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Support to the Israeli Central Bureau of Statistics in Improving the Quality of Official Statistics

STUDY VISIT REPORT

on
Infrastructures for Agricultural Statistics
Activity C3

Study visit to the Italian National Institute of Statistics (ISTAT)

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List of Abbreviations

CATI	Computer-assisted telephone interviewing
CREA	Council for Agricultural Research and Economics. The sampling survey concerning the economical results for medium to large agricultural holdings.
ESS	European Statistical System
EU	European Union
FADN	Farm Accountancy Data Network
FSS	Farm Structure Survey
GIS	Geographic information system
ICBS	Israeli Central Bureau of Statistics
IACS	Integrated Administration and Control System
ICBS	Israeli Central Bureau of Statistics
ISMEA	Istituto di Servizi per il Mercato Agricolo Alimentare
ISTAT	Italian National Institute of Statistics
MARD	Ministry of Agriculture and Rural Development (Israel)
REA	The sampling survey concerning the economical results for small agricultural holdings. The REA survey is managed by ISTAT.
SDGs	Sustainable Development Goals
SFR	Statistical Farm Register

Summary of the study visit

Italian National Institute of Statistics (ISTAT) *relies primarily on the agricultural census and the Farm Structure Survey (FSS) as the basis for their agricultural statistics and for maintaining a farmer's frame. The agricultural census is conducted every 10 years and two FSS are conducted between the censuses. These operations are embedded in EU and local regulations and their funding is secured. The updated farmers frame is used to conduct various thematic surveys regarding outputs, agricultural accounts and agri-environmental indicators. The data are used for decision making at various levels, research and for reporting.*

Besides the agricultural census and the FSS, agricultural statistics in Italy, to a minor extent, rely on administrative sources, however they are often of poor quality. GIS data are vastly used and are linked to economic data. However, some constraints regarding the quality of the geographical data still exist. ISTAT considers the expansion of administrative data use in the future. Other sources such as expert estimation, big data and models were also discussed and evaluated.

ISTAT collects data from monthly to annually, depending on its reporting obligations and data availability. The statistical methods used are somewhat similar to the methods used by Israeli Central Bureau of Statistics (ICBS), but there are some differences. For example, ISTAT corrects for seasonality in agricultural price statistics and provided forecasts in livestock statistics, whereas ICBS does not. Some challenges were discussed regarding the explanations for irregularities in data, which are not always available in agriculture.

Both ISTAT and ICBS deal with multiple crops within a field season. ISTAT considers multiple crops in its FSS but not in the census.

Economic data in agriculture are collected by surveys and in some cases by other organizations. The analysis and the generation of economic indicators in the agricultural sector are the task of ISTAT, and they are also the National Institution responsible for reporting the indicators to the EU. Some of the presented economic indicators could be very valuable for the ICBS Agricultural account. The concept of the agri-food chain is an interesting way to present the impacts of agricultural production on the entire economy.

ISTAT conducts various surveys in agriculture. However the direct communication with the farmers is done at the local level. Italy is divided into 21 regions and the data collection is managed by the local offices or by sub-contractors. ISTAT is responsible for data management and dissemination. Some data are collected electronically, but paper questionnaires are still frequent.

Italy has a large number of small farms. Although 95% of the production comes from big farms, small farms are well represented in the statistical operations. Different thresholds are set for the census and FSS (98% coverage according to EU regulation) and for the FADN (8,000 standard euros per year). Non –agricultural activities are more important for small farms.

1.General comments

This study visit report was prepared within the Twinning Project ”Support to the Israeli Central Bureau of Statistics (ICBS) in enhancing the Quality of Official Statistics” and organized under component C: Infrastructures for Agricultural Statistics and was forth activity in the component.

During the study visit the Israeli delegation[1] met with staff members from the Italian National Institute of Statistics (ISTAT) in Rome. The study visit served as a necessary step to proceed with the already initiated work at ICBS related to the preparations for conducting an agricultural census and the establishment of a farm register. The main topics covered were:

- Overview of Italian Agricultural statistics - Census, Surveys, farmers frame
- Data sources (Administrative data, direct data collection, GIS layers)
- Collection of data and statistical methods
- How to deal with multiple crops within a field season
- Collection and analysis of agricultural economic data
- Methods for combining agricultural data with GIS data
- Communication methods with farmers and collecting methods
- How to deal with data on small farms (frequency of data collection, thresholds, methods of communication)

The study visit gave the Israeli delegation a wealth of valuable ideas and inspiration for future development of structural agricultural statistics.

The staff of Israeli Central Bureau of Statistics (ICBS) would like to express their thanks to all officials and individuals met for the kind support and valuable information which they received before, during and after the stay in Rome which highly facilitated the work.

The views and observations stated in this report are those of the participating staff of ICBS and do not necessarily correspond to the views of EU, ICBS, Statistics Denmark or ISTAT.

[1] For participants please consult Annex 2

2.Lessons Learned

2.1 Infrastructure and Cost of the Census

An overview was provided on the agricultural statistics and agricultural census. The census in Italy and its funding are embedded both in the EU and the Italian legislations and have a specific legal framework (Fig 1). In agreement with the EU regulations EC 1166/2008 and 1200/2009 ISTAT conduct an agricultural census every 10 years. In the census information on the structural characteristics of agricultural holdings (land use, livestock and labor force) are collected. For EU Regulations please consult regulations and Amendment of Regulation:

- http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008R1166
- http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32014R0378
- http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009R1200

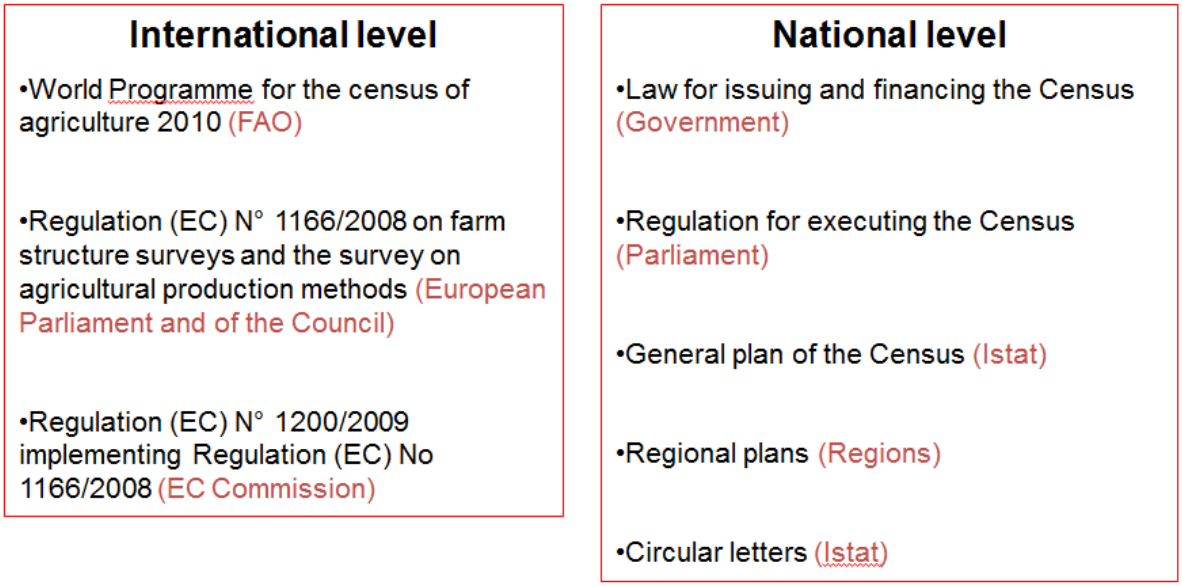

Figure 1: *2010 Agriculture Census –Legal Framework*

The cost of the last census was 125 million euros of which EUROSTAT funded 4 million euros out of the total budget. The cost per individual farm was 50 euros.

The organizational structure of ISTAT regarding the agricultural census is outlined in Fig 2) and includes, among others, the following components:

- Agricultural Census Office- which consists of 16 employees
- Consulting Committee- meet once a month.
- Regional Offices- 21 regions
- Training Offices
- IT Offices
- 14 thousand interviewers
- Post Census Survey Offices

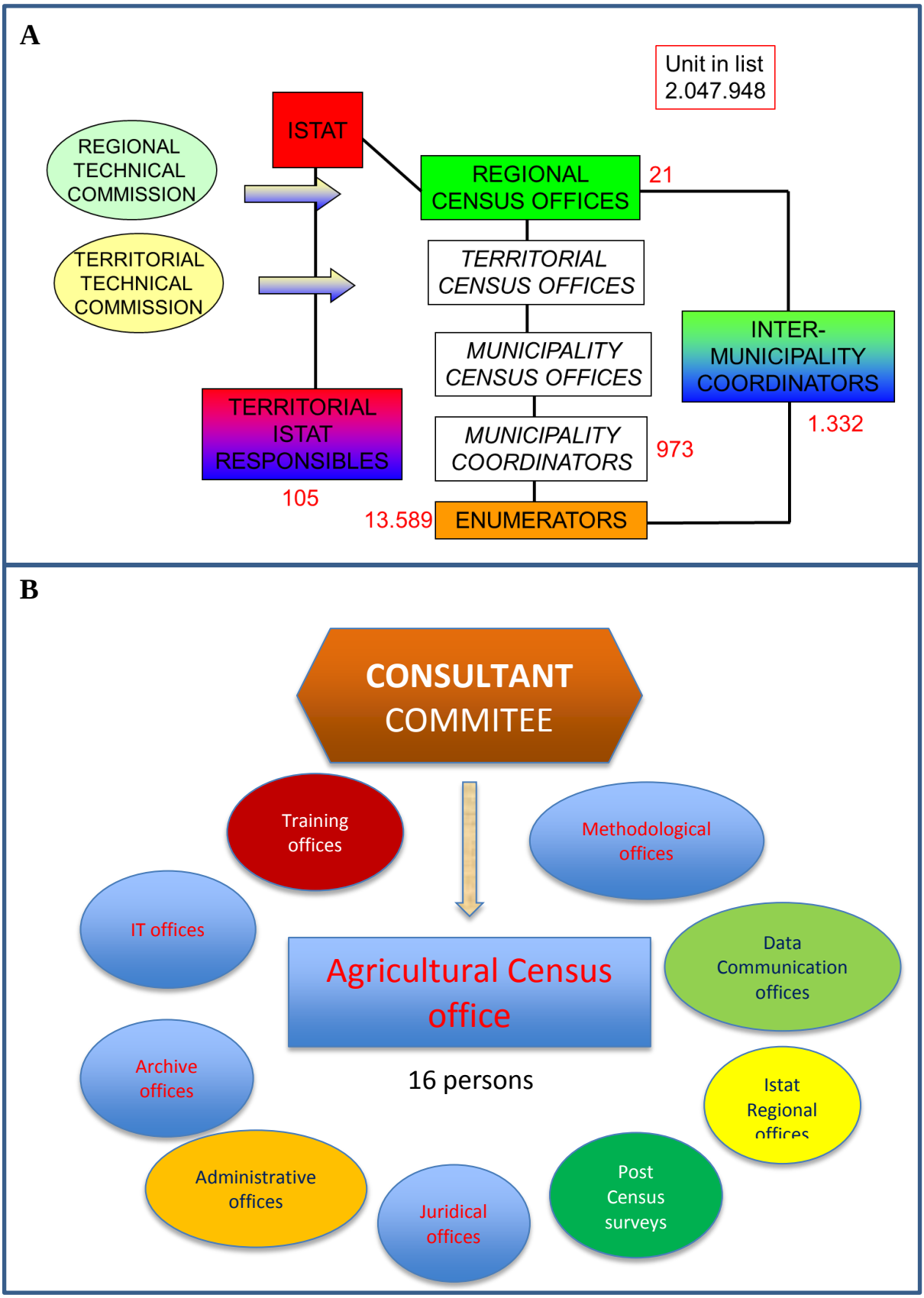

Figure 2: (A) *The Agriculture Census network organization at ISTAT.* ***(B)*** *ISTAT organization*

Regarding the definition of agricultural holding, ISTAT uses the EU definition of 98% coverage with regional thresholds of 0.2-0.4 ha per farm in order to fulfill the requirement of 98% coverage.

2.2 Census Questionnaire

The length of the last ISTAT census questionnaire was 16 pages. The last census was conducted as either face-face interviews in the field using a paper questionnaire where enumeration took place at the address of the owners which is not necessarily the address of the farm or it was conducted as self-compilation of the electronic questionnaire in the web by the holder.

An important note is that the questionnaire was filled by the cultivator of the farm and if the owner was not the cultivator of the farm, they were requested to refer the interviewer to the renter who cultivates the land in practice.

The interviewer asked for the x,y coordinates of the farm and in case it was missing, the EUROSTAT and ISTAT accepted cadastral information as well.

The questionnaire included, among others, the following major topics:

- major crops for the physical area
- unused agricultural area
- energy crop area
- farm location
- organic farming
- soil conservation
- livestock
- animal housing
- water source for irrigation
- separate information regarding the farm manager and the farm owner
- percentage of income from non-agricultural activities
- self-consumption
- labour force and third party work
- equipment use
- product marketing

2.3 Post Census Activities

Following the census ISTAT conducts evaluation surveys in order to estimate non-response and coverage. The data from the census are published at the farm level. This is possible due to legislation that bypasses the ISTAT confidentiality constraints.

Websites were created for dissemination of the census products http://censimentoagricoltura.istat.it/ as well as for the Website for the census network and management of the activities of the interviewers.

2.4 Farm Register

The process of setting up the farm register is outlined in Figure 3

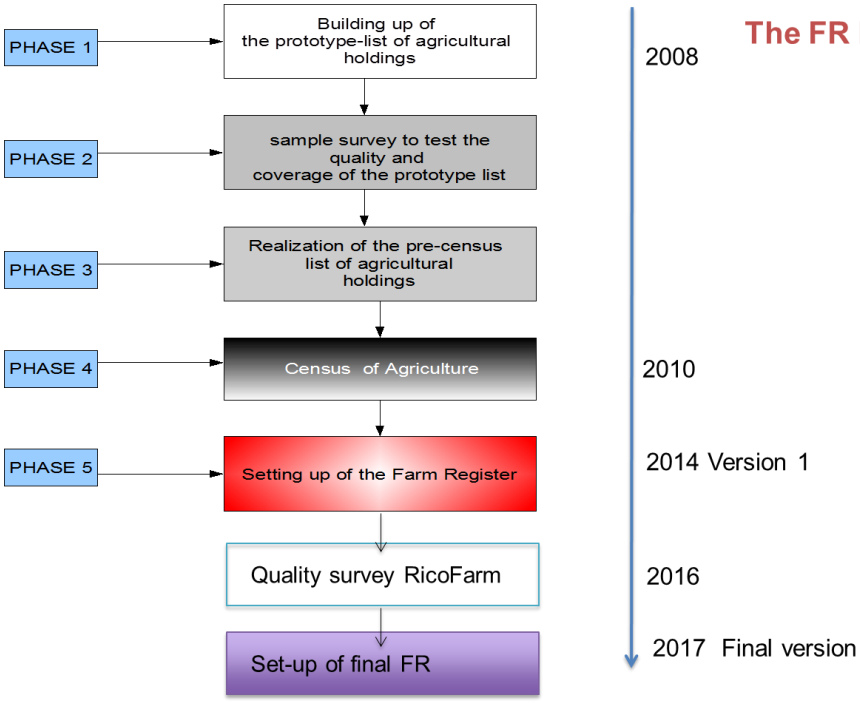

Figure 3: *Farm Register update process*

The process lasts about 10 years and occurs between censuses in order to maintain a high quality frame for the census and for current statistical surveys conducted in agriculture. In addition, the farm register is important for providing longitudinal analyses on historical trends in the overall structure of agricultural holdings.

The major administrative source of the data is the dataset of recipients of subsidies in agriculture as well as property tax data and other sources. Every year the data are updated from the various data sources. In addition, the register is updated by data received from ongoing surveys. ISTAT ranks the data sources according to their statistical unit compliance and data source coverage.

The Statistical Farm Register (SFR) interacts with other registers such as: household registers, business registers in addition to Statistical survey and sectorial archives.

The identification of the farm is by the fiscal code or Unique Code of Agricultural Holdings. Agricultural holdings and holder headquarter are identified on the base of the localization and distance of lands owned or managed.

The coding system of the SFR was presented as well as the methodology for quality assurance, coverage, metadata analysis and post validation activities.

2.5 Livestock Statistics

Data collection on Livestock ("red" meat animals), slaughtering ("red" and "white" meat animals) and production were described by animal type. Data collection is based on EU regulation concerning livestock and meat statistics

- http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008R1165&from=EN

Current data as well as complimentary data are collected from the veterinary services. Questionnaires are sent via an official email system for notification purposes. The questionnaire is filled out by Computer-assisted telephone interviewing (CATI). ISTAT provides semi-annual forecasts based on livestock statistics and expected number of slaughtering.

Regarding milk statistics, ISTAT conducts two surveys by CATI:

- Monthly survey of milk and milk products
- Annual survey of milk and milk products

The statistics are in forced in accordance to the EU Regulations on statistical surveys of milk and milk products:

- http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31996L0016&from=EN

2.6 Statistical System

The structure and activity at ISTAT was described with particular focus on in the Agricultural unit in ISTAT:

- ISTAT has a central statistical system headed by the president of ISTAT since 1989.
- Recently ISTAT went through an organizational change in order to save resources and it is expected to show savings results within a year. Thus some of the surveys were moved to a designated survey department. All administrative data are centralized in one portal.
- ISTAT is not the only body that collects data and therefore serves as a coordinator. ISTAT's role is embedded in the law.
- A three-year data collection statistical plan (SISTAN) is approved by the parliament.
- The use of administrative data is relatively low to other European countries as there is less tradition of using administrative data in Italy, and also since the number of small farms not appearing the administrative sources are higher than in e.g. the northern countries.
- The Italian Ministry of Agriculture and ISTAT share the collection of data regarding poultry, eggs, fishery, forestry and spring crops.
- The agricultural census is conducted every 10 years with two structural surveys in between. It was noticed that in the USA the census is conducted every 5 years with no surveys in between.
- Food balance is assembled by the Ministry of Agriculture but ISMEA calculates special balances for meat and wine.

- ISTAT copes with various concerns regarding confidentiality, too detailed questions for the farmers, location of the farm (usually refers to the headquarters and not the location of the fields), response burden etc.
- Agriculture contributes to the SDG's 10 indicators.

2.7 Agricultural Data Sources- Pros and Cons

ISTAT recommended using a few data sources of a good quality. Several data sources are available in agriculture, below some of the pros and cons are listed for the different sources:

- Surveys are efficient for large scale data collection. They enable the calculation of sampling errors, however they are costly.
- Expert estimations are less expensive but the methodology is not always sound.
- Remote sensing data have a good potential for availability but they are costly.
- Administrative files are not expensive but there can be some legal obstacles involved and data might not always be complete in particular when it comes to small farms.
- Mathematical models are used when no other way of data collection is available.
- Big data- the cost is low but the statistical error is hard to estimate. Possible use in Agro-Tourism.

2.8 Crops Data

European statistics on crops are primarily regulated by the regulations listed below:

Establishing a Community typology for agricultural holdings concerning crop statistics:

- http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32008R1242

Crop statistics:

- http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32009R0543

2.8.1 Methodological notes

- There should be a distinction between the physical area and the actual area used for agriculture (multi crop) as is the case in Israel as well.
- Agriculture data are characterized by fluctuations. EUROSTAT requests explanations for the fluctuations but it is not always possible to provide.
- Data on crops are based on expert estimation except for sugar beet, rice and wine for which ISTAT conducts surveys and relies on administrative data. The expert estimations are based on monthly land area data.

2.8.2 Cereals in Europe

From 2008 to 2016 there was a sharp decrease in the production of cereals in the EU, except for Lithuania, Estonia and Belgium. This decrease is due to imports from other countries such as countries in Eastern Europe. At the same time, the profit in agriculture has gone down. The

expectations of farmers for a price change of cereals impact the changes in the quantity of sawn cereals. This is one example of how collection of data impacts decision making at the farm level.

2.8.3 Estimation of data and data problems

One method of estimation of missing values is the "near neighbour" method. In principal, the neighboring area's rate of change is applied to the missing data, assuming that they share the same data trends. However, it is not always the case.

Integrated Administration and Control System (IACS) is a system for the management and control of subsidies in agriculture and serve as the base of agricultural statistics in many European countries. For regulation of establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers please consult:

- http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32003R1782

However, in Italy these data source suffers from several problems:

- Some farmers do not request support and therefore are not included (in particular small farmers)
- Some farmers report incorrectly in order to maximize their profits.
- Duplication and missing values.
- Due to political problems this source was unavailable for ISTAT for a long period.

As mentioned earlier, in contrast to Statistics Denmark, ISTAT mostly relies on surveys. However, it intends to reduce reliance on surveys in the future.

2.9 Farm Structure Survey (FSS)

The regulation for the FSS is the same as of the census (please consult section 2.1). A regulation regarding usage of administrative files exists only for rural development data, and for the rest, surveys are used.

Similar to the census, a threshold of 98% coverage is used. Data collection occurs between December and May. The sample size in 2016 was 35,000 and in 2013 - 44,000 farms. In 2016, the survey was conducted with 1,100 interviewers. Prior to the survey, the ISTAT president sent an introduction letter. The reference period for the survey is not a calendar year but rather an agricultural year which differs from country to country. In Italy it lasts from November to October.

Sampling method for FSS- stratified sampling by size, type of holding and regional level.

In Italy the network of actors for structural surveys is organised as shown in figure 4:

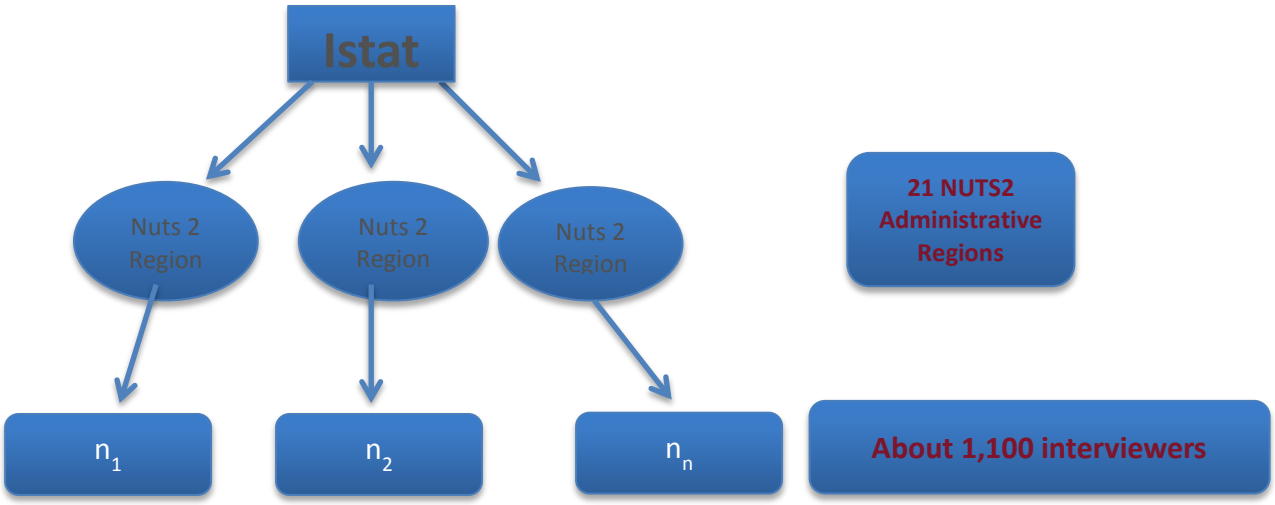

Figure 4: *In Italy the network of actors for structural surveys*

Italy is divided into 21 regions. The surveys are conducted by the regions themselves, and are funded by ISTAT. Occasionally they use sub-contractors for data collection. So far, they used paper questionnaires. For the next FSS they hope to conduct it electronically. For data collection and management one web portal is used. Data input occurs at the home or office of the interviewer. The Salary of interviewers is paid according to questionnaires- full/partial/non-response.

The Cost of the last FSS was 2.75 million euros, not including internal costs such as overhead. 84% of the budget was used for data collection purposes.

The FSS covers multi crops in contrast to the census, where the questionnaire focuses on the crops that are grown currently. The farmers encountered difficulties answering questions regarding energy and water use.

2.10 Permanent Crops (Plantation) surveys

The European statistics on permanent crops are regulated by:

- http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32011R1337

These surveys are conducted every 5 years. Data are reported to EUROSTAT by region, density and age of the trees. Questions include self-consumption and percentages of the produce that goes into different products such as, oil, wine, marmalades etc.

The questionnaire includes also questions regarding pesticides and fertilizers; however ISTAT could not use this information as it did not have the capacity to check the data. For these questions, the farmers could not tell which ingredient is used for which crop and they lacked the knowledge regarding the names of the brands and active ingredients. ISTAT do not conduct pre-tests on their surveys and therefore did not identify these problems in advance.

2.11 Fertilizers and pesticides surveys

Both fertilizers and pesticides surveys are conducted according to EU regulation and their data are reported to EUROSTAT.

Statistics on fertilizers are regulated by:

- http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32003R2003

and statistics on pesticides by:

- http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009R1185

The fertilizers survey examines minerals and final products (preparations) sales. It is aimed for distributers. The survey is conducted at the provincial level (nuts3).

There are two pesticide surveys. Both are conducted annually. The first survey is aimed at the users and the reporting is annual. The second is aimed at the distributors and the reporting is every five years, per each year. Data collection is done by CATI.

In total the first survey cover 5 crops, whereas each year 2 crops are selected, in rotation. 15,000 products that are used for these 5 crops are covered.

The second survey examines distribution of pesticides by region. They also have information about frequency of use. ISTAT do not publish the findings, but the results are used to monitor the national plan for the reduction of pesticides use. The national plan is a consequence of EU regulation. However, each country adopted a different specific plan. It should be noted that for the farmers, it is an expensive input and they would like to use as little as possible.

These surveys help calculate several agri-environmental indicators. They have 28 environmental indicators in total that were selected after discussions. ISTAT would like to expand the list and establish a database-system. EFSA website provides additional information regarding food safety and levels of the toxicity.

2.12 Farm Accountancy Data Network (FADN) surveys

Statistics on Farm Accountancy are performed as a survey regulated by

- http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015R0220

There are two parts of the survey: small farms and big farms. 8,000 euros per year is the threshold. ISTAT calculates a standard output in order to be able to compare among the different years. The survey uses stratified sample that takes into account the region, the size of the farm and the agricultural branch.

The sample size is 11,000 for the big farms and 4,000 for the small farms. 95% of the output comes from the big farms and 5% from the small farms. Therefore, they are considering conducting a survey on small farms every 5 years instead of every year.

The questionnaire is collected by an electronic questionnaire built by REA for the big farms and for small farms, it was a questionnaire built by ISTAT. They cannot obtain the detailed information from the financial statement and therefore they need the survey. Logical tests are used to make sure that the data input is correct.

Within the small farms, they had only a 50% response rate despite the fact that it is obligatory for them to answer.

The threshold in the FSS is area and FADN is income. The frame is taken from the census.

2.13 GIS

In general, farms could be identified by VAT code or coordinates. In Italy they use the center of the farm as the GIS identification. Their goal is to use geographic coordinates instead of VAT as a linking key, which is typically used in record linkage practices. A study regarding the linkage between toxic waste dumping and the production of milk and meat at the Campania region was presented. The administrative data source was the Ministry of Health (National Data Bank) and the statistical source was the Italian survey on livestock.

This practice serves well public health studies that map the farm- risk management. It can also be used for example for studying the connection between health issues and the use of pesticides. In their view, it could be sufficient for research but not necessarily for statistical reasons. ISTAT uses a software tool in order to link data from the different sources and to correct errors, validate addresses and standardize them into an official format.

2.14 Agriculture accounts

The economic accounts for agriculture in the European Community is regulated by

- https://publications.europa.eu/en/publication-detail/-/publication/c4ae3f49-a467-472a-9217-2e641674340c/language-en

In agreement with the European classification, ISTAT divides the agriculture accounts into three classes: 1.agriculture (includes animal production and crops), 2. Fishery and hunting and 3. Forestry.

ISTAT include also services provided to animal production and crops. In contrast, ICBS includes only production of animal and crops and fishery, whereas forestry and services are not included and hunting is negligible.

ISTAT use bridge tables between national accounts and the agriculture satellite accounts:

The "Bridge table": differences between the central framework of NA and EAA
PRODUCTION

AGGREGATES	Central framework NA (ESA 2010) (review 2014)	Satellite account EAA
Wine	Wine from own grapes	Wine made by cooperatives included
Oil	Pressed oil made from own olives	Pressed oil made by cooperatives included
Kitchen gardens	Included	Not included
Small animal farming	Included	Not included
Seeds for research, certification and experiments	Included	Not included
Christmas trees and others	Not included	Included
Very small production enterprises	Included	Not included
Associated activities, including:		
- land and landscape preservation	Included	Included
- use and rental of third party farming machines, with staff (pure sub-contracting)	Included	Not included
- first processing of product	Included	Included

Figure 5: *Bridge Table – Production*

The "Bridge table": differences between the central framework of NA and EAA
INTERMEDIATE CONSUMPTION

AGGREGATES	Central framework NA (ESA 2010) (review 2014)	Satellite account EAA
Expenses for energy, fertilizer, animal feedstuffs, pesticides, other goods and services (very small enterprises)	Included	Non included
Expenses for wine and oil processing (cooperatives), milk, fruit and other	Non included	Included
Agricultural tourism	Included	Included
Expenses for bottling and marketing of wine and oil	Own production only	Including cooperatives wine and oil expenses
Expenses for packaging, first processing of the product and arrangement for the markets	included	included

Figure 6: *Bridge Table – Intermediate Consumption*

ISTAT publishes the account every quarter and annually. In total, the agriculture is 2.1% of the total value added. The account is at the regional level, meaning that 21 accounts are published. ISTAT conducts a monthly survey on quantities and prices and multiply the derived average price by the annual quantity in order to calculate the weight of each region.

In the account, other activities of the farm are included, such as production of renewable energy, eco-tourism and more. 20% of the production comes from non-agricultural activities, especially for the small farm.

The account is used to generate a set of economic indicators in agriculture (Please see Annex 4). This list could be adopted by ICBS to enhance the presentation of the major findings of the annual agricultural account.

The process of reporting the accounts estimates along the year to EUROSTAT was also discussed.

2.15 Prices in Agriculture

Prices in agriculture are calculated since 1935 and their base is updated every 5 years. The Chamber of Commerce is responsible for the collection of prices data. In Italy the indices are calculated according to the methodology of the EU Agricultural Price Statistics using in the "Laspeyres" methodology. Please consult Handbook for EU Agricultural Price Statistics

- http://ec.europa.eu/eurostat/ramon/statmanuals/files/Handbook%20for%20EU%20Agricultural%20Price%20Statistics%202008.pdf

In the outputs basket there are 245 products. The indices are calculated for each region and are corrected for seasonality. The national index is a weighted average index for all regions. The prices are calculated for the local market. Prices for export and industry are calculated in another unit. For the Inputs index there are 145 products.

When reporting data, they note changes in varieties or technology that may have an impact on the prices. In a case prices seem unreasonable, ISTAT refer to the chamber of commerce for explanations. If there is no reasonable explanation, ISTAT imputes the price.

2.16 Land prices and rent

A methodology for the calculation of prices of land rent and land sales was presented. The data source is administrative. The methodology is new and is not uniform across the EU countries and therefore, is not comparable. It is planned to establish a gentlemen agreement with the EU on this issue.

The data received were at a low quality with large differences between the years. ISTAT divided the land prices into "irrigated land" and "non-irrigated land" categories, as there are difference in the prices of these two categories (non-irrigated land have lower income potential and their prices are lower in general).

2.17 Research applications of census data.

ISTAT conducts a few studies in agriculture that are based on their data:

2.17.1 Agri-food chain

EU Official Control rules are a key element of the governance of the agri-food chain in Europe, which are world-wide recognized as an example of best practice. Those rules provide national enforcers and the Commission with the necessary powers to ensure effective enforcement of regulatory requirements, and with mechanisms that allow full cooperation of all parties involved in ensuring the correct application of the law across national borders. New rules on official controls along the agri-food chain is expected to enter into force in the first quarter of 2017 and to be applicable by 2020.

Currently agri-food chain statistic is based on data from the FSS according to EU old regulation. Besides the FSS it also includes administrative data. Thus Employee data were taken from the business register. In Italy data are available for the years 2008-2013.

The chain includes: agriculture, manufacture industry, wholesale markets, retail market-specialized and non-specialized stores and food and beverage services. The main goal was to present some economic parameters for this group of industries that rely on agriculture. This could promote agriculture and enhance awareness to its contribution to the economy, as agriculture by itself is a very small industry.

The chain includes 2.1 million enterprises, of which 1.6 are farms. The chain represents 9% of the total employment.

The study enabled the calculation of several economic indicators. For example, the productivity and cost of labor by region of the agri-food chain.

A trend-analysis between 2008-2013 revealed 11% increase in the chain productivity relative to 4% for the rest of the economy. They concluded that this chain may serve as the engine of the economy, especially when growth rate is low.

2.17.2 Localization of farms

Another study presented a spatial model that tries to predict the optimal location for an agricultural holding, using agricultural data such as standard output, self-consumption and own work versus sub-contractors. The model included also other variables such as population density, age composition, educational level, employment, service sector, distance from the highway and topography.

A spatial model was presented for the Piamonte region, which is similar in size to Israel and has half its population.

3.Conclusions and recommendations

The study visit emphasized the need to conduct an agricultural census. The census is a very basic tool in agricultural statistics both in Europe and the rest of the world and provides valuable information on farms structure and activities. It serves as the base for decision making at all levels and is the basis for agricultural research and accumulated knowledge.

The need to combine statistical data with geographical data was highlighted. In ISTAT this combination enables regional detailed analysis of agricultural variables such as output, inputs, agricultural area, production, input and output prices and agri-food chain performance indices. These possibilities are not available at the moment in the Israeli case. Therefore, more effort should be put into improving the identification codes in MARD and in the ICBS in order to enable better linkage between the economic and the geographic data.

In order to avoid duplications and improve geographical information, it is recommended to use face to face interviewing in the Israeli census. After so many years of using low quality administrative data, it is ideal to conduct the census in the actual field although it will not solve all the methodological problems, such as underestimation.

The existing GIS data should be examined again in light of the experience gained in this visit. This activity could be added to the Twinning, Component C assisted by a GIS expert that will join the team.

MARD's reports are based on the data that ICBS collects but further analysis is needed. Better cooperation is needed in the analysis, where Eurostat benchmarks could be used to validate data and analysis.

In the ICBS, the agricultural satellite account could be enhanced by using the common economic indicators, presented by ISTAT. In addition, the linkage between the agricultural account and national accounts should be clarified, using an adapted bridge table.

Agricultural statistics are based on international standards. One of the basic foundations of these standards is the need to conduct an agricultural census periodically in order to serve fact-based decision making. The U.S. conducts a census every 5 years and the EU every 10 years, with intermediate surveys. In Israel it is needed to conduct an agricultural census at least every 10 years. This requires a change also at the legislation level. Therefore, similar to population census, agricultural census should be considered as mandatory core statistics.

In this regard, there is a need to understand how to combine forces with the population census and improve the connection between two operations. As the population census is planned to take place in CAPI, sharing resources could lower the cost.

The study visit helped the Israeli team to enhance their understanding of the area of agricultural statistics and the potential use of detailed census data. Although, the resources and the statistical systems in Italy and Israel are different, both organizations share some statistical accomplishments and challenges. For instance, both organizations seek for the delicate balance between the use of surveys and administrative data in order to generate high-quality agricultural statistics. This study

visit opened a window of opportunity to share experience and views and to improve cooperation between the organizations.