ORGANICDATA
NETWORK

SYNTHESIS REPORT

DATA NETWORK FOR BETTER EUROPEAN ORGANIC MARKET INFORMATION

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Contents

Table of Acronyms

Agence Bio	Agence française pour le développement et la promotion de l'agriculture biologique - Agency for the development of organic farming (France)
AMI	Agrarmarkt Informations - Gesellschaft mbH - Agricultural Market Information company (Germany)
ASSOBIO	Associazione nazionale delle imprese di trasformazione e distribuzione di prodotti biologici e naturali - National Association of Processors and Distributors of Organic and Natural Products (Italy)
Bio Suisse	Private-sector organisation, is the federation of Swiss organic farmers
CIHEAM IAMB	Istituto Agronomico Mediterranneo di Bari - Mediterranean Agronomic Institute of Bari (Italy)
CPA	Classification of Products by Activity - EUROSTAT
CULS	Czech University of Life Sciences (Czech Republic)
EFTA	European Free Trade Association
ESS	European Statistical System
EU	European Union
Eurostat	Statistical office of the EU
FADN	Farm Accountancy Data Network

FiBL	Forschungsinstitut für biologischen Landbau – Research Institute of Organic Agriculture (Switzerland)
GfK Eurisko	Association for Consumer Research (Gesellschaft für Konsumforschung)
IAEI	Institute of agricultural economics and information (Czech Republic)
ISMEA	Istituto di servizi per il mercato agricolo alimentare - The institute for study, research and information on agricultural and agri-food market (Italy)
MOAN	Mediterranean Organic Agriculture Network
ORC	The Organic Research Centre (United Kingdom)
OrMaCode	Organic market data Manual and Code of Practice
SINAB	Sistema d'informazione Nazionale sull'Agricultura Biologica – National information system on organic farming (Italy)
SITC	Standard International Trade Classification
Soil Association	Soil Association is a control body operating in the United Kingdom
Statistic Denmark	Statistics Denmark is the central authority on Danish statistics.

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About this report

This is a synthesis report that provides an overview of the results of the OrganicDataNetwork project. Accompanying this, there is the companion report that contains the recommendations from the project on how to improve organic market data collection and dissemination.

This report is targeted to EC DGs, EUROSTAT, national statistical institutes, organic market data providers/collectors, and other stakeholders who are interested in producing and using organic market statistics.

This is not an original scientific report. In the interest of readability, we have freely made use of sentences, paragraphs and text extracted from the published reports of the OrganicDataNetwork, without further indication or acknowledgement except in the references. This document is part of deliverable D7.1, which is publicly accessible on the project website.

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Introduction

The objective of this report is to provide an overview of the results that are emerging from the studies carried out in the OrganicDataNetwork project. The OrganicDataNetwork project was a major effort that involved 15 institutes from 10 countries, and it was aimed at creating a **data network for better European organic market information** (Table 1). In this report, we present the selected important results from this project, which we believe will be of interest to stakeholders involved in organic data collection and dissemination. In this report, we do not present any recommendations based on these findings, as these are available in the companion report.

This report aggregates information from the single study package reports, to provide an overall synthesis of the results. Therefore, we have freely made use of sentences, paragraphs and text passages of the published OrganicDataNetwork reports. In some cases the text has been revised and adapted to serve the purpose of this report, while in others it is reproduced in full here. To achieve greater readability, we have not referenced these texts and these changes in detail. We refer to the project reports from which the information comes by a specific note at the beginning of each chapter. A full list of reports and publications can be found at the end of this report.

Table 1. Partners of the OrganicDataNetwork project

PARTNER ORGANISATION	COUNTRY
Università Politecnica delle Marche (UPM)	Italy
Forschungsinstitut für Biologischen Landbau (FiBL)	Switzerland
The Organic Research Centre (ORC)	United Kingdom
University of Kassel (UKS)	Germany
Czech University of Life Sciences Prague (CULS)	Czech Republic
Istituto Agronomico Mediterraneo di Bari (CIHEAM IAMB)	Italy
Agence Bio	France
Agricultural Market Information Company (AMI)	Germany
Bio-Mark.Info	Germany
BIOCOP Productos Biológicos	Spain
Ecozept	France
Centre for Ecological Engineering (CEET)	Estonia
IFOAM EU Group	Belgium
IMO-CONTROL	Turkey
Soil Association	United Kingdom

This synthesis report is structured as follows: after this short Introduction, Chapter 2 covers the inventory of organic market data collectors that was performed at the beginning of the project; Chapter 3 deals with the different existing organic market data collection methods in Europe; Chapter 4 focuses on the needs and the demand for information by end users of organic market data; Chapter 5 summarises the key challenges that need to be considered when presenting European market data in a common database; Chapter 6 provides a discussion of the methodologies for data quality improvement; Chapter 7 summarises the lessons learned from the stakeholder involvement throughout the project; Chapter 8 summarises the results of the case studies performed during the project, which were aimed at improving upon the current data collection systems; Chapter 9 gives our final conclusions.

Inventory of organic market data collectors[1]

Authors: C. Feldmann , C.L. Gerrard, U. Hamm, S. Padel, A. Vieweger

Despite the growth of the organic market in Europe, in most countries only very basic statistics about this sector exist. Individual country governments collect data on the number of certified organic holdings, organic and in-conversion land areas, livestock numbers, production volumes and numbers of operators (producers, processors, importers). These are published nationally and by Eurostat. Market statistics such as data on consumption, retail sales, international trade and prices are lacking in most countries. Data and market information are needed by members of the organic supply-chain to inform investment decisions, and by policy makers to calibrate measures targeted to the sector.

To understand the availability of data on the organic market and to assist in improving data quality and availability, it is necessary to be aware of the organisations that currently collect, analyse and/or disseminate such data across Europe and the methods that they use. Results of a survey carried out within the EU27, EFTA, the rest of Europe and the Mediterranean are reported in this section. 600 organisations were contacted with a response rate of just under 30%. In addition, 14 responses were collected in a second round telephone survey among additional key data collectors.

Based on an overview of all relevant public and private bodies and stakeholders that are involved with the collection, processing and dissemination of organic market data in

1 - This text is based on Gerrard et al. (2012) and Feldmann and Hamm (2013).

Europe, the market data collection effort seems to be very varied across Europe and it was found that not all data that are collected are also published.

According to the OrganicDataNetwork survey on data collectors (Gerrard et al., 2012), the **data types** most commonly collected are data on land area, followed by production volume; whereas production value is much less commonly collected. This emphasis on area and production volume data is not surprising within the EU, as it is a legal requirement of the organic regulations to collect such data and provide them to Eurostat. However, even with the legal requirement to collect data on production volume and detailed area and livestock data, there are many countries that do not fulfil this requirement in full. Price data and retail data are much less commonly collected than area and production volume data. Export data are more commonly collected in non-European countries than in the EU, perhaps reflecting a higher importance to their economies. Import data particularly with regard to import into the EU and trade within the EU are rare within data collection. The **product categories** most often represented in the surveyed market data collections are meat, milk and dairy products, fruit and vegetables. Data on non-food products are not often collected.

The **main focus** of most of the organizations involved in market data collection and publishing, covered under the OrganicDataNetwork survey on market data collectors, is data analysis, followed by collection and dissemination (Figure 1). Some organizations, however, may also have more than one focus.

Figure 1. Main focus of organisations collecting and publishing organic market data
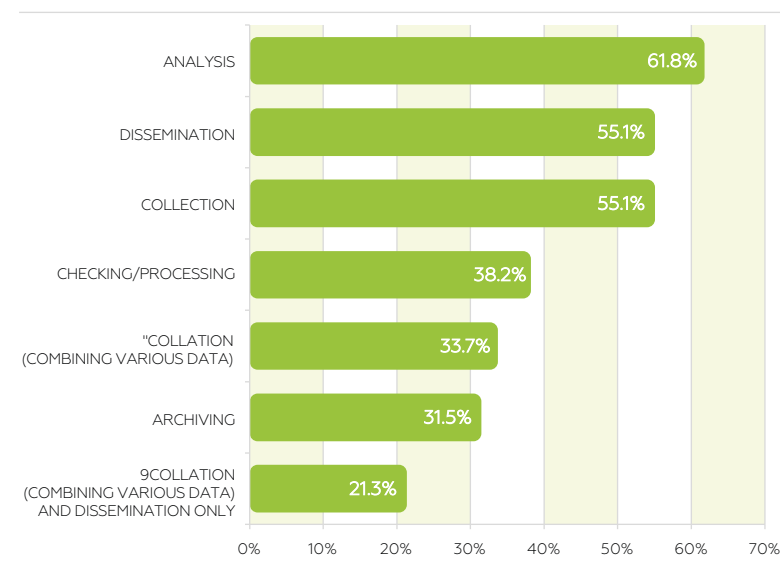
Source: Feldmann and Hamm, 2013

According to the OrganicDataNetwork survey of market data collectors, data collection methods show a varied picture (Feldmann and Hamm 2012). Surveys are a commonly used method across all data types (Figure 2), but, in general, methods vary with the type of data collected. Respondents report that censuses are often used to collect production data and, in a few instances, other types of data such as international trade data. For retail data and consumer price data, consumer/household panels or retail panels (scanner data) are likely to be used, whereas catering sales data are collected by surveys. Import and export data are generally collected using surveys and sometimes censuses but some reliance is also placed on expert estimates. Expert estimates are also used across most of the country categories: many organisations compile their data through expert estimates.

Figure 2. Methods used for data collection without reference to particular data type

Method	Percentage
E-MAIL SURVEYS	84%
CENSUS	72%
EXPERT ESTIMATES	68%
TELEPHONE SURVEYS	68%
FACE TO FACE SURVEYS	61%
OTHER PANELS	35%
CONSUMER/HOUSEHOLD PANELS	33%
RETAIL PANELS	20%
ONLINE SURVEYS	13%
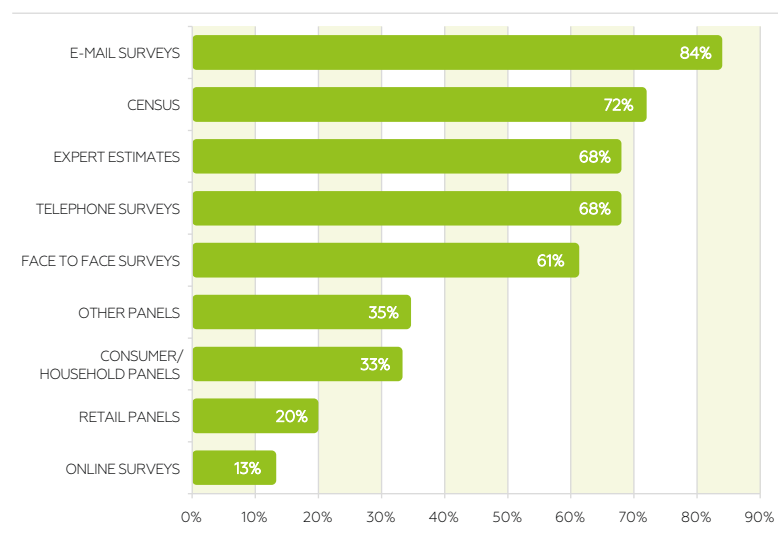
Source: Feldmann and Hamm, 2013

The **data analysis** carried out in the different countries (across all of the categories) tends to be either just compilation or basic statistical analyses (such as averages, and ranges).
However, types of analyses vary with the type of data collected (Figure 3). Other more advanced methods include time-series analysis, comparison to averages or totals, and checking for plausibility against other data.

Figure 3. Types of analyses carried out by organisations*

	COMPILE THE DATA	BASIC STATISTICS	MORE ADVANCED STATISTICS
PRODUCTION VOLUME	42	20	4
PRODUCTION VALUE	16	10	1
RETAIL SALES VOLUME	14	10	5
RETAIL SALES VALUE	21	20	8
PRICE FARM LEVEL	18	14	3
PRICE CONSUMER LEVEL	14	13	6
IMPORT VOLUME	14	7	1
IMPORT VALUE	9	6	2
EXPORT VOLUME	15	7	1
EXPORT VALUE	16	8	1
CATERING SALES VOLUME	4	2	1
CATERING SALES VALUE	8	5	1
OTHER	5	5	1
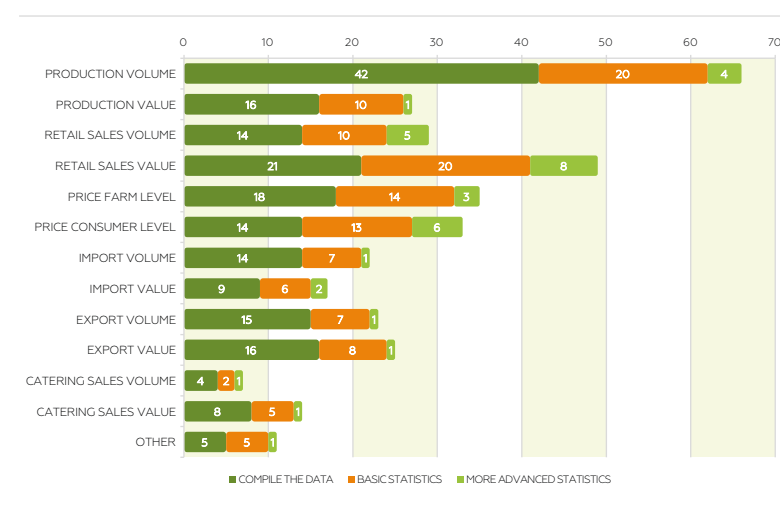
* Multiple answers possible
Source: Feldmann and Hamm, 2013

With respect to **publication**, respondents reported that data other than areas, livestock numbers and production volumes are rarely published. Of all the data types, area, livestock numbers and operator data are most likely to be freely available. Other data may be available at a cost but, if so, are usually available to data providers for free or at lower cost. The largest proportion of European organic market data is collected annually and published annually, with the exception of consumer and farm level price data, which are collected more often and often published on a weekly basis (Figure 4). This reflects the great importance of timeliness, with regard to price data. The most common way of publishing the data is via the internet, through reports or in statistical tables.

Figure 4. Frequency of publication depending on different data types*
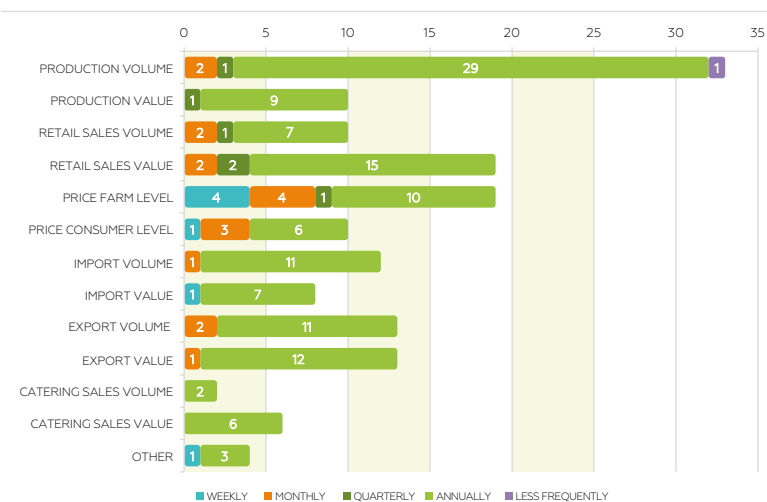
* Multiple answers possible
Source: Feldmann and Hamm, 2013

KEY FINDINGS

▸ **Data on areas, livestock numbers, production volumes, and operator numbers is collected more frequently and hence, is less fragmented across Europe than retail, international trade and price data.**

▸ **Data analysis is fairly limited at present, although some organisations do carry out basic data checks such as cross-checks between sources and year-to-year comparisons.**

▸ **Not all data that are collected are currently freely available.**

Classification and evaluation of existing organic market data collection methods in Europe[2]

Authors: C. Feldmann, U. Hamm

High quality organic market data, which is desirable and important for both economic and societal reasons, depends on the quality of statistical processes. Without a proper approach to data quality assessment, institutions involved in data collection cannot improve their process further. At the same time, data quality assessment is an important prerequisite when there is a need to inform the end users about the potential use of data. Despite the growth of the organic market, the availability of good quality data on this market is still problematic. Until now the comparability and consistency of organic market data in some countries has been problematic, because data collection methods are not harmonised. In some cases, this can lead to incorrect entrepreneurial decisions, which in turn might result in lower market efficiency. To improve the organic market data collection practice in Europe, it is of primary importance to deal with the definition of quality criteria for data collection and compilation methods, the evaluation of existing data collection methods, and the relative assessment of data quality. In addition, guidelines for statistical work in the organic market sector are required to establish a common basis for the collation of comprehensive European statistics for this growing sector.

2 - *This text is based on Feldmann and Hamm (2013).*

Data quality dimensions (relevance, accuracy, comparability, coherence, accessibility and clarity, timeliness and punctuality), as defined by the European Statistical System (ESS), were adapted to the research objective for the evaluation of organisations' statistical work (Table 2). Factors determining the performance in each data quality dimension were identified and evaluated to assess existing data collection methods in Europe and to identify "best practice" examples.

Table 2. Topics allocated to six data quality dimensions

RELEVANCE	ACCURACY	COMPARABILITY	COHERENCE	ACCESSIBILITY/ CLARITY	TIMELINESS/ PUNCTUALITY
Main focus of organisation	Data source	Methods of data collection	Methods of data collection	Voluntary or obligatory to provide data	Frequency of data collection
Data Sources	Methods of data collection	Disaggrega-tion of data		Publication of data	Frequency of publication
Data uses	Details of analysis	Sample size		Availability of data	
Type of analysis & details of analysis	Quality checks & details of quality checks			Format of publication	
Sample size					
Start of data collection					

Examples for "best practice" identified among European organic market data collectors can function as a reference system for those organisations that see the need to improve their data collection and processing approaches.
An overview of the "best practice" examples, described by quality dimension, are summarised as follows.
The following organisations were chosen: the German Agricultural Market Information Company (AMI) and the French Agence Bio that collect and publish a wide range of data, the Bio Suisse and UK's Soil Association that collect and publish data on retail sales, Statistics Denmark that collects and publishes data on retail sales, exports and imports and Eurostat that compiles data from the Member States on areas, livestock numbers, production volumes, and operator numbers and publishes them in its online database and in regular reports. Most of these organisations receive public funding for their data production activities.

◥ **Relevance**. Both, the AMI and Agence Bio, follow an approach in which the focus of the organisation and its statistical work correspond to the purpose for which the data is collected and the data use. The sources from which they receive their data are consistent with regard to the type of data the organisations require and the data sources are appropriate for the data uses. The samples sizes are large enough to ensure a solid basis for the type of analysis applied by the organisations. Furthermore, the AMI has long-term experience in organic data collection and has thus gathered substantial knowhow in terms of interaction among all the parameters relevant for consistent data collection and processing. Both organisations applied advanced statistics to achieve results that are useful for the end users of their data. Altogether, their approaches rank highly on the parameters associated to relevance.

◥ **Accuracy**. As explained above the approaches followed by AMI and Agence Bio are both very consistent with regard to 'data source' and 'type of analysis'. The data collection methods used comply with the data sources used by AMI and Agence Bio and lay the foundation for accurate analyses. Due to the successful interplay of data sources, collection methods, and the types of data analyses the performance of both organisations is ranked

high for the quality dimension accuracy. Furthermore, both, AMI and Agence Bio, apply quality checks to search for inconsistencies and errors in their datasets. Thereby they ensure accurate results for the end users of their statistical outputs.

◤ **Comparability**. Once again the performances of AMI and Agence Bio offer examples of best practice. While the data collection methods comply with the choice and size of the sample, the data of these two organisations are also disaggregated by certain regions within the country to allow for comparisons on a national level.

◤ **Coherence**. Soil Association, Agence Bio, and AMI reveal a good performance in this dimension, which is very closely related to the dimension of comparability. A coherent approach is characterised by the use of a data collection method, which is wisely chosen to meet the requirements of the data sources, the sample, the data use, and the final analyses. Thereby the organisations achieve a comprehensive approach, which leads to comparable and consistent results.

◤ **Accessibility/clarity**. Eurostat, Statistics Denmark, Soil Association and Agence Bio all represent "best practice" examples for this data quality dimension. The "best practice" examples are characterised by a good availability of data which is easy to understand and user-friendly. Due to the different formats of publication offered by the organisations the accessibility is enhanced for the data users. Furthermore, most of the data is publicly available without any charges and the conditions of data provision may be reflected in the clarity of the data that is available to the end user.

◤ **Timeliness/punctuality**. The organisations, AMI and Bio Suisse, both follow approaches in which the frequency of publication and the frequency of collection happen in the same time intervals. The timely and punctual collection and publication of data improve its quality and the satisfaction of the end user concerning the statistical output.

KEY FINDINGS

◤ The performance in terms of data quality strongly depends on the main focus of each organisation and its involvement in data collection and processing.

◤ The performance also strongly depends on the budget and funding of each organisation and the willingness of data providers to share company data.

◤ Agence Bio (France), Agricultural Market Information Company (AMI – Germany), Bio Suisse (Switzerland), Eurostat, Soil Association (United Kingdom) and Statistics Denmark (Denmark) were identified as "best practice" examples.

The market data end-users' needs and demand[3]

Authors: R. Home, M. Lošťák , M. Stolze

The prioritisation of the areas to be targeted for data improvements requires an understanding of the demands of end-users of organic market data. The wishes of these end users are particularly important since they are also the potential end-users of any future organic market information system.

An evaluation, from the end users' perspective, of the current available data in Europe was undertaken to identify their needs and demands of organic market data, and to find areas of information asymmetry. Results based on end users' demand for various data types in four European countries (France, Germany, Italy, and Spain) are reported and compared with the mean responses from European end users. There is an almost universal expression of feeling at a competitive disadvantage because of lack of available data for all data types (Home et al. 2013).

Looking at quality criteria in more detail, **relevance** seems to be always the main quality criteria for existing data that end-users rate as most important, with other quality indicators rated about equally important: that data should be affordable, available as often as needed, accurate, up to date, easily accessible, comparable with other data that respondents use, of high quality, and sufficient for the respondents' needs. The most common criticisms of organic

market data were with regard to **accessibility**, availability as often as needed, and whether it is up to date. Data on organic import volumes were also criticised for their lack of accuracy and **comparability** with other used data, while retail consumer price data for organic food and organic sales data at retail level are both criticised for their reduced accessibility if not at a cost. The main reason why available data are not used is the lack of **relevance**. Cost of data access and **comparability** were rarely the reason, and lack of **punctuality** and **accuracy** were almost never the reason that data are not used.

Using the same means of comparison, import volume and value data, and commercial/public organic procurement price and volume data were found to be evaluated as being very similar in quality. These data types are all considered to be quite different from the data collection perspective, but seem to be bundled from the end user perspective.

Figure 5 shows the mean quality ratings of all data types in the four study countries and in Europe. In analysing these data it has to be kept in mind that the scope of this analysis was to identify and describe possible shortcoming in the system, and not to compare the data collectors in each country or the data collection methods that they employ. Although this table shows that some data types in some countries are better than others, the overall quality of all data types is around neutral (on a scale of -2/low quality/to+2/high quality), which suggests that quality of European organic market data is considered to be generally poor.

Figure 5. Mean quality ratings of all data types as rated by the respondents of the OrganicDataNetwork survey on end users demand * **
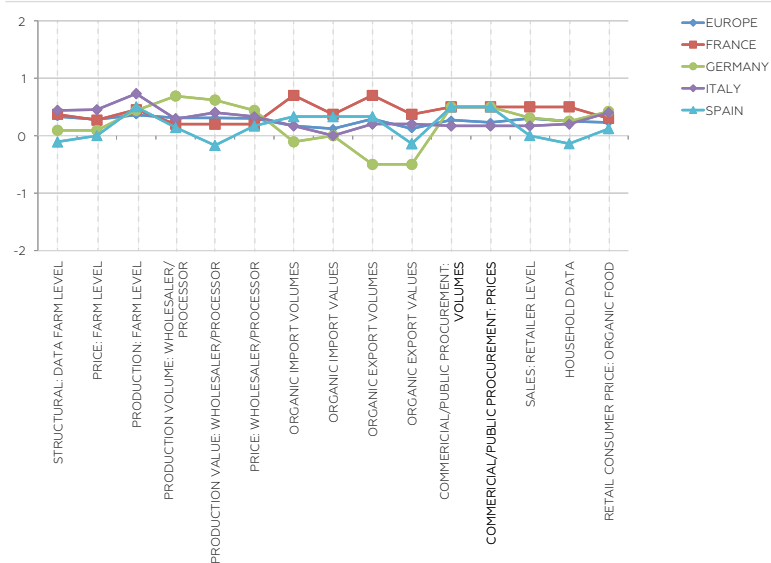
* Multiple answers possible
** -2 = Low quality, 0 = Neutral, 2 = High quality
Source: Home et al., 2013

The number of users of each data type were compared, at the European level, with the number of people who report that the respective data type does not exist. As expected, the fewer people using the data type, the more people think the data don't exist (Figure 6). This result probably reflects the variability of data availability within Europe with data of a specific type available in one country but not in another.

Figure 6. Number of users of each data type and number of respondents who reported that the respective data type does not exist*
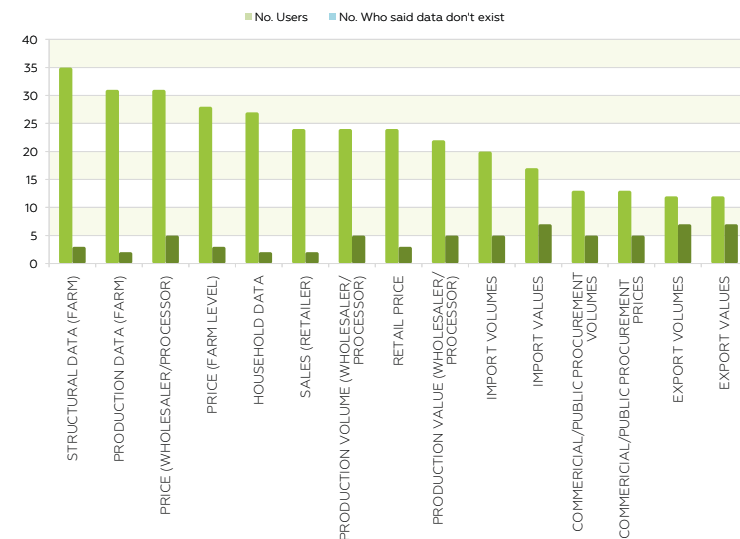
* Multiple answers possible
Source: Home et al., 2013

KEY FINDINGS

◣ Relevance is the key quality criteria for data from an end users' perspective.

◣ End users consider the quality of European organic market data to be poor in all countries and in all data types.

◣ End users feel that they are disadvantaged because of the poor quality of available organic market data.

◣ When data are unavailable, end users will collate whatever data they can find to solve their data needs: even when this collation is of poor quality. Poor data is considered to be better than no data.

Challenges associated with developing and producing a European database of organic market data[4]

Authors: H. Willer, D. Schaack

The comparability of the existing organic market data is low. Lack of standardisation of classifications of products, definitions of indicators, and harmonisation in data collection methods renders data comparisons between countries over time or even within one country problematic. Therefore merging different national datasets into one set of European statistics is very challenging. Albeit Eurostat is publishing data on area, livestock umbers and production volumes as well as numbers of operators, it does not collect data on production values, retail sale/import/ export values and volumes, and catering sales.

Therefore a database was produced as part of the OrganicDataNetwork, in order to store in a common format and provide access to, currently available data on organic markets in Europe.

In this database, the OrganicDataNetwork has made available, for the first time, the European organic market data by product groups and sales channels. Data for 2011 and 2012 are accessible at the OrganicDataNetwork website (**www.organicdatanetwork.net/odn-statistics.html**).

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4 - *This text is based on Willer and Schaack (2014).*

The OrganicDataNetwork database shows that a wide range of data is now available, in particular in relation to retail sales data (Figure 7 and Figure 8). This includes organic market data that were not easily accessible before that have now been collected and collated and made available centrally. The data collected show – over countries - what products do best within the organic segment and how certain products and product groups perform in comparison with all other products sold. For example, organic eggs reach high shares of the overall egg market in many countries. As regards international trade data, there is a major lack of such data and conclusions regarding the European situation cannot be drawn. The following classifications were used in developing the database:

❮ Eurostat **Handbook for Annual Crop Statistics** for organic agricultural land and crops,

❮ Eurostat **CPA 2008 - Statistical Classification of Products by Activity** for products.

Figure 7. Data availability for organic market data in Europe
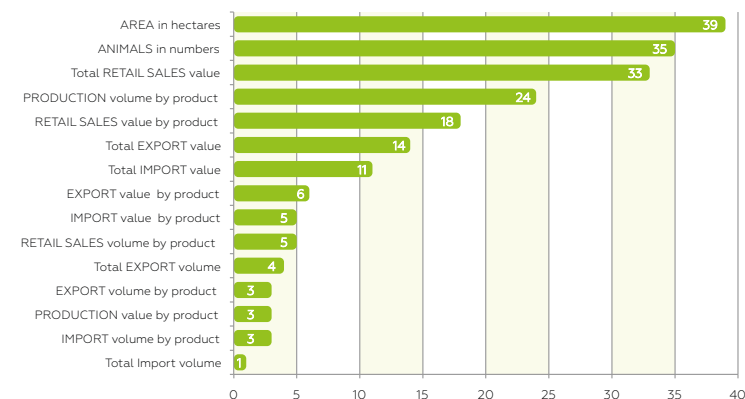
Source: Willer and Schaack, 2014

Figure 8. Number of products for which data on retail sales values are available in different countries

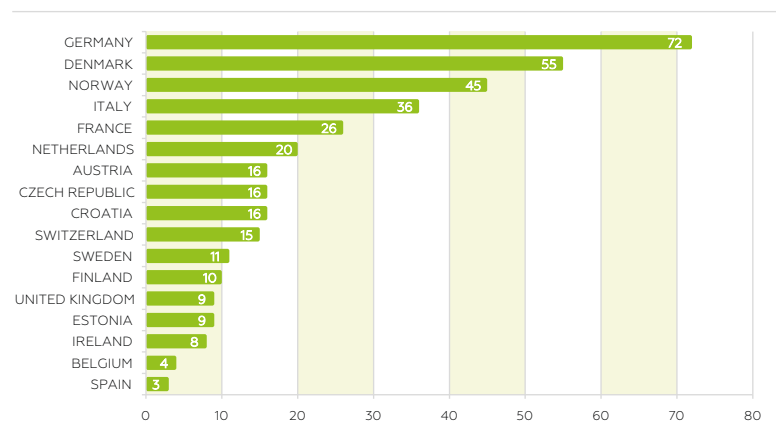| Country	Value
GERMANY	72
DENMARK	55
NORWAY	45
ITALY	36
FRANCE	26
NETHERLANDS	20
AUSTRIA	16
CZECH REPUBLIC	16
CROATIA	16
SWITZERLAND	15
SWEDEN	11
FINLAND	10
UNITED KINGDOM	9
ESTONIA	9
IRELAND	8
BELGIUM	4
SPAIN	3

Source: Willer and Schaack, 2014

From the experience, a number of challenges have been identified that need to be tackled in the near future.
These challenges include (Willer and Schaack 2014):

◀ **Lack of data and incomplete data** - In most countries, only very basic data such as data on certified organic farms, land areas and livestock numbers are reported. Currently, reliable detailed market data, e.g. production volumes, data on domestic market, international trade and consumer prices do not exist in most European countries. In some European countries, there are only rough estimates of the levels of production and consumption. When survey or panel data exist, often coverage is incomplete, and this may result in biased statistics.

◀ **Lack of common definitions and classifications/ aggregation rules across countries -** There is a lack of standardised and harmonised procedures to ensure higher data quality. Almost every country uses different

definitions, nomenclature and classifications, only few use international classifications (Denmark uses the UN's Standard International Trade Classification – SITC; Czech Republic the CPA codes – EUROSTAT). As a consequence, country-to-country data comparisons are very difficult. In countries, where the domestic market data are collected from panel data, usually the nomenclature and classifications of the major market research companies are used, and these vary between countries and may change from one year to another; comparisons appear also quite difficult. Data is often aggregated and a lot of details get lost in the **aggregation**. In many cases only incomplete breakdown by crop or product is available and this may make data of little use for some purposes (e.g. farmers' decisions). What makes things worse is that there is no harmonized way of aggregating these data. For example, in Switzerland, Bio Suisse groups breakfast cereals, with pet food. In addition, aggregation may change from one year to another so that times-series comparison becomes impossible. With reference to non-standardised **definitions of indicators/data types**, a good example is that of livestock data. The indicator is "number of heads", which is interpreted as "average stock per year", "livestock at a given day" (e.g. the 1st of May in some German Laender), the "number of places" (in stables), or "animals slaughtered" in different countries. These differences in the definition make country-to-country comparisons for livestock impossible.

◀ **Inconsistent data** - The plausibility checks carried out (such as year on year comparisons, comparisons with neighbouring countries) showed a lot of inconsistent data, some of which could be explained by the data providers or better data were found. However, this could not be resolved in all cases, and there were figures that were clearly implausible if compared with a country's total or with data from the previous year or from

neighbouring countries. Simple quality checks are often not performed by the data providers: basic plausibility checks often allow inconsistencies to be identified. Some data are based on **expert estimates**, but often no checks are performed to validate these data by other sources.

◥ **Other issues** - **Exchange rate fluctuations** may make country-to-country data comparisons very difficult.

KEY FINDINGS

◥ The main challenges for storing organic market data in one common database are: lack of data, incomplete data, inaccessible data; non-harmonized definitions, nomenclatures and classification; and data consistency issues.

◥ While the OrganicDataNetwork online database improves availability and accessibility of organic market data, it also shows the current shortcomings clearly.

◥ We therefore recommend that data availability and accessibility should be increased, that classifications, nomenclatures and definitions in particular for organic market data are harmonized and that data quality should be improved.

Methodologies for data quality improvement[5]

Authors: C. Feldmann, U. Hamm

Previous studies related to data collection, processing, and analysis of the organic market have revealed a lack of consistency and harmonisation across Europe. However, it is not only the lack of consistency and harmonisation in organic market data that is problematic, but there are also some concerns about the accuracy of the data. Up to now, organic market data collection has been inconsistent throughout European countries; data from different organisations and from different countries are hard to compare, because very different methods, product categories, and nomenclatures are used. Interpretations based on incomplete and inconsistent data might lead to wrong decisions by companies and policy makers.

The **identification of inconsistencies** in organic market data requires knowledge on specific quality and consistency checks. These should be standardised among the data collectors in order to lead to a harmonisation of the process. For the implementation of these checks, however, it is necessary to have reliable data for comparisons or to have sufficient data to establish supply-balance equations. More extensive and thorough data collection is needed to fill gaps in organic market data.

Quality dimensions were defined by Eurostat to establish a framework for the analysis and evaluation of the quality of

5 - *This text is based on Feldmann and Hamm (2014).*

statistical data and its sources: relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability, and coherence. The improvement of accuracy, comparability, and coherence in organic market data is the main objective when performing ex-post data quality checks.

As part of the OrganicDataNetwork, a **guideline for the application of consistency checks** for organic market data was established. The guideline explains the different types of data quality checks and how they should be carried out. The choice of consistency check depends on the data types that are available. However, data used for comparisons as well as the sources of these data have to be checked for reliability and validity.

An example for a consistency check is the **comparison of organic area, production, and yield data with conventional/total data**. Organic areas or production volumes that show an implausible high share of total areas/volumes should be flagged for inconsistency and checked further. Organic yield data that are larger than conventional ones, suggest an inconsistency, because organic production is in general less productive than conventional production.

The comparison of an **organic market statistic over years** is used to check for obvious inconsistencies, which are revealed through noticeable outliers in the data. To verify that these outliers are actual anomalies in the data, it is necessary to compare the trend of the statistic in the organic sector with the trend in the conventional sector. Strong fluctuations take place simultaneously in both sectors, because they usually depend on weather conditions, which equally influence both farming systems (i.e. very cold vs. very hot or very wet vs. very dry season). Depending on the type of product and the production conditions during the respective year, there might be particular reasons for extreme values.

In most cases, **typing or unit errors** are the reasons for organic numbers that are reported to be larger than total numbers. These errors can often be detected through comparisons of organic with total data or comparisons with data from previous years or countries with similar farming conditions. In addition, it is very helpful to get data checked by third persons as well as to get **feedback from market experts** which might help to identify inconsistent information in data sets.

The **availability of data** is a limiting factor concerning more advanced data checks, which can be used to get better insights into the market structure of one's country. To date, organic market data collection in Europe is still fragmentary. Hence, more advanced approaches, such as supply balance equations are only applicable in very few cases.

Another valuable approach to data quality checking is the **crosschecking** of one country's import data with another country's export data. Thereby, data errors as well as fraud could be identified. However, due to confidentiality restrictions and the sensitivity of these data, it is almost impossible to carry out these comparisons.

KEY FINDINGS

◤ Consistency checks are needed to ensure quality, especially accuracy of data.

◤ Important consistency checks are based on a comparison of organic area, production, and yield data with conventional/total data or by looking at the trend of an organic market statistic over years.

◤ Many inconsistencies are typing, transcription or unit errors.

◤ The feasibility of consistency checks depends on the availability of data.

Lessons learned from stakeholders involvement[6]

Authors: R. Home, D. Vairo, R. Zanoli, M. Stolze

The OrganicDataNetwork project initiated such a European organic market data network of public and private bodies bringing together active, relevant stakeholders concerned with organic market data collection, analysis and publication. This data network established a platform to allow for adequate communication and interaction among all stakeholders involved in organic market data development, production and dissemination as well as in data analysis and usage. The core principles of this network are social learning processes and co-creation of knowledge to remove barriers to a European organic market data information system, which will facilitate the development of shared visions. Multi-stakeholder dialogue has been organized at a European level and two workshops have been held to bring together stakeholders in the organic market data sector, to discuss ideas and experiences, to provide a unique opportunity for networking with other experts on European market data and to set the basis for an ongoing organic data network platform for information exchange:

The **first** workshop was held at the Organic Research Centre, Elm Farm, Newbury, UK on March 13, 2013 and had the main aim to identify organic market data problems from the stakeholders' point of view. Twenty-seven stakeholders

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6 - *This text is based on the unpublished proceeding of the two stakeholders workshops held in Newbury (UK) and Bari (IT) as part of the OrganicDataNetwork project.*

from 17 European countries and from Morocco and Tunisia attended the workshop. Participants identified problems in data collection (Figure 9), improvement opportunities and ease of implementation and also the main areas for which good organic market data are difficult to obtain (availability and quality): retail sales, international trade and price data.

Figure 9. Problems in organic data collection
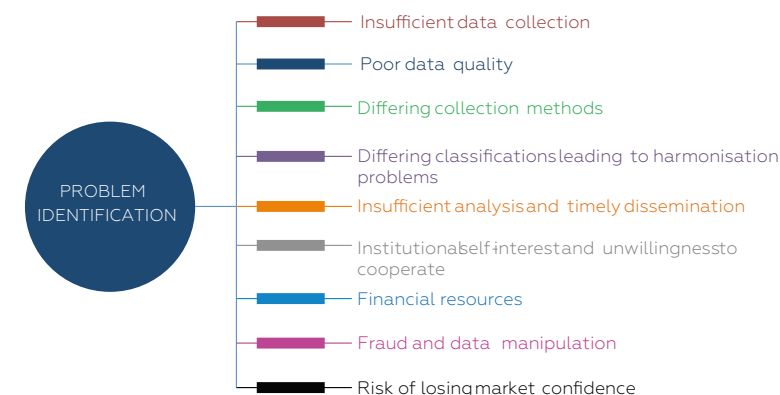
The **second** workshop concentrated on the current situation of data collection methods to identify areas where improvements are needed, such as data quality improvement measures and the development of model pathways for the implementation of organic market data collection procedures in EU27, EU Candidate and EFTA countries. The workshop was held at the Mediterranean Agronomic Institute of Bari (CIHEAM-IAMB), in Valenzano Italy on 10-11 July 2014.
Thirty stakeholders from 20 countries attended the second workshop. The primary aim of the workshop was to develop and refine the Organic market data Manual and Code of Practice (OrMaCode) intended for data collectors and to discuss how networking and information exchange between data collectors could continue after the end of the

OrganicDataNetwork project.
Three main themes arising from OrMaCode were addressed:

INSTITUTIONAL SETTING:

❧ Guidelines are needed to avoid misuse of organic market data, to ensure cooperation among bodies and a long-term collaboration/network, and to achieve institutional commitment to the collection of a wide range of organic market data.

❧ However, guidelines such as OrMaCode and top-down regulations (e.g. mandatory data collection) need to be supplemented by cooperation and bottom-up networking strategies to motivate individuals and agencies to cooperate.

STATISTICAL METHODOLOGIES:

❧ Networks promoting cooperation among stakeholders and creating tools that enable harmonisation of definitions and classifications are considered to be promising to align data collection methods and analyses across Europe, to improve data quality and quantity for each data category, and to implement more consistency checks to validate the data.

❧ Various tools may be developed to help data collectors to improve the quality of data. These include a common electronic platform to collect and validate data, guidelines such as OrMaCode, template for questionnaires, conversion and correspondence tables for data harmonisation.

❧ Training in using these tools and other services like help desks are highly recommended by stakeholders.

STATISTICAL RESULTS:

❧ Both positive and negative lessons could be learned from existing practices on how to improve timeliness, punctuality and accessibility of data (incl. business models), and how to balance quality and availability of data. Learning from best practices can improve the various stages of data collection from development to dissemination.

❧ The OrganicDataNetwork database should be continued and maintained after the project life since it can help to ensure higher accessibility, timeliness and punctuality of organic market data at the European level.

❧ Adequate funding should be ensured at the EU and national level to continue and enhance the publication of high quality statistical data on the organic market.

KEY FINDINGS

❧ The key to improving data quality is to initiate and maintain cooperation, both within and between countries, and adopt a unified system of collection and dissemination of organic market data.

❧ Once a critical mass is achieved in the use of a unified system, other countries and agencies will be attracted to joining that system rather than creating their own.

❧ Guidelines and top-down regulations are needed to establishing a unified system but should be supplemented by a range of strategies to motivate individuals and agencies to cooperate.

❧ Adequate funding should be provided at both national and EU level.

Examples of improving data collection systems[7]

Authors: C.L. Gerrard and S. Padel

Procedures and methods for collection and publication of or-ganic market data across Europe vary widely, with a growing number of countries publishing market estimates, but several problems with data collection are reported. Even in countries with relatively well-developed organic markets, data are not nearly as detailed and reliable as in general agricultural and food industry statistics, leading to a lack of transparency in the organic market.

To overcome some of the problems with national organic market data and to test approaches in a practical situation, there is a need to facilitate networking, learning and collab-oration among all organisations publishing the national re-ports.

A number of problems with organic market data have been confirmed for a variety of European countries in several pro-ject activities. Consultation with different national stake-holders has resulted in identifying a number of areas for im-provement. The six case studies of the OrganicDataNetwork project have produced new/improved organic market reports through close collaboration between different partners, by using quality checks developed in the project and by carrying out additional data collection and analysis where possible (Table 3). The new/improved market reports are summarised in Table 4, broken down by the different case study countries.

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7 - This text is based on Gerrard et al. (2014).

Table 3. The case studies of the Organic Data network

AREA OF IMPROVEMENT	UK	DE	FR
Partner organisations*	ORC *Soil Association*	*AMI* UKS	*Agence Bio* FIBL
Production data	Improve timeliness of publication; English producer survey		Methodology for missing volume data collection
Domestic trade/retail	Change of panel data source; Additional survey on non-multiples	Continuation of the organic market task force	Sector based approach for cross-checking sources
Farm-level prices		Compare with other coun-tries	
Retail prices			
International trade		Experience from BOEL project on imports into Germany was considered	Work with Ministry and customs to obtain data; Use of surveys; International comparison of methods

*Organisations in italic were responsible for the publication of the market report; Organisations in brackets were not full members of the Organic Data Network Project.
Source: Gerrard et al. (2014)

Table 3 continued. The case studies of the Organic Data network

AREA OF IMPROVEMENT	CZ	IT	MOAN
Partner organisations*	CULS *(IAEI)*	UPM IAMB *(SINAB)*	*IAMB* MOAN UPM
Production data	Use of FADN data to verify own data	Data harmonisation to provide volume and value estimates	Consolidate data collection
Domestic trade/retail		Comparison of datasets of domestic market	
Farm-level prices		Cross check between ISMEA and Stock exchanges da-tasets	
Retail prices	Analyse & publish the most recent, freely-available data		
International trade	Explore the use of customs data	Cross-checking of various data sources on imports	Combine sources to estimate export

*Organisations in italic were responsible for the publication of the market report; Organisations in brackets were not full members of the Organic Data Network Project.
Source: Gerrard et al. (2014)

The experience from these case studies suggests a number of common steps to start or improve data collection and identifies some possible issues (Figure 10).

Figure 10. Process in conducting data collection

IDENTIFY KEY ORGANISATIONS
- Identify the key organisations involved in the organic sector that may collect or hold market data.

ENCOURAGE AND MAINTAIN DIALOGUE
- In this way, key data holders, data collectors, the ministry of agriculture and/or the statistical office as well as other stakeholders who would want to use the data will be aware of each other.

DATA HANDLING AND STATISTAL PROCESSES
- Obtain clear and detailed description of the data collection and analysis methods at source;
- Be clear about the subsequent collection and analysis for publication;
- Assess coverage and representativeness of the sample obtained;
- Carry out quality checks (e.g through cross-checking over time and with other sources)

WORKING WITH OTHER ORGANISATIONS
- Collaboration with a trusted third party who will collect and collate data may help in reassuring potential data providers that their data will be kept confidential and will only be used in an amalgamated format

AIM FOR A NATIONAL PLATFORM
- A national platform with a sufficient budget to facilitate continued dialogue at national and international level should imrpove quality and encourage other data providers to participate.

Source: Gerrard et al. (2014)

A continual dialogue and discussion is seen as a vital feature in initiating data collection within a country. Across borders, networks of data collectors from a range of countries, like the OrganicDataNetwork, can support this through sharing experience and advice between countries and by providing a forum to discuss organic data collection. For instance, the case studies in countries of the Mediterranean Organic Agriculture Network (MOAN) conducted in close collaboration with the national statistical authorities (e.g. Turkey) had the effect of raising awareness of organic data collection procedures in those institutions.

Table 4. Publication of improved market reports from six case studies.

UK ORGANIC MARKET REPORT

An English producer survey was carried out as part of the case study, asking about retail sales of organic produce as conventional and producers' future intentions with regards to both production levels and remaining in organic production. Also, production data from control bodies have been better harmonized. With regards to estimating the total annual value of retail sales, the 2014 report used data from a retail sales panel (rather than a household panel), as well as from surveys of multiple retailers and Soil Association certified businesses. This has improved the reliability of the total market estimate compared with previous years.
The 2014 Organic Market Report by the Soil Association is available at:
https://www.soilassociation.org/marketreport

GERMAN ORGANIC MARKET REPORT
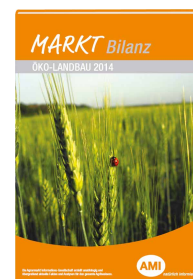
Within the German case study, AMI has improved the estimate of the total annual market value through better collaboration between panel institutions and scientists. Greater coverage of sales through non-multiple channels (bakeries, butchers, box schemes, farmers' markets and farm shops) should be aimed for in future and national funds will be sought. Also the methods used in collecting producer price data were compared with other European countries that will inform future data collection procedures. A supply-balance for carrots and milk was attempted but data gaps for import/export data remain.
The 2014 AMI Marktbilanz Ökolandbau (in German) can be ordered for EUR 206 (print version) or EUR 303 (digital version) here:
http://www.ami-informiert.de/amishop/ami-shop-startseite/produktansicht/amiartikelnr/201465101.html

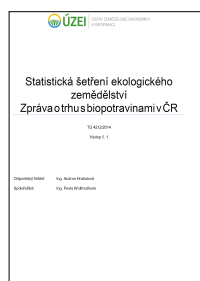## ITALIAN ORGANIC MARKET REPORT

The main aim of the Italian case study on behalf of the 2014 Italian market report was to improve international and domestic market data. The Ministerial and customs datasets of imports are integrated into one common database. An expert assessment for each crop at regional level has been carried out to estimate production volume. Finally, a cross checking was carried out of ISMEA/GFK-Eurisko household panel data with the ASSOBIO data to improve the estimate of the retail sales value in non-specialized shops.
The 2014 Organic Market Report of the SINAB (BIO IN CIFRE 2014) is available at :
http://www.sinab.it/sites/default/files/share/bio%20in%20cifre%202014.pdf

CZECH REPUBLIC ORGANIC MARKET REPORT

The Czech University of Life Sciences (CULS) worked closely with the Institute of Agricultural Economics and Information (IAEI) on the improvement of the organic market reports. Retail price data from supermarkets from previous periods (2009-2013) were published in spring 2014. These consisted of data for about 2900 organic products from 12 retail chains (hypermarkets, supermarkets, discount chains and drugstore chains). Part of the analysis is also a price comparison with conventional food in the category of "milk and dairy products". Data from declarations of trade with non-EU member countries were also included in the report following data checking.

The main 2014 Organic Market Reports in the Czech Republic is available at:

http://eagri.cz/public/web/file/306458/Zprava_o_trhu_s_biopotravinami_za_rok_2012_final.pdf

with the appendix containing price data:

http://eagri.cz/public/web/file/306464/Analyza_nabidky_biopotravin_2009_2013_priloha_Zpravy_o_trhu_s_biopotravinami.pdf

FRENCH ORGANIC MARKET REPORT

Agence Bio's 2014 French market report includes production and consumption volume data, a more detailed breakdown of domestic sales data, as well as the import and export volumes by products and in total. In some sectors where production volume data were lacking, methodologies for estimating the production volume and total balances were set up and data included in the 2014 yearbook when relevant. An assessment was conducted together with the Ministry of Agriculture and the French customs of import volumes from third countries, intra-EU exchanges and exports. Due to the diversity of sales in France, a channel based survey approach was proposed for collecting consumption data specifying when possible more detailed categories of products. The 2014 organic Market Report of the Agence Bio is available at: http://www.agencebio.org/la-bio-en-france

ORGANIC MARKET REPORT OF THE MEDITERRANEAN ORGANIC AGRICULTURE NETWORK (MOAN)

For the first time in many years, the Institute of Agronomic Research (CIHEAM-IAMB), in close collaboration with the respective MOAN representatives, published the 2014 Mediterranean organic agriculture report. The report, reveals the latest available data on organic area and operators in the Mediterranean region with interesting insights into the key features, the recent facts and the most up-to-date figures on the national organic sector of six countries of the Network, namely three south Eastern Mediterranean countries (Lebanon, Morocco and Tunisia) and three EU Candidate and Potential Candidate countries (Albania, Serbia and Turkey).

The 2014 organic Market Report of the MOAN is available at:

http://moan.iamb.it/index.php?option=com_phocadownload&view=category&id=8&Itemid=94

Collaboration among researchers and national bodies who publish market data has resulted in the implementation of additional or improved data collection methods and quality checks within the case studies. Table 5 summarises the experience in relation to lessons learned from the case studies; which are relevant to other stakeholders involved with, or planning to set up, data collection of organic market data.

Table 5. Lessons learned from the experience of conducting the case studies

DATA CATEGORY	LESSON LEARNT FROM THE EXPERIENCE
Production data	◥ Private bodies may develop their own data categories; dialogue is often required to achieve harmonisation with Eurostat categories. ◥ FADN data can provide additional information about production (e.g. yield, farm-level prices). ◥ Producer surveys can also supplement production data, targeting specific data gaps and providing more up-to-date insights. ◥ Estimating yields to calculate volume and value of production should make use of a combination of different approaches such as scientific studies, previous projects and expert estimates.
Domestic retail sales data	◥ A combination of different sources and approaches is necessary to develop an estimate of the value of the total organic market and of the proportion of sales through different channels, such as multiple retail, independent retail, mail order and home-delivery (box schemes) and sales through farm shops and farmers markets. ◥ Users of household or retail panel's data should be aware of the likely coverage and advantages and limitations of the methods. ◥ Market research companies use their own product classification, which hampers cross checking and comparisons between different sources, over time and between countries. ◥ Surveys among members of umbrella organisations, collaboration with trade/sector bodies or specialist panels for organic shops may be an alternative approach for estimating sales through specialised organic retail and other sales channels.
Farm level and retail price data	◥ When comparing different methods for farm-level price data collection, it is necessary to consider: where in the supply chain the data is collected, publication dates and frequencies, VAT inclusion/exclusion, transport costs, packaging, level of processing, product categorisation. ◥ Access to non-up-to-date data collected by private companies can be very useful in providing information on price trends and market development and may be available at lower costs or for free. ◥ When comparing retail price data (e.g. organic with conventional), it is necessary to compare products of similar quality and packaging.
International trade data (import/export)	◥ This category covers both trade between EU countries and with non-EU countries, which represents an important part of domestically consumed organic products in most Member States. ◥ Special customs provisions are made for import of organic products from outside the EU as part of the organic import regime (Box 44 of the SAD is already used for this purpose in some countries). ◥ There is no special requirement to monitor intra-EU trade as part of the organic control regime, so it is most difficult to obtain such data. ◥ Other collection methods to gather export and intra EU trade data include dedicated surveys of exporters and other operators. ◥ The full picture of all import/export into one country can only be obtained if all three types of trade (with countries on the compliance list, with countries that are not on the compliance list and intra EU trade) are considered. ◥ The easiest way to get international trade data would be the differentiation between organic and conventional items in the national foreign trade statistics

DATA CATEGORY	LESSON LEARNT FROM THE EXPERIENCE
General conclusions all data categories	◣ Data are often collected by many different organisations, including commercial bodies, governments and researchers, but organic data collection is not necessarily an explicit task for all of them.
	◣ Close collaboration with specific government departments that are not directly involved with organic farming (e.g. customs authorities, national statistics authorities) has improved the availability of data in several cases. Taking part in the case studies has also raised awareness of the need to identify and address problems and the need to increase efforts in organic market data collection.
	◣ Sharing of organic data between organisations can prevent over-sampling of organic producers and operators, but this only works if common classification systems are used. Also, there is a tension between market transparency and the need to protect commercially sensitive data.
	◣ Efficiently collating data from different sources also requires harmonisation of classifications and methods, but different data types require different solutions to improve the data collection.

KEY FINDINGS

◣ Continuous improvement of data collection and analysis should be the aim of all organisations. Even organisations with well-established data collection make incremental changes annually to continue to improve data quality.

◣ Data checks allow inconsistencies to be identified and so allow data quality to be improved.

◣ Data sharing and cross checking work best if common classification systems are used.

◣ Communication and dialogue with end-users of data and with other data collectors allows an organisation to identify areas for improvement and ways of achieving those improvements.

◣ The creation of a coherent and durable national organic market data platform for developing collaboration between public and private organisations is likely to improve confidence in the organic market. The mandate and funding should include collection of key data as well as data storage so that historical trends can also be analysed.

Concluding remarks

In this report we have provided a synthesis of all of the findings of the OrganicDataNetwork project.

These results show that a network for better European organic market information is an ongoing, long-term permanent venture between all stakeholders who are interested in organic market statistics, rather than a one-time, three-year research project.

Enhancing the availability and quality of organic market statistics requires greater collaboration among stakeholders, which is required for better decision making at both the micro level (i.e., the firms) and the macro level (i.e., the governments).

In this report we have reported facts and figures, and interpretations of these facts and figures.

In the separate companion report, we have developed specific recommendations based on these facts, figures and interpretations. Those recommendations carry the lessons learned during the OrganicDataNetwork project, and we would suggest that you consult them next.

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