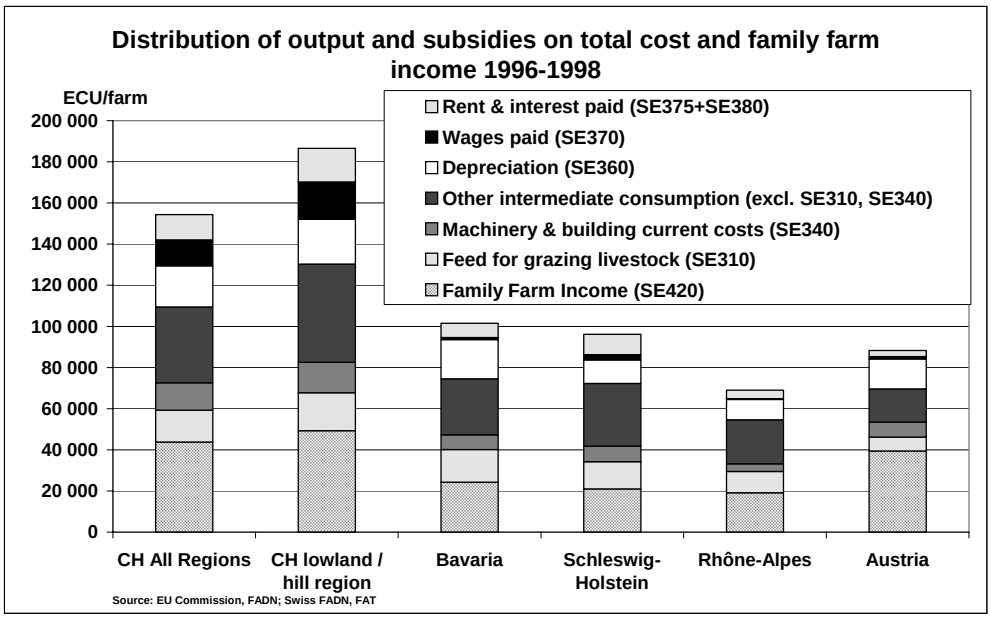


Figure 6: Costs and family farm income in dairy farms of 30 to 50 ha

Summary and conclusions

The Swiss Farm Accountancy Data Network FADN has produced results for organic farms for more than two decades now. The increasing interest in organic farming and in system comparisons has led to the integration of "organic results" in the standard publications.

There are strong arguments for the use of the national FADN as a source of information on organic farming:

- High level of harmonisation between the farms and over time
- High quality standards
- Data dictionary is open for consistent embedding of new data
- Many possibilities for inter-farm-, longitudinal and international comparisons
- The existing institutional framework with its infrastructure offers efficient ways to integrate new data

When increasing the use or collection of FADN data for analysis on organic farming, one must bear in mind some potential limitations:

- Representativity might suffer from inadequate sampling and weighting procedures
- Time series are heavily influenced by panel rotation and conversion to new forms of production
- The existing institutional framework might limit the flexibility to integrate new data

INLB-vergleichbare Buchhaltungsergebnisse der Schweiz **Alle Werte in EURO nominal**

Buchhaltungsjahr = 2000; Grundgesamtheit für Gewichtung = 2000; Standarddeckungsbeiträge für Typologie = "1998"

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		Hill-region		
		All farms	***Integrated Production***	***Organic (conversion completed)***
Jahr	Year	2000	2000	2000
*	MUSTERBETRIEB UND ANZAHL	SAMPLE AND POPULATION		
SYS02	SYS02-Farms represented	13 097	11 844	1 180
SYS03	SYS03-Sample farms	1 072	977	89
SYS04	SYS04-Exchange rate	1.558	1.558	1.558
*	STRUKTUR UND ERTRAG PRO BETRIEB	STRUCTURE AND YIELDS PER FARM		
SE005	SE005-Economic size-ESU	47.6	48.8	37.0
SE010	SE010-Total labour input-AWU	1.73	1.74	1.63
SE015	SE015-Unpaid labour input-FWU	1.37	1.37	1.32
SE020	SE020-Paid labour input-AWU	0.36	0.36	0.32
SE025	SE025-Total Utilised Agricult. Area-ha	19.63	19.85	17.79
*	EINKOMMEN PRO BETRIEB	INCOME PER FARM		
SE131	SE131-Total output-c.u.	97 713	99 927	77 236
SE275	SE275-Total intermed. consumpt.-c.u.	55 016	56 407	42 267
SE600	SE600-Balance current subsid.&taxes-c.u.	27 164	27 174	27 881
SE410	SE410-Gross Farm Income-c.u.	69 861	70 694	62 850
SE360	SE360-Depreciation-c.u.	16 630	16 709	16 094
SE415	SE415-Farm Net Value Added-c.u.	53 232	53 984	46 757
SE365	SE365-Total external factors-c.u.	14 300	14 574	11 445
SE405	SE405-Balance subs.&taxes on invest-c.u.	0	0	0
SE420	SE420-Family Farm Income-c.u.	38 932	39 410	35 312
*	EINKOMMEN PRO PERSON	INCOME PER PERSON		
SE425	SE425-Farm Net Value Added / AWU-c.u.	30 763	31 036	28 605
SE430	SE430-Family Farm Income / FWU-c.u.	28 457	28 666	26 776

Figure 7: Selected results of Swiss farms by groups of organic or integrated production, comparable to EU-FADN-standards

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ZMP-Comparison of producer prices for milk

Reinhard Schoch[71]

In order to obtain a clear picture of the German milk markets and to clarify the situation for the milk farmers in Germany the ZMP Zentrale Markt- und Preisberichtstelle has developed a system to monitor the prices of raw milk paid by various dairy companies to the farmer. The project was set up in 1994 after the principles of the method were the subject of a scientific report done by Professor Weindlmaier of the Munich Technical University. The price comparison is based on two different sources and calculation principles. Common to both calculations is the standardisation to a fat content of 4.2% and a protein content of 3.4% (see figure 1).

There is no difference in the price calculation for a producer of conventional or alternative (organic or biological) production schemes. The procedure and the different sources of the comparison are shown in figure 2. All the data are introduced into a SQL-Database.

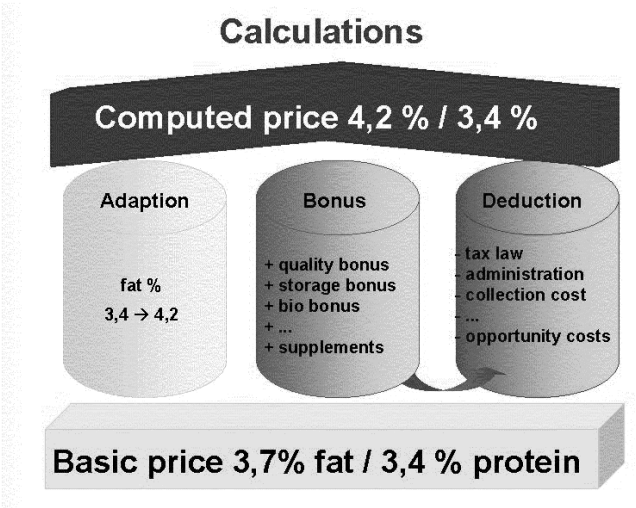

Figure 1: Method of Calculation

The monthly milk payment receipts of selected dairy farmers are controlled, and a yearly average price based on the farmers' data is computed. The price is adjusted to a fat content of 4.2 % and a protein content of 3.4 %. All the other elements like bonuses and deductions (as well as supplementary payments) are included. The average price is weighted depending on the delivery during the year. The opportunity costs are also taken into account (e.g. interests for the supplements. This price is only valid for the farmer. The farmer is asked to fill in a questionnaire asking for specific information on the dairy company he is supplying. The return rate of the questionnaire is about 65 to 70 % every year.

On the other hand the ZMP calculates an average price of the dairies from the basic data of the receipts. The calculation is made for three different annual deliveries (150t, 500t and 2,000t) because of a broad use

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of delivery bonuses used in Germany. The data are completed, too, by an annual questionnaire submitted to the dairies to get more specific information of the dairy companies. So the ZMP records the information on the share of milk benefiting from specific bonuses.

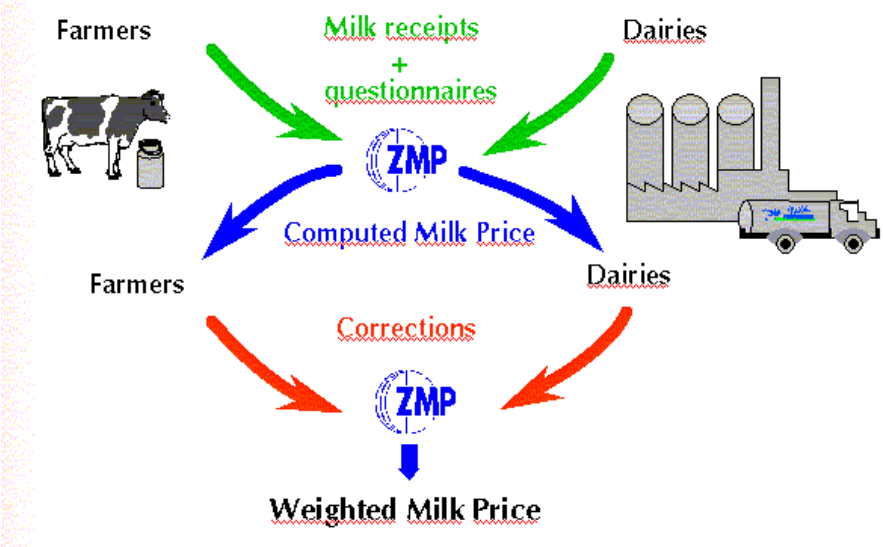
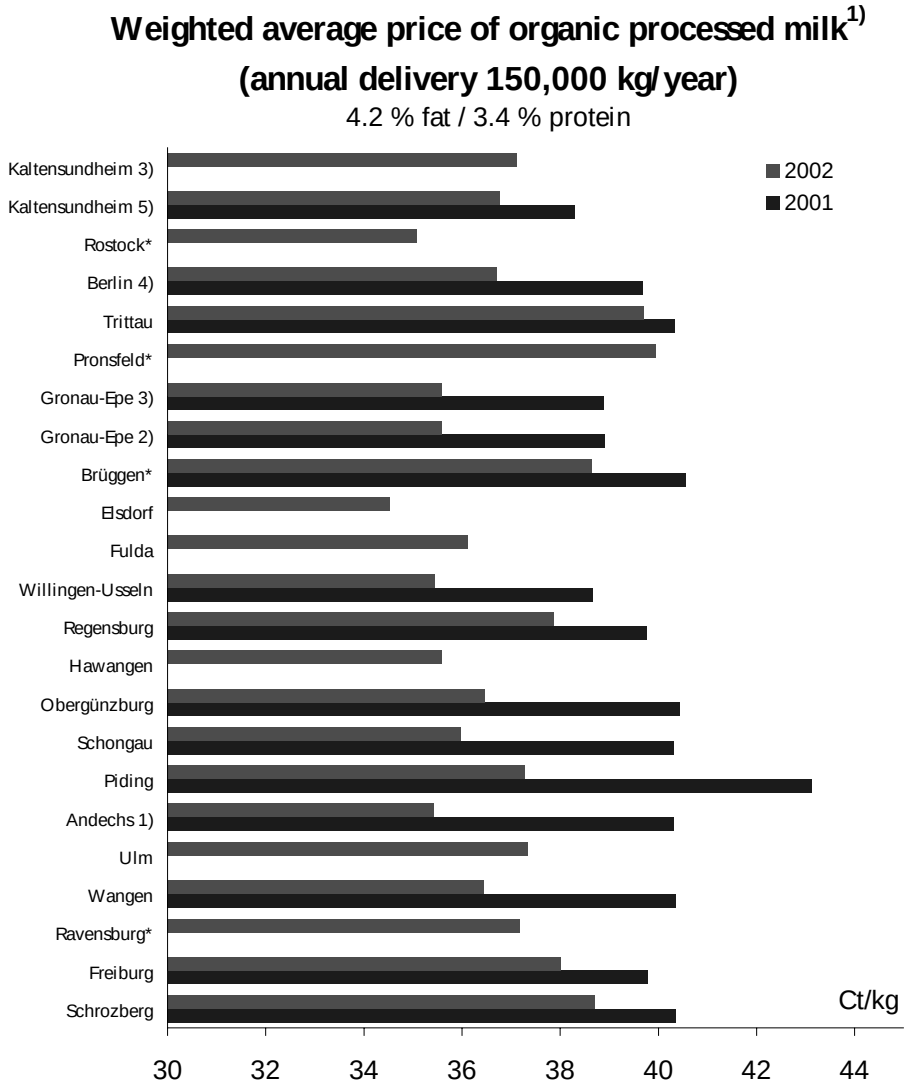


Figure 2: Data sources

More than 75 % of the companies return the questionnaire, representing 85 % of all milk collected. Information on companies which have not returned the questionnaires is collected from company reports, press releases and other sources. Thus the average milk price of the company is calculated with the help of mainly two questionnaires (dairy and producer) and the other sources.

The results of the dairy average prices are published in the regional and national farm press. In table 1 the 2002 results for the organic processing dairy companies are presented.



1) Bonuses for organic milk depending on the association.
2) Price for Bioland-, Naturlandmilch.
3) Price for Demetermilch.
4) Price for Gäa.
5) different prices for producers.
* including announced supplements, not yet paid .

Figure 3: Results of the ZMP milk price comparison

Determination of organic product prices at farm level

Markus Rippin[72]

Abstract

Since 1992 the ZMP has collected prices at farm level for all (organic) agricultural products at different marketing levels. This includes direct sales, sales to retailers, wholesalers as well as to processors. In general the farmers or the farmer associations are asked to report this price information to the ZMP. In order to validate this price information the purchasing partner is asked to give information about the prices paid to the farmer or farmer association as well. Out of this information a weekly report is generated and published as a print and online version. Once a year this information, gathered on a weekly basis, is analysed and commented in the year book "ÖKOMARKT Jahrbuch" broadened by additional farmer relevant information about the market itself and some statistical data.

Introduction

The ZMP is monitoring these prices as it is in charge of improving the transparency of the agricultural market for all those interested. Because the organic market has a small-size structure and is extremely variable it is very difficult to get a really representative price monitoring system. In this case the random sampling would have to be vast. As it is not possible due to restricted human resources to maintain such a big number of panel participants, the results of the price monitoring of the ZMP are not claimed to be representative but to be a clue to estimate the realistic situation, which over all depends on various parameters. The aim of this DCPS is to give the market partners an objective and a profound as possible overview of the farmer prices and market situation of organic products in Germany.

Methodology

The price monitoring for vegetables, fruits, cereals, potatoes, meat, eggs and milk is achieved by different collection methods. Prices come in by traditional mail, fax or via e-mail as well as by telephone interview. In some cases copies of the accounts generated by the purchasing partner are sent to the ZMP by the farmer or farmers' association in order to be able to consider all relevant parameters to calculate the effective net farmer price (amount, quality, applied deduction and supplements).

The price data are weighted by the relative significance of the individual data supplier within the whole group of data suppliers of one region in Germany (North, South, East). Data are recorded by using a specific database. From this database results are regularly retrieved and published showing average price, maximum and minimum price and the number of data suppliers for the current and the last observation period as well as the average price of the previous year. Data of cereals and beef cattle are published monthly. Some data dealing with direct sales (meat, milk, eggs) are published quarterly as there is little price variation over time. Very detailed data for beef cattle are distributed only within a closed participant group in order to enhance the interest in participating in this new panel.

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Results

The weekly report is only available in German. The following tables show some results as they are published in the weekly report.

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Table 1: Vegetables, fruits and potatoes

Gemüse & Obst Verkauf an den Großhandel, Fr. R. Gesamtes Bundesgebiet *Ökologischer Anbau*		12. KW 2004 Preise in EUR ohne MwSt von	bis	Durch-schnitt	Anzahl der Mel-dungen	Vorwoche Preise in EUR ohne MwSt von	bis	Durch-schnitt	Vor-jahres-woche
Blattgemüse									
Chicoree - lose	/ kg	2,50 -	2,80	**2,64**	7	2,57 -	2,80	**2,65**	2,62
Feldsalat - gewaschen	/ kg	6,00 -	8,50	**7,23**	5	5,50 -	8,50	**6,97**	8,84
Postelein / Portulak	/ kg	4,80 -	6,34	**5,47**	8	4,65 -	6,34	**5,22**	5,75
Zwiebelgemüse									
Lauch/Porree	/ kg	1,10 -	1,60	**1,34**	7	1,10 -	1,60	**1,39**	1,85
Zwiebeln /Speise- - braun 30-50mm	/ kg	0,46 -	0,85	**0,60**	9	0,46 -	0,85	**0,60**	0,67
Zwiebeln /Speise- - rot 30-50mm	/ kg	0,60 -	0,86	**0,80**	7	0,60 -	0,86	**0,79**	0,80
Kohlgemüse									
Weißkohl	/ kg	0,40 -	0,64	**0,56**	9	0,40 -	0,64	**0,57**	0,66
Wurzel- & Knollengemüse									
Möhren - gewaschen	/ kg	0,49 -	0,70	**0,62**	10	0,49 -	0,70	**0,62**	0,66
Pastinaken - gewaschen	/ kg	0,80 -	1,10	**0,89**	9	0,80 -	1,10	**0,89**	0,95
Rettich - schwarz	/ kg	0,70 -	0,98	**0,81**	9	0,70 -	0,98	**0,81**	0,95
Rote Bete	/ kg	0,43 -	0,80	**0,56**	11	0,43 -	0,80	**0,56**	0,68
Schwarzwurzeln	/ kg	1,00 -	2,25	**1,54**	7	1,00 -	2,25	**1,54**	-
Sellerie /Knollen-	/ kg	0,68 -	0,80	**0,75**	9	0,68 -	0,80	**0,75**	0,75
Steckrüben	/ kg	0,60 -	0,75	**0,66**	6	0,60 -	0,75	**0,66**	0,69
Topinambur	/ kg	0,92 -	1,60	**1,39**	5	0,92 -	1,60	**1,31**	-
Wurzelpetersilie	/ kg	1,45 -	1,90	**1,52**	8	1,45 -	1,90	**1,52**	-
Küchenkräuter									
Kresse	/ Schale	0,25 -	0,41	**0,36**	8	0,25 -	0,41	**0,36**	0,37
Schnittlauch	/ Bd.	0,45 -	0,55	**0,49**	8	0,40 -	0,55	**0,49**	0,53
Thymian	/ Bd.	0,47 -	0,54	**0,49**	5	0,47 -	0,54	**0,49**	-
Kernobst									
Äpfel - Durchschn. aller Sorten	/ kg	0,75 -	1,62	**1,00**	84	0,70 -	1,62	**1,04**	1,09
Äpfel - Gloster	/ kg	0,75 -	1,35	**0,83**	10	0,70 -	1,35	**0,75**	-
Äpfel - Idared	/ kg	1,00 -	1,48	**1,02**	8	0,95 -	1,48	**0,99**	1,00
Äpfel - Jonagold	/ kg	1,04 -	1,52	**1,12**	14	0,95 -	1,52	**1,10**	1,13
Äpfel - Jonagored	/ kg	0,95 -	1,23	**1,09**	11	0,95 -	1,23	**1,05**	1,11
Äpfel - Topaz	/ kg	1,23 -	1,60	**1,29**	11	1,13 -	1,60	**1,24**	1,35
Kartoffeln									
- - Durchschn. aller Sorten	/ kg (12,5 kg)	0,35 -	0,66	**0,48**	45	0,38 -	0,66	**0,48**	0,48
- - Durchschn. aller Sorten	/ kg (2 - 5 kg)	0,53 -	0,73	**0,55**	13	0,53 -	0,73	**0,56**	0,66

Anmerkungen

1) Ihre Erzeugerpreise meldeten für die aktuelle Woche 21 Meldestellen Preise für die Vorwoche meldeten 29 Meldestellen

Table 2: Cereals

Getreide Verkauf an Mühle oder Verarbeiter, fr. R. gesamtes Bundesgebiet *Ökologischer Anbau*		Februar 2004 Preise in EUR ohne MwSt von	bis	Durch-schnitt	Anzahl der Mel-dungen	Vormonat Preise in EUR ohne MwSt von	bis	Durch-schnitt	Vor-jahres-monat
Jeweils Preis /kg bei Abnahme von A-Ware frei Rampe, frei Mühle									
Brotgetreide									
Dinkel Basisfeuchte 15 %, Protein 14 - 15 % i. TS									
- entspelzt, gesackt	/ kg (25 kg)	0,66	- 0,78	**0,71**	36	0,66	- 0,78	**0,71**	0,72
- Rohware, lose	/ kg (...dt)	0,30	- 0,44	**0,39**	49	0,38	- 0,45	**0,39**	0,38
Hafer Basisfeuchte 15 %, hl > 54 kg									
- Rohware, lose	/ kg (...dt)	0,20	- 0,26	**0,23**	43	0,19	- 0,25	**0,22**	0,24
Roggen Basisfeuchte 15 %, FZ > 120									
- lose, vorger.	/ kg (...dt)	0,20	- 0,28	**0,23**	58	0,21	- 0,27	**0,22**	0,24
Weizen I Basisfeuchte 15 %, Protein > 11,5 % i. TS, FZ: 240 - 280, Sedi > 35, Kleber > 26 %									
- lose, vorger.	/ kg (...dt)	0,25	- 0,32	**0,29**	56	0,27	- 0,32	**0,29**	0,31
Weizen II Basisfeuchte 15 %, Protein < 11,5 % i. TS, FZ > 220, Sedi > 25, Kleber 22-26 %									
- lose, vorger.	/ kg (...dt)	0,24	- 0,30	**0,26**	54	0,25	- 0,31	**0,27**	0,29
Futtergerste Basisfeuchte 15 %									
- lose	/ kg (...dt)	0,18	- 0,24	**0,21**	34	0,18	- 0,22	**0,19**	0,22
Futterweizen Basisfeuchte 15 %									
- lose	/ kg (...dt)	0,20	- 0,26	**0,22**	38	0,20	- 0,24	**0,21**	0,22
Triticale Basisfeuchte 15 %									
- lose	/ kg (...dt)	0,17	- 0,22	**0,20**	30	0,16	- 0,21	**0,18**	0,19
Mais									
- lose, vorger.	/ kg (...dt)	0,24	- 0,27	**0,26**	12	0,21	- 0,26	**0,23**	-
Ackerbohnen									
- lose	/ kg (...dt)	0,24	- 0,29	**0,27**	34	0,24	- 0,28	**0,26**	-
Futtererbsen									
- lose	/ kg (...dt)	0,24	- 0,30	**0,27**	38	0,26	- 0,31	**0,27**	-

Anmerkungen

1) Ihre Erzeugerpreise meldeten für den aktuellen Monat 20 Meldestellen Preise für den Vormonat meldeten 20 Meldestellen

Table 3: Beef cattle (closed group of participants)

Öko-Schlachttiere Verkauf an Erzeugergemeinschaften frei Rampe	1. Quartal 2003				4. Quartal 2002			1.Qu. 2002
	EUR/kg SG ohne MwSt.			Anzahl der Meldungen	EUR/kg SG ohne MwSt.			
	von	bis	Durchschnitt		von	bis	Durchschnitt	
Rinder								
Färsen Ø aller Klassen	2,55 -	3,70	3,07	47	1,88 -	3,60	2,98	3,09
Färsen - U2	3,18 -	3,51	3,28	4	2,50 -	3,58	3,31	3,22
Färsen - R2	3,12 -	3,70	3,26	9	2,29 -	3,55	3,08	3,16
Färsen - R3	2,65 -	3,70	3,24	9	3,07 -	3,20	3,10	3,17
Färsen - O2	2,80 -	3,60	2,93	8	1,88 -	3,50	2,73	2,95
Färsen - O3	2,80 -	3,60	2,93	8	2,11 -	3,45	2,72	2,95
Jungbullen Ø aller Klassen	2,29 -	3,80	3,03	35	2,29 -	3,90	3,08	2,80
Jungbullen - U2	2,53 -	3,51	3,25	5	3,20 -	4,07	3,40	
Jungbullen - R2	2,51 -	3,45	3,03	6	2,49 -	3,97	3,03	3,01
Jungbullen - O2	2,29 -	3,10	2,75	6	2,29 -	3,77	2,85	
Kühe Ø aller Klassen	1,20 -	2,80	1,74	21	1,46 -	2,50	2,20	1,72
Kühe - R3	1,60 -	2,05	1,82	6	2,08 -	2,50	2,44	1,99
Kühe - O3	1,48 -	1,8	1,69	5	1,92 -	2,50	2,05	1,86
Ochsen Ø aller Klassen	2,70 -	3,80	3,19	57	2,81 -	4,00	3,20	3,18
Ochsen - U2	3,33 -	3,51	3,4	6	3,10 -	3,60	3,41	3,32
Ochsen - U3	3,33 -	3,8	3,45	9	3,32 -	3,58	3,43	3,33
Ochsen - R2	3,00 -	3,80	3,35	10	3,00 -	3,70	3,21	3,25
Ochsen - R3	3,00 -	3,75	3,33	10	3,07 -	3,65	3,22	3,25
Ochsen - O2	2,7 -	3,7	3,05	9	2,39 -	3,60	2,81	3,04
Ochsen - O3	2,91 -	3,65	3,04	8	2,64 -	3,55	2,84	3
Schweine								
Mastkreuzungen - E	2,09 -	2,71	2,40	96	2,34 -	2,92	2,49	2,46
Mastkreuzungen - E MFA > 61%	2,31 -	2,71	2,51	11	2,26 -	2,92	2,54	
Mastkreuzungen - E MFA 60,1-61%	2,29 -	2,66	2,44	11	2,34 -	2,92	2,51	
Mastkreuzungen - E MFA 59,1-60%	2,26 -	2,66	2,43	12	2,24 -	2,91	2,51	
Mastkreuzungen - E MFA 58,1-59%	2,22 -	2,57	2,40	10	2,21 -	2,80	2,48	
Mastkreuzungen - E MFA 57,1-58%	2,13 -	2,54	2,35	17	2,19 -	2,87	2,48	
Mastkreuzungen - E MFA 56,1-57%	2,14 -	2,50	2,38	19	2,22 -	2,84	2,46	
Mastkreuzungen - E MFA 55,1-56%	2,09 -	2,48	2,31	16	2,06 -	2,80	2,43	
Mastkreuzungen - U	2,03 -	2,44	2,19	70	2,00 -	2,72	2,29	2,36
Mastkreuzungen - U MFA 54,1-55%	2,04 -	2,44	2,25	16	2,16 -	2,72	2,37	
Mastkreuzungen - U MFA 53,1-54%	1,99 -	2,35	2,22	14	2,11 -	2,72	2,35	
Mastkreuzungen - U MFA 52,1-53%	1,99 -	2,36	2,21	15	2,06 -	2,67	2,31	
Mastkreuzungen - U MFA 51,1-52%	1,94 -	2,35	2,14	12	2,07 -	2,63	2,21	
Mastkreuzungen - U MFA 50,1-51%	1,94 -	2,32	2,13	13	2,00 -	2,61	2,22	
Mastkreuzungen - R	1,50 -	2,28	1,90	40	1,45 -	2,56	1,86	2,06
Mastkreuzungen - R MFA 49,1-50%	1,74 -	2,28	1,99	12	1,80 -	2,56	2,03	
Mastkreuzungen - R MFA 48,1-49%	1,79 -	2,25	1,97	10	1,80 -	2,51	2,01	
Mastkreuzungen - R MFA 47,1-48%	1,79 -	2,22	1,88	8	1,50 -	2,09	1,73	
Mastkreuzungen - R MFA 46,1-47%	1,70 -	2,19	1,77	10	1,50 -	2,45	1,85	
Referenzschwein*	2,04 -	2,60	2,34	9	2,22 -	2,84	2,45	2,36
Lämmer								
Lämmer Ø aller Klassen	4,90 -	6,00	5,18	6	5,00 -	6,00	5,11	

*) MF 56 %, 100 kg SG

Preise für Rinder meldeten 14 Meldestellen, für Schweine 17 Meldestellen und für Lämmer 4 Meldestellen

Producer price premiums – an indicator for the viability of organic farming at the European level?

Nicolas Lampkin[73]

Introduction

Price data make an important contribution to the efficient functioning of markets and to policy development, for example by:

- Making price formation processes transparent (which requires immediacy of data availability);
- Enabling trends analysis and price forecasting; and
- Providing indicators of the financial situation of producers and the development of markets for policy evaluation and policy making purposes, including the setting of support levels and the monitoring and evaluation of policy impacts.

However, with few exceptions, there is very little publicly available price data for organic products, which is in sharp contrast to the data available for the conventional sector.

The particular context of this paper is the inclusion of organic producer prices as an indicator within the IRENA[74] framework currently being developed by the European Commission and the European Environment Agency (EC, 2001). IRENA is designed to show impacts of agricultural policy changes on key agri-environmental variables. Of the 32 planned indicators, two relate directly to organic farming. Indicator 7, organic land area, has been developed by Eurostat (see Duchateau, this volume). Indicator 5, organic producer price premiums and farm incomes, is currently being prepared by the author and colleagues for the European Environment Agency. The purpose of this indicator is to provide information on the financial viability and sustainability of organic farming as the sector grows, but a key question is the extent to which producer price premiums actually demonstrate this.

Characteristics of price data

To be useful, particularly in the context of efficient market functioning, price data needs to be sufficiently detailed, with the information differentiated by market channel (e.g. packer, wholesale, direct); seasonality (ideally daily or weekly); product quality (as standards for specific product); as well as packaging and lot size. The level of detail required clearly depends on the required purpose.

For the organic sector, the availability of price data is currently very limited. There are only a couple of functioning, regularly published sources at national level, for example from ZMP (weekly) in Germany, BioPrezzi in Italy and Okologienhus in Denmark, and more limited publication of occasional price data in the specialist business media. Only ZMP produces a regular weekly bulletin and has a large sample of producers regularly reporting data. Most other services rely on consultation with a limited number of key informants, typically at the next level of the chain, i.e. market actors that buy from farmers. But the

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[74] Indicators for the Integration of Environmental Concerns into the Common Agricultural Policy.

further up the chain, the more reluctant are market actors to disclose prices paid or received on commercial confidentiality grounds.

In theory, national and EU price statistics could also be used to provide data on organic prices, but organic data is not currently collected separately, and separate collection would require modification to the product classifications. As discussed elsewhere (see Martinez, Mayo, this volume), there is a marked reluctance to implement such a change. Some data is potentially available from the Farm Accounting Data Network (FADN) statistics (see Offermann, D'Avino, this volume), but this involves a very high level of aggregation, with little context information to allow effective interpretation, and is only of historical value, so that its role in market functioning is very limited.

At the European level, organic price data has also been assembled by a range of research projects (OFCAP75 (Offermann and Nieberg, 2000); OMIaRD76 (Hamm et al., 2002); ESTO77 (Kristensen et al., 2004 in preparation); EU-CEE-OFP78 (Offermann, in progress), but although these provide some comparability across countries, they also lack immediacy and detail, as well as only covering limited periods of time as dictated by the specific period under study.

As indicated, there are some key context variables needed to ensure that price information is interpreted appropriately. For organic prices, this includes the question of comparability with conventional prices and how the comparators are defined, as well as background information on the costs of achieving the prices obtained (for example, the highest organic prices can be obtained via direct marketing in small quantities, but this may be associated with high labour and transport prices). In terms of presentation, the continuity of data over time, with the possibility of analyzing and forecasting price trends, as well as questions concerning the level of aggregation (within and across products) is important.

For a number of purposes, particularly for policy evaluation, comparability with conventional data is important, as organic markets often operate more or less independently of conventional markets. It is difficult to ensure that all parameters are comparable (seasonality, quality, channel etc.), and only a proportion of the available product may be marketed at a higher organic price, so the average price received may not reflect the actual organic market price. In addition, the price premium may be a result of falling conventional prices, combined with stable organic prices, which disappears when conventional prices recover, but does not necessarily provide an indicator of organic market problems.

Possible solutions

Ideally, the availability of organic price data in national and EU statistics and the business media should develop to a similar level as currently available for the conventional sector, but we are a long way from this. Product codes to identify organic products separately, with a requirement for member states to report organic data, seem a long way off, although there is some potential for improved availability of, albeit historical, data through FADN. The most likely solution, particularly to improve the immediacy of data collection, will be national surveys, either of key informants, or by facilitating direct reporting by producers. One option to achieve this would be to move to web-based data collection and publication, but

[75] Organic Farming and CAP Reform (FAIR3-CT96-1794, http://www.uni-hohenheim.de/~i410a/eu_org/Fair3_Index.htm)

[76] Organic Marketing Initiatives and Rural Development (QLK5-2000-01124, www.irs.aber.ac.uk/OMIaRD)

[77] European Science and Technology Organisation/European Commission (DG Agri) commissioned study on 'The value adding process along the supply chain for organic agriculture products'

[78] Further development of European organic farming policies, with particular emphasis on EU enlargement (QLK5-2002-00917, www.irs.aber.ac.uk/EUCEEOFP)

to be effective this would need to be based on a common approach at EU level and supported by organic producer organizations and consultants to maximize voluntary participation.

For the IRENA organic producer prices indicator, the availability and costs of obtaining and analyzing data at an appropriate level of detail and aggregation, as well as the problems of ensuring data quality and representativity if data is obtained from voluntary reporting, present key problems. These are aggravated by specific issues relating to interpretation of the results, including the influence of imports, exchange rates and conventional price movements, as well as the fact that changes in consumer demand may reflect food rather than environmental concerns. If the purpose of the organic price premium indicator is to reflect either the sustainability of organic markets or organic farming as a business, then the confounding factors may well result in this not being achieved. Considering also the impact of support scheme payments, and considering that prices may not be the main motivating factor for conversion, it may be that an alternative or supplementary indicator to that of producer price premiums would be desirable. To this end, the focus of the ongoing IRENA indicator development work is to see how price data obtained from FADN (as the most likely source of continuous EU-level data in the foreseeable future) can be combined with market volume or market share data as well as income data, to provide an integrated assessment of the financial sustainability of organic farming. The focus will be on actual prices, rather than the premium over conventional, leaving comparisons, if required, to be made separately.

The challenge of providing price data usable for market purposes remains to be addressed.

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HDRA's contribution to organic horticultural data collection in Europe

Ulrich Schmutz and Chris Firth[79]

Abstract

The paper gives a short introduction into HDRA's (Henry Doubleday Research Association) contribution to the collection of organic horticultural data relevant to the EISfOM process. As a non-profit NGO, HDRA is involved in various public funded research projects on organic farming. Farm level business data and market data of organic vegetables and top fruits are the current focus of the research. The methodology used and selected results are shown for some studies to highlight HDRA's research approach. Problems with data collection are listed and discussed.

Introduction

HDRA (Henry Doubleday Research Association) is one of the largest European organisations devoted to organic horticulture. This includes organic vegetable growing, organic fruit growing, organic landscaping and amenity horticulture. HDRA is a registered charity and a membership organisation with over 30 000 members in the UK and overseas. The research department is involved in agronomic and economic research for organic horticulture production and has about 30 members of research staff.

HDRA's economic, marketing and policy team is involved in data collection, processing and pooling of secondary data in the following areas relevant to the EISfOM process:

- **UK –** market data on the organic vegetable market, funded by the UK Department of Environment, Food and Rural Affairs (DEFRA)
- **UK –** farm business data (farm income, variable costs, gross margins) of specialised field scale vegetable and top fruit farms (various DEFRA funded projects in cooperation or subcontractor with partner organisations in the UK)
- **UK –** consumer survey on the availability of UK produce and prices of organic vegetables in 2004 ("HDRA member experiments")
- **Europe –** pooling of existing field scale vegetable production gross margin and price data by EU partners for each of their countries (at present Norway, Denmark, UK, Germany, Italy and Spain). This will be used in an agro/economic model (EU-Rotate_N project, EU 5th framework programme funded).

Methodology and problems of data collection
UK organic vegetable market study

Data on vegetables marketed are collected through direct contact with all the organic vegetable marketers (including packers, retailers and wholesalers) at the end of each marketing season (April-March). Data on

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vegetable types, quantities, source and time of the year are collected via structured data collection sheets sent to all registered (45 in 2001/02) organic packers and wholesalers, and through interviews with key players/informants via structured interview forms. The linkages (Figure 1) between marketers and their suppliers are mapped to ensure that, as far as possible, all produce is accounted for. For produce, which is directly marketed (box schemes), quantities are estimated from knowledge of crop areas obtained from certifying bodies and typical yields.

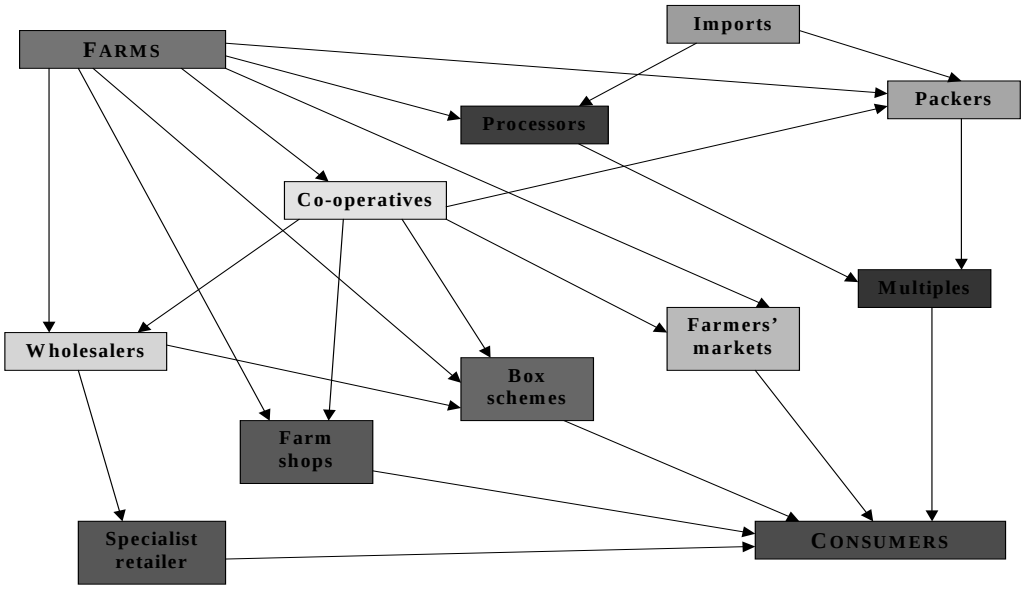

Figure 1: Market channels for organic vegetables in the UK

Data on vegetable production areas are collected and collated directly from the certifying bodies by the Soil Association and checked against DEFRA National Statistics. Processing of data and production of schedules is done on an individual market organisation and on a crop by crop basis, collated and checked and schedules prepared which show the balance of demand and supply for the each of the main organic vegetable crops grown in the UK. A new DEFRA funded follow-up study will continue annual monitoring of the organic vegetable market in the UK over the next three years.

Problems

- The response rate was 70%. To achieve this rate intensive personal contact/chasing was necessary. The remainder has to be estimated.
- Even if the market channels were carefully mapped there is potential for double counting of produce.
- For produce, which is directly marketed (box schemes) quantities have to be estimated from the cropping areas.
- With short term funding, it is a problem to ensure continuity in monitoring the market.
- The data are historic; therefore we are looking for ways, which could make them more predictive.

Farm business data of organic vegetable and top fruit farms

Farm income, variable costs, gross margins and prices are collected on farms, which have converted to organic field scale vegetable production. These farms represent a cross section of farms that have converted to organic vegetable production. The sample includes larger arable farms, smaller more intensive vegetable farms and mixed farms with livestock. Data is collected according to Farm Business Survey (FBS) standards and has resulted in the calculation of output, costs, and net farm income on a whole farm basis and gross and net margins for each organic vegetable crop.

Problems

- A specific problem associated with horticultural farms in the UK is the small sample size for farm income data, both for vegetable farms (12 holdings) and top fruit farms (5 holdings), which makes it difficult to generalise and average the farms.
- Also vegetables are grown on a wide range of farm sizes from small market garden to large limited companies with more then 1000 ha. The latter tend to be only partly organic which makes it more difficult to assess the economics of the organic section of the farm. Classifying the farms to FBS standards shows only the smaller more intensive farms as "other horticulture", while most classify as "general cropping", or "cropping, cattle and sheep". If potatoes would be counted as horticultural crops and organic standard gross margins used, this might give a different picture.
- Another problem is that currently in the UK no regular (monthly/weekly) organic vegetable price information system is available as supplied by ZMP in Germany. Growers in the UK would very much like to have access to up to date market information. DEFRA is intending to take action on this.

EU-Rotate_N project

This project uses mainly published horticultural data and pools them together in a database. Currency transformations and standardisation of definitions are done. A database holds currently 55 different horticultural crops with financial data for conventional and, where available, for organic production. Different market channels and regions are also accounted for which adds up to 250 data sets. As an example results from the database created are shown for wholesale organic carrots in north and central Europe (Figure 2).

Figure 2: Standard financial data (€/ha) of wholesale organic carrots in north and central Europe

Country	Marketable yield t/ha	Price €/t	Subsidies	Output	Var. Costs	Gross Margin
NO	30	750	1075	23575	17632	5944
DK	35	404	81	14213	12004	2208
UK	43	357	0	15357	9565	5792
DE	20	650	350	13350	3582	9768

Problems

- From the work done in 2003 it was experienced that gross margin and price data for organic field scale vegetables were available and published from Norway, Denmark UK and Germany. Data from southern

Europe are more difficult to source. In Italy an economist involved in the EU-Rotate_N project was successful in actively collecting data. In Spain no data on organic vegetables were available.

- There are no standardised definitions for which costs to include in gross margins on a European scale. For example mechanical weeding costs are defined as fixed costs in the UK and not included in gross margins, in other countries they are.
- In a later stage the EU-Rotate project will create case studies for regional and country level, therefore structural data on the distribution of vegetable farms and the dominant organic vegetables grown in different areas are needed. Farm structure survey (FSS) data will be used, but the problem is obtaining detailed information for horticulture.

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Results of Group 2: Farm Incomes and Prices

Jürn Sanders[80] and Johan Bakker[81]

Group 2 "Farm incomes and producer prices" considered that the FADN organic sample was not always reliable and that this needed correction through

1) better interpretation

2) accurate number of organic test farms and

3) updating the weightings applied and

4) that the absence in FADN of prices for meat (FADN has prices for animals) is a disadvantage.

The integration of organic data into existing data collecting system should be considered, but harmonization requires a common approach with a lot of flexibility.

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Group 3: Supply chain/Trade (Import/Export) volumes and prices

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Understanding organic markets and the production of relevant statistics with special focus on the trade/wholesaler/processor level

Jens Vestergaard[84]

Abstract

Comparison of organic markets and understanding of their functioning is dependent on the development of valid, reliable, and precise dimensions and scales. Section 2 suggests a frame for comparison. Section 3 gives an elaboration of a framework for understanding of the dynamics in organic markets. This section could be used for developing relevant categories to describe the state of organics in processing, wholesaling, retailing and other dimensions. Section 4 illustrates that there is no common EU organic market, but that there are several individual markets that are not interconnected. Further, this section illustrates severe limitations in using cross-country comparisons as a base for policy recommendations.

Comparison of the organic industry in five EU countries in 2003

The situation of the organic industry differs remarkably in the various EU countries. An example is given in figure 1.

The following 12 dimensions have been chosen for comparison:

- Consumer dedication to organics
- Organic share of total food market
- Organic assortment compared to conventional food assortment
- Organic distribution compared to conventional distribution
- Organic processing compared to conventional processing
- Organic farming compared to conventional farming
- Ownership – dedicated organic companies or conventional food processors
- Farming growth
- Demand growth
- Supply/demand balance
- Farm Family Income (FFI) within organic farms

The position of each country is indicated for each dimension on a seven point scale. Data was assembled from research teams in each country participating in the EU Project Conversion QLK5 CT 2000-01112.

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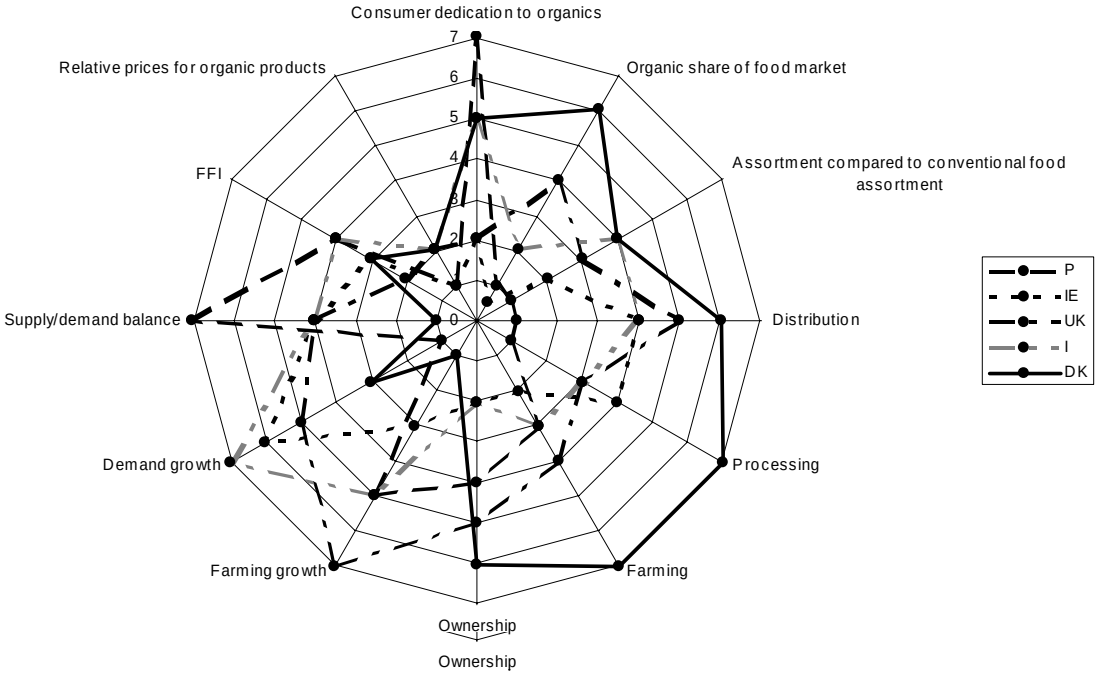
The dimensions and the scaling allow for comparison of the organic industry situation in the five countries. The validity/reliability/precision and relevance of dimensions and scales can, naturally, be improved and adapted to specific purposes.

Figure 1: Comparison of the Organic Industry in Five EU Countries in 2003: Comparative Report on the Feasibility Assessments



Legend:

1) 1= Very dedicated, high share	7= Not dedicated, low share
3) 1= Supply limited	7= Supply close to conventional food supply
4) 1= Direct distribution / specialty stores	7= Distribution close to conventional dist.
5) 1= Small scale, high cost	7= Large scale, low cost operations
6) 1= Small scale	7= Same size as conventional farms
7) 1= Dedicated organic companies	7= Owned by conventional food producers
10) 1= Oversupplied relative to demand	7= Undersupplied relative to demand
11) FFI are higher in organic farms than in conv.	7= FFI are much lower in organic farms…
12) Organic products much more expensive…	7= Organic prod. are at same price level…

The internal dynamics in organic markets

The development of organic markets is characterised by a more or less parallel development in demand, retailing, wholesaling, processing, and farming. The development is characterised by an over- or undersupply of organic products and associated price fluctuations because the markets are limited and it is difficult to form rational expectations of the future market development. Another important aspect in explaining the functioning of organic markets is the development of the character of the organic system and the associated cost of running the organic farming, processing, and distribution system. For instance, the Danish organic system has developed from an emergent industry position or a market niche situation

to a position with similar scale and scope to the conventional food industry and broad market coverage (Vestergaard & Linneberg 2003). During this development the character of the organic food system has changed. The changes do not necessarily follow a uniform pattern in all parts of the organic industry – it varies with the developments in demand going from uncertain to more certain situations, the competitive pressure experienced from the conventional sector, and the policy choices of dominant actors within the organic and conventional sector. These policy choices are made in situations where the potential scale and scope of the organic industry changes and offer different potential possibilities to establish cost effective behaviour in the different elements of the organic food system. An empirical investigation into these aspects is not intended here, but an analytical approach is presented which sheds light on the dimension of the development process and the potential cost aspects.

Table 1 presents an overview of some important elements in the organic food system, important dimensions within the individual element, possible choices within the dimensions, and the potential cost effect of the different choices.

Table 1: Organic food systems: Activity, dimensions, choices, and relative cost effects

System activity	Important dimensions	Possible choices	Relative cost associated with the choice
Primary production of raw material	Scale of production and joint production	Small scale Optimal scale and scope	High unit cost Low unit cost
Transportation and storage	Size and place	Small scale Optimal scale and scope	High unit cost Low unit cost
Processing	Technology	No processing Craft processing Industrial processing	No cost High cost Low cost
Distribution	Technology	Direct Speciality stores Conventional food stores	Typical high cost carried by consumers Medium cost Low cost
Service	Readiness for use	Low High	Small unit cost High unit cost
Market position of the product category	Knowledge/confidence	High Low	Small unit cost High unit cost
Market position of the marketer	Knowledge/confidence	High Low	Small unit cost High unit cost

Source: Vestergaard, & Linneberg. (2003)

The primary factor behind the actual configuration of an organic food system within the elements illustrated in figure 1 is the scale and scope and the stability of demand. Given their evaluation of the situation, the actors and potential actors in the food system make their commitments and try out the potential. Thus, the system develops gradually from a low scale/high cost system into a high scale/low cost system. It is important to note that the system development has to be gradual due to the inherent uncertainties in the development path.

Two extremes can illustrate the potential outcome:

Situation 1 – The low demand/low turnover/high cost case

In this case the primary production will typically be small scale as will transportation and storage. Processing will be handicraft, distribution is direct or through speciality stores, and knowledge of the product category and the marketer is low. All these features point to a system with high unit costs for the product units involved.

Situation 2 – The high demand/high turnover/low cost case

Contrary to situation 1, this situation results in low product unit cost due to scale and harmony in production, optimal scale and scope in transportation and storage, industrial technology in processing, low cost distribution, and low cost marketing due to the established position of the product group and the marketer.

In the real world, for given organic products in given markets the actual situation with respect to system elements, their character, and their cost can be far from the two extreme situations. Nonetheless, the summary presented in table 3 is an important tool for understanding the potential organic food systems and their cost structure.

In a case similar to the Danish situation, where several product groups have reached the development stage described in situation 2, the effectiveness and efficiency of the organic system for these products are important elements in promoting and stabilizing the organic market.

It is a fact that organic products in most cases are more expensive per product unit than products from conventional farming, but given that farm costs typically account for only one third of the final product cost this does not need to influence final organic product prices significantly. Inefficiencies in other elements of the organic food system can be far more important in creating high cost organic products.

The closer the organic food system approaches to situation 2, the low cost case, the more it is possible to start a self enforcing movement towards bigger organic markets. The organic markets have reportedly high price elasticity – let us assume it is 2 in a given market. A lowering of the organic system cost (and prices) of say 10% should then result in a demand increase of 20%. By going from a situation 1 case to a situation 2 case, cost reductions of this size or more are easily realized even without tampering with farm prices. This effect can be called the "maturity gains" as it unfolds when the organic industry within a product group moves from being in an emergent situation (situation 1) to a mature situation (situation 2).

The above reasoning for maturity gains is based on a simplified theoretical argument, and the Danish experience in several organic product groups, naturally, is transferable to other EU markets. The basic core of the argument lies in the fact that the majority of the maturity gains originate from the logistic, processing, distribution, and marketing elements of the organic food system. If the market participants are alert to these maturity gains and use this potential, they have considerable impact on the development of the organic food markets and can damp the influence of higher farming product cost and increase turnover considerably by making the system more effective and efficient.

Inter-country trade in organics and cross country comparisons as a base for policy recommendations

In order to produce relevant statistical material on organic markets it is important to choose the right conceptual models as the point of departure. What then are the relevant models? And what are irrelevant models? Let us consider two examples:

In Hamm (2002, p 92) the following argument is put forward in an attempt to understand observed price variations in organic markets. "Thus, the price differences (and differences in organic price premiums) did not reflect the neo-classical economic theory". This argument is based on the understanding that there is one European organic market. A competing understanding would be that the European area could be perceived as several different markets. This would save the neo-classical economic theory and be more in line with realities.

In Hamm (2002, p 117) the following argument can be found "In summary, the most important factor hampering successful marketing activities is considered to be the small scale of organic markets. This is especially the case for those aimed at supplying general food shop chains which in turn is the most important way of accessing the broad mass of consumers."

An alternative conception could be that the organic markets would develop from an emergent industry situation, where high cost/low scale would dominate in processing and distribution, into a mature industry with low cost/high scale and probably end up with a dual structure depending on product groups. Using this concept, small scale operations can be seen as a necessary and very important step in organic market development and a way of exploring further market potential which eventually might lead to a mass marketing situation. In other words: nobody is born fully grown. There is a series of stages one has to go through to reach maturity. This goes for organics as well as for everything else.

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The price of organic fruit and vegetables: analysis of one year of monitoring from production to consumer in Italy

Francesco Giardina[85] and Luigi Guarrera[86]

Objectives

This paper is intended to supply an analysis of the results obtained from price monitoring of organic fruit and vegetables undertaken in Italy by the National Observatory on Prices of Organic Products.

Monitoring method

The Observatory was created in September 2001 by a joint initiative of ARM – Azienda Romana Mercati – a Special Agency of the Chamber of Commerce of Rome for the agri-food sector – and AIAB – Associazione Italiana per l'Agricoltura Biologica (Italian Association for Organic Farming).

Price monitoring is undertaken by the Observatory through consulting the main organic operators (distributors, co-operatives, producers, specialised retailers, supermarkets), located throughout Italy which are representative of their sector.

Data

On its dedicated web site (www.prezzibio.it), the Observatory periodically publishes four price lists: production, distribution, specialised retail sale and supermarkets. In every price list, and for each product, the minimum, average and maximum prices, as well as the market trend, are shown.

Taking into account that the price lists for specialised retail, supermarkets and producers are published monthly, and the price lists for distributors are published fortnightly, the Observatory owns a great amount of data that allows a careful analysis of the organic fruit and vegetable market.

The analysis

From the data which is gathered it is possible to define:

- a price comparison between organic and conventional products sold in supermarkets;
- an index of market instability derived from the difference between minimum and maximum prices in the various stages;
- the price increase along the food chain as an index of added value in the various commercial stages;
- the price trend over time for every single product;

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- a price comparison between supermarkets and specialised retailers.

During the three years of the project development "critical points" have arisen. In particular, the “phase” showing the greatest difficulties is price monitoring at production level. As is already the case for conventional farming, organic farming production is so tied to distribution channels that its autonomy in defining prices appears to be very limited. Furthermore, for the Observatory system to be representative, adequate and stable funding is required, which until now has been guaranteed by the Rome Chamber of Commerce.

BioStockManager®: A software solution for data collection along the whole supply chain

Harald Falkner[87]

1 Product traceability in the European market

Traceability and quality assurance in real-time is one of the main challenges in the modern food industry. Most companies face this challenge with traditional traceability methods such as documenting each step forward and backward to suppliers and customers with a lot of paperwork. This method of collecting data at each and every step of a supply chain works in most cases. To be a competitive organic food trading company on the European market, these companies are faced with time periods of less then one hour to trace their traded goods back to their origins. Only one step forward and backward is enough to fulfil laws given from the European Union, but is in most cases insufficient enough to sell high-quality organic products on the European market.

Especially in the organic market, electronic certification data should also be used to check every transaction of high-quality goods in order to have an efficient 'quality assurance' mechanism. The ideal method of ensuring product quality is to combine electronic supply chain data with certification and laboratory data. Every year many problems which could be avoided arise during the production process, damaging the image of organic products. The money saved together with money earned by increased business volume, as a consequence of 'high traceability' and 'quality assured' products, could be spent on financing common traceability systems such as BioStockManager®, FoodResourceManager and AgrarCertificationManager.

2 Introduction

fab4minds Informationtechnology GmbH is one of the leading consulting and information technology companies in the European market for agriculture products specialised in the area of organic food trading. Fab4minds started to work on the idea of developing traceability and quality assurance systems in the food production channel five years ago.

The first major challenge was to develop an overall system to handle traceability using very open interfaces to make it possible to integrate other tracing systems to get a main directory for the food supply chain. There should be a standard as to how traceability data should be transferred to organic food companies. With the help of such a standard, it would be possible to exchange very important supply chain data between some major systems. During the development of such a standard, we have to take into consideration the different supply chain processes according to the main product groups such as grains, milk, meat and so forth. On the European market, there are many small traceability systems that are only able to handle a few products traded within small environments. There are almost no interfaces which facilitate communication. Most of the existing systems are not web-based and can only be used on fixed locations. If the supply chain changes, and in a dynamic business this is often the case, new members should be quickly and cheaply. This is only possible with the use of the internet.

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The second main task was to reduce the work spent on documentation by using automated data collection. Most traceability systems operate alongside a traditional ERP (enterprise resource planning) system. In this case, there are two problems that are very difficult to solve. Firstly, companies have more administrative work as a result of having to enter data into two systems. If there is a lot of work to be done using such a documentation system, the take up (which is very important in this area) will be low, and this brings us to the second part of the problem, which is that data quality is mostly very poor in these cases. Employees are not motivated to enter most of the ERP data twice. In some cases, this is done in the evening after their normal jobs. A solution to this problem is to integrate traceability documentation into the existing ERP systems such as BioStockManager® or FoodResourceManager. If companies use such modern systems, it is easier to implement a given standard governing traceability information.

The third idea was to combine this collected supply chain information with real-time checks, against a standardized certification and analysis data processing system for quality assurance purposes. A lot of expense can be saved if quality checks are done in real time. The biggest problem in this case is that there is no standard that allows certification bodies to communicate efficiently with one another. To face this challenge we also have to develop a standard that is combined with a central administrative system. If a traceability system wants to get information on certification data, in most cases it does not know which certification company or system it has to contact. For this, it is necessary to use a central administrative system such as CERTib. The biggest challenges, in this instance, are to manage usage rights and standards. A lot of small certification companies are not able to deliver certification data electronically, so we have to fill the gaps in such an e-certification directory. These gaps can be filled with very low cost software solutions for certification bodies which are compatible with developed standards such as CERTc. In this way, it is possible to get certification data for all goods concerning any supply chain.

If it is possible to realize all three ideas, trading companies can deal with a high standard of traceable and quality assured products that are especially important in the organic market since brand image is very important for product quality.

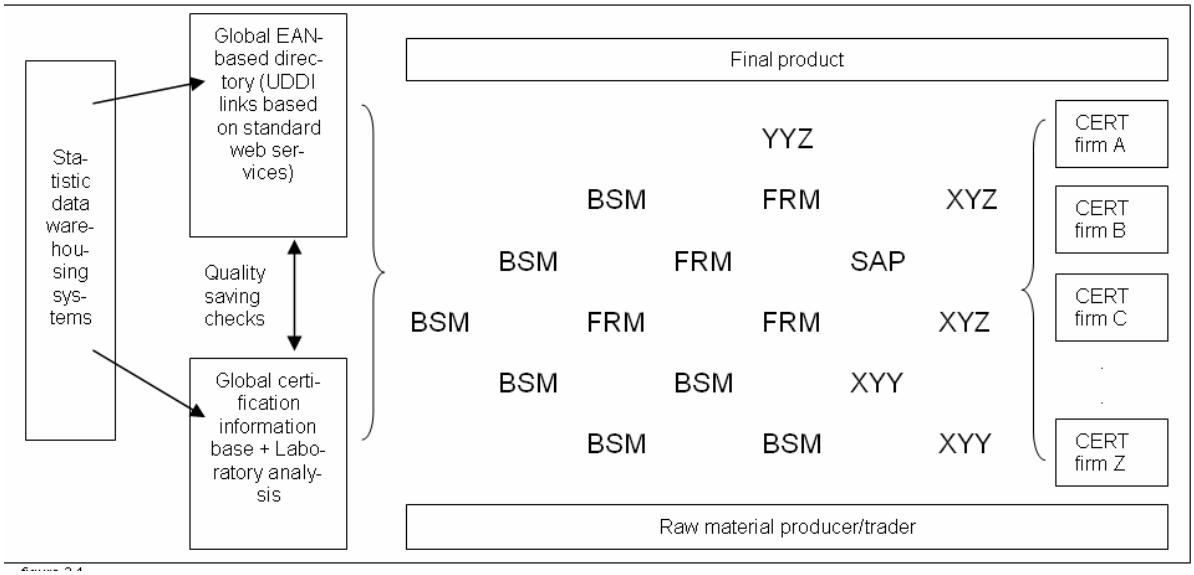
Consequently, it will be possible to use produced supply chain data for statistical purposes. Data customers will be able to generate product quality, origin, source, import and export reports for various countries and, perhaps, even for the whole European Union.

3 Methodology/methodological issues

In the food industry, it is very difficult to document the manufacturing process. It is easy to collect traceability information concerning the input and output of a manufacturing company and in a lot of cases this is already done, but documentation of the manufacturing process is very difficult and not really available in a lot of companies. Therefore, fab4minds have developed a flexible standard which can also include manufacturing traceability information. Companies can use, for example, the FoodResourceManager system to automatically collect traceability data during their production process to achieve this standard.

To have an overview of traceability data, especially for statistics, it is important to develop a way of transferring traceability information very easily. Every food processing company is required by law to collect information on the origin and destination of their traded or produced products. If it is possible to add further criteria to this law, initially only for large organizations, in such a way that they have to provide this information in a specific electronic way (standard) – on the internet, for example – it will be possible to get a lot of very useful statistical information.

For such a standard, it is necessary to have a central identification system such as EAN codes. Standardized data attached to such a bar or RFID (Radio Frequency Identification) code can be the key to solving this challenge. Perhaps it is not possible to store traceability information in a central system so we have to develop a mechanism which allows us to link systems together (see figure).



All systems have to be administered over a central station that works with EAN codes, and develops and supports the standard. Therefore, it is possible to find, with the help of keys to all traceability and quality saving processes, specific data for any product. User management is also a very big challenge in this context. A possible solution would be to delegate user management to the individual member systems in order to decrease complexity.

Data exchange should be made in XML format so as to be as platform-independent as possible on the IT side. fab4minds uses every available web service worldwide for data exchange which is described by WSDL (Web Service Description Language) files. Every node in such a tree as it is shown in the figure above can communicate over a specific URL with another partner who is, for example, in the role of a supplier. It is necessary to have a central system, for example a UDDI (Universal Description, Discovery, and Integration) directory, to find the traceability system of specific partners. Of course, initially it would be possible to publish the web service URLs of system members on their webpage, such as the address of the company.

Today, fab4minds is working on logical systems that calculate the probability of the origin or destination of product parts that are not documented in the system. If there are only some gaps in the supply chain, it may be possible to calculate the values of these gaps as a result of additional traceability data.

4 Results

fab4minds have developed not only software solutions, but a whole range of other solutions as well. Usage of such systems describes a whole business process, detailing how trading and manufacturing can be done on a high quality and traceable level. Every system partner has his own portal with specific features and job lists, such as its workflow systems. There is a large web-based data analysis and reporting system to obtain all the stored information from every part of the world within seconds. In the near future the three

main systems explained in the following section will become certified as the first secure traceability system by the certification company SGS in Europe.

4.1 BioStockManager® (BSM)

fab4minds put their system "BioStockManager®", which is now known across European markets, into production in the year 2000. In this first step, about 30 000 tons of Austrian grain were handled, documented and checked using this system. Two years later, BioStockManager® expanded to about 30 members all over Austria. One result of using BSM was that members were able to expand without increasing their staff numbers. Thus the second idea of reducing the administrative load in the daily business by automated data collection and documentation was realized. Lastly, harvest over 130 000 tons are traded over this system with over 100 partners and over 2 500 producers in Austria, Germany, Italy and Switzerland.

BioStockManager is a fully web-based Traceability-ERP solution which is based on data collection in real-time. It can handle many subsidiaries (clients) of one main system in order to get an overview of transactions in a large area. Every single transaction, from harvesting and cleaning, to manufacturing and transport, is documented on site. BSM has interfaces to weighbridges and quality testing instruments. Combined with necessary documents for transaction confirmation and on a traceability data based accounting system, it is guaranteed to realize real-time documentation. It is also possible to use chip cards for partners, EAN or Barcodes for lot and product identification. BSM uses the standardized open interface to ACM to perform real-time checks based on areas and the average harvest per product and hectare of producer deliveries. In addition, certification data is checked in real-time with the help of ACM.

Using the documented supply chain described means that it is possible to extract statistics and reports for all transactions. If you are interested in the details of some "hotspots", you can do a so-called "drilldown" to get more detailed information (see Online Analytical Processing, OLAP). During the production and trading process, a lot of data will be generated and this causes a flood of information that can only be handled by analysis and reporting systems.

This year the first "real" traceability web portal was launched with a customer of BSM traded products (see www.ja-natuerlich.at.) Here it is possible to enter lot numbers and see the farmers who have produced your purchased products. The revolutionary aspect of this BSM-provided web portal is that the product supply-chain stretches over 20 steps and over four partners in one production chain and is not dependent on the structure of the supply chain. It is very flexible and scalable in order to allow it to handle nearly every possible production chain.

A traceability search engine is now available and fab4minds will develop new portals with graphical product flow diagrams, links to available laboratory reports and farmer-based data. This will be launched shortly before the 2004 harvest on www.biostockmanager.at. BioStockManager also have many interfaces to third party systems which use the collected information for third party data processing or statistical systems.

Every year fab4minds tries to expand their systems and standards to include new product categories and to work on a global EAN based directory as explained in this document.

In the process of the development of BSM, fab4minds found that open standards could be the basis of an electronic "traceability standard" for the whole European Union. Of course, there is a lot of work to be done in order to combine all the interests and requirements of the European countries but this work can be a very solid and approved foundation for such a future traceability standard.

4.2 FoodResourceManager (FRM)

FRM is a software solution developed by fab4minds, based on the "know-how" collected during the development of the system BioStockManager®. In contrast to the specialized raw material handling system BSM, FoodResourceManager specifically caters to the needs of manufacturing companies. This system is a full ERP IT solution for food manufacturing firms which allows them to document the required traceability information automatically. FRM fulfils the traceability standard as developed by fab4minds, and is able to communicate with any other systems working on the basis of this standard such as BioStockManager®. Also, interfaces to ACM are available for FRM.

4.3 AgrarCertificationManager (ACM)

The aim for ACM was to provide a central database for all certification and laboratory check information with open interfaces and easy user management. To realize this vision the following three sub-systems were developed.

4.4 CERTib

fab4minds found it would be necessary to develop a central certification database in order to realize the idea of real-time checks of products along the supply chain. Therefore a central certification database called CERTib (Certification Information Base) was developed. CERTib offers open web service-based interfaces for certification bodies to transfer certification data into and out of this system. These interfaces were developed with all the major Austrian certification bodies over a one year period.

4.5 CERTc(2)

For all inspection companies unable to provide an IT interface to the CERTib system, fab4minds have developed very low cost software for certification companies, which is compatible with CERTib. Certification data collection along the whole supply chain is now possible. The three main parts of CERTc are data collection, inspection and certification. Printing and electronic archiving of certificates is also possible in terms of communicating over many interfaces which will be one of the most important challenges of certification companies in the future. The idea was to provide a very flexible system that would be usable by nearly all certification authorities. CERTc can import available certification data rapidly and is easy to set up, so it can be used especially well by small certification companies. CERTc is, like all fab4mids products, a very open system that can be connected to almost every interface because it is based, as BSM and FRM are, on the most modern Java web technology J2EE.

4.6 CERTlab

It is not only important to store certification data in ACM; the quality analysis of products associated with a supply chain also has to be fully documented. There are two main reasons for collecting product quality analysis data in such a system. First, it is an important part of IT-based quality assurance. For example, if products are contaminated, it is possible to lock the supply chain in real-time. Secondly, it can reduce the cost of repeated laboratory analysis. It is also possible to calculate the probabilities for which step in the supply chain is most efficient for laboratory analysis.

Furthermore, supply chain reports can use the data of CERTlab to increase the image of high quality products by integrating quality check information. Moreover, it is interesting to get statistics from laboratory analysis of suppliers in order to find out which products are most likely to be safe and organic.

During the last five years, while working on the ideas detailed above, fab4minds have collected much "know-how" to deal with these problems. Developing standards in traceability and certification data is one of the main tasks of fab4minds today. In Austria, the experience of working on such systems has made it possible to realize all the ideas mentioned above, in over 90% (130 000 tons) of the grain market.

5 References

Österreichische Agentur für Bio Getreide, A-3820 Raabs/Thaya Hauptstraße 17, Austria: Quality savings and traceability guideline. Download at http://www.biostockmanager.at/BSMWeb/download/oeafbg/qs.pdf

Statistics on organic farming and organic products in Denmark

Poul Henning Larsen[88]

1 Abstract

As in many other European countries, the production and sales of organic products have increased in importance, and this development has, of course, also resulted in increased needs for statistical information on the sector. Based mainly on administrative records, the first part of the chain from primary production to final consumption is rather good, whereas information on processing and sales is less developed. Against this background, Statistics Denmark has proposed that the following statistical areas should be developed further:

First and foremost:

1. Turnover of organic products in retail shops

2. Foreign trade in organic products

3. Ad hoc surveys of direct sales of organic products from farmer to consumer and various subscription systems

and secondly:

1. Prices of selected organic products in the chain from primary production to final consumption

2. Trends Survey for organic food and beverages

This paper describes the statistical models for the above subjects. Furthermore the paper gives an outline of the existing data capture of organic production and products in Denmark.

2 Introduction

Within the last decade the production of organic products has increased in importance within the Danish agricultural sector, and the numbers of organic farmers as well as acres used for organic farming have risen intensively. Corresponding to this growth the demand for organic products has increased. This development has created an increased need for a more comprehensive coverage of this domain, and in the autumn of 2001 the Directorate for Food, Fisheries and Agri-Business asked Statistics Denmark to carry out a critical analysis of user needs, mapping of existing data capture, and finally to make proposals for potential new data collection within organic farming, processing and consumption.

Since then Statistics Denmark has produced two reports. The first report[89] gives a brief data needs assessment, a detailed mapping of existing data capture possibilities and finally proposals for new

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[89] Danmarks Statistik, 2003. Økologisk statistik. Behov og muligheder for en udvidet statistisk dækning af økologi-området

statistics within the organic sector. The second[90] report contains detailed statistical models for selected domains as proposed in the first report.

This paper contains a summary of the two reports with special focus on fields considered to be relevant in a European context.

3 Mapping of existing data capture

This part of the paper gives an overview of possible data capture in the area of organic farming and organic products, but also a brief overview of what is to be considered as organic in Denmark.

In the Danish framework, organic products can only be considered as organic if the farm producing the product is licensed by the Government. Organic farms are certified and controlled by the Danish Plant Directorate[91]. With a few exceptions the organic products can only be processed and distributed to the consumer if the shop is certified and controlled by the Danish Veterinary and Food Administration[92]. Both institutions work in accordance with a very detailed protocol which conforms with various EU regulations. The two institutions are therefore important potential sources for better information on the sector.

Although Statistics Denmark at present carries out only limited data collection in the organic sector, there is wide range of possibilities for creating new information by combining information from various registers in Statistics Denmark with information from other sources.

In connection with various projects and studies, government institutions, trade organisations, business enterprises and research institutes collect data covering different aspects of organic production and products. Information from those sources is only considered to be relevant if the scope of the study achieves full coverage of the surveyed territory.

The definition of organic farming and organic products and the method used to certify and control the sector gives an important framework for transforming these administrative records into statistical information:

- the data already collected by the Danish Plant Directorate and the Danish Veterinary and Food Administration can be reused and, together with other sources, can create new information
- as it is an advantage for the farmers and enterprises to be certified, information from the administrative records must be considered to have achieved more or less full coverage
- the data collected by the two Government institutions can potentially reduce the response burden imposed on trades and industries

Illustrations of potential methods of capturing new data to be used in creating new statistical information are given below for:

- Organic farming and production
- Processing and sale

[90] Danmarks Statistik, 2003. Fase 2: Økologisk statistik. Behov og muligheder for en udvidet statistisk dækning af økologi-området

[91] For further information see www.pdir.dk

[92] For further information see www.fdir.dk

- Foreign trade
- Final consumption by consumer
- Prices

3.1 Organic farming and production

The Danish Plant Directorate collects information every year from the certified farms. The questionnaire contains information on areas of various crops in hectares at a two digit level. Furthermore, for each type of crop it is recorded whether the area is conventional, or fully or partly converted for organic farming. For domestic animals, there is detailed information covering the present year with average expected number of animals for fat stock (cattle, pigs and chickens) and expected number of produced animals in the reported year.

Enterprises processing, storing and selling products to organic farmers must be certified by the Danish Plant Directorate and must report every year to the Directorate concerning production machinery, stock and type of products produced.

The Ministry of Food, Agriculture and Fisheries is responsible for the Central Livestock Register, which contains information on the various types of livestock on the farms. The information on cattle has improved over the years and since 31 December 2000 Statistics Denmark has used the information in this register for compiling the stock of cattle. Stock information on other animals is considered unreliable.

Even though the quality of information on cattle is high, it is possible at present to fully identify the numbers of slaughtered cattle, including the weight of the animals, but not the stock of organic cattle. The information is considered to achieve full coverage.

Since 1997 the Danish Research Institute of Food Economics has produced accounts covering organic farming based on a representative sample consisting of about 13 per cent of total Danish organic agriculture. The survey gives very detailed information on profit and loss accounts for organic and conventional farming, but also provides information for the two most important organic activities: plant and milk production[93].

Like other national statistical institutes, Statistics Denmark collects a vast amount of information on farms and agricultural production. The backbone of the Danish agricultural system is the yearly Agricultural and Horticultural Survey, supplemented by other traditional surveys such as, for example, the harvest of cereals, rape and pulses. To obtain an overview of the data collected, see the electronic edition of the Statistical Yearbook for 2003 on http://www.dst.dk/yearbook. For more detailed information on agriculture, visit Statbank Denmark at: http://www.statbank.dk.

On a quarterly and an annual basis Statistics Denmark receives information from the Danish Dairy Board[94] on conventional and organic milk delivered to the Danish Dairies, and information from the Danish Veterinary and Food Administration on sales in kg of organic and conventional eggs for consumption.

[93] For further information see www.foi.dk

[94] For further information see www.mejeri.dk

3.2 Processing and sale

In contrast to information on organic farming and production, there is at present very little information on processing and sales with full coverage. Statistics Denmark, however, receives quarterly information on volume of milk, butter and cheese from the Danish Dairy Board[95].

The Danish Veterinary and Food Administration licenses enterprises producing and selling organic products for human consumption. At present, about 650 enterprises are certified but, although the Directorate controls their activities, they do not collect information from them. The information remains within the individual enterprises.

Statistics Denmark has for many years carried out quarterly surveys in manufacturing industries on commodity sales in value and volume at a very detailed level; however the survey does not distinguish between conventional and organic products.

3.3 Foreign trade

Like organic processing and sales, there is very limited information available on foreign trade in organic products, although over the last few years Organic Denmark[96] has carried out a survey covering exports of organic products[97]. The survey population is the certified enterprises from the Danish Veterinary and Food Administration and it contains 16 food categories.

In accordance with the EU regulations, Statistics Demark collects data on foreign trade, but does not differentiate between conventionally and organically produced products.

3.4 Final consumption by consumer

Although a product is produced according to organic regulations, this does not necessarily imply that the product will be sold as organic. There are several examples:

- At present it is not possible for the Danish dairies to sell all the milk they received from organic farms as organic
- Not all cuts or meat from organic cattle will be sold as being organic

Additionally, there is some waste/discarding in the chain from farms to the final consumer; to obtain information on the final consumption of organic products it is therefore necessary to obtain data from other sources.

There are various possibilities for data capture:

- Turnover in retail shops
- Direct sales from farmer to consumer and various subscription systems
- The catering sector
- Household surveys
- Dietary surveys

[95] For further information see www.mejeri.dk

[96] Organic Denmark is nongovernmental organization for farmers, producers and consumers

[97] Økologisk Landsforening, 2003. Eksportnotat 2002 and www.okoland.dk

Since 1939 Statistics Denmark has collected data and calculated a turnover index for retail sales, but unfortunately there is no information on the turnover of organic products.

Until 2002 a marketing information company received detailed information from various supermarket chains, where it was possible to distinguish between organic and conventional products. Since 2003 several of the bigger supermarket chains no longer participate in the survey.

It is traditional in Denmark for some foods to be sold directly from the farm to the consumer. Experts assess that the total volume is of some importance as regards organic products, but the size and magnitude are not known.

Within the last 10 years a large number of farmers as well as small companies have started subscription systems, where a box of food is delivered directly to the consumer's address. Experts assess that the total volume is of some importance as regards organic products, but again the size and magnitude are not known.

The Danish Veterinary and Food Administration estimate that all year round 0.5 million meals are served every day in canteens and an additional 0.5 million meals in day care institutions, residential homes for the elderly people and so forth. The number of such meals based on organic products is not known.

Statistics Denmark and a large number of private marketing information companies carry out surveys at consumer level. Most of the surveys measure attitudes to organic products. One company, GfK[98], has for some years carried out a panel survey of 2 000 households, where consumers are asked to report what the household has bought as everyday necessities. The survey gives important information for the analysis of which households buy what kinds of organic products, but GfK assesses that the survey does not provide a true and fair picture of the total volume of various organic products consumed by the households. The information is sold to private companies and research institutes.

Statistics Denmark carries out a continuous household budget survey, which gives very detailed information on household expenditure, but the survey does not differentiate between organic and conventional foods.

In 2002 the Danish Veterinary and Food Administration published the third dietary survey. The survey collects information on an individual basis and uses more than 150 categories of food; however none of the categories includes organic foods.

3.5 Prices

Since 2001 Statistics Denmark has collected and published consumer prices on a monthly basis for eight selected organic products, i.e.:

- Whole milk
- Semi-skimmed milk
- Skimmed milk
- Large eggs
- Carrots
- Potatoes
- Minced beef, maximum 12 per cent fat
- Minced pork, maximum 12 per cent fat

[98] For further information see www.gfk.dk

4 Reusing information

As shown above, the statistical coverage of organic farming and products is far from perfect, and there are many gaps in the chain from primary production of organic products to final consumption by the consumer. However it also appears that there is a wide range of potential possibilities for providing new statistical information by reusing the various administrative and statistical records already available. This can be accomplished in different ways:

- create new information by combining two or more registers
- cross match two or more registers and in that way reduce the population for gathering new information

With the focus on reusing the data, the rest of this section describes the various immediate possibilities of creating/gathering new information.

As mentioned above, the Central Livestock Register contains information on all domestic animals on Danish farms, but at present only the information on cattle is considered to be a reasonably valid. Furthermore, it is not possible to identify organic animals. Statistics Denmark's view is that it is advisable to try to utilize this information, although the workload will be high. On the other hand, hopefully new information might emerge without increasing the response burden for the farmers.

The same identification number is used for farms in the Danish Plant Directorate's register of certified organic farms and in Statistics Denmark's Agricultural register, in which information is based primarily on the yearly Agricultural and Horticultural Survey. As mentioned earlier the Danish Plant Directorate's register has detailed information on sowing areas in hectares of various crops at the two-digit level. By combining Statistics Denmark's information from the yearly yield survey, which covers conventional as well as organic farms, in principle it should be possible to compile yield statistics for the two different types of farms.

Organic farming is not specifically identified in Statistics Denmark's yearly Agricultural and Horticultural Survey which covers both conventional and organic farms. By combining this information with information from the Danish Plant Directorate it is possible to obtain some new information and to produce much more detailed information than the data that have previously been published by the Danish Plant Directorate.

The information presented above may give the reader the impression that it should be very simple to create new statistics by matching two registers, but unfortunately this is not the case. It is always important to be aware that problems can arise when data collected for one purpose are subsequently used in another context. For example, as a test Statistics Denmark has tried to match the Danish Plant Directorate's register with Statistics Denmark's information from the yearly harvest survey. The results show that the hectares reported in the two registers are not always similar; disparities are generally associated with the different definitions used in the two registers.

An enterprise that wants to produce and sell organic products must be certified by the Danish Plant Directorate and/or the Danish Veterinary and Food Administration. By matching that information with the population used by Statistics Denmark for the quarterly surveys on commodities, and then checking potential organic products, it is possible to reduce the population for a possible survey of organic commodities.

Similarly, for a survey of organic commodities it is possible to reduce the population for organic foreign trade by combining information from the Danish Plant Directorate and the Danish Veterinary and Food Administration with Statistics Denmark's register for foreign trade.

5 The way forward for new organic statistics in Denmark

On the basis of the above mapping, which shows that the greatest lack of information is seen in the last part of the chain, from primary production to final consumption, the various stakeholders in Denmark have suggested developing the latter.

Firstly:

- Turnover of organic products in retail shops
- Foreign trade in organic products
- Ad hoc surveys of direct sales of organic products from farmer to consumer and various subscription systems

and secondly:

- Prices of selected organic products in the chain from primary production to final consumption
- Trends Survey for organic food and beverages

The statistical models for the above surveys will be described below.

5.1 Turnover of organic products in retail shops

According to U. Hamm et al. (2002, p. 44) 86 per cent of the total organic products for consumption in Denmark are sold in general food shops, while direct sales and weekly markets only account for 7 per cent. This indicates the importance of surveying this sector to provide a valid picture of final consumption of organic products.

The Danish retail sector is characterized by some supermarkets chains like Coop Denmark, Dansk Supermarked and Aldi plus some chains of independent wholesalers which are all members of De Samvirkende Købmænd (DSK). The members of DSK have about 1 500 shops, and those shops are supplied by three wholesalers. The retail shops for organic products are therefore quite extensive, but also concentrated on few players. This clears the way for reducing the number of questionnaires.

The statistical model is:

Joint report for the turnover of organic products from:

a) Coop Denmark

b) Dansk Supermarked

c) Aldi

Joint reports from the three DSK wholesalers' sales of organic products to retail shops, excluding the three chains (a-c) mentioned above.

The questionnaire was posted January 2004, requesting information on the turnover of organic products for the year 2003.

Information was requested on organic products in different commodity categories in volume and turnover in DKK.

The supermarket chains a-c are asked to report on retail sales, and the three wholesalers on sales to retail shops.

It should be possible to use the information collected from the supermarket chains a-c, immediately without any further calculations, but that is not the case for the information from the three wholesalers. This information on volume can be used as an estimate of sales in retail shops by assessing waste of commodities bought. When combined with information available from other sources, wholesalers' sales in DKK can give a valid picture of turnover in retail shops.

5.2 Foreign trade of organic products

By matching the information on certified enterprises from the Danish Plant Directorate and the Danish Veterinary and Food Administration with Statistics Denmark's information on foreign trade, it is possible to create the population for the survey. By using this method it will be possible to validate data immediately as well as reducing the response burden for the trade, as it will only be necessary to send questionnaires to those enterprises that have been active in foreign trade.

The statistical model is:

The basis population is made up of about 3 900 certified enterprises and farms in the registers from the Danish Plant Directorate and the Danish Veterinary and Food Administration for the actual year of the survey.

This basis population is matched with Statistics Denmark's information on foreign trade for actual year of the survey.

Those enterprises that might have had foreign trade in potential organic products constitute the final population for the survey.

The questionnaire will be sent out in May 2004 requesting information on foreign trade with organic products for the year 2004.

The population will receive a questionnaire with information on foreign trade that the enterprises have already reported to Statistics Denmark and/or customs authorities (volume, prices in DKK and country). The enterprises are requested to report the share of organic products.

When the questionnaires are returned, Statistics Denmark will carry out quality control including a validity check.

5.3 Ad hoc surveys of direct sales of organic products from farmer to consumer and various subscription systems

As mentioned earlier, the majority of organic products are distributed through supermarkets. Various experts suggest that about 10 per cent are distributed through direct sale from farmer to consumer and various subscription systems. But there is a general consensus that this estimate is defective with an unknown element of uncertainty.

To create a total picture of direct sale from farmer to consumer, from a statistical point of view, it would be most appropriate to survey a total or random sample of all certified farms; however this implies a considerable response burden for the farms. When this is considered in relation to the presumably small sales, Statistics Denmark will not recommend this procedure.

Organic Denmark has for some years operated a database containing information on farms which sell direct from farmer to consumer[99]. The database is updated on a yearly basis free of charge for the farmers.

No database exists which has full coverage of the various subscription schemes for organic products, however Organic Denmark is in possession of a more or less complete list of them.

5.4 Prices of selected organic products in the chain form primary production to final consumption

Until now there has been no systematic collection of prices for organic products in the chain from primary production to final consumption by the consumer. Statistics Denmark has suggested starting to collect comparable prices for those eight categories of commodities that are, at present, covered by Statistics Denmark. A possible comparison appears in table 1.

Table 1: Selected categories of organic products in the chain from primary production to final consumption

	Prices in primary production	Processing prices	Retail prices
1.	Carrots	Carrots	Carrots
2.	Potatoes	Potatoes	Potatoes
3.	Eggs, large	Eggs, large	Eggs, large
4.	Natural milk	Whole milk	Whole milk
5.	Natural milk	Semi-skimmed milk	Semi-skimmed milk
6.	Natural milk	Skimmed milk	Skimmed milk
7.	Cattle/kg	Minced beef	Minced beef
8.	Pig/kg	Minced pork	Minced pork

As shown above it is possible to follow the prices for the products in categories 1-3, as these are less processed products (for example only sorted and packed). This is not the case for categories 4-8. To compare the prices in different stages in the process different circumstances must be investigated.

Organic products are bought and sold by many enterprises, and to create an average price index it is necessary to have information about the total volume sold. This validity problem can be minimized if the information is published only as indices.

In many cases the farmer will receive additional payment for the products in categories 4-8 six months to one year after production. This will make it difficult to compare processing and retail prices with prices in primary production on, for example, a monthly basis.

For product categories 1-3, in many cases the farmer will sell directly to the various supermarket chains or individual retail shops. In this case the processed prices will not give a true and fair picture.

To form the basis for valid price statistics further investigation is therefore necessary.

99 Organic Denmark, 2002. Stalddørskataloget 2001.

5.5 Trends Survey for organic food and beverages

On a quarterly and yearly basis Statistics Denmark has carried out a trends survey for manufacturing industries.

The purpose of the survey is to provide up-to-date data on the business cycle in Danish manufacturing industries, including data on current assessments of the preceding period and data on future expectations. The trends survey is a supplement to other short-term statistics. To this is added information on a number of factors considered difficult to extract from the traditional statistics.

The survey provides qualitative information on the current situation as well as forecasts for the coming three months. The most important variables are production, employment, new orders, sales prices, investment plans and limits to production.

It is a characteristic feature of the method used that the management of the enterprises which respond should be able to answer the questions without any elaborate analysis, since they are primarily requested to indicate with a tick whether a given economic variable, e.g. production is up, largely unchanged or down for the survey period, compared to the preceding period. The questions concern both future expectations and current judgment over the preceding period.

Corresponding to the above it could be possible to carry out quarterly or half-yearly trends surveys for certified manufactures of food and beverage as well as retail businesses. Whether this is appropriate or not must be compared with the increasing response burden imposed on the enterprises.

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Hamm, Ulrich et al., 2002. Analysis of the European market for organic food. Organic Marketing Initiatives and Rural Development. School of Management and Business, University of Wales, Abersytwyth, UK.

e-Cert, inspection and certification software

Frank Rumpe[100]

1 e-Cert software: The electronic inspection and certification management tool and database

e-Cert offers a new standard of reliable inspection and certification for safer food worldwide! Each step in the inspection and certification process is accomplished digitally which leads to accelerated and simplified processing. The multilingual software enables organisations with several locations to perform advanced procedures in a global network via the web. The inspection process is carried out in a completely paperless form by means of laptop or tablet PCs. The inspection is followed by the production of a report which is sent to the certifying organisation. Back in the office again the data is synchronised automatically. This means that the inspectors always have the most up-to-date data to hand and can fully prepare themselves for the inspections by accessing data archives [inspection reports, correspondence, certificates etc.]. This enhances the competence of the inspectors and the inspecting and certifying point.

2 Introduction (background/problems/aims)

e-Cert IT GmbH (www. e-cert.net) was founded by four strong partners ABG - Austria Bio Garantie, bio.inspecta (Switzerland), Naturland e. V. (Germany) and Intact Consult (Austria). They saw the need to have a common basis for their procedures in data collection and exchange for both food safety reasons and statistical purposes. The aim was, and is, to establish a software solution which can become a global standard for inspection bodies, certifiers and others, such as researchers. e-cert will be an international platform for inspection and certification institutions providing a professional network with successful partners. Currently e-cert software is already being implemented successfully at ABG, Bio.inspecta and Naturland e. V. and is currently available in six languages (English, German, French, Spanish, Italian and Hungarian).

3 Methodology/methodological issues

Data collection is always a major activity for inspection bodies and certifiers, since the final certification decision is based on the quality and completeness of the data. A lot of data can be accessed through interfaces with authorities and other institutions which allows the inspection bodies to free their customers of the need to provide this data themselves. One major problem is often that different data sources of data report different data when the data should match. Therefore the need for fewer more centralised databases and for harmonisation of data is self evident from our point of view.

A further problem can be the amount of data collected and keeping it up to date. Not all of the data is needed! Focussing on the data which is really necessary leads to lower maintenance costs for those working with it.

The e-Cert web portal offers various services to customers, researchers, authorities and employees. Employees and other network partners may undertake inspections or certification via the web.

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Researchers and authorities can access clearly defined areas of data. Customers can view their certificates and documents and are linked directly to appropriate databases, which leads to better customer relations.

4 Results

e-Cert will bring the following benefits to the organic inspection and certifying industry, as well as to other institutions in the organic (and conventional) field.

- Improvement in quality assurance systems
- Central database – central and easy data analysis
- Speeding up the inspecting and certifying process = more food security
- More efficient data recording due to online input
- More efficient evaluation of the recorded data
- Improved information availability for inspection staff
- Increase in the efficiency of work processes at the point of inspection

Stakeholder perspectives and data management

Conrad Thimm [101]

1 Abstract

This is a synthesis of two papers I was invited to present:

a) on Stakeholders Perspectives on behalf of the ITF – IFOAM[102] Trade Forum

b) on Improving Sales by Data Management along the Supply Chain

Stakeholders in the trade see a need for meaningful data on organic markets for at least two reasons:

1. When Governments interfere in organic markets, as they do with conversion support, action plans, regulations etc., this must be based on understanding markets and data.
2. The more markets for organics mature the more meaningful data become vital for business decisions and daily improvements in marketing, shelf space etc.

Marketing skills are needed to develop organic markets. Efficient data management is a core competence of successful retailers. It is best established along the whole supply chain.

Most stakeholders in the organic trade have raw data, but no meaningful data and they will only share their raw data with someone who provides a good, confidential service in making meaningful data out of them and thus supports them in their mission.

The German drugstore chain dm Drogerie-Markt has developed together with suppliers and market research outstanding data management systems that combine the highest productivity with "Efficient Consumer Response" (ECR) and the participation of all stakeholders in a company with a humanistic and ecological approach. The organic trade can learn from this example both in the mainstream retail sector and in the specialized organic store sector.

2 ITF - IFOAM Trade Forum and the basics

The IFOAM Trade Forum was founded at BioFach 2004 in Nuremberg and is a global network for organic business companies. Its objectives are to create growth in both international and local trade in organic products worldwide and to develop and encourage ethical and sustainable business practices.

In particular the IFOAM Trade Forum promotes the global sharing of market information and the influence of traders in political questions such as support, action plans, regulation of organic food and farming and the improvement of ecological and social circumstances of food production, trade and consumption. Its board is comprised of Maria Gardfjell, Coop Sweden (chair); Mark Retzloff, Aurora Dairy, USA (vice-chair); Carol Haest Delhaize, Consultant, Belgium; Mukesh Varma, Trader, India and myself, Conrad Thimm, a German consultant.

Twenty years ago I organised a seminar with a very experienced biodynamic vegetable grower on how to do crop planning. The first thing he said was: "I prefer critical shopkeepers as my clients, because it is the

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[102] IFOAM = International Federation of Organic Agriculture Movements

shopkeepers who check my vegetables thoroughly, that sell large quantities, whereas those who accept everything sell very little. And from those who sell large quantities, I learn what I should grow more of."

It is this attitude of checking what sells and what does not, and of communicating this to the supplier, and demanding more bestsellers and less non-sellers, that improves sales. It is as simple as that. With some 60 vegetable items in one shop the information is easily gathered and shared by the shopkeeper himself. With several thousand items and a lot of shops, effective data management is needed.

When action plans, logos, information campaigns, in store advertising and the like are discussed to promote the sales of organic products, the basic techniques to improve sales are often neglected. Yet all real success stories in retail recently contain an element of excellent data management, whether it is Wal-Mart, USA, Tesco, UK, or Aldi, Germany. A particularly interesting example is the German drugstore chain dm Drogerie Markt.

3 The public must invest in good, meaningful data

"Good data" are reliable, precise and meaningful. Everybody knows what "reliable" and "precise" is, or at least, what it should be. Any check-out scanner gives reliable and precise data. But these data are raw data and need processing to become meaningful. And to do the data processing you need people who ask the right questions, do the data mining, present meaningful results and, last but not least, a board or a boss who wants all this.

This applies equally to data on the farm level, and very often only data make sense when different levels are combined. A study was conducted recently for a German state by a mixed group of consultants, from farming consultants to trade consultants, all with a very practical background (Arge Food Future: Alvermann, Heitkämper, Soika, Thimm). It showed that marketing problems in organic milk and beef were based not only on general milk price problems and lower exports, but also on the 160 per cent increase in certified organic permanent pastures in this state from 2001 to 2004 (while certified organic arable farming was expanded 'only' by 37 per cent).

Only "good data", which are reliable, precise and meaningful, are needed.

It is obvious that political decisions on matters like conversion support, action plans, regulations and the like need to be based on good data to be successful and appropriate and to lead to the desired results. Yet most political decisions in this realm are hardly based on data at all because of the sheer lack of them. The reason is quite simple: politicians, administrators and sometimes scientists tend to think that one needs only to ask the trade, but people in the trade have others things to do rather than collect and process data.

When traders are treated just as a source of information, they will not give out any data. This is hard to avoid for people who have no experience as traders. Instead, traders should be treated as partners who actually develop the markets. The only way to win the collaboration of the people in the trade is to offer an interesting service for them, to create a win/win situation: 'you give me the raw data, and I will make something meaningful for you out of it, and advise you on how to improve your data management and keep your data completely confidential'. When traders are convinced that giving data can improve their business, then they are likely to do it.

To establish such a public/private data partnership needs time, competence and perseverance, but without these virtues, no good data will become available.

4 Trader's skills are needed to expand the markets for organics

Just as children act with spirit and enthusiasm but very little structure, so the markets for organic products have been developed mostly by enthusiasm. Now conventional traders' skills are needed to expand them further. And this is where good data come in, because succesful companies not only have good data but actually learn from them and with them and make them an integral part of their continuous improvement programme.

Efficient data management needs a base of several shops with the same marketing and store design and collaboration in category management. Then the product lines can be optimized in collaboration between the retailers, the suppliers and market research that benchmarks the sales and profits of each product and product-line according to the marketing measures. To do this the market research needs information on all marketing measures and the sales data.

This is the simple mechanism "Efficient Consumer Response" (ECR) is based on. Its use will play a major role in the growth of the market for organic products as a whole and in the success or failure of many players in this sector. Alongside the goodwill of the retailers, it needs the data processing, the skilful interpretation and readily understandable presentation by market research.

This kind of data management needs a sufficient base of similar outlets to become a worthwhile and efficient tool. Chains of multiple stores are most suited but, if they co-operate, individual stores like specialized organic stores can apply it as well. To give you a typical current example:

In Hamburg two organic shops were opened within the last two years by a former Aldi manager. He calculates prices in such way that they appear very low yet has a sufficient margin over all. Long established organic shops notice growing competition and see the need, besides other marketing measures, to compete in pricing. This is possible, when they combine their purchases, cut down on the number of non essential goods and calculate prices as the former Aldi manager does. To do this well they need to process the raw data they get from their check out scanners and closely co-operate with their wholesaler or the manufacturers directly.

General sales data like those provided by Nielsen, GfK and others are of very limited value for such purposes and for real understanding because they always give averages of many different outlets that say nothing about individual situations and qualities. This is like the man who stands with one foot in ice and with the other in boiling water but, on average, feels quite comfortable.

5 The dm case

German drugstore chain dm is known for its humanistic approach and has annual sales of 2.8 billion €, made up of 2 billion in 660 stores in Germany and 800 Million in 840 stores in other central and southern European countries (Austria, Czech Republic, Slovakia, Hungary, Slovenia, Croatia and Italy).

dm is well known for its outstanding productivity based on efficient data management in collaboration with its suppliers. In 2003 dm received the ECR Award together with Nestlé for consumer-oriented involvement in the baby sector. In 2001 dm received the "Goldener Zuckerhut" award from Lebensmittel-Zeitung for its outstanding achievements in the exchange of data and the networking of the company and its staff with the suppliers.

The basic method is simple: when a supplier offers a new product which seems interesting, dm will accept it on condition that the supplier pays for the monitoring of the item by a market research company for the first 6 months. dm supplies the raw data from its check-out scanners, the supplier gives additional marketing information, the market research company presents meaningful data about the performance

and benchmarks in the same category to the supplier and dm and after 6 months dm decides with the supplier if and how to continue.

The monitoring by the market research company then becomes a continuous process which is the basis for any marketing action concerning this item and also the basis for the regular annual sales meeting between supplier and dm. This way dm optimizes its product range, lines and shelves, its prices, advertising and communication all the time results in outstanding performance.

dm calls this "Integrative Marketing" and managing partner Götz Werner says: "Integrative Marketing expresses, what we have been after for a long time: the participation of the suppliers in what we do and what we learn from that. This is to say, that we tie in the individual marketing concepts in such a way that a measurable added value is created. The industry knows the market from its perspective very well and we from ours. Thus both partners can complement each other very well. We have therefore asked all our manufacturers to take part in cooperative marketing."

6 What we can learn from stakeholders' perspectives on data management

Be clear, what you want which data for. If it is just a general picture, like the most cited ITC overview on organic markets globally, an expert panel guessing might be more appropriate than extensive data mining with too many unknown aspects.

If governments wish to interfere in markets they should consult the companies in the markets beforehand for their opinion and possibly even for data to predict what measures might make sense.

Markets are best developed by companies, who are doing this successfully anyway, and they need ever more and better data.

If you want something from a trader you had better offer him something in exchange, and to make meaningful data out raw data is a worthwhile service for many traders.

Individual shops can use the tool of data management by co-operating on the horizontal level and with wholesalers and manufacturers.

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Results of Group 3: Statistics on organic farming: Supply Chain Level

Norbert Gleirscher[103] and Raffaele Zanoli[104]

Group discussion and conclusions

- Market structure, size and industry concentration may influence the data collection method.
- Supply-chain data can be collected at different points: e.g. if it is difficult to collect farm gate prices, one can use purchase input prices at wholesalers/processors level instead.
- The above strategy works only for formalized/long supply-chains. In short chains like direct marketing with no coding (e.g. EAN) data are very difficult to recover and need to be estimated.
- Few new data collection procedures/software are needed but common standard communication procedures are required which can adapt different DCPS
- Improvement of trade data can be approached at relatively low cost without the need for new activity/product classification by matching existing information, as is done in Denmark; feasibility in different contexts still needs to be explored.
- It is sometimes easier if the DCPS is imposed by an authority, because some stakeholders do not cooperate with each other; on the contrary, official State initiatives are not universally welcomed in the same positive manner.
- Feasibility of "mandatory" data collection is varies greatly in different countries.
- Traceability and control of sales of organic as organic by inspection bodies is still not uniform throughout Europe: the need for new (electronic?) systems to improve the integrity of organic systems which could be useful for matching statistical needs.
- Privacy issues need to be tackled in order to be sure that data are really available to users (user rights).
- Stakeholder involvement is crucial to obtain accurate and timely statistics, but they have to be proven relevant (at least after data processing) for stakeholder/supply chain members.

  > Raw data are in most cases not meaningful and not relevant for traders, but if they find that raw data can be processed in order to produce relevant information, they will be happy to collect raw data.

- Scanner data are of very high quality (accurate, timely, relevant, etc.). If they could be combined and harmonized with other databases the information would be very relevant (but user rights issues apply).

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- Data should be reliable, precise (accurate) and meaningful (relevant). But in the case of organic market data we are using the most unreliable and inaccurate data. However, even inaccurate data (e.g. expert assessments and estimates as ITC data on organic market demand & supply) can still be meaningful.
- Given that many data are not collected at all or with very low accuracy, we should lower our expectations on harmonisation and instead concentrate on basic data collection at this time.

Proposals for future action

- A single identifying number for each operator which is used by every organization dealing with them would simplify the harmonization of data and quality assurance.

  Cost: very low

  Actual feasibility: varies from country to country, but needs at least 2 years

- Change in trade nomenclature could be very useful for generating intra- industry supply chain data as well as trade data.

  Cost: the administrative burden is the most frequent argument against the change

  Actual feasibility: at the moment very low

- Given that in some cases soft data are enough for describing certain phenomena, international harmonisation of expert assessments could be a useful way forward.

  Cost: quite low

  Actual feasibility: high

- In some cases, software tools used for checking food security, can be used for statistical purposes along the supply chain.

  Cost: Quite low

  Actual feasibility: varies from country to country, depends on market structures and the willingness of market partner to cooperate.

Group 4: Retailers and consumers

Chairs: Sylwia Zakowska-Biemans [105], Toralf Richter[106], Susanne Lux[107]
Rapporteurs: Susanne Lux and Gabriele Hempfling[108]

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Information from household panels about the market for organic farming

Micaela Schantl[109]

1 Abstract

A representative household panel is a good and reliable instrument for analysing different kinds of markets. It delivers quantitative data which can be observed over a long period of time, therefore trends can be derived. In terms of organic markets data is not fully reliable as consumers have to enter their shopping into a diary and all the entries cannot be checked as complete and true. But we know from qualitative interviews that consumers tend to say that they buy a high percentage of organic products which does not reflect their real shopping behaviour – their answers therefore are socially motivated rather than truthful. A household panel can, therefore, be one instrument among many for analysing organic markets. It would be unrealistic to use a single tool for market analysis. The main aim and the steps to take should be to:

- find the most effective tools for evaluating the production side, and the in-home and out-of-home consumption side;
- find a way to bring this data together for estimations of market size and developments in the past and in future;
- harmonize methodologies, instruments and data within the EU.

2 Introduction

Agrarmarkt Austria Marketing (AMA) is a company which is engaged in advertising and promotion as well as quality assurance of agricultural foodstuffs in Austria. One of its activities is market research for planning efficient strategies for promoting consumption and raising awareness about food. The most important tool for us is our household panel, called "RollAMA" (Rollierende Agrarmarktanalyse). This panel helps us to understand shopping behaviour and trends in the Austrian market for fresh food. We also observe the markets for organic products with this tool, and we have to consider all the strengths and weaknesses of a household panel while analysing the data.

3 Methodology

Within the "RollAMA" household panel 1200 representative Austrian households per year keep a diary of their fresh food purchase and record information about volumes, expenditures, source of supply and so forth for each product/brand they bought in the various ranges - dairy, fresh and frozen meat, eggs, vegetables, fruit and ready meals. For each product they also have to mark whether it has been labelled organic or not. The diary-entries go to a market research company for analysis three times a year. For organic markets, we get information about the shares of organic products versus conventional products in

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each product range, the average prices, the source of supply, socio-demographic data about the households etc. Of course the data are not completely reliable as we have to trust the diary entries of the households and they may not classify all organic products as organic and may also classify not organic products as organic. For branded products (e.g. dairies) we check the entries and correct them, since we know whether the brand is organic or not. Without any brand information, the entries have to be trusted. But since we have been gathering data within this panel continuously since 1998, the trends at least can give a good overview of the situation of organic markets in Austria. It must be noted, however, that the data relate only to household consumption; consumption outside the home and exports/imports are not analysed.

4 Results

4.1 Key analysis of organic markets via the household panel

Market share is one of the key aspects for analysis. We define the market share as the percentage of household purchases of organic products (volume or value) based on the total purchases within a product range. Figure 1 shows the value shares for selected products and the trends for the past four years. We notice that the shares show a steady development during the past three years. There was a peak in year 2001, the developments of this year were influenced by the beef crisis due to BSE. Consumers reacted by purchasing more selectively, most of all when purchasing meat.

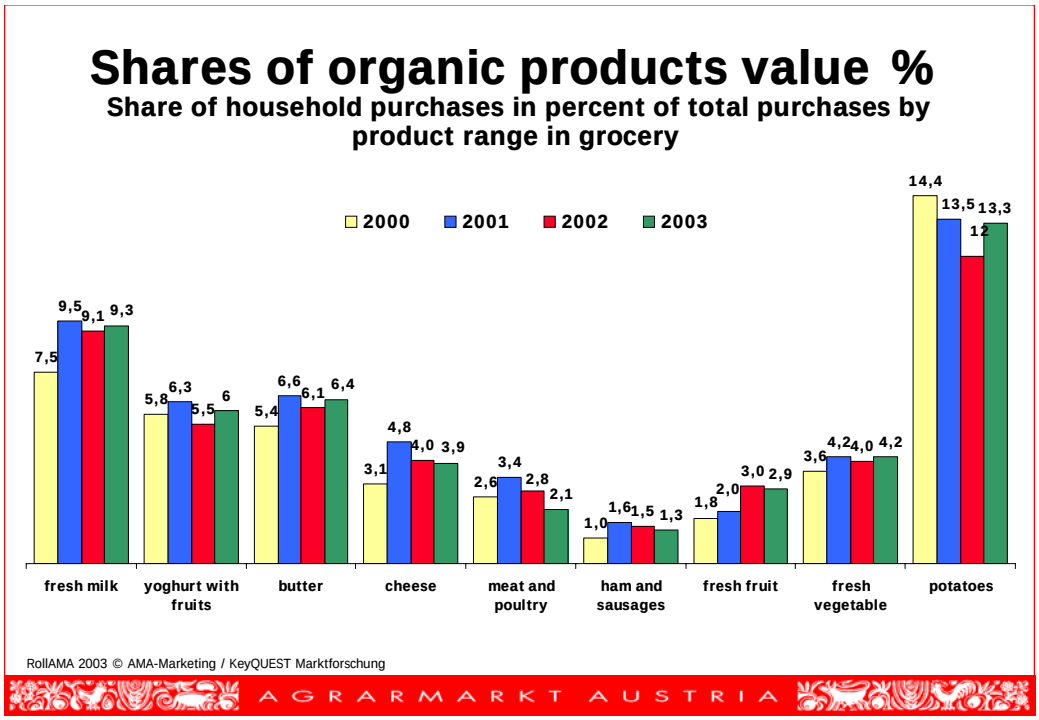

Figure 1: Value shares of organic products

We are also interested in the average prices of organic products. In our household panel, prices are calculated as the ratio of value of expenditure/volume purchases of the households. Figure 2 shows the average price differential between organic and conventional products in selected product ranges.

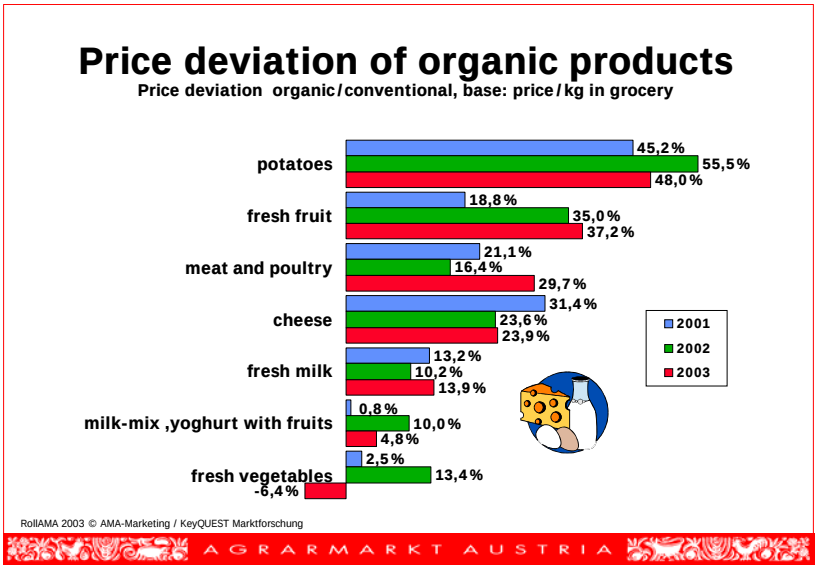

Figure 2: Average Price Differential organic vs. conventional products

Compared with data from retail panels, household panels offer the opportunity to not only analyse trends in volume, value, market shares or prices but also to take socio-demographic data on the households into account. We therefore can relate factors, such as the age of the head of household, household size and structure (children, single, etc.), income, social status as well as regional derivation, to the purchase of organic products (see figure 3).

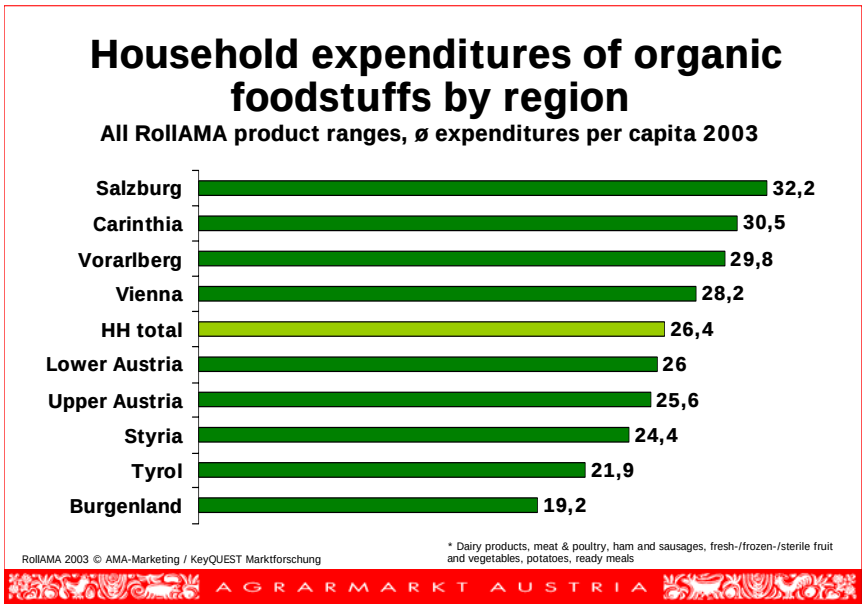

Figure 3: Expenditure on organic foodstuffs by region

4.2 Available data measured by household panel

As well as the examples above, a household panel can offer the following information about organic products (extract of most important data):

- Market size (by volume, piece, value)
- Market shares
- Average prices
- Source of supply (grocery, yard sale…)
- Penetration (percentage of households purchasing at least one product in a defined period of time)
- Frequency of purchase, volume, pieces, value per purchase
- Purchased volume, pieces, value per household/per capita
- Socio-demographic variables (age, income, region…)
- Trends in previous periods in all dimensions (depending on the level of aggregation: month, quarter, trimester, year)

4.3 Strengths and weaknesses of the household panel for analysing organic markets

It is obvious that a household panel cannot deliver information about the whole market for organic products: it includes only household shopping and not purchases by individuals (e.g. an apple bought by a family member as a snack). Nor does it record consumption outside the home, or the derivation of the product bought. This implies certain strengths and weaknesses for such an instrument in analysing organic markets

Strengths:

- Quantitative data with objectivity and high reliability and good validity for branded products (can be checked and corrected), no influence of interviewer (no socially motivated answers)
- Trends can be observed
- Various analyses of a huge range of data and possible data combinations
- Information about household structure leads to better understanding of shopping behaviour

Weaknesses:

- Validity of diary entries concerning unbranded products cannot be checked
- No coverage of consumption outside the home and individual shopping
- Only coverage of products defined in the panel, the more products the lower the motivation of the households, the lower the validity, the higher the costs for the panel
- Panel-effects in general (when consumers note their shopping over a longer period of time shopping behaviour can change)
- Household panels can therefore only be one instrument amongst of others for analysing organic markets. There is no one single reliable tool for market analysis. The main aim and the steps to take should be:
    1. to find the most effective tools for evaluating production and consumption inside and outside the home;
    2. to find a way to bring these data together for estimations of market size and past and future developments;
    3. to harmonize methodologies, instruments and data within the EU.

Retailer and consumer panel data: strengths and weaknesses in surveying organic food demand

Paul Michels[110]

It is difficult to quantify consumer demand for organic products because of problems of definition. In this paper, experiences from a special diary project are reported, and the current panel approaches are considered with respect to their strengths and weaknesses. Then a pragmatic "puzzle" approach is introduced, which consists of a combination of current panel techniques.

Representative Survey Techniques

The usual survey techniques are not useful for measuring the demand for organic food. Asking people about organic product consumption per week/month does not result in realistic market figures because

- acting ecologically is socially desired. Many consumers actually want to eat natural food. However, at the P.O.S (point of sales) they are not willing to pay the higher prices.
- in Germany, it is not easy to identify organic food. Products purchased at weekly markets, at farms or at health food shops are usually classified as "organic". Many conventional brands suggest natural production (pseudo organic products).

Experiences from the special diary project

In February 2004, ZMP/CMA completed a project supported by the German government which took a "two-step diary approach" based on a GfK mail access panel with 20 000 households:

- *1st step (screening)*: every quarter year, 5 000 primary shoppers in this panel estimated their purchase behaviour of the last 6 months. 37% of the interviewees indicated that they bought organic products at least once a month. From this group a sample of 1500 panel members was drawn.
- *2nd step (diary):* each month for the next 3 months, 500 people from this sample were asked to record for one month each purchase of organic food and drink via a detailed diary.
- The returned diaries were carefully checked and "pseudo" organic products were eliminated.

The registration period was October 2002 to December 2003.

The strengths of this approach were:

- The method led to valid and useful structural data (products, regions, shop types, demographics, attitudes)
- The raw data set is a unique resource for further scientific investigation.

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However we also observed the following weaknesses

- The projection to total market volume was not possible.
- The sample size was too small for valid trend estimation on the product level.

Current panel approaches
GfK ConsumerScan

- 13 000 households record their Fast Moving Consumer Goods (FMCG) purchases using in-home scanners.
- Once a week the household purchase data are pulled by GfK via modem.
- In order to register products without EAN (like fresh vegetables) GfK provides their households with a detailed code book.
- After entering fresh food items using the code book the panellists are taken to a scanner dialogue in order to record further product characteristics like country of origin, package type and organic / non organic classification.
- [In Germany ACNielsen also conducts a homescan panel (8 400 households). However, the GfK split for fresh food is much more detailed than that of ACNielsen Homescan. ACNielsen Homescan is no alternative for fresh food data].
- GfK has no database with the EANs of all organic products. Thus they have to analyse trade texts and price lists of manufactures in order to generate organic product information for EAN-products. For EAN products ACNielsen Homescan could be an option.
- The following facts are available: volumes, sales, prices and penetration, purchase frequencies, loyalty, buyer demographics and attitudes, etc.

GfK ConsumerScan shows the following strengths

- Households record their purchases at all FMCG (Fast Moving Consumer Goods) shops.
- Comparison of conventional and organic food is easily possible within the same instrument.
- For EAN products GfK classifies organic products; for fresh food this is left to the consumers.
- High sample sizes lead to higher stability and validity of trend estimations (especially for fresh food with high purchase frequencies).

GfK ConsumerScan shows the following weaknesses

- The panel measures only purchases for consumption at home.
- The households may tend to skip small purchases (e.g. fresh rolls at the bakery)
- No purchases by tourists or small restaurants are included.
- Few purchases for consumption in the workplace are recorded.
- The coverage of retail sales is between 60% and 80% for fresh food categories depending on category (rolls low, meat high).

- Household may mix up conventional and organic food in fresh food categories. This may lead to misclassification of organic / conventional products.
- Small sample sizes for EAN products do not permit analysis of detailed structures (retail, product segments, regions, etc.).
- Shoppers at organic stores are under-represented.

ACNielsen retail panel Market*Track

- ACNielsen collects scanning data from (a sample of about 750) supermarkets, hypermarkets and discounters. Beverage shops are included when necessary.
- ACNielsen retail panel reports are confined to packaged goods at multiple retailers and drug discounters.
- The following facts are reported by product segments, regions and store types: sales, volume, market shares, prices, distribution
- ACNielsen analyses trade texts and price lists of manufactures to generate organic product information. In addition ACNielsen's field service examines all products within a category in a sample of shops and divides them into organic or not.
- In May 2004, the shop audits will take place for milk, yoghurt, butter and curd cheese. Next year we intend to cover about 10 further product categories.

ACNielsen retail panel Market*Track offers the following strengths:

- High coverage of multiple retailers (exception: heavy discounters).
- For EAN products, ACNielsen classifies organic products (by shop audits, price lists and trade texts).
- High sample sizes lead to high stability and validity of trend estimations (even if the purchase frequencies are low)
- Comparison of conventional and organic food is easily possible within the same instrument.

ACNielsen shows the following weaknesses:

- It is limited to multiple retailers, drug discounters and beverage shops
- and to packaged products (with EAN).

The new firm bioVista is building up a retail scanner panel for specialist organic stores. Since the bioVista system is presented at the EISfOM seminar, no more details are listed in this paper (see paper by Christph Spahn in these proceedings).

The pragmatic approach of ZMP/CMA

ZMP and CMA will try to integrate information from different sources, i.e.:

- GfK ConsumerScan is used to observe the "fresh" categories - bread, meat, poultry, vegetables, fruit, potatoes, eggs, cheese and sausages - in all shops. (ZMP has access to ConsumerScan raw data via the

internet. GfK has to classify EAN-products in these categories, ZMP/GfK have to solve the challenges mentioned above).

- A selection of (packaged) categories is observed via ACNielsen for multiple retailers, drug discounters and beverage stores and by bioVista for organic specialist shops: milk, yoghurt, curd cheese, butter, cereals, fruit / vegetable juices, spreads, flour, frozen and canned vegetables.
- ZMP will organise the process, examine the data quality, develop methods to classify organic fresh food and combine the multiple sources if the project is supported by the German Federal Organic Farming Scheme.

These data are useful for supporting commercial activities for organic food because

- Producers can estimate their potential: which segments are interesting for investments?
- They can optimise their field service activities: in which regions, shop types, retailers do my products have high distribution, and where are they underexposed?
- They can evaluate the assortment / price strategies, success of retailers: how can I prepare myself well for sales talks with retailers?
- They can benchmark their own business: how does the category trend in the total market / organic market compare to my own products? i.e. am I losing or gaining market shares?

bioVista – retail panel for the organic food market

Christoph Spahn[111]

Abstract

bioVista is a retail panel for the organic food market. Within this panel, all market participants are able to influence and control their market position and to react to current developments in the market. bioVista provides reliable and important insights into the most significant sales channels of organic products for retailers, producers and everyone who is interested in the organic food market. The panel offers a continuous source of information and functions as an objective decision-making guide for all market participants. bioVista helps to improve the efficiency of marketing and product range development.

Introduction

bioVista analyses the scanner data of organic food stores and natural food supermarkets. These data provide comprehensive and reliable market information on the organic food sector. bioVista presents a reliable platform for decision making when it comes to assortment optimisation, pricing and supply control. Market participants are able to assess their own market position and market strategy. Furthermore, they are able to optimise the placing of products and boost their economic situation compared to similar retailers.

Specialized retailers for organic products get solid decision-making support in all important assortment questions. Analysis of sales volume, sales slips and product rankings provide an overview on current developments in the own store and in the organic market in general. The measurement of product range optimisation and placing is supported by detailed analysis of product groups and baskets of goods. Therefore, the decision-making process concerning the product range is more reliable.

Producers benefit from an up-to-date examination of sales developments as well as a review of their own situation compared with the total market. bioVista answers questions like "How will the sales volume of the organic market develop? How will the sales volume of separate product groups grow?" The panel helps to tackle specific questions and comes up with a thorough analysis.

bioVista offers valuable information on product range development and brand management. "How can the position of a brand be sustained competitively? Which products are successful? How frequently is a brand present in the market and how strong is the brand as such?" Moreover, the risk associated with new product introductions can be reduced. From the objective information that bioVista provides, the actual potential of a brand is revealed. The panel functions also as a useful tool to control marketing activities. As a result, success and effects are easier to identify. Concerning the supply strategy, producers are again guided in their decision-making process. Successful strategies can be defined and individually realised. bioVista customers exclusively receive special analysis, for instance, pricing tests.

bioVista is a cooperation of three companies looking back on a long consultancy experience. They have been analysing current issues for the organic market as well as important issues in data mining. Founded as a private initiative, they noticed the demand for panel data for the organic market. The development of

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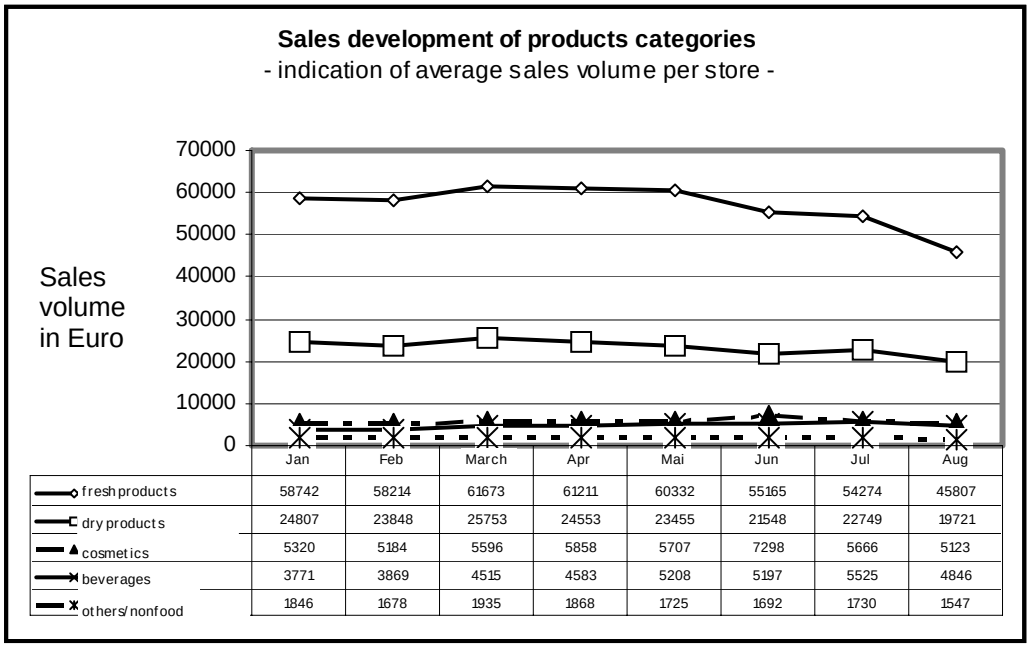
bioVista takes place without national or panel operator support. At present, the bioVista team is engaged in topics such as the advantages for European countries already using bioVista data and the question of its relevance for other European countries. The expansion of bioVista in Europe and the search for partners are currently being considered.

Methodology

After one and a half years of testing, bioVista now delivers data for the German organic food sector. The test phase was carried out in trial-stores in order to, for example, resolve technical problems. The procedure for data collection is based on gathering scanner data from organic food stores and natural food supermarkets using merchandise management systems. The scanner data are encoded and transmitted via the Internet. Data are processed and analysed with software developed especially for bioVista. Currently, 50 retailers supply the panel with their data. For this reason, the accuracy and reliability of data is assured. bioVista cannot quantify the market volume in numbers, but instead addresses the information needs of individual companies. There is no claim for the data to be representative.

Results

One significant application for bioVista is the development of the product range. The identification of fast-selling products or brands shows product trends in the organic market. Consequently, producers are able to react. The following chart shows the sales development of different product categories per month. Detailed knowledge of product groups and consumer behaviour are significant information sources. bio Vista is the only platform that provides market data for specialized retailers and for producers of organic products. The data help to make product range developments and decisions more professional.



	Jan	Feb	March	Apr	Mai	Jun	Jul	Aug
fresh products	58742	58214	61673	61211	60332	55165	54274	45807
dry products	24807	23848	25753	24553	23455	21548	22749	19721
cosmetics	5320	5184	5596	5858	5707	7298	5666	5123
beverages	3771	3869	4515	4583	5208	5197	5525	4846
others/nonfood	1846	1678	1935	1868	1725	1692	1730	1547

Figure 1: Sales development of products categories. Indication of average sales volume per store

Consumer Price Monitoring in Germany - ZMP-Panel of retail trade

Hans-Theo Erkes[112]

Abstract

The ZMP–Panel of retail trade began in 1960 and was supported for several years by the government (Ministry of Agriculture). Since 2000 organic products have been integrated into the panel so that it is possible to compare prices for conventional foods with organic foods. The panel is a market research instrument for consumer price monitoring in Germany. The most important task for this project is to create market transparency for agricultural products at the retail trade level. In order to get the data, a particular group of people (reporters) note down the consumer prices in certain shops every week or every month for a defined list of products, the so-called "Warenkorb", basket of goods. The data is processed by the ZMP using a special computer programme database. The conventional consumer prices are published on-line each week. The organic consumer prices are published monthly in the ÖKOMARKT Forum. Our price information is always up to date (one week or one month behind) and we are able to present data for a homogeneous time series because we have collected the same prices over a number of years. Since the beginning of 2004 the Ministry of Agriculture has cut financial support for this project so that the ZMP has to reorganize the panel and find other and cheaper ways to collect consumer prices.

Introduction

The ZMP-Panel of retail trade is an instrument of market research for consumer price monitoring in Germany. The most important task of this project is to create market transparency for agricultural products at the level of retail trade. Since 2000 organic products have been integrated into the panel so that it is possible to compare the prices of conventional foods with organic foods and to analyse retail prices in order to identify price tendencies. The effective of emotive issues such as BSE, the Euro etc., can be confirmed and the information can be delivered to our ZMP market experts for comprehensive reporting. Furthermore this panel demonstrates that it is possible to integrate organic products into an existing system in a cost-effective way. If a separate panel for organic products is set up, the disadvantage will be that comparability may often be very limited.

Methodology/Methodological issues

In order to get the data, a particular group of people (reporters) note down the consumer prices in certain shops every week or every month for a defined list of products, which belong to the 'basket of goods'. There are about 350 reporters all over Germany who work for the ZMP. These people are briefed and equipped with special materials (lists to write down prices) to go to different kind of shops (supermarkets,

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butcher's shops, health food shops etc.) and write down the prices of specified food products. After that the price lists are sent back to the ZMP.

The ZMP collects prices for 88 traditional agricultural products and, since October 2000, for 37 organic products. Some products are observed weekly (60 products such as meat, poultry, eggs, fruits, vegetables, potatoes) and others monthly (57 products such as milk, milk products, flour, bread, margarine, oil and organic foods). Within the price collection each product is exactly defined. In order to be able to compare general food prices with organic food prices, we took the same organic products as we had traditional products on the list. Expecting the prices for organic food to stay at the same level for several weeks, we decided to collect the organic prices once a month.

The shop types are exactly defined as well and can be divided into: • traditional grocer's shops smaller 400 m², • traditional grocer's shops (supermarkets) bigger 400 m², • hypermarkets (from 800 m²), • discount shops, • butcher's shops, • greengroceries, • health food shops (organic food shops), • organic butchers' shop.

In order to find a representative selection of data we need the knowledge about the total amount of shops in Germany in every Nielsen area and a certain number of each shop type in every area. In addition we need the turnover for the different product groups for each shop type and Nielsen area in order to calculate the representative average prices. For the identification of the different shops every reporter and every shop is given a special code.

These codes contain the following information: • shop type, • sales area of traditional shops, • butcher's shop and organic butcher's shop separately, • greengrocers and organic food shops separately • separate discount shops (Aldi, Plus, Penny, others), • size of the city where the shop is located, • code for the reporter (including his region). For each proper data collection, ZMP pays between 2.50 EUR and 4.50 EUR.

For the data processing a special computer programme/data base is used by qualified ZMP staff. The code for the shops and prices are entered and the programme identifies the codes and evaluates the prices. Furthermore the plausibility is checked, and the prices are weighted according to the turnover data of the various shops. Average prices are calculated from all the prices recorded and these are then published. The advantage of this system is that the price information is always up to date (relating to the previous week or month). Furthermore the ZMP is able to present data for a homogeneous time series because we have collected the same prices over a number of years.

This project was sponsored by the government. Since the beginning of 2004 the support has been reduced, and we have now got to find other, cheaper ways to collect consumer prices. But, if the system is going to be adjusted, this has got to be done very cautiously. It takes a long time to build up such a panel as this one. Hasty decisions on changing the system can have serious consequences.

The following tables give examples of the organic consumer prices as they are published.

Table 1: Average consumer prices in the Federal Republic of Germany (Euro)

Durchschnittliche Verbraucherpreise* in der Bundesrepublik Deutschland (in EUR)

Artikelname	Einheit	Anz. Meld.[1]	Ökoware		konv. Ware			Streuung, April 04	
			April 04	März 04	April 04	März 04	März 03	Ökoware	konv. Ware
Fleisch									
Rinderkochfleisch, mit Kn.	kg	57	**8,44**	8,59	**4,93**	4,88	4,89	3,06	0,95
Rinderschmorfleisch	kg	77	**14,61**	14,77	**8,60**	8,64	8,53	3,72	1,75
Rinderhackfleisch	kg	68	**9,64**	9,54	**5,85**	5,81	5,92	2,80	1,45
Rinderfilet	kg	71	**32,36**	32,06	**24,38**	24,62	24,48	8,91	5,13
Kalbsschnitzel	kg	34	**22,25**	22,13	**17,39**	17,66	17,31	4,85	3,61
Schweinekotelett	kg	59	**10,86**	11,15	**5,66**	5,63	5,61	3,00	1,34
Schweinebraten (Nacken)	kg	57	**11,89**	11,47	**6,20**	6,17	6,21	2,83	1,68
Schweineschnitzel (Keule)	kg	73	**13,57**	13,36	**7,11**	7,18	7,12	3,48	1,81
Kochschinken (Hintersch.)	kg	62	**21,18**	21,00	**12,14**	12,18	12,29	6,45	3,51
Eier									
Eier, Kl. M (Freilandhaltung)	St.	473	**0,29**	**0,29**	**0,18**	0,18	0,17	0,04	0,04
Obst									
Tafelbirnen	kg	167	**2,74**	2,76	**1,77**	1,78	1,76	0,68	0,51
Äpfel, alle Sorten[2]	kg	376	**2,68**	2,80	**1,76**	1,68	1,70	0,57	0,33
Bananen	kg	190	**2,49**	2,41	**1,30**	1,32	1,40	0,32	0,36
Gemüse									
Kopfsalat	St.	93	**1,41**	1,54	**0,67**	0,77	0,87	0,36	0,18
Eissalat	St.	66	**1,57**	1,45	**0,88**	0,90	1,45	0,35	0,24
Salatgurken, mittlere Größe	St.	147	**1,51**	1,75	**0,65**	0,71	0,60	0,60	0,18
Tomaten, rund	kg	188	**3,67**	3,67	**1,69**	1,83	2,01	0,93	0,53
Strauchtomaten	kg	132	**4,17**	4,06	**2,03**	2,28	-	1,11	0,55
Gemüsepaprika, rot	kg	91	**7,34**	6,16	**4,56**	3,93	4,63	1,75	0,99
Weißkohl	kg	117	**1,53**	1,46	**0,73**	0,74	0,83	0,28	0,16
Blumenkohl	St.	96	**1,98**	2,02	**1,26**	1,42	1,63	0,39	0,30
Möhren, ohne Laub	kg	396	**1,46**	1,45	**0,78**	0,78	0,79	0,28	0,24
Zwiebeln	kg	365	**1,69**	1,60	**0,97**	0,84	0,88	0,44	0,32
Porree/Lauch	kg	102	**2,47**	2,60	**1,34**	1,38	1,78	0,62	0,31
Kartoffeln									
Kartoffeln [3]	kg	441	**1,37**	1,26	**0,63**	0,62	0,48	0,36	0,16
Milch- und Milchprodukte									
Vollmilch, 3,5% standf. Pack.	l	411	**0,96**	0,96	**0,58**	0,58	0,58	0,10	0,07
Vollmilch, 3,5% Pfandflasche	l	154	**1,04**	1,06	**0,87**	0,88	0,87	0,13	0,08
Markenbutter, deutsche	250 g	458	**1,59**	1,60	**0,86**	0,86	0,86	0,19	0,06
Joghurt, natur, 3,5% Fett	150 g	366	**0,43**	0,43	**0,17**	0,17	0,17	0,09	0,05
Gouda, jung, 45-48% am Stück	kg	176	**11,05**	10,83	**5,03**	5,02	5,07	1,93	1,13
Mehl und Brot									
Weizenmehl, Type 405, Marken	kg	230	**1,11**	1,15	**0,64**	0,63	0,61	0,20	0,14
Weizenvollkornmehl	kg	306	**1,31**	1,34	**1,06**	1,04	1,05	0,29	0,19
Roggenvollkornbrot, geschn.	500 g	263	**1,53**	1,56	**0,91**	0,91	0,93	0,28	0,34

[1] Anzahl Meldungen für Ökoware aktueller Monat

[2] Äpfel: Ökoware: Durchschnitt aller Sorten; konv. Ware: Durchschnitt der Sorten Jonagold, Golden Delicious, Braeburn, Elstar, Gala, 70 - 80 mm

[3] Kartoffeln: Ökoware: Durchschnitt aller Sorten und Gebindegrößen; konv. Ware: 2,5-kg-Gebinde

* Die ZMP beobachtet seit Oktober 2000 regelmäßig (1x im Monat) im Rahmen des ZMP-Einzelhandelpanels die Preise für ökologische Agrarerzeugnisse. Die gemittelten Preise sind in Anlehnung an das unterschiedliche Vermarktungsvolumen in den Geschäften mit entsprechenden Faktoren hochgerechnet. Die Gewichtung erfolgt gemäß der Marktanteile der einzelnen Geschäftstypen im ZMP-Einzelhandelspanel:
Fachhandel (Naturkostfachgeschäfte, Bio-Metzgereien, konv. Metzgereien) = 55 %,
Verbrauchermärkte und traditionelle Lebensmittelfachgeschäfte unter 800 qm = 45 %

Table 2: Average consumer prices for organic products in the Federal Republic of Germany (Euro, April 2004)

Durchschnittliche Verbraucherpreise für Öko-Produkte in der Bundesrepublik Deutschland (in EUR), Apr 04

Artikelname	Einheit	Anz. Meld. insg	gew. Mittel	Geschäftstypen LEH 1	LEH 2	Disc	VM	FG
Fleisch								
Rinderkochfleisch, mit Kn.	kg	57	8,44	-	7,26	-	7,42	9,34
Rinderschmorfleisch	kg	77	14,61	14,94	13,87	-	12,82	15,49
Rinderhackfleisch	kg	68	9,64	-	8,48	-	8,38	10,64
Rinderfilet	kg	71	32,36	-	32,51	-	26,93	34,78
Kalbsschnitzel	kg	34	22,25	-	20,75	-	17,79	24,82
Schweinekotelett	kg	59	10,86	-	10,63	-	8,88	11,85
Schweinebraten (Nacken)	kg	57	11,89	-	12,16	-	9,99	12,66
Schweineschnitzel (Keule)	kg	73	13,57	-	13,93	-	10,80	14,69
Kochschinken (Hintersch.)	kg	62	21,18	17,12	21,16	-	16,51	24,04
Eier								
Eier, Kl. M (Freilandhaltung)	St.	473	0,29	0,29	0,30	0,24	0,29	0,29
Obst								
Tafelbirnen	kg	167	2,74	2,80	2,53	-	2,61	2,82
Äpfel, alle Sorten	kg	376	2,68	2,59	2,61	1,97	2,58	2,75
Gemüse								
Kopfsalat	St.	93	1,41	0,99	1,26	-	1,48	1,48
Eissalat	St.	66	1,57	1,54	1,65	-	1,74	1,49
Salatgurken, mittlere Größe	St.	147	1,51	1,00	0,95	-	1,25	1,83
Tomaten, rund, ausl. Ware	kg	188	3,67	3,17	4,48	2,64	4,06	3,44
Strauchtomaten, inl. Ware	kg	132	4,17	3,66	4,94	-	4,24	4,09
Gemüsepaprika, rot	kg	91	7,34	6,61	9,41	-	6,40	7,52
Weißkohl	kg	117	1,53	-	1,53	-	1,56	1,52
Blumenkohl	St.	96	1,98	-	1,97	-	2,04	1,95
Möhren, ohne Laub	kg	396	1,46	1,40	1,45	0,99	1,41	1,50
Zwiebeln	kg	365	1,69	1,82	1,93	1,13	1,75	1,60
Porree/Lauch	kg	102	2,47	0,00	2,16	0,00	1,96	2,82
Kartoffeln								
Kartoffeln	kg	441	1,37	1,44	1,30	1,18	1,36	1,37
Milch- und Milchprodukte								
Vollmilch, 3,5% standf. Pack.	l	411	0,96	0,94	0,94	0,80	0,92	0,99
Vollmilch, 3,5% Pfandflasche	l	154	1,04	1,05	1,00	1,06	1,05	1,04
Markenbutter, deutsche	250 g	458	1,59	1,51	1,55	1,31	1,50	1,66
Joghurt, natur, 3,5% Fett	150 g	366	0,43	0,41	0,40	0,31	0,38	0,46
Gouda, jung, 45-48% am Stück	kg	176	11,05	10,61	11,01	9,28	10,64	11,32
Mehl und Brot								
Weizenmehl, Type 405	kg	230	1,11	1,12	1,11	-	1,13	1,09
Weizenvollkornmehl	kg	306	1,31	1,18	1,22	-	1,23	1,39
Roggenvollkornbrot, geschn.	500 g	263	1,53	1,37	1,37	0,96	1,32	1,69

Anmerkungen:

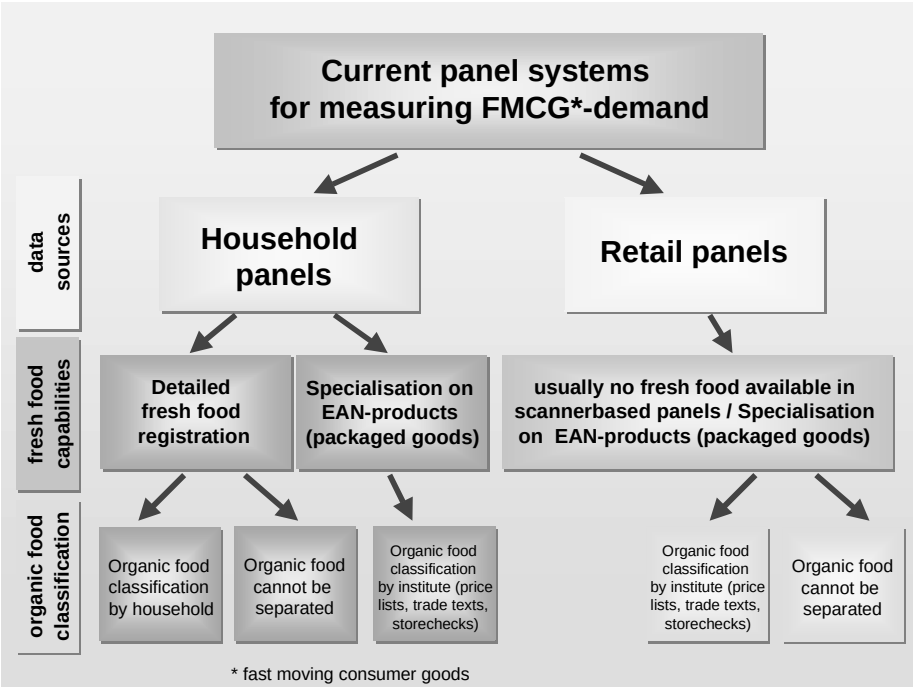
LEH1: kleiner Lebensmitteleinzelhandel mit einer Verkaufsfläche unter 400 m²
LEH2: großer Lebensmitteleinzelhandel mit einer Verkaufsfläche von 400 bis 799 m²
Disc: Discounter mit eingeschränktem Lebesmittelsortiment und niedrigem Preisniveau
VM: Verbrauchermarkt mit Lebensmittelsortiment mit einer Verkaufsfläche ab 800 m²
FG: Naturkostfachgeschäfte, Bio-Metzgereien und konventionelle Metzgereien

Mittelwerte für die einzelnen Geschäftstypen: arithmetisch.

Bundesmittel: Die Gewichtung der Preise erfolgt gemäß der Marktanteile der einzelnen Geschäftstypen im ZMP-Einzelhandelspanel: Fachhandel (Naturkostfachgeschäfte, Bio- und konventionelle Metzgereien) = 55 %, Verbrauchermärkte = 25 %, traditionelle Lebensmitteleinzelhandelsgeschäfte = 20 %.

A European information system for organic markets based on current panels: A critical assessment of possibilities and constraints

Paul Michels[113]



Problems

Current panel systems differ with respect to data sources (household or retail level), the method of recording purchases (scanner or paper and pencil), the fresh food capabilities and the method of organic food classification. For more details see the paper on "retailer and consumer panel data: strengths and weaknesses in surveying organic food demand" by Paul Michels in these proceedings. Herein a pragmatic "puzzle" approach for Germany is introduced which consists of a combination of current panel techniques. In order to develop such systems the panels should be able to measure fresh food purchases and to differentiate organic and conventional food for both packaged and fresh food.

- If there is a provider of consumer or retailer panels in your country the following possibilities and constraints have to be considered:
- The retail structure and the fresh food shares in each country determine the instrumental mixture.
- Check the methods in your own country and build up your own judgement. Market research institutes tend to sell the data with low costs and high profit.

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- Be aware of the strengths and weaknesses the different methods show for different types of retailers and products (see paper on "retailer and consumer panel data: strengths and weaknesses in surveying organic food demand" by Paul Michels in these proceedings).
- Do not be disappointed if market research institutes are not enthusiastic about your idea of integrating organic food classifications into their panels. They will screen their sales potential and come to the conclusion that most of the manufacturers of organic food are not willing to pay much money for this information. This is especially true in the beginning. You need case studies to convince the manufacturers of the usefulness of demand data.
- Be prepared therefore to pay (at least in the beginning) a major part of the costs. In Germany this will only be possible if the German Government supports the project significantly.
- The methods based on current panel systems will not be standardised because the current panels are not standardised.
- European standards can be established by defining common product categories, segments, shop types, facts, demographic groups, etc. This is helpful for the integration of data across Europe.
- EISfOM is a good platform to work on common definitions, to share best practice and to show case studies.

Results

There is no easy solution. Despite of all these difficulties, the way of measuring the organic food demand by current panels is the only appropriate approach for generating continuously quantitative estimations of the organic food demand.

THERE IS NO BETTER WAY! For more information on the organic food capabilities of current panel approaches contact Europanel at www.europanel.com, ACNielsen at www.acnielsen.com, try www.infores.com.

The Household Budget Surveys as a source of information for the study of the consumption of organic products

Antonio Puente Rodero[114]

Introduction

This short document has been written in response to a specific request for the EISfOM project seminar to be held on 26 and 27 April 2004. The main goal of the paper is to analyse the possibilities of using the existing Household Budget Surveys (HBS) data as a source of information for the study of the consumption of organic products and its evolution over time.

The Working Group (WG) on HBS was created by a decision of the DGINS[115] conference held between 29 November and 1 December 1989. The aim was to compile the existing information in the Member States (MS) on household budgets in order to make all this information available at European level as well as to improve harmonisation of surveys in terms of concepts used, classification of variables, data collection and data processing methods.

This project filled a gap in the area of social statistics, allowing the social portrait of Europe to be completed. Contrary to ECHP[116] and EU-SILC[117] which focus on household income, HBS relies on the concept of household consumption expenditure.

So far, this project has not had any legal basis and therefore has been run as a "gentleman's agreement" among the MS, some EFTA countries and Eurostat. Essentially, each country set the targets, the uses and the programming of its national HBS, and at the same time collaborated with Eurostat in order to compile a Europe-wide data set on household budgets at intervals of about five years[118]. The approach is cross-sectional rather than longitudinal.

Available data

One of the features of these surveys, and probably one source of the problems, is the wide variety of uses and users. Traditionally, the main use has been to collect information on household consumption expenditures for updating the 'weights' for the basket of goods used in the Consumer Price Indexes at a national level. In addition, many other uses have arisen either at national or European level: to estimate the household consumption accounts for National Accounting, to carry out a wide variety of analyses on consumers and consumption (i.e. consumption patterns, nutritional studies, etc), to supply complementary information for studies on poverty and social exclusion, to conduct research on economic and consumption issues, and so forth.

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[115] Directors-General of the National Statistical Institutes (Directeurs Généraus des Instituts Nationaux de Statistique)

[116] European Community Household Panel

[117] European Union - Statistics on Income and Living Conditions

[118] Although several EU countries and many Accession and Candidate countries conduct annual surveys, this is an international comparison exercise and can only proceed at the pace of the slowest participant.

The key concept of the data collected by the HBS is "household final consumption expenditure". These data are broken down by the COICOP[119]-HBS classification. Together with these data, the HBS collect numerous cross-sectional variables regarding households and household members. These variables allow the HBS results to be used in many different ways.

Since 1989, Eurostat has collected three data rounds for the following reference years:

- 1988, with 10 MS participating,
- 1994, with the current 15 MS participating,
- 1999, with full participation of the current 15 MS and simplified data collection from 12 Candidate Countries.

In the WG meeting of October 2001 it was agreed that the next reference year would be 2005. All the candidate countries have promised to participate fully in the next round.

In the first round, the methodologies used by the MS to carry out the HBS were very far from being harmonised. Since then, all the countries participating in this project and Eurostat have made big efforts in order to harmonise their HBS and to improve data comparability. However, there is still room for improvement.

In order to allow Eurostat to process the data it receives and to perform an ex-post harmonisation and to answer specific requests of the users, countries deliver micro-data to Eurostat. However, the implemented gentleman's agreement only allows Eurostat to disclose aggregated tables or indicators.

To give an account of the HBS results, Eurostat has a dissemination plan with four specific sections:

- the incorporation of the most significant aggregated data in an electronic format (Eurostat's reference data base 'NewCronos');
- analyses on specific subjects ('Statistics in Focus');
- other publications. The publication in the series "Panorama of the European Union" entitled "Consumers in Europe. Facts and Figures" issued in 2001 was largely based on the HBS data for 1999;
- replies to ad-hoc requests.

Methodology and characteristics of the HBS

The Household Budget Surveys (HBS) in the European Union are sample surveys of private households carried out regularly under the responsibility of the National Statistical Offices (NSIs) in each of the fifteen Member States (European Statistical System). Essentially, they provide information about household consumption expenditures on goods and services, with considerable detail in the categories used; information on income, possession of consumer durable goods and cars; basic information on housing and many demographic and socio-economic characteristics. Conversely to other European statistical domains, HBS is voluntary and no EU regulation exists. Therefore there is considerable for each Member State to decide the objectives, methodology, programming and resource assignment for their respective HBS.

In co-operation with the National Statistical Offices of the Member States, for many years Eurostat has worked on the quality of the data - mainly the comparability of HBS statistics within the EU. In spite of

[119] Classification of Individual Consumption by Purpose COICOP, see http://europa.eu.int/comm/eurostat/ramon/sna_1999/coicop_en.html

the important progress already made, there is still much room for improvement regarding quality and harmonisation of HBS data.

The current HBS situation is characterised by the following:

- HBS is a complex cross-sectional statistic with no legal framework at the EU level. Although there is a common classification (COICOP-HBS), each country has its own targets, survey programming and methodology, which are not totally aligned with the same elements in the other countries. Eurostat carries out an ex-post harmonisation on the data sets delivered by each participating country, but it is not possible to totally eliminate the comparability problems.
- HBS have close relationships with other statistics. The most important are:

  - ECHP[120]/EU-SILC[121], because both statistics are of social nature and address similar populations. On the other hand, they have different purposes (measurement of income instead of consumption expenditure) and different approaches (cross-sectional and longitudinal instead of only cross-sectional).

  - National Accounts (NA), because HBS could be used to estimate the accounts of household final consumption expenditure. Therefore ESA-95 is a good reference in order to set methodological recommendations for HBS.

  - Estimation of weights for annual Purchasing Power Parity calculation and GDP volume comparison exercise.

  - Harmonised Indexes of Consumer Prices (HICP), because HBS is used by all countries to collect information on household consumption expenditures for updating the 'weights' for the basket of goods used in the national Consumer Price Indexes. At this point the distinction between monetary and non-monetary consumption expenditure becomes relevant.
- There is a wide variety of uses and users both at national and at European level.
- Frequency is long (about 5 years)[122] and timeliness is also long (for certain data, more than 3 years).
- Although there has been important progress in harmonisation issues since the start of the European HBS project in 1989, there is still some room for improvement. The main points of divergence and comparability problems will be summarised later on in this section.
- In June 2002, a Task Force (TF) meeting was organised to discuss some problems identified in the current COICOP-HBS nomenclature. More specifically, the COICOP divisions for food, housing, financial services and insurance were analysed. The main problems were of two types: omissions of categories in COICOP-HBS (such as the lack of a specific category for "frozen vegetables"), and problems of classification leading to conflicts at the current level of detail of COICOP-HBS (such as the different ways of classifying "pizzas" and other "combined" products and services in different countries). The HBS WG approved the modifications proposed by the TF to the COICOP-HBS classification during its meeting in May 2003.
- In December 2000, there was another TF meeting organised to discuss the problems of comparability of household consumption expenditure in the areas of Health and Education. However, in that case, although there were some interesting proposals, there was no clear final agreement and the main problems remained unsolved.

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[120] European Community Household Panel

[121] Statistics on Income and Living Conditions

[122] Op.cit. (118)

Presently the main points of divergence in the national methodologies creating comparability problems among the MS are as follows.

- There are still some differences in the national definitions of:

  - household and household members,

  - head of household/reference person,

  - child/adult.

- Countries have different uses for COICOP-HBS nomenclature, either in the degree of detail or in the criteria used to decide the borderline cases. Moreover, a few countries continue to use national nomenclatures instead of COICOP-HBS. Other countries have carried out national adaptations of COICOP-HBS by adding more levels of detail. In principle this practice does not cause any problems, provided that these nomenclatures are compatible downwards with COICOP-HBS.

- There are some problematic areas in the definition of the concept of household consumption expenditure:

  - "actual final consumption" versus "final consumption expenditure" (although the first concept would be preferable from a theoretical point of view, for the moment it is only possible to implement the second),

  - treatment of goods or services retained for own final consumption,

  - treatment of salaries in kind,

  - rentals for housing,

  - recording of consumption expenditure for alcohol, narcotics, prostitution and illegal services,

  - transactions in existing goods,

  - treatment of gifts and transfers,

  - treatment of certain types of insurance and financial services,

  - health and education consumption expenditures.

- Similarly, household income still has some divergences in the level of detail, in the definition and in the method of recording.

- Sample definitions and survey organisation are also very different from country to country.

- Formats of data files delivered by the countries to Eurostat are very different.

- Regarding the frequency, while there are seven MS with annual or continuous surveys, the other eight perform their HBS every 5 years. However, the surveys which do not take place annually are "reasonably" well synchronised.

The methodological divergences among the candidate countries are even bigger.

The problems mentioned above were discussed during the meeting of Directors of Social Statistics hold in Luxembourg in April 2003 and during the last HBS working group meeting held in May 2003. The result of the discussions was a set of recommendations for further harmonisation to be implemented for the next round of data collection planned for the reference year 2005.

So far, Eurostat has produced the following publications as methodological references:

- Eurostat; "Family Budget Surveys in the EU: Methodology and Recommendations for Harmonization"; Luxembourg, 1993.
  This document contains a description of the methodology used by the participating countries and Eurostat for the collection of data in the 1988 round and some recommendations for improvement for the next round.
- Eurostat; "Household Budget Surveys in the EU: Methodology and Recommendations for Harmonization"; Luxembourg, 1997. Available in electronic format at: http://europa.eu.int/comm/eurostat/ramon/coicop_hbs/coicop_hbs_en.html
  This document contains a description of the methodology used by the participating countries and Eurostat for the collection of data in the 19994 round and some recommendations for improvement in the next round.
- Eurostat; "Household Budget Surveys in the EU: Methodology and Recommendations for Harmonisation"; Luxembourg, 2003. This document has been published electronically on the internet site of Eurostat:http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=KS-BF-03-003-__-N-EN
  This document contains a description of the methodology used by the participating countries and Eurostat for the collection of data in the 1999 round and some recommendations for improvement in the next round.
- Eurostat; "Household Budget Surveys in the Candidate Countries. Methodological analysis, 2003"; Luxembourg, 2004.
  This document will be published electronically soon on the Eurostat internet site. This document contains a comparative analysis of the HBS methodologies used by the 13 CC from the point of view of both the assessment of the comparability of 1999 data and the identification of harmonisation problems for planning future actions.

Analysis of the use of HBS data for the study of the consumption of organic products

Historically, the prime objective in conducting HBS in all the Member States was to collect information on household consumption expenditures for use in updating the 'weights' for the basket of goods used in the Consumer Price Indices (CPI). The 'weights' measure expenditures on specific goods and service items as a proportion of total expenditure. Over the years, the range of uses has grown as the surveys also had to meet the requirement to give a picture of the living conditions of private households in certain areas and at certain periods of time. To this end, the surveys provide detailed descriptions of a private household's total consumption and expenditures by household characteristics such as income, possession of consumer durable goods, housing and many demographic and socio-economic characteristics. The surveys also provide information on standards of living in terms of income and expenditure. Hence HBS are multi-purpose surveys which cater for a large number of uses and users. In terms of the scope and detail of information supplied, the surveys are an invaluable source of information on economic and social living conditions of households and individuals in the EU Member States.

The multi-purpose nature of HBS is one of their more appreciated features, but it also is a source of problems. Each user of HBS data has slightly different information needs and hence there is constant pressure on the HBS managers to including new variables or improve the level of detail in existing classifications. The result of accepting these demands are huge increases in the size of the questionnaires to be filled by households that participate in the surveys. It can be easily inferred that the usual consequence of this practice has been an increased reluctance of households to collaborate with these

surveys and a fall-off in the response rates. Therefore HBS managers have had to find suitable trade-offs between the amount of information collected by the HBS and achieving acceptable response rates.

At the moment, there are three main difficulties for using HBS as a source of information for analysing the consumption of organic products:

1. Organic products are not explicitly considered by the latest version of the COICOP-HBS nomenclature.
2. HBS do not collect quantities of product consumption (in physical units); only data on consumption expenditures (on economic value) are gathered.
3. HBS is not suitable for building time series or analysing the evolution of variables over time for to two main reasons:

   - The frequency of HBS data collections is 5 years.

   - Between all successive HBS data rounds there have been significant methodological changes, which means that the results of different rounds are not comparable.

For these reasons the possibilities of using HBS data for carrying out studies on the consumption of organic products are limited. If the information needs of these studies are very demanding, the possibility of creating ad-hoc surveys for this purpose should be considered seriously, rather than trying to adapt the existing HBS.

Contact persons

The HBS team in Eurostat is as follows.

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Surveys carried out in Hungary in connection with organic products and arising problems

Annamária Kovács[123]

Abstract

In this presentation I draw conclusions regarding the problems which researchers may face when analysing the Hungarian organic market. The presentation is based on market research and the results of an analysis published by Hungarian researchers.

There have been no exploratory qualitative surveys in Hungary yet. Market information is available from surveys carried out with questionnaires and the analysis of the results.

During the surveys it became obvious that because of the lack of knowledge about organic farming the results have to be handled carefully. It has to be taken into account that the products which consumers regard as organic are not always certified organic products.

There has been no research in Hungary as part of an international survey on the Hungarian consumers of organic products. This makes it more difficult to compare the existing data on Hungary with those of the international markets.

1 Introduction

In Hungary the institutions of organic farming have been in existence since 1983, and there has only been one country-wide sector organisation, the Bioculture Society (Biokultúra Egyesület), which was founded in 1989. Hungarian organic production is mainly export-oriented; consequently, special attention was paid to the establishment of the domestic market only at the beginning of the 2000's. Therefore, research concerning the consumers of organic products started only in the 1990's.

Results of all surveys show the same problems that hinder the increase of consumption of organic products. The difficulties, that experts have to face if they intend to investigate the domestic demand for organic products become apparent, too.

2 Methodology

I drew conclusions from the comparative analysis of the studies on Hungarian consumers of organic products and on the basis of the experience of my primary research. I analysed the problems that make it difficult to get a picture about the current and potential size of the consumer segment, and I also disclosed the problems related to the research carried out.

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3 Studies published by Hungarian researchers
Analysis of the international literature

A part of the publications issued only described the characteristics of the foreign, mainly the German and Austrian consumers. The main topics were: the description of the consumers' motivation, factors hindering consumers from purchasing organic products and surveying the purchasing habits (e.g. Lehota et. al. 1998)

The results of these analyses cannot be transferred to the Hungarian situation, because the attitudes and incomes of the consumers and the supply situation differ considerably between Hungary and in the countries mentioned.

The areas investigated and the categories in many question groups can be harmonized with those applied in international surveys, or they are already completely harmonized (e.g. motivation structure and attitudes regarding the difficulties of purchasing). However, the evaluation of the product range and the marketing channels cannot be standardized due to the differences in the development of the sector.

Surveys of "academic workshops" of higher education

At agricultural and horticultural universities research does not only focus on the organic production system but also the characteristics of consumers. There are several diploma theses, which are important because they explore certain areas in a very detailed way. However, the size of the sample in case of the diploma theses is small, consisting of 100-200 consumers.

The people investigated are characteristically the consumers of special marketing channels (organic shops and markets). From these we can draw conclusions about the innovators, today so-called "core" consumers. (e.g. Szente, 2000; Morky, 2001)

Interesting tendencies can be found in the studies that draw conclusions from the differences between the consumer groups of organic and conventional products by parallel questioning of the consumers of a certain conventional product. Gyöngyösi (2002) in his diploma thesis compares even the scale of values, apart from delivering a general survey of consumption and purchasing attitudes.

Nowadays surveys include also consumers buying through conventional marketing channels. I was the first to survey the attitudes of consumers of hyper- and supermarkets in connection with organic products in my diploma thesis (Kovács, 2003).

In order to explore the subject further, in March 2004 one of the students of our Institute tried to carry out a similar survey to investigate the image of a certain organic products. However, the survey was impossible to carry out because it contained a question about consumption and knowledge of organic products as a filter question. The student found only one consumer every five to six hours who met this requirement. Another student carried out a similar study at three busy organic shops in Budapest. The difference of the two types of shops is very well demonstrated by the fact that the latter student was able to fill in 100 questionnaires in eight hours.

The most comprehensive sources are theses and research by university departments that do research with a larger sample.

The largest sample is included in a study carried out in 1997 (Kürthy, 1997). According to his survey, carried out with a representative sample of 1000 consumers, the main reasons why the consumer base is not expanding are the high prices of products and the lack of proper information and marketing channels. Also, his survey shows the problem that every expert has to face; namely, that the consumers do not know the criteria of how to identify organic products. Only 11.7% of the consumers questioned could exactly

define organic farming and organic products; 60.1% could not exactly define the term organic; 22% said they had only eaten such organic products which they had grown themselves, but only 6.1% of them adhered to the rules of organic farming; 11.2% of the questioned persons have trust in the guarantee of the retailer; 6.8% trust the oral guarantee of the producer, and only 5.9% thought that the official guarantee was important. He revealed that mostly people in the capital city and of medium-age pay attention to the official guarantee, and with higher education and income more and more people prefer the official trade mark.

Our Institute carried out a salesroom survey in 1994 with a representative sample of 713 consumers. The scale of values of the frequent, the casual and the non-consumers was compared. The discriminant analysis showed that there are differences in the scale of values and the risk perception. The consumers of organic products ranked values connected to inner harmony and the risk factors in connection with health highly. The reason why people refused organic products were the high price (75.9%), the unfavourable taste (51.6%), the lack of trust (34.6%), insufficient quality (28.7%) and unsatisfactory exterior quality (26.3%).

According to the results organic product consumers were estimated to be 1.7% of the adult population, and the frequent consumers to be 0.5-0.6%. The potential consumers were estimated to be 5 to 6% of the population.

Market Research on consumer and market characteristics

Only since the beginnings of the 2000s has been attention given to organic product consumers and markets. The market research institute GFK Hungária and the Agrármarketing Centre (AMC) carried out large scale studies in 2002. Results of these studies show us the typical consumers of organic products, the potential target segment, the per capita consumption and the volume of the market.

The study carried out by the commission of AMC in October 2002 (questioning 1235 consumers in an omnibus research) showed that 3.0% of the questioned knew and consumed organic food, 2.6% knew and if they could choose they would buy organic food, and 12.7% knew and sometimes bought organic food.

According to the estimates of the study the market in 2002 was five times as large as in 1998. The turnover was HUF 4 million (=15 805 Euro), and the organic food consumption per capita was 0.4 Euro.

Research of GFK Hungária carried out with a representative sample of 1000 consumers in 2002 showed the following characteristics of organic consumers: a higher than average proportion of women, people at an age of 39-40, graduates, people living in smaller towns and people with higher income have a positive approach to organic products.

4 Results

We can identify the following problems in the area data collection about the consumption of organic products:

1. Several studies carried out on small and differently chosen samples make it is difficult to compare the results and to detect tendency of development precisely. Data are sometimes contradictory.
2. According to the studies average consumers do not know the organic labels and the special characteristics of organic products. Therefore data coming from the studies carried out with questionnaires do not provide information about the consumption of officially approved organic products but what consumers think to be organic products.

3. Dominance of quantitative methods, therefore lack of qualitative data that help to better understand the consumers.
4. There are no studies harmonized with international organisations and therefore no satisfactory basis for comparative research.

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Results of Group 4: Consumer and Retailer Level

Sylwia Zakowska-Biemans [124], Toralf Richter[125], Susanne Lux[126], Gabriele Hempfling[127]

State of the Art

Information on organic consumption and retail is useful because

- it is important for political decision making (e.g. subsidies).
- it is important for investments.
- it is important for the sales power of producers to estimate sales potentials of certain retailers.
- it gives information for processors and retailers about prices, assortments, etc.
- it can be used for benchmarking the enterprise's own performance against its competitors.
- it can help to objectivate emotive issues, e.g. on BSE, Nitrofen, etc.
- it is important for policy-making at the national and the European level.

According to Eurostat, the only public sector system at the consumer level, the Household Budget Survey (HBS) is not a suitable instrument for collecting data on organic products. So far, data collection and processing systems (DCPSs) both on the consumer and the retailer level are mainly run by private companies (for example ACNielsen, GfK, TNS). In most systems, organic products are included in DCPSs covering the total markets. Therefore, organic data is usually comparable with total data. As the data collection is mainly conducted for national customers, the systems usually are not harmonized to an international level. Not even within a company that often works on the international level does a harmonized Europe-wide system exist (e.g. GfK). There are significant differences in the sample, in available product categories and the detail of analysis depending on the wishes of the clients.

Retail and consumer panel data are usually available to paying clients. Since the costs for such systems usually are very high, the demand for organic data is presently restricted to public / semi-public institutions such as AMA, the Austrian Marketing Association, in Germany to the CMA Centrale-Marketing-Gesellschaft der deutschen Agrarwirtschaft / ZMP Zentrale Markt- und Preisberichtstelle or the Dutch LEI Landbouw Economic Institute. These organizations usually publish parts of the data. More detailed information is often only available for paying users.

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Retailer Level

On the retail level there are two methods of data collection: scanning systems and the inventory method driven by store visits of the field service of the market research companies combined with the information on goods received from the market actors. Usually scanning systems cover only packaged goods in multiple retailers. Even for packaged goods with barcodes (EAN) it is not always clear whether a certain EAN belongs to an organic or a conventional product. To characterize organic products, some organizations also analyse trade texts and product price lists. Furthermore, they conduct field services (store checks) in the supermarkets for special product groups to divide the products into organic and conventional. The following types of data are available in a retailer panel: consumer prices, sales volumes and values, distribution levels by product, retailer, shop type and region.

Consumer Level

In addition to sales and price data, consumer panels offer socio-demographic data or provide data on market penetration, behavioural aspects of different consumer groups etc.

An important factor for consumer panel data quality is the correct identification of organic and conventional products. If scanning systems are used as method for data collection, the consumers scan the EAN code of packaged food at home. Then the market research companies have to classify which EANs belong to an organic product and which do not. For fresh products, panellists have to decide whether a product is organic or not, and this is an important source of misclassification. Often products bought at (farmers') markets or farms themselves are classified as organic even though they are not. It is socially preferable to buy organic products. Some companies use code books for surveying fresh food. Another method is the "paper and pencil panel", where consumers note down their purchases, the brand, (the EAN code), the store, etc. in a diary.

One obstacle for Europe-wide harmonized consumer panel data is limited product group reporting. Often not all product groups are covered by organic data collection in consumer panels. Due to limited penetration / market share, consumer panels often do not cover specialist organic store expenditures very well.

Discussion

The problems of data collection both at the retailer and the consumer level have been identified during the discussions.

- The risk of misclassification of fresh food in consumer panels. This means that either conventional products (e.g. bought at weekly markets) are or are not marked as organic. This leads to a problem of reliability and validity. A retailer panel data on fresh food is not available because of the scanner system. The problem of misclassification of certain organic products can be solved by afterwards classification, i.e. plausibility checks of the consumers' product classification (organic or not), and the price entry should be carried out to detect misclassified organic products.
- Product classification (organic or not) and the price entry should be carried out to detect misclassified organic products.
- General problems of consumer panel data are expenditures on out-of-home consumption (restaurants, canteens, etc.), forgotten small purchases (e.g. fresh rolls at a bakery) and consumption of foreign households in border regions. Often, these expenditures are not covered. Retailer panels only cover these data in part.

- The limited number of organic products / product groups included. With an increasing number of products it becomes more difficult for the panellist, motivation decreases along with validity, and costs increase.
- The limited representation of different store types such as organic shops (without a scanner system), butchers, bakeries, discounters in retail panels. Discounters in particular tend to be excluded.
- Problem of funding. Data collection and processing on the retailer and consumer level is very expensive. Since the sector and the market size of organic products is still small, the demand for organic product data by paying users is limited. A separate system for organic products might be even more expensive.
- Regarding the funding of panel systems, it is important to involve all stakeholders. Usually, their demands for data differ; public demand focuses on different aspects from private demand. Stakeholders should be encouraged to formulate their needs. If the data provided are useful, it will be easier to gain funding.
- Problem of data quality. Figures provided by consumer and / or retailer panels usually have a high validity. Nevertheless, methodological problems exist, especially in regard to products with a low market share / low penetration rate etc.
- The problem of definition. Different terms are used, different definitions of product groups (which products belong to which product group) are applied, the decoding of EAN codes is usually not always available. ECR (Efficient Consumer Response) has already established a nomenclature, as have Eurostat within the Household Budget Survey (HBS).
- Problem of harmonization. As data on consumer and retailer panels are mostly gathered by private companies, there is no interest in harmonisation (competitors).

Results, conclusions, recommendations

The following steps can be taken to improve organic data collection on consumer and retailer panels:

1. Make an inventory list
    a) of definitions / coding systems (private (e.g. ECR[128]) / public (e.g. COICOP[129]) / product classifications
    b) of EAN codes
    c) of existing organic consumer panel data
    d) of existing organic retail panel data
    e) of existing organic price panel data
2. Discuss options for harmonization / integration
    a) with regard to COICOP / ECR / EAN etc.
    b) with regard to product definitions
3. Define stakeholders' interests (private / public)
    a) define data needs

[128] Efficient Consumer Response

[129] Classification of Individual Consumption by Purpose COICOP, see http://europa.eu.int/comm/eurostat/ramon/sna_1999/coicop_en.html

b) integrate stakeholders into process (as in the Dutch example)

c) raise funds from both private and public stakeholders

d) probably (initial) public funding is necessary to have valid and reliable organic data.

- ☐ this can be public funding as in Germany, Austria or the Netherlands (example: "Absatzfonds"[130]); nevertheless, in times of budget cuts and higher taxes, it will be very difficult to establish new "Absatzfonds", especially for a small segment as the organic market.
- ☐ European Action Plan: could initial funding for data collection on organic consumption and retail come from this source?
- ☐ EUROSTAT (Food Safety Group): if general food consumption panels are built up / used for basic data collection, the additional costs for organic data collection would be lower.

4. Building up a network of data collectors:

a) exchange of experiences, e.g. by workshops, referring to the state of the art in the different countries.

b) identify important partners in each country.

c) build up client power.

d) make proposals for harmonization / standards.

e) the EISfOM membernet should be an instrument for sharing experiences.

f) include market research companies (GfK, ACNielsen, etc.) in the next EISfOM seminar in Brussels.

5. Co-operation with Eurostat:

a) 2005, the Food Safety Group of EUROSTAT focuses on consumer level data.

b) Experts from national institutions like AMA, CMA, ZMP, LEI etc., who were present in the EISfOM working group, could be members of a market researcher network supporting general market data activities on the consumer level.

c) Organic market data collection could be one element of 2005 activities.

d) Household Budget Survey (HBS): no overloading of the data collection, therefore separate a special group within the total number of households. This group notes down information on organics annually.

e) Create an inventory list with product classifications and definitions, also respecting the nomenclature of COICOP and ECR. Eurostat can provide information about classifications. Increasing the number of listed products in the EAN database.

[130] The Absatzfonds is a small tax on all sales for marketing and promotion activities, which is paid by the producers

f) If possible, Eurostat could be the long-term partner to be involved with the process of harmonisation.

6. In order to proceed with Europe-wide harmonisation on the retailer / consumer level, suitable case studies for the EISfOM Work Package 5[131] should be identified. More developed systems could be used as the benchmark.

7. Integrate accession countries.

[131] The aim of work package 5 of the EISfOM project is to co-ordinate and to evaluate pilot data collection and processing systems at national level.

Group 5: Supply Balance Sheets

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Supply Balance Sheets

Francis Weiler[135]

Aim

The main objective of this contribution is to offer a short introduction to supply balance sheets (SBS). This presentation refers to the methodology applied to the products of conventional agriculture, but can easily be extended to other types of production. The concept of SBS does not differ too much in the case of organic production. More detailed documentation is available; the reader can find a more systematic approach in the handbooks developed by Eurostat or the FAO in this field.

1 Definitions

1.1 The supply balance sheet

The supply balance sheet is a method of comparing the resources and the uses of a product. The SBS covers the life of the product from production to wholesale; retailers and consumers fall outside its range.

SBS is used either for market management or for food management. In the European Union, SBS provides an overall view of the market for an agricultural product both by country and for the European Union as a whole. Market management means the regulation of supply and demand and includes, to a certain extent, both prices and budgetary concerns. Food management is a concept applied by the FAO to supply food to the human and animal population of the world.

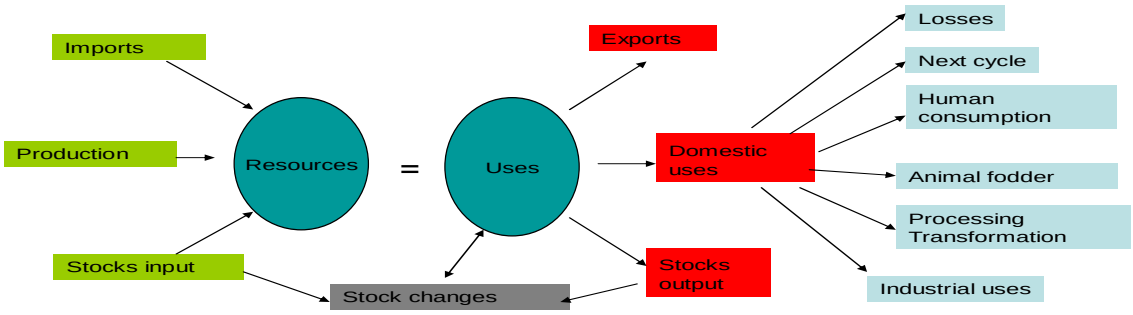

Figure 1: The Supply Balance Sheet (SBS)

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Data sources vary according to the individual product and the operation recorded. Each country has its own administrative organisation. In general, external trade is recorded by Customs; for intra-Community trade within the EU, customs declarations have been replaced by the INTRASTAT system.

Figure 1 shows the different components of a supply balance sheet as it would generally appear. For a given product or a given country, all the components are not mandatory, for example, if there is no domestic production, imports are required, and if the raw product is not directly consumable, the main domestic use is processing.

In the main, for crop products a distinction is made between farm balance and market balance.

The farm balance shown in figure 2 takes in account the "own-use" of products on the farm and agricultural sales are introduced in the market balance shown in the figure below. Stocks reported are stocks at the farm level.

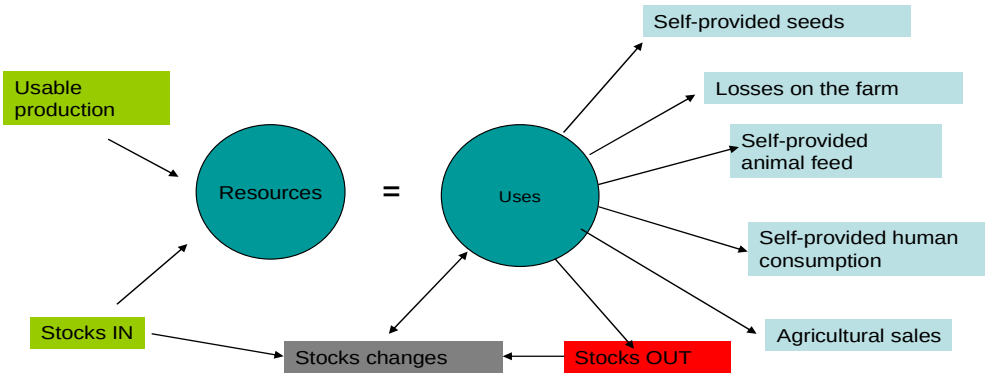

Figure 2: SBS: Farm Balance

All the components referring to external trade and domestic processing and industrial use outside the framework of the farm appear in the market SBS.

To complete the definition, it is possible to establish:

- a total SBS by adding together the farm and the market balance,

an aggregated balance, by combining the balances of raw and processed products e.g. rice balance = paddy + husked + milled,

- an overall balance by adding together the balances of products in the same product group, i.e. balance of cereals.

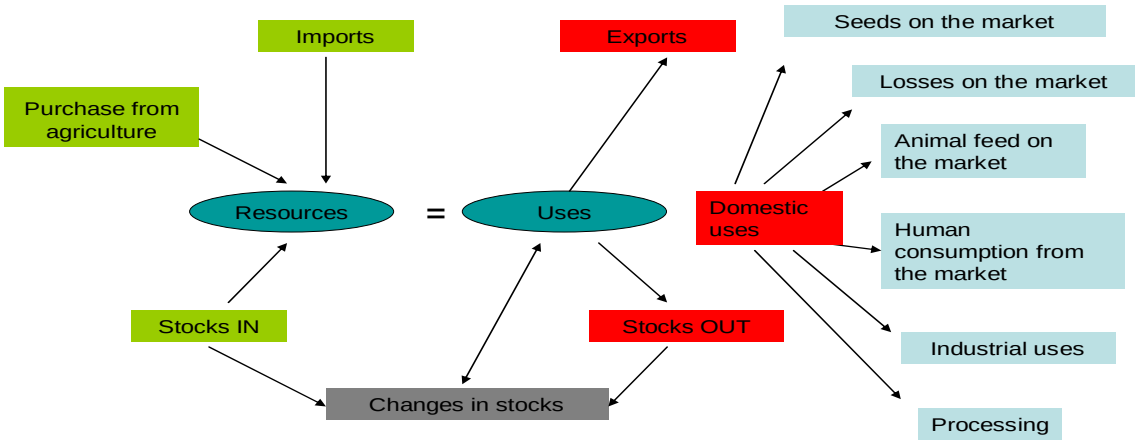

Figure 3: SBS: Market Balance

1.2. Geographic area

SBS are established at the level at which the required information is available. External trade figures are compiled at the national level. In the framework of the European Union, the SBS are calculated for the customs territory of the Member States, defined in accordance with Council Regulation (EC) No 1172/95 of 22 May 1995 relating to the trading of goods by the Community and its Member States with non-member countries, as last amended by Regulation (EC) No 374/98. This means that some non-European territories of the Member States are excluded.

1.3 Unit

Since the data sources may report in a variety of ways, the SBS are compiled using a common unit which can convert a processed product into a raw product, or a compound product into the reference units of the SBS. The units used most frequently refer to weight in 1,000 tons, e.g. in the case of meat, 1,000 tons carcass weight and for eggs, 1,000 shell-eggs tons.

1.4 Reference period

The reference period normally covers twelve consecutive months, using the calendar year for livestock products and the twelve months of a marketing year for crop products. Certain balance sheets (vegetable fat balance sheets) are worked out both by calendar year and by marketing year.

The marketing years for the various crop supply balance sheets can start at different dates. Council Regulations on the common organisation of the markets specify the start and end dates of the marketing year required by the Community.

1.5 Per capita consumption

Human *per capita* consumption is obtained by dividing total human consumption by the population.

The calculation of consumption *per capita* uses the population data appearing in official statistics. The following dates are used:

- 31 December for balance sheets per marketing year,
- 30 June for balance sheets per calendar year.

Statistics refer to the resident population of each country: persons normally residing in the country but temporarily absent are included in the total population figure, whilst foreigners residing temporarily in the country are excluded.

It is thus possible to determine the apparent human *per capita* consumption.

1.6 Degree of self-sufficiency

The degree of self-sufficiency of a given region indicates how far "domestic production" (from a domestic raw material) in this region is able to cover all the needs or "domestic use" (total use for humans, animals and industry) of this region.

$$\text{Degree of self-sufficiency} = \frac{\text{"Domestic production"} \times 100}{\text{"Domestic use"}}$$

The "domestic production" is easily determined for crop and milk production, since the crop harvest and milk collection figures are known at the farm level. In the case of meat production, the notion of "gross indigenous production" has been introduced in order to estimate the "domestic production", since the import and export of live animals may have a significant impact on the figures.

2. Components of the supply balance sheets

The list below refers to figure 1 in section 1. Currently the EU-Member States compile the SBS using a common definition of the components; the definitions given below reflect the general approach. A more precise definition by product type is also available in each specific handbook.

Each country delivers the information at the national level. To obtain the EU-level, an aggregation of the different components is made. The EU-level is, in this case, considered to be the whole geographical territory for which some SBS components are not simply the sum of the national figures. EU external trade is trade between the Member States and third countries: intra-EU trade is not included.

2. 1 Usable production

Usable production means the usable quantities resulting from the production process during the reference period; any losses suffered during this process and until delivery do not appear in this figure.

Example 1: Cereals

This involves the quantities collected and delivered to the holding which are available to be sold off the holding or used or consumed directly on it. This includes marketed production, misrepresented quantities, self-provided quantities, self-consumed quantities and losses on the farm (handling, waste, pest

damage, etc.). It excludes the non-harvested quantities, losses to the harvest (in the field) and losses in transportation from the field to the store.

Example 2: Meat

"Usable production" (net production) is the overall tonnage of meat found suitable for human consumption by the inspection bodies. This meat is from all the animals slaughtered in the country, of both domestic and foreign origin.

Example 3: Fish

This covers all fish unloaded by fishing vessels of the Member State in national or foreign ports and any transfers at sea onto foreign boats.

2.2. External trade, imports and exports

Foreign trade for the SBS is established in accordance with a list of selected products corresponding to the tariff and statistical nomenclature and to the Common Customs Tariff in force. The product list refers to the CN (Combined Nomenclature) from which it is extracted.

The sources used for "Imports" and "Exports" in the supply balance sheets are the official Foreign Trade statistics which cover goods (gross products or processed products):

- which enter or leave the statistical territory of the Community (extra-Community trade),
- which circulate between the statistical territories of the Member States (intra-Community trade).

The list includes all products which relate to the particular supply balance sheet: the raw product, the processed products and the manufactured products. A conversion coefficient is used for the conversion of product weight into the appropriate balance sheet unit, for example, to convert processed or compound products into raw product. Reference coefficients have been set by Eurostat, but Member States are entitled to use their own.

With the entry into force of INTRASTAT, declaration thresholds were introduced for imports and exports between Member States. This means that data is less accurate for intra-EU trade and different rules are applied:

- thresholds are different for imports and exports (in general, the import thresholds are lower); the threshold is applied by the market operator; thresholds are expressed as monetary values and therefore, depending on changes in price, the tonnage may fluctuate;
- the declaration of import or export is obligatory when the threshold is reached, but in some Member States and for some products, there is no threshold and therefore all operations are declared;
- when the declaration is required, in some cases it begins at the threshold figure and the amount below the threshold is not declared;
- alternatively, when the declaration is required, it starts at the beginning of the year and the amount below the threshold is also declared.

Trade with third countries is recorded without thresholds. The distinction between intra-EU and extra-EU trade remains in order to record EU external trade with third countries, which is reported in the EU-level SBS.

2.3 Stocks and changes in stocks

SBS are calculated with the input of stocks at the beginning of the reference period as resources and the stocks output at the end of the reference period as use of products. The recording of the stocks at the beginning and at the end of a balance sheet reference period presents various degrees of difficulty according to the product and the nature of the stock.

Rather than recording the stocks at the beginning and at the end of the reference period, the change in stock during this period is frequently used. For some products, the change in stock is not significant: for highly perishable goods (for example, fresh vegetables), it is possible to ignore stocks and stock changes.

Considering that the SBS covers the product cycle from production to wholesale, the stocks reported are:

- producers' stocks;
- public stocks and security stocks;
- intervention stocks;
- stocks on the market, including wholesaling, importers/exporters and processing plants;

Retail stocks and household stocks are not covered.

2.4 Domestic uses

Domestic use is a country's overall consumption of a product. It includes seeds, eggs for hatching, losses, human consumption, animal feed, processing and industrial uses.

2.4.1 Seeds; eggs for hatching

This covers the quantities of raw product used for the next production cycle.

2.4.2 Losses

This represents the usable production which is lost at the level of:

- the production sector
- the marketing sector.

For production sector losses, the losses during harvesting have already been deducted to determine "usable production". Losses on the holding (waste, loss in sorting, losses after the wine harvest statement, etc.) should be entered in here. Meat unfit for consumption is not recorded in the usable production.

For marketing sector losses, this involves losses which have occurred during storage, transportation, processing and packing (including the losses by drying).

Losses, in general, are fixed in the most realistic way possible, but can be an estimate in percentage terms (based on experience).

When certain produced quantities are not marketed but are withdrawn from the market and made unsuitable for consumption, these quantities also appear under the "Losses" heading.

2.4.3 Human consumption

"Human consumption" in the balance sheet indicates the quantities of foodstuffs consumed or produced by the agricultural industry for consumption by the inhabitants of the territory during the reference period. It involves the quantities delivered in various forms (unprocessed, processed, preserved, etc.) by the wholesalers to the retail trade and to the public sector (canteens, restaurants, hospitals, etc.) and the quantities consumed directly by the producers. The losses and changes in stocks at the retail trade and the consumer level also appear here.

2.4.4 Animal feed

The quantities of raw products used for feeding animals during the reference period, including those produced and consumed on the holdings (direct animal feeding) and those delivered to the animal fodder industry are recorded under this heading.

2.4.5 Processing

Processing means the transformation of a raw product into another food product, for which a balance sheet is compiled.

The "Processing" heading in the balance sheet provides a link between the supply balance sheet of a raw product and that of another product resulting from the processing of the first. It shows the quantity of raw product processed.

2.4.6 Industrial uses

The quantities used by industry during the reference period appear in this part of the balance sheet, insofar as this involves quantities which are intended neither for human consumption nor for animal feed.

3 Some applications

There are some specific applications of the SBS by product or product group of products which include the following examples.

3.1 Crops

3.1.1 Cereals

The table below shows the list of balances established for cereals. It is stressed that balances are compiled at both farm and market levels and a total balance is obtained from these two balances.

Table 1: List of balances established for cereals

B1100	Cereals – Total	B1130	Cereals - Total, farm	B1160	Cereals - Total, market
B1110	Wheat – Total	B1140	Wheat - Total, farm	B1170	Wheat - Total, market
B1111	Common wheat	B1141	Common wheat, farm	B1171	Common wheat, market
B1112	Durum wheat (Triticum durum)	B1142	Durum wheat (Triticum durum), farm	B1172	Durum wheat (Triticum durum), market
B1120	Cereals other than wheat	B1150	Cereals other than wheat, farm	B1180	Cereals other than wheat, market
B1121	Rye and maslin	B1151	Rye and maslin, farm	B1181	Rye and maslin, market
B1122	Barley	B1152	Barley, farm	B1182	Barley, market
B1123	Oats and mixed grains other than maslin	B1153	Oats and mixed grains other than maslin, farm	B1183	Oats and mixed grains other than maslin, market
B1124	Maize	B1154	Maize, farm	B1184	Maize, market
B1125	Triticale	B1155	Triticale, farm	B1185	Triticale, market
B1129	Cereals n.e.s. (including sorghum)	B1159	Cereals n.e.s. (including sorghum), farm	B1189	Cereals n.e.s. (including sorghum), market

3.2.2. Rice

The peculiarity of rice is that the harvested product must be processed to become a consumable product: there are two stages in processing - husking and milling. SBS are established for paddy rice, husked rice and milled rice, long, round and medium grain. Broken rice is a result of processing. The figure below shows the stages of processing, and stocks must be included to complete the balance. It is important to mention that there is only a harvest of paddy rice, but there is trade in all types of rice, a small consumption of husked rice, and most consumed rice is milled.

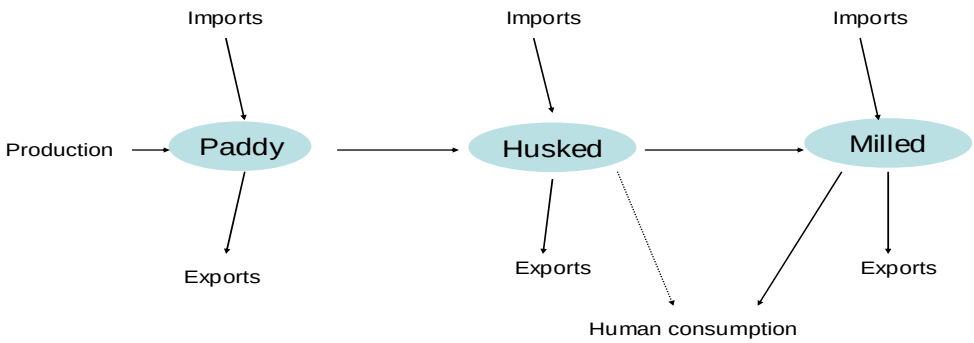

Figure 4: SBS: Rice

3.2.3 Vegetables and fruit

A list of the balances compiled for fruit and vegetables is given in table 2.

Table 2: List of balances established for fruit and vegetables

B1711	Cauliflowers (market balance sheet)	B1723	Fresh peaches	B1910	Fresh fruit (excluding citrus fruit)
B1712	Fresh tomatoes (market balance sheet)	B1724	Processed peaches	B1920	Nuts
B1713	Processed tomatoes	B1725	Oranges (market balance sheet)	B1940	Citrus fruit
B1721	Apples (market balance sheet)	B1726	Fresh grapes (market balance sheet)	B1950	Dried fruits
B1722	Pears (market balance sheet)	B1800	Vegetables		

3.2.4 Meat

The difficulty in meat production is that production in not fully linked to the territory. A distinction is made between live animals and meat. There is a significant external trade in live animals. The degree of self-sufficiency is based on the gross indigenous production (GIP) defined as total slaughterings + balance of trade of live animals, i.e. total slaughterings + exports - imports. The production of meat is reported by the slaughterhouses, without distinguishing between the origins of the animals. Numbers of animals

slaughtered outside the slaughterhouses are estimated; due to more stringent health and animal welfare regulations, these numbers have fallen dramatically. Production figures include only meat fit for human consumption expressed in carcass weight. For pigs, bovine animals, sheep and goats, the carcass weight is defined in Commission decision 94/432/EC, 94/433/EC and 2003/597/EC. Figure 5 below shows the two levels of the production, live animals and meat, and trade at both levels.

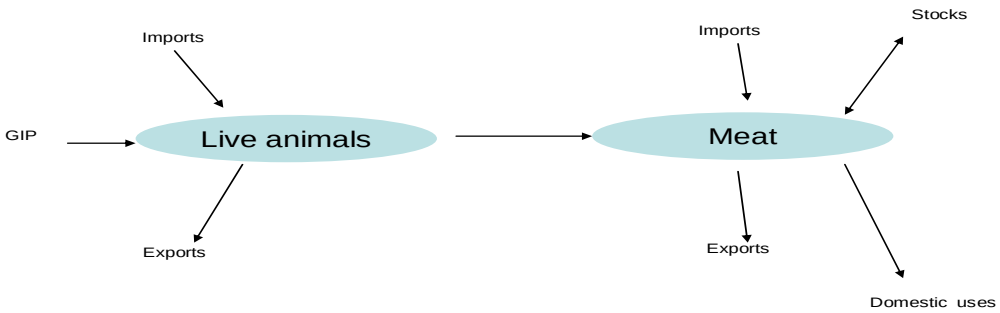

Figure 5: SBS: Meat

Table 3: List of balances established for meat

B4100	Meat Total	B4130	Sheep and goats	B4160	Other meat
B4110	Cattle	B4140	Equidae	B4170	Offal
B4120	Pigs	B4150	Poultry		

In most of countries, offal is expressed as a percentage of the carcass weight. Table 4 give a detailed list of the components of the meat SBS.

Currently, in the meat SBS, animal feed and industrial uses are not recorded. In consequence all the meat is considered as being for human consumption. Efforts are being made to obtain better information on other domestic uses. Processing is not relevant. All the meat used in compound food products and consumed in the country of production is included under the 'raw' meat item. Only the external trade of compound products is calculated, taking into account the list of meat products (CN codes) and the conversion coefficients for carcass weight equivalents.

Table 4: Detailed list of the components of the meat SBS

01	Gross indigenous production (1000 t carcass weight)	30	Total exports (for EU: Exports to third countries) (1000 t)	65	Processing (1000 t)
02	Total exports of live animals (1000 t carcass weight)	35	Exports to EU-15 (individual countries only) (1000 t)	70	Gross human consumption (1000 t)
04	Exports to EU (intra-EU) of live animals (individual country only) (1000 t carcass weight)	40	Final stocks (1000 t)	80	Degree of self-sufficiency (%)
06	Total imports of live animals (1000 t carcass weight)	45	Change in stocks (1000 t)	90	Gross human consumption per capita (kg/head)
08	Imports from EU (intra EU) of live animals (for EU exchanges intra EU) (1000 t carcass weight)	50	Total domestic uses (1000 t)	96	Slaughter weight (kg carcass weight)
12	Usable production (1000 t)	53	Losses (1000 t)	99	Resources = uses (1000 t)
20	Total imports (for EU: imports from third countries) (1000 t)	55	Animal feed (1000 t)		
25	Imports from EU-15 (for EU: intra-EU exchanges) (1000 t)	60	Industrial uses (1000 t)		

3.2.5 Other balances

Balances are also established for milk and dairy products, fish, wine, oils and fats, sugar, eggs, etc. and fodder.

4 Current problems

Supply balance sheets do not have the same meaning as an accounting balance. Most of the information used is statistical: it is obtained from estimates or using standard conversion factors.

A degree of inaccuracy is introduced by INTRASTAT, since all of the trade between EU-Member States is not recorded and the rules for applying thresholds differ from country to country. Thresholds are expressed in price values; volumes and weights, for instance, are dependant upon the price level.

The product list used to value external trade is extracted from the Combined Nomenclature, and conversion factors are used to move from the product weight to the balance sheet unit, taking into account the amount of 'raw' product in the manufactured product and the units required.

Stock evaluation is difficult and all the types of stocks mentioned under 2.3 are not reported. Balances are worked out using change in stock, but stocks at the level of processing plants or for some products are considered not to change very much or not to be significant. Balance sheets have been developed for human consumption. For some balances, domestic uses only report human consumption of a product even though there are animal feed or industrial uses.

5 Organic farming in SBS

Currently the collection of the information is not organised so as to identify the mode of production. Supply balance sheets are produced from information gathered from various sources, and these are the basis for specific SBS. In the legislation which defines agricultural products statistics at present, the mode of production is not specified and the figures cover total agricultural production. The Combined Nomenclature is not designed to identify products according to the mode of production.

To calculate a supply balance sheet for organic products, it is necessary to identify the "organic" production:

- in the production figures
- in external trade
- in stocks
- in domestic uses and in processing.

Some of these figures are easy to obtain since certification bodies already have the information. External trade data needs some refinements, and the use of organic products as conventional products must be resolved.

Conclusion

This document cannot be considered to offer a systematic approach; it is a general overview of the SBS with some examples. The reader can refer to the detailed documentation made available by Eurostat in English, French and German:

- a handbook for compiling supply balance sheets - general information, concepts, etc.
- handbooks for the following specific products

Cereals	Wine
Rice	Meat
Dried pulses	Milk and dairy products
Potatoes	Eggs
Vegetables	Fodder
Fruit	Oil and fats
Sugar, beets, molasses, honey	Fish

The FAO has also developed its own handbook which is available at following web addresses:

- http://www.fao.org/DOCREP/003/X9892E/X9892E00.HTM (English)
- http://www.fao.org/DOCREP/005/X9892F/X9892F00.HTM (French)
- Eurostat has set up a nomenclature site. Various nomenclatures and definitions have been published on the following web site in the EU-languages:
- http://europa.eu.int/comm/eurostat/ramon

Results of Group 5: Supply Balance Sheets

Ulrich Hamm[136], Jessica Aschemann[137], Guido Recke[138]

Introduction

Supply balance sheets compare the resources and uses of a product (or a group of products) in a reference area, over a reference period (Eurostat, 2001). They are a key instrument for decisions of politicians and market actors.

State of the Art

In almost all European countries supply balance sheets for the total supply exist, but there are no complete supply balance sheets for organic products in any European country

Problems in conventional supply balance sheets:

- Data about losses, stock changes, intra EU-trade and consumption for different users often relies on estimations
- There is a lack of data accuracy for processed products and only roughly estimated conversion factors from raw to processed product exist
- Enterprises have concerns about confidentiality when there are only a few market actors involved

Problems especially for organic supply balance sheets:

- Currently there is not enough organic data available to draw up organic supply balance sheets in any European country
- Data for industrial users is not a problem as there is no organic production of starch, technical alcohol, etc.
- Stock changes are a minor problem because there are currently few stocks (there is no market regulation for organic products)
- Organic products sold as conventional must be recorded as an additional item in the supply balance sheet

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Discussion

The discussion in the sessions concerned which actors along the supply-chain are interested in organic supply balance sheets (politicians, market actors), because the need was identified for clear arguments to justify the extra effort of collecting data.

An important point was from which source the missing data could originate (certifying bodies, bottle-necks in the supply-chain like slaughterhouses, adding organic product nomenclature, extra surveys) and whether the collection, when made by certifying bodies, should be voluntary (problem of lack of data-delivery), paid for, or mandatory (need to develop legal enforcement). An example from Australia showed that there is a special institution collecting data on organic exports recognised by the organic logo. Also data about organic yields is collected systematically in Australia. Experiences from Eurostat indicated that data collection via on-line forms is an option which generates less work and lower costs than any other.

Problems (see above) and advantages (data two years in advance because of conversion) were pinpointed which are especially relevant for the organic supply balance sheets. The problem of organic products sold as conventional in particular was discussed and several options were suggested (such as an extra survey or an additional column in existing forms).

A proposal was made in the last session on how to collect data for organic supply balance sheets and how to address the problems mentioned. The discussion of quality assurance approaches for supply balance sheets for organic data showed that there is no need to develop a new approach. Since in the early years there will be no historical data available, it was agreed that many methods used for quality assurance based on long time series cannot be adopted. The question was raised of whether national experts for organic markets can be integrated to validate the data.

In general, the discussion showed that much data could be available from the certification bodies. However, until now certification bodies cannot be obliged to provide statistical institutions with data. Production data for organic crops could be supplied by a test farm survey implemented in a similar manner to the conventional data. This system would be very costly, whereas the cost of using the data that can be provided by the certification bodies would be much lower.

Results, conclusions, recommendations

Reasons for implementing organic supply balance sheets:

- Market management for politicians: politicians need sound information to decide whether to support production, demand or marketing
- Market management for market actors: enterprises need market information as a basis for their planning

Solutions:

- Develop legal enforcement for data collection on organic products from European countries and the countries on the third country list

  - Proposal for the production level: data is collected by certification bodies and is delivered to national statistical institutions

  - Proposal for the trade level: data collection is carried out in a similar way to the total statistics by adding a digit (organic/non organic) in the report forms

- Proposal for the consumption level: data collection is carried out in a similar way to the statistics for total consumption. The problem of conventional sales of organic products will be solved through data collection by inspection bodies

- Until the legal enforcement is implemented, data collection is done on basis of a gentleman's agreement as a pilot project to gather experiences
- Quality assurance will be easily done by using the current procedure of Eurostat
- In the early years validation of the collected organic data is needed by national experts on organic markets

Conclusion

- Supply balance sheets for organic data will be easily introduced as a pilot project
- There will be low cost for implementation

References

Eurostat (2001) Handbook to compile supply balance sheets – General information, concepts. Working party "Crop Products Statistics" of the Agricultural Statistics Committee EAA. Eurostat. Luxemburg.

Group 6: Policy Evaluation

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Evaluation of European organic farming policies - development of indicators employing the MEANS framework

Jon Tuson[141] and Nicolas Lampkin[142]

1 Policy evaluation: the European organic farming policy context

Since the early 1990s, European policies for organic farming have been developed on a number of levels. These include the EC Reg. 2092/91 defining organic production; support for organic production, processing and marketing through agri-environment, rural development and structural measures; support for research and information dissemination measures; the development of national and EU action plans for organic farming; and the continuing reforms of the main commodity elements of the Common Agricultural Policy.

The impacts and cost effectiveness of these policies is an issue of increasing importance as the size of the organic sector, and the consequent demand for resources, increases. There is in any case a formal requirement for ongoing monitoring and evaluation of policies at national and EU level (e.g. current mid-term review of rural development and structural programmes). Competing claims on the resources are likely to become louder, and there needs to be clear evidence of benefits to justify their continuing application to organic farming. However, the evaluation of these impacts is not simple, because organic farming works on a number of different levels, with multiple, sometimes conflicting, objectives and impacts. While the benefits from supporting organic farming with respect to one particular objective may be less than can be achieved by more targeted measures, the total benefit across all objectives of adopting a systems approach such as organic farming may be sufficient to more than justify the costs of the support compared with single-objective, single-measure schemes. However, current evaluation methodologies need further development in order to make a full assessment.

There have been a number of recent efforts to focus specifically on evaluation of organic farming policies at the European level. The EU-funded research project OFCAP[143] looked at policies implemented in the period 1993-1997, with the results reported in the *Organic Farming in Europe – Economics and Policy* series (Volumes 1-10) published by the University of Hohenheim[144]. Of particular relevance is the overview of policies implemented (Lampkin et al., 1999) and the policy impact assessment of Häring (2003), with Dabbert *et al.* (2004) providing an overview of the whole project. More recently, Häring *et al.* (2004) have provided a first evaluation of the impacts of the Agenda 2000 reforms, in particular the main commodity measures and the rural development programme, on organic farming.

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[143] Organic Farming and CAP Reform (FAIR3-CT96-1794, http://www.uni-hohenheim.de/~i410a/eu_org/Fair3_Index.htm)

[144] For details, see: http://www.uni-hohenheim.de/~i410a/ofeurope or e-mail ofeurope@uni-hohenheim.de

Since 2003, a new EU-funded project, EU-CEE-OFP[145] has been in progress, which aims to analyse the:

- effectiveness of organic farming policies (OFPs) in the old EU member states and Switzerland (EU15/CH)
- regional and spatial impacts of existing and potential OFPs on farm structures and production in EU15/CH
- development of organic farming and the policy and regulatory environment in the new EU member states from Central and Eastern Europe (CEE8)
- development and implementation of organic farming regulations and markets in CEE8
- farm level economic impacts of organic farming policies, Agenda 2000 implementation and EU enlargement in selected countries
- policy networks for developing OF policies in selected countries, and
- involve policymakers and stakeholders in identifying parameters for further development of European organic farming policies.

This paper reports on the progress made in the EU-CEE-OFP project with the evaluation of organic farming policy implementation at a member state and regional level. Indicators are being developed to reflect the range of policy objectives addressed in the multitude of policies that have been adopted or are available for member states to adopt to help foster the development of organic farming. This needs to take account not only the ability of organic farming policies to assist the development of the organic sector, but also in their ability to meet the broader environmental and social objectives of agri-environmental and rural development programmes. The first part of the analysis aims at identifying best practice in policy development for the organic sector, whilst the second part focuses on evaluating the benefits to society relative to the levels of support and the availability of resources to support the organic sector.

2 The MEANS framework

The evaluation approach within the EU-CEE-OFP project builds on the European Commission requirement for ongoing monitoring and evaluation of policies at both a national and European level, which feed into the process of reviewing rural development and structural fund programmes. As part of the ongoing concerns about the quality of programme monitoring and evaluation and the validity of outputs, DG XVI (Regional Policies and Cohesion) commissioned the MEANS[146] programme (1994-1999), which developed a coherent set approaches and methods for future evaluations. The results (European Commission, 1999) provide a framework for evaluation as well as guidance on developing structures for collecting common indicator sets for monitoring and subsequent evaluation purposes. The EU-CEE-OFP project relies heavily on the MEANS approach not only for developing a framework for identifying indicators but also in identifying appropriate analytical methodologies.

A key to adapting the MEANS framework for organic farming policy evaluation is the two key levels of analysis identified above:

> 1 the need to identify the immediate ability of organic farming policies to develop organic farming - this analysis focuses on all EU member states and Switzerland in two periods, 1997-1999 and 2000-2003, i.e. pre- and post- the Agenda 2000 reforms;

[145] Further development of European organic farming policies, with particular emphasis on EU enlargement (QLK5-2002-00917, www.irs.aber.ac.uk/EUCEEOFP)

[146] Methods for Evaluation Actions of a Structural Nature

2 the identification of the wider effects of organic sector development with respect to agri-environmental and rural development policy goals and the relative cost effectiveness of using resources in this way. This part of the analysis refers to 8 case studies regions where it is believed that data is most likely to be available: UK (two regions), Germany (two regions), Italy (two regions), Denmark and Switzerland.

Figure 1 illustrates how the MEANS approach provides a structure that links closely to the requirements of organic farming policy evaluation in terms of meeting sector development (output and result indicators) as well as meeting rural development and agri-environmental policy objectives (impact indicators). In essence, the distinction between output, result and impact indicators reflects the control and effect of programme officers and managers, with output indicators being the direct consequence of operators' activity, Result indicators being the effect that this activity has on programme beneficiaries, and Impacts being the wider consequences of these activities on rural/social development and environmental quality.

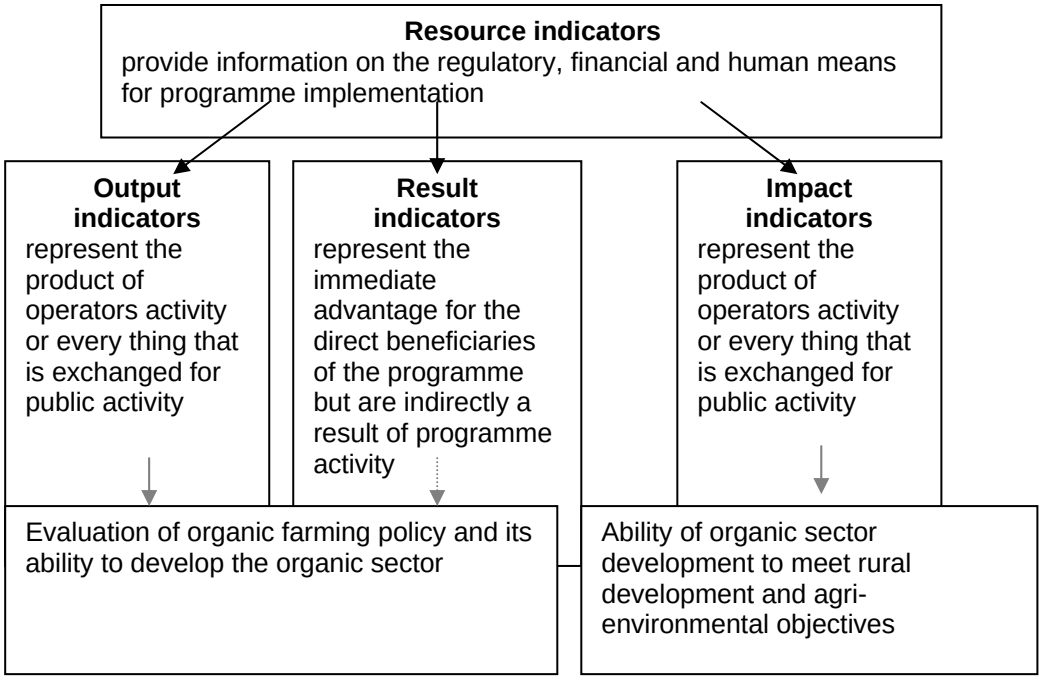

Figure 1: MEANS indicator framework and its relationship to the evaluation of organic farming policies

However, the structure presented so far is limited in detail, particularly with respect to endogenous changes within the organic sector that might guide future policy developments as well as exogenous developments especially in the conventional farming sector that might encourage or dissuade farmers or enterprises to change to organic systems. Within the MEANS approach, these endogenous changes are typified as programme indicators and within the EU-CEE-OFP analysis we can identify three specific characteristics of sector development that might aid or guide policy development:

- Business characteristics - farm type, economic/physical size of farm/enterprise
- Social characteristics - age, gender, education level, external income
- Environmental characteristics - less favoured area and other designations

Exogenous changes are akin to wider dynamics beyond specific organic farming policy as well as changes in the conventional agriculture sector but still have relevance to the development of the organic sector. These context indicators include trigger events such as gross changes in agricultural practices and consumer purchasing choices following previous food and farming scares such as foot and mouth disease and BSE, but also include slower changes such as over-supply and price collapses in the dairy sector.

3 Development of output and result indicators

Thus far this discussion has focussed on the framework for identification of indicators. Whilst resource and output indicators are theoretically simple in their design, the result indicators require association to specific policy objectives.

With respect to the specific policy objectives for organic farming, three areas of policy to foster the development of the organic sector can be identified, and these are highlighted in Table 1 below.

Table 1: Intermediate and specific policy objectives of organic farming identified for the development of result indicators.

Supply push – increased net uptake/ volume of production	**Demand pull** – increased demand for organic products	**Cross cutting** – improve organic production and food systems
• Reduced barriers to conversion • Cost reductions • Increased farm incomes • Improved physical output/ production systems • Risk reduction and sharing	• Improved domestic self sufficiency • Increased consumption/ market size • Improved marketing systems • Cost reductions • Increased consumer confidence in organic food and food standards	• Increased research/ training • Improved practices/ systems quality • Institutional/infra-structure development and capacity building

Having identified the potential policy objectives in fostering the development of the organic sector, these need to be related to the possible EU and national policy measures that are being employed in member states. There is a wide ranging and large list of possible policy measures that can be specifically adopted and targeted at the organic sector, which are highlighted in Table 2.

This list demonstrates an inherent problem in the approach being adopted, that we are only focussing on policies specifically adopted to support organic food and farming. Clearly organic farmers and processors are a sub-set of the wider agricultural and rural community and as such are able to draw on support or access schemes outside of specific organic farming support. This ability to access such "conventional sector" support may reveal extra contextual information about organic farming. Although not focussed upon in this framework, a farmer survey conducted for another part of the EU-CEE-OFP project may reveal patterns of access to other funding. Without reporting in detail the whole list of indicators developed under each of the policy measures, Table 3 below gives a flavour of the output and result indicators developed and their relationship to objectives, in this case focussing specifically on conversion and maintenance payments as well as advice and training initiatives.

Table 2: Policy areas and potential organic policy instruments available to member states

Policy area	Specific measures
Agri-environmental schemes (EC Regs 2078/ 92, 1257/1999)	Organic farming schemes, advice and training
Rural development programme (EC Reg 1257/1999)	Less favoured areas, investment in agricultural holdings, young farmers, forestry, early retirement, processing and marketing, rural adaptation measures
Structural programmes (EC Reg. 1260/1999)	Wide range of market, information and environmental initiatives of possible in specific regions
Other agri–environmental measures	Environmental pollution control regulations and cross compliance
Information measures	Research, education, extension and consumer education
Common market organisation measures	Special conditions for set-aside, access to national quota reserve specific national envelopes
Others	Public procurement, certification and logos, tax incentives institutional capacity building

Table 3: Overview of output and result indicator development

Policy Measure	Output indicator	Result indicator	Related objectives
Organic Conversion and maintenance payments (2078/92 and 1257/99)	**Programme indicators** Numbers converting Number/ areas leaving **Context indicators** Total number organic farms Number of farms and UAA total	Value per ha, per farm Value of payments as % of total subsidies Value as % of income forgone and relative to value of price premium	**Supply** (reduced barriers, increased farm income, risk reduction) **Supply** (increase farm incomes) **Supply** (increase in farm incomes)
Conversion advice and training (RDP 1257/ 1999: vocational training, 1260/1999 structural funds, National provisions)	**Programme indicators** Number of supported training events/courses and participants by type Numbers taking up organic advice **Context indicators** Number of training staff	Number of visits by extension advisors Number of days attending organic training events Number of farmers indicating improved systems as a result of training	**Supply** (Cost reductions, improved systems, risk reduction) **Supply** (Cost reductions, improved systems risk reduction) **Supply** (Reduced barriers to conversion, Cost reductions, improved systems and farm income, risk reduction) **Cross cutting** (increased research/ training, improved practices)

One important aspect in the development of indicators is that there is relevant data available to produce valid and comparable findings. The result and output indicators developed are all quantitative in nature and will be analysed using logistical regression methods to identify trends and patterns. In the case of this research, this limitation has frequently limited the scope of factors that can be addressed in the evaluation. Under rural development programming, member states are required to submit common indicator tables which will supply much of the data for resource and output indicators. FADN data on farm incomes and prices will provide information on the effects of schemes on farm finances, whilst Farm Structure Survey and administrative data supplied by EUROSTAT, DG Agri and certification bodies will go much of the way to understand changes in production patterns and systems. Where gaps have previously been

identified, these are being supplemented by specific questions included in the farmer survey being under taken as part of the EU-CEE-OFP project.

Even with these best of intentions, the scope and depth of indicators required in this evaluation provides a demanding task not only in terms of data retrieval, but also analysis. It is not clear at this stage whether this detail will be available for all member states, regions and in appropriate detail for programme indicators. Fragmented data availability across member states is likely to make cross-country comparison difficult. System shocks and trigger events, whilst clearly observable, may have differing different effects on the organic sector – either in terms of the time-lag before the effect is detected, or because they may be masked by other inherent trends within the conventional or organic sector. Finally, and of most significance, is the synergy or lack of synergy between the various policy measures that are being adopted within the various member states and regions. It is not clear that the analysis in this form will allow for specific understanding of such effects – there may be a need for further qualitative assessment to address this.

4 Development of Impact Indicators

The appreciation of the role of organic farming sector development in meeting agri-environmental and rural development objectives presents other methodological and theoretical problems. In essence the approach is similar to the development of result indicators, but in this case the intermediate and specific objectives need to be supplemented by the impact that organic farming sector development has on those objectives. This should take the form of single causal statements that relate changes in particular environmental, economic or social variables to particular impacts. The initial identification of a wide range of objectives and impact statements has taken place in a series of workshops with policy-makers, stakeholders and researchers. The final list of impact statements will then be used in a form of cluster analysis to identify commonality and ranking of relative importance. It is at this stage that a further process will be needed to discuss the clusters and produce a list of policy relevant indicators. These indicators can either be quantitative or qualitative with the process of analysis dependant on the nature of the indicators, but multi-criteria analysis is a proposed approach, especially where synergistic effects are to be identified.

5 Conclusions

This paper has highlighted the approach being employed to evaluate organic farming policies in an EU and national context within the EU-CEE-OFP project. In employing such an approach, many problems have been identified. Whilst in theory impact assessment is essentially straightforward, the multiplicity of policy objectives under rural development programming and organic farming policies adds a complexity to the analysis that may be lost in the final development of indicators. Furthermore, objectives in one member state or region may contradict or conflict with the objectives identified in another. The work undertaken so far by OECD in developing agri-environmental indicators (Jones, this volume) demonstrates some key problems of assessing environmental impacts, let alone the social and other impacts that need to be addressed. Developing the policy evaluation framework in a fully multi-functional, systems context is a challenge still to be addressed.

6 Acknowledgement

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OECD Work on Agri-environmental indicators: Lessons for data harmonisation and policy evaluation

Darryl Jones[147]

1 Overview of OECD Agri-Environmental Indicators (AEI)

1.1 Objectives

Understanding the environmental impacts of agriculture requires information on the relationship between agriculture, the environment, trade and sustainable development. Recent OECD meetings of agriculture and environment ministers have emphasised the importance of examining agricultural and environmental policy issues supported by indicators and better information.

- Against this background OECD has, since 1995 (see OECD 1997; 1999; and 2001), been developing a set of agri-environmental indicators which aim to provide:

  1st information on changes in environmental conditions in agriculture; and,

  2nd a tool to help policy makers and other stakeholders in the monitoring and evaluation of the impacts of policies on environmental conditions in agriculture and in future looking scenarios, to improve policy effectiveness in promoting sustainable agriculture.

1.2 Driving Force-State-Response framework

To help improve information on the current impacts and trends in the environmental conditions of agriculture, the OECD is developing a set of agri-environmental indicators (AEIs) within the Driving Force–State–Response (DSR) framework (OECD, 1997). This framework takes into account the specific characteristics of agriculture and its relation to the environment; the consideration of agriculture in the broader context of sustainable development; and the work already under way in OECD Member countries and other organisations to develop their work on indicators. The approach adopted here is also broadly consistent with the Pressure–State–Response framework.

The DSR framework addresses a set of questions, including:

- What is causing environmental conditions in agriculture to change (driving force)?
- What effect is this having on the state or condition of the environment in agriculture (state)?
- What actions are being taken to respond to changes in the state of the environment in agriculture (response)?

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1.3 Coverage

Within the context of the DSR framework and building on previous OECD work on indicators this has led to considerable progress in both the identification and specification of policy-relevant indicators. In summary, the indicators are being developed in terms of agriculture's role in:

***1. Protecting the stock of natural resources impacted by agriculture*:** Agriculture plays a critical role in the protection (or depletion) of the stock of natural resources used for production, notably soil and water resources, because for most OECD countries agriculture accounts for the major share in the use of these resources. Farming activities also impact on the quality and quantity of natural plant and animal resources (i.e. biodiversity) and landscapes, both on and off-farm.

2. Reducing environmental pollution from agriculture: Flows of materials into water (e.g. nutrients, pesticides) and emissions into the air/atmosphere (e.g. ammonia, greenhouse gases) are an inevitable part of agricultural production systems. Reducing the flows of these materials and emissions to an 'acceptable' level of risk in terms of human and environmental health is a priority for policy.

3. Improving agri-environmental management practices and resource use efficiency: The quantity of agricultural production is affected by the financial resources available to agriculture (both returns from the market and government support), the incentives and disincentives facing farming, and the kinds of management practices and technologies adopted by farmers. These practices and technologies impact on the productivity of the natural resources (e.g. soil) and purchased inputs (e.g. fertilisers) used by farmers. Depending on the management and productivity of agriculture's use of resources and inputs this will affect the rate of depletion and degradation of soils and water; the flows of harmful emissions into soils, water, air and the atmosphere; and the quantity and quality of plant and animal resources and landscape features.

1.4 Criteria for selection

In order to help select and develop appropriate indicators to monitor sustainable agriculture, work undertaken by OECD on agri-environmental indicators (AEIs) has suggested that they should possess a number of attributes (OECD, 1997). This implies that indicators must be:

- policy-relevant, that is they should be demand (issue) rather than supply (data) driven, and address the environmental issues faced by governments and others in the agriculture sector;
- analytically sound, based on sound science, but recognising that their development involves successive stages of improvement;
- easy to interpret and communicate essential information to policy-makers and other stakeholders; and,
- measurable, that is feasible in terms of current or planned data availability and cost effective in terms of data collection, processing and dissemination.

1.5 How is OECD developing indicators?

The OECD is developing its set of AEI through three main methods.

- Working in close co-operation with OECD country expertise and other stakeholders such as the GAO, WWF and the European Environmental Agency (EEA).
- Hosting a series of expert meeting to bring together scientists and policy makers to discuss a specific agri-environmental issue. Expert meetings have been held on agri-biodiversity, soil organic carbon,

landscape, soil erosion and biodiversity, water use and quality, land eco-system functions and farm management. Information regarding these meetings can be found on our web-site: www.oecd.org/agr/env/indicators.htm.

- Questionnaires on specific issues/themes.

2. Issues relating to AEIs

To meet the increasing demand for an improved agri-environmental information base for policy makers and the wider public will require further work in six key areas:

1. ***Enhancing the analytical soundness and measurability of indicators***, such as a better understanding and measurement of agriculture soil organic carbon in relation in to improvements in soil quality, and also how to best track agriculture's impact on biodiversity.
2. ***Overcoming data deficiencies***, enhancing monitoring activities and increasing efforts of the supporting science. The current lack of data and extensive monitoring systems is an impediment to further enhancing AEI data sets. However, there exists considerable potential to further exploit existing databases from which to generate AEIs, and use new information technologies to further develop databases at 'relatively' low cost.
3. ***Improving interpretation of indicator trends***, especially through better expression of the spatial variation of national level indicators, and developing appropriate baselines, threshold levels and targets to help assess policy performance. Some OECD countries are beginning to establish environmental targets by which to monitor and evaluate policy performance.
4. ***Measuring the external environmental costs and benefits of agriculture***, by translating AEIs measured in physical terms (e.g. mg/l of nitrates in surface water) into monetary terms (e.g. capital and operating costs to water companies on nitrate removal). This would help provide the basis to assess the magnitude of different environmental issues on a comparable basis.
5. ***Using agri-environmental indicators to better inform policy monitoring, evaluation and projections***, for example, monitoring agriculture's compliance with water quality standards; and projecting future production, price and trade effects of achieving specific environmental objectives in agriculture, such as reducing rates of soil erosion.

3 Concerns regarding the organic agric-environmental indicator

In the OECD work on AEI, three major concerns have been expressed about the simple, national average of land in organic agricultural production as an AEI.

- Too shallow – i.e. it does not show differences in the types of land (production) in organic use, which may make it difficult to assess both the impact of policies and the environmental impact.
- Too subjective – i.e. what is the environmental impact of organic agriculture? It is often claimed to provide benefits across a range of environmental variables but how are these to be measured and valued, particularly against policies which may be targeting other factors.
- Too specific – there are other whole farm management practices that may be providing as many if not more environmental benefits or creating less pressure than organic systems. These other practices also need to be taken into account within an overall inventory of AEI. Differences between organic and conventional farming systems will vary from country to country. For example, organic farms in New

Zealand do not have large numbers of housed animals to provide bulk manure for nutrient supply. Further, the conventional clover-based pasture dairy systems in New Zealand are perhaps more similar to the organic farming concept than they are to the conventional dairy farming systems involving animal housing and feedlots in Europe or the United States.

There are a number of possible responses to these concerns.

- Deepen the level of detail – e.g. provide information on the type of land use
- Continue to test the hypothesis regarding the environmental impact of organic farming
- Broaden the context – e.g. develop a whole farm management matrix that would take into account both organic and other sustainable production systems.

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Results of Group 6: Policy Evaluation

Nicolas Lampkin[148] and Jon Tuson[149]

Scope and aims of the working group

The programme for this group was structured somewhat differently to that of the others as a consequence of a) not building on the reviews of current data collection and processing systems that had been conducted for the other levels, and b) preparatory work that had been conducted a part of the EU-CEE-OFP project on development of European organic farming policies[150]. The first session focused on an introduction to current research on organic farming policies and their evaluation and the potential use of the MEANS framework for policy evaluation. The second and third sessions developed the identification of relevant objectives and impact statements within this framework, building on stakeholder, expert and policy-maker input. The final session focused on current OECD work on agri-environmental indicators and their implications for organic farming policy evaluation and international harmonisation issues. Unfortunately, the evaluation of the Federal programme for organic farming in Germany could not be presented.

The desired outcomes for this working group were to:

- provide a basis for further development of organic farming evaluation
- identify opportunities for application of the MEANS framework to detailed organic farming policy evaluation
- identify key issues for the integration of agri-environmental indicators in organic farming policy evaluation
- identify relevant international harmonisation issues
- identify issues relating to evaluation of complex programmes, in particular data availability and quality
- identify barriers to the implementation of organic farming policy evaluation

State of the Art

The paper presented by Jon Tuson highlighted the current state of progress on evaluation of organic farming policies and the relationship with the MEANS framework used by the European Commission to evaluate rural development (including organic farming support) and structural measures (currently the subject of a mid-term review).

Specific evaluations of organic farming policy have been conducted as part of an earlier EU-funded project *Organic farming and CAP reform* (OFCAP[151]), which looked at policies implemented in the period

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[150] Further development of European organic farming policies, with particular emphasis on EU enlargement (QLK5-2002-00917, www.irs.aber.ac.uk/EUCEEOFP)

[151] Organic Farming and CAP Reform (FAIR3-CT96-1794, http://www.uni-hohenheim.de/~i410a/eu_org/Fair3_Index.htm)

1992-1997. In the EU-CEE-OFP project, this work is being updated and extended to new member states in Central and Eastern Europe, with the analysis covering the period 1997-2003, i.e. before and after the implementation of Agenda 2000.

Both the Commission's mid-term review and the research projects provide potential data sources for organic policy evaluation, but also require an analytical framework. Underpinning this is a recognition that there are two broad aims behind policy support a) to increase the size and improve the performance of the organic sector, with the aim to b) achieve wider public benefits, e.g. environmental protection and rural development. The relevant emphasis on the two is likely to differ between policy-makers and stakeholder and any analytical framework needs to take account of this.

The MEANS framework provides a basis for developing organic farming policy evaluation and distinguishes between the monitoring of *outputs* and *results* directly affecting the organic sector (i.e. the first of the two main aims identified above) and the evaluation of *impacts* on broader policy goals. The monitoring and evaluation process requires the definition of objectives, impact statements and indicators in a consultative process with policy-makers and stakeholders.

As part of the EU-CEE-OFP project, the sector level objectives, outcomes and results have been defined and relevant data are currently being collected. In order to define the broader objectives and impact statements, workshops have been held with two groups (policy researchers and IFOAM EU Group representing stakeholders). The combined lists resulting from these earlier workshops were presented to the policy evaluation working group for review and validation.

Daryl Jones' paper reviewed the OECD agri-environment indicator approach, the process by which they were developed and the implications for organic farming policy evaluation. The indicator development was very much policy-driven, and was an ongoing process that had taken several years in a collaborative process integrating OECD country expertise with other stakeholders such as FAO, WWF, EEA. Several expert meetings had been held for specific indicator development, such as soil organic carbon, biodiversity, water use and farm management (including organic farming). Questionnaires had been used to establish data availability. Some data problems had been identified, as well as inconsistencies with submissions to other organizations. As a result of this indicators and calculated co-efficients were subject to ongoing development and improvement, with the OECD seeking to ensure methodological rigour. The indicators are currently only applied at the national level, but there are some initiatives to make them more region-specific in future.

Conclusions and recommendations

It was agreed that the approach being adopted, based on the application of the MEANS framework supplemented with agri-environmental indicators such as those developed by the OECD, could provide a basis for further development of organic farming policy evaluation. But a very wide range of policy objectives and impacts had been identified in the preceding brainstorming process and it was difficult to summarise this in a manageable list. Further work is needed to do this so that the impact statements can be properly validated, grouped and prioritised to identify group of key indicators for evaluation. The extent to which such indicators should focus on risks or likelihood of impacts, rather than absolute levels of impact, and whether changes in perceptions and attitudes on the part of actors should be included, also needs to be considered.

The wide range of objectives and impacts identified also highlighted the methodological problems associated with evaluating complex policy programmes intended to support multi-functional systems approaches such as organic farming. Interactions and conflicts between objectives and impacts could be

highly significant in any evaluation. These methodological issues need to be resolved before data collection takes place and this should be a key focus for international consultation and harmonization.

However, data availability is also likely to be a key issue limiting the scope of the evaluation framework – data needs to be collated from existing sources where available, as resources to collect data first hand are limited. The OECD experience has identified that communication with the right individuals can be very important for both data gathering and quality control.

Summary and conclusions of the 1st EISfOM European Seminar, Berlin, April 2004

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Summary and conclusions of the 1st EISfOM European Seminar, Berlin, April 2004

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Aims and achievements

At the start of this seminar, we set out to:

- Review the current state of organic data collection in Europe, based on the results of the national surveys and other contributions
- Identify problems, issues, challenges and development opportunities
- Identify the potential for integration of organic with general agricultural statistical systems
- Review quality assurance and international harmonisation issues
- Identify options for future systems development and pilot case studies, and
- Identify possible barriers to the implementation of improved system.

During the plenary sessions and the individual working groups, we have succeeded in addressing some of these objectives fully, others perhaps not as completely as we would have hoped. The detailed conclusions of the different working groups have been summarised elsewhere in these proceedings, but the main issues identified by the different groups indicate some degree of commonality and do provide us with the basis of an agenda for future action:

Group 1 Production and farm structure data identified the need for reporting under EC Reg. 2092/91 to be mandatory, with the methodology and definition of categories fully harmonized, and the process to be supported by public authorities. This would require justification by the EISfOM project of the need for these data for inspection and development purposes. In addition, there should be improved collaboration between Farm Structure Survey and EC Reg. 2092/91 responsible authorities and certifiers, with the setting up of a common system to avoid overlap and harmonize definitions and methodology. The process should be facilitated by the development of electronic data collection tools, for quality assurance and reduced work load of data collectors and operators as well as the development of a harmonized system for dissemination of (electronic) reports.

Group 2 Farm incomes and producer prices considered that the FADN organic sample was not always reliable and that this needed correction through 1) better interpretation 2) accurate number of organic test farms and 3) updating the weightings applied and that the absence in FADN of prices for meat (FADN has prices for animals) is a disadvantage. The integration of organic data into existing data collecting system should be considered, but harmonization requires a common approach with a lot of flexibility.

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Group 3 Supply chains and trade concluded that supply-chain data could be collected at different points. For example production prices and outputs could be obtained as wholesaler/processor inputs as an alternative to farm-gate data. In addition, common standard communication procedures are needed to adapt different DCPS, rather than the development of new data collection procedures and software. Changes to trade nomenclature would be very useful for intra-industry supply-chain and trade data, but also costly. The Danish example provides an alternative low cost strategy for the recovery of trade/supply-chain data, facilitated by a single identifying number for each operator used by every organization dealing with them. The more widespread adoption of this approach would simplify data harmonization and quality assurance.

Group 4 Retailers and consumers highlighted that private companies dominate data collection, with poor comparability of data between countries. There are few concrete targets for public data users, which implies little demand for public-funded market research. Total (organic + conventional) databases are available in most EU countries, but organic data collection depends presently on private national demand. The EUROSTAT "Household and Budget Survey" with its current approach provides no possibility to include organic consumption data. However, in future it would be possible to consider seriously the inclusion of organic consumption data within a new European approach to food consumption data collection initiated by EUROSTAT. The group recommended that further intensive expert information exchange was required, which could be facilitated by the establishment of a European working group for the main clients of retailer and consumer panel data with respect to organic food.

Group 5 Supply balances focused on the need for low cost solutions. International harmonisation was not a current issue, as there are no existing supply balance sheets for organic products in any European country. Further development would require legal enforcement for data collection on organic products; in the meantime, the data collection on basis of gentlemen's agreements would be needed to enable pilot projects to gather experiences.

The work of Group 6 Policy evaluation provided the basis for further development of organic farming policy evaluation, based on the application of MEANS framework, supplemented with agri-environmental indicators. As part of this process, policy objectives and impact statements have been defined, but there remains a need for further refinement and prioritisation to develop appropriate indicators. Methodological development is required to be able to evaluate complex programmes, and this needs to precede data gathering. The main focus for international harmonization at this stage should therefore be on consultation on the methodology. Interactions between indicators, conflicting objectives and data availability are likely to be the main barriers to implementation of OFP evaluation.

Harmonization, data quality and resource issues

During the seminar it became clear that significant steps were being made to include organic farming data in existing international systems, key examples being the Farm Accountancy Data Network (FADN/RICA) and the Farm Structure Survey, but that within these an important issue remains how reliably organic holdings are identified. The extension of identification into economic activity and product classification was much debated – could the benefits justify the likely high costs and administrative complexities. At the moment opinion is divided, with national and international statistical agencies favouring alternative, lower cost solutions, such as surveys of registered organic operators. A further key question that divided opinion was how best to ensure that quality data was provided by all countries and agencies – should this be based on compulsion (legal enforcement) or persuasion (supported by financial incentives), or a combination of the two.

With respect to data quality, the question was raised whether we need special quality standards for organic farming data, or can we adopt existing quality standards? This issue also applies to administrative data. Preferences were expressed to work with existing systems wherever possible, but there is a need to carefully define methodologies for specialist organic statistics issues, such as selection of comparison farms in FADN, and a role for expert input from the research community in partnership with statistical agencies. The potential role of improved IT systems to reduce costs and improve consistency was also identified. As part of the ongoing development of these issues, the importance of stakeholder involvement and the potential for follow-up meetings and events was highlighted.

At various points in the seminar, the hot topic of money was raised. Any development of organic farming statistical systems will require resources, at a time when pressure is on to cut budgets. Who should be responsible for paying for these developments? Should this be seen as a public good issue, or one which should be supported by private funds because of the market context of organic food? For issues of public policy, both in terms of generating environmental and other public good benefits and the appropriate use of resources for supporting organic farming, as well as ensuring that the market is functioning effectively, the case for public funding for statistical initiatives to balance private funding was stressed. But this needs further work to clearly justify the need for and the value of organic farming statistics. In particular, it was stressed that data collection needed to be relevant to the organic inspection system and to producers if DG Agriculture were to support additional data collection from Member States. Related to the financial issues was a more general question about how inspection and certification bodies on the one hand, and statistical agencies (as well as individuals working within these organizations) could be motivated to prioritise the collection and provision of statistical data more highly.

Next steps in the EISFOM project

The above issues are phrased in general terms reflecting the proximity of the event; further work is planned to identify and analyse specific issues in more detail. The Berlin seminar is therefore not an end-point for the project, but a starting point for intensive discussions to follow. As part of the ongoing work, some key steps are planned for the next few months:

- Final reports on the current situation of organic and conventional data collection and processing systems are due to be completed by end May 2004;
- The evaluation of the development opportunities, harmonisation and data quality issues, building on this seminar, are due to be completed by end July 2004;
- National pilot studies with new/improved DCPS will be initiated later in 2004 and evaluated in 2005;
- Building on these steps, proposals for the EISfOM framework will be developed and discussed at second European Seminar, in Brussels in Autumn 2005.

In the meantime, discussions between all interested parties can be continued at www.eisfom.org. The EISfOM 'membernet' provides an electronic mailing list for this purpose, and also provides the possibility to review and comment on the working papers as they are developed. For those with data to published, the EISfOM website also provides the possibility for making links to the data.

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About the EISfOM Project

The project European Information System for Organic Markets (EISfOM) is a European Concerted Action, funded under the 5th Framework Programme for Research and Technological Development of the European Union (Quality of Life) – Key Action 5 Sustainable Agriculture. The project will run from 2003 to 2005.

EISfOM aims to build up a framework for reporting valid and reliable data for relevant production and market data about the European organic sector in order to meet the needs of policy makers, farmers, processors, wholesalers and other actors involved in organic markets.

The major outputs of EISfOM will be

- A review of existing data collection systems
- Proposals to improve data quality and data collection systems for organic markets
- Recommendations for future development and coordination of data collection systems in 32 European countries

The project is steered by the project partners and representatives of key international organisations, including the European Commission (Eurostat and DG Agri), the Food and Agriculture Organisation (FAO), the Organisation for Economic Co-operation and Development (OECD) and the International Federation of Organic Agriculture Movements (IFOAM).

The EISFOM member network links numerous experts, including representatives of regional, national and European statistical offices and the private organic sector.

Further information can be found on the EISfOM website www.eisfom.org or contact the project co-ordinator, Dr. Nicolas Lampkin, at the Institute of Rural Sciences, University of Wales, GB-Aberystwyth SY23 3AL, Tel +44 1970 622248, Fax +44 1970 622238, E-mail nhl@aber.ac.uk.

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The main aim of the project is to develop a framework for the collection and processing of data on organic production and markets.

The proceedings of the first European EISfOM seminar "Development of a European information system for organic markets" provide coverage of the papers presented as well as the outcomes of the individual working groups and the final conclusions of the seminar.

Detailed project information is available at www.eisfom.org

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