

## Improving statistical information on the agro-environmental indicator “organic area” at the global level

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**Key words:** Agro-environmental indicators, organic farming statistics, data collection

### Abstract

*Globally, organic farming continues to grow and has reached wide acceptance amongst farmers, consumers, market actors, and policymakers. According to the latest available data (per 31.12.2015), almost 51 million hectares are under organic agricultural management, and this constitutes one percent of the global agricultural land. Organic agricultural land area (and the organic share of the total agricultural land) is an agri-environmental indicator according to FAO, OECD, and Eurostat. However, the collection of these data is associated with several challenges, including data gaps and incomplete data, issues related to definitions, classifications, data quality, and data access. In order to enhance the use of this indicator by policy makers and society on the state and trends in agri-environmental conditions, better data are needed.*

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### Introduction and background

Organic farming, which emerged in the first decades of the past century (Vogt 2000), continues to grow globally and has reached wide acceptance amongst farmers, consumers, market actors, policy makers and the public in many countries. Organic agriculture has garnered increasing official attention and support in the past years, in particular since 2000. Among other reasons, governments support organic farming because it responds to consumer demand for high-quality food and environmentally friendly farming practices. The benefits of organic agriculture are documented in many peer-review scientific papers, and organic agricultural land area (and organic share of the total agricultural land) is an agri-environmental indicator according to the Food and Agriculture Organisation (FAO) (2016), the Organisation for Economic Co-operation and Development (OECD) (2013), and Eurostat (2015).

According to FAO (2016), agri-environmental Indicators (AEI) are key tools to monitor the environmental performance of agriculture, track trends in environmental impacts, and provide information to assess the effects of the integration of agri-environmental concerns into policy measures. Indicators provide crucial information to monitor and analyse the effects of those policies on the environment. They can also contribute to the understanding and analysis of the environmental effects of future policy scenarios and agricultural projections (OECD 2013). The agri-environmental indicators have been developed by FAO in collaboration with OECD and Eurostat (FAO - Environment 2016). The FAO agri-environmental dataset available on the FAOSTAT homepage currently includes 24 indicators under eight domains: air & climate change, energy, fertilizers, consumption, land, livestock density, pesticide use, soil, and water use. The

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domain “land” (with data on total agricultural land and land use) includes the data on the agri-environmental indicator “organic agriculture” (FAO - Environment 2016).

OECD explains that the agro-environmental indicator “organic area” “*reflects a move towards the elimination of the use of chemicals, some of which are of environmental concern. Organic farming practices also have important implications for biodiversity by altering habitat conditions ....*” And FAO (2016) writes that in organic agriculture “... *high emphasis is put on environmental and wildlife protection and animal welfare considerations.*”

## **Material and methods: Data collection**

The Research Institute of Organic Agriculture FiBL has been compiling and publishing data on organic agriculture based on national data sources and data from international certifiers annually since 2000. The data are published annually in a yearbook (Willer&Lernoud 2017a) and online (FiBL 2017). The data are widely used and quoted by governments drawing up action plans for organic agriculture, researchers, market actors, market research companies, and the media.

Whereas in the beginnings of FiBL's data collection activities, only data on the organic area and the number of producers were collected, data collection has been expanded in the past few years. Data collection is carried out in collaboration with many partners, using a standardized questionnaire (for metadata on the FiBL survey (see Willer & Lernoud 2017b). The network includes 200 data providers: private sector organisations, market research institutes, certification bodies as well as governments, many of which have established collection systems for data on the organic sector. These governmental data collection systems are often linked to the establishment of regulations/laws about organic agriculture, such as the European Union's regulation on organic agriculture, which describes precisely what data should be provided to Eurostat, the statistical office of the European Union (Council of the European Union 2007). Eurostat publishes data annually, covering a wide range of indicators such as area, livestock numbers, production, and operators; data are provided by the Member States of the European Union, its Candidate and Potential Candidate Countries, as well as the countries of the European Free Trade Association. Globally, FAOSTAT publishes global organic surface area/land use data online, based on the annual FAO land use survey, however, where countries do not supply these data, the FAO dataset is supplemented with data from FiBL (FAOSTAT 2016).

## **Results**

According to the latest FiBL survey on certified organic agriculture worldwide (Willer&Lernoud 2017a) as of the end of 2015, data on organic agriculture was available from 179 countries (up from 172 in 2014). There were 50.9 million hectares of organic agricultural land, including in-conversion areas. The countries with the most organic agricultural land are Australia (22.7 million hectares), Argentina (3.1 million hectares), and the United States (2 million hectares). Currently, one percent of the global agricultural land is organic. Many attain higher shares: Liechtenstein (30.2%), Austria (21.3%), and Sweden (16.9%); in eleven countries, ten percent or more of the agricultural land is organic.

## **Discussion**

From the experience of FiBL's long-standing data collection, there are a number of challenges related to organic data collection that needs to be tackled. These include lack of data and incomplete data, lack of common classifications, lack of common definitions, and inconsistent data. The Organic Data Network project, funded under the 7th Framework programme for research and technological development in the European Union, has developed recommendations for organic

market data in Europe (Zanoli 2014). If applied to the global situation, with a specific focus on the organic area and land use data, the following recommendations emerge.

**Recommendation 1: Strengthen existing collection efforts and set up national data collection where not yet in place**

Even though “area” is the most commonly collected organic agriculture indicator, there is still a major lack of data on organic agriculture in many countries; in particular of land use and crop details (e.g. Australia, Brazil, India), furthermore the area data are not complete in all cases. Therefore, it would be beneficial if more governments set up data collection systems for organic data or expand the scope of existing data collection efforts by striving for more complete data, increasing the number of indicators collected, and including data collection cropping patterns. In many countries, particularly Africa and Asia, no governmental collection system is in place, and the data is collected either by the private sector or by FiBL that compiles the data from international certifiers, which is, however often incomplete and hard to obtain. It would be ideal if countries could follow the example of the European Union, which makes the collection of basic data mandatory in the organic regulation (European Commission 2014). Better data availability at a country level can then lead to better data availability at a global level.

**Recommendation 2: Improve and harmonize methods to increase accuracy of data collection**

Currently organic area data are collected with a wide range of methods, the most common being the collection of such data among organic certifiers (e.g. most countries in the European Union). Others collect the data in the framework of the farm structure survey (often based on samples; e.g. Australia) or in the framework of the Agri-environmental programmes (Austria, Switzerland). Due to the often difficult access to the data from certifiers, some countries collect the data among the organic operators (e.g. Kenya, Tanzania, Uganda; private collection systems). While the non-harmonised collection systems may seem a minor problem in the overall context, it has to be said that incomplete data and data gaps (e.g. on land use details) associated with some systems are not helpful when it comes to international comparisons and the assessment of the importance of organic agriculture.

**Recommendation 3: Harmonise nomenclature and definitions**

For organic agriculture many countries have a specific classification to organise their data, often not harmonized with the national or international agricultural statistics (e.g. some countries add the temporary grassland to the arable land, for others it is separately categorised as “grassland”). Another issue of constant concern is the treatment of areas for wild collection as agricultural land, resulting potentially in far too high organic shares of the total agricultural land.

**Recommendation 4: Establish a system of routine quality checks**

Data providers should establish a system of routine quality checks for organic data by applying plausibility checks. The comparison with the previous year(s), the comparison with the total farmland or the comparison of yields, can give important hints on potential inconsistencies and help to improve data quality.

**Recommendation 5: Strengthen collaboration at the national, regional and global level and improve data access**

At the national level, the collaboration of the authority in charge of the data collection with the organic sector could help to improve data quality and availability. International exchange, training and learning from role models is also needed. Better access to the data is one important prerequisite for this exchange. While the FAO and FiBL databases strive to give international access to data on area and some further indicators, on a country level data is often not shared or hard to find.

## **Outlook**

The development of the organic sector, which has seen the continuous growth of the organic market and land under organic management, reflects the dynamic and innovative nature of organic food and farming in response to the expectations of policymakers and the demands of consumers for high-quality food production. On a global level, availability of data on organic agriculture has improved considerably in the past years, in particular for data on organic agricultural land. However, with the collection of these data, there are challenges, including data gaps and incomplete data, issues related to definitions, classifications, data quality, and data access. In order to enhance the use of the indicator “organic land” by policy makers in order to assess the environmental performance of agriculture, better data are needed. Better support for data collection from governments and international institutions could help to improve the situation.

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