Terms of Reference

EU Twinning Project IL/12 CRIS 2015/370-467

07 December 2016

Component C: Infrastructures for Agricultural Statistics

Activity C.x: Combining economic agricultural data with GIS data

0. MANDATORY RESULTS AND BENCHMARKS FOR THE COMPONENT

Mandatory results:
- *Setting an overall programme for the establishment and maintenance of a farms register to be used as a framework for agricultural statistics (February 2018)*

Benchmarks:

- *IC1: Mapping of all the available data sources and identifying new sources of information (Ultimo November 2016)*

- *IC2: A methodology is set for determining the size threshold for defining a farm (Ultimo November 2016)*

- **IC3:** *A methodology is developed for the integration of different administrative sources for the establishment of farmers frame* (Ultimo February 2017)

- **IC4:** *Questionnaires are drafted and fit needs of direct data collection* (Ultimo May 2017)

- **IC5:** *A methodology is developed for the maintenance of farms register* (Ultimo August 2017)

- **IC6:** *A plan is established to produce farms statistics based on administrative data, GIS layers and direct data collection* by (Ultimo August 2017)

- **IC7:** *A plan is* established *for routine data collection from various sources for agricultural statistics* by (Ultimo August 2017)

In addition to the planned activities, there is also an interest of combining economic agricultural data with GIS data in order to present a full picture of the agricultural sector.

1. PURPOSE OF THE ACTIVITY
The aim of the current activity is to learn and discuss the possibilities and challenges of combining agricultural data with GIS data. The Polish experts will present their experiences in using GIS tools to capture, maintain and produce data in the agricultural census. Special focus will be on combining economic agricultural data with GIS layer data, where units are not identical and discussion of multiple crops within a field season as well as duplications.

The discussions and presentations will help to elucidate the potential benefits and challenges by integrating GIS data into the agricultural census.

The topics that will be covered are listed below:

- Overview of the Polish Agricultural statistics - Census, Surveys, farmers frame:
  o Establishment and maintenance
  o Data sources (Administrative data, GIS layers and direct data collection)
  o Communication methods with farmers and collecting methods
- Combining economic agricultural data with GIS layer data
  o Benefits
  o Challenges
  o How to deal with partnerships in agriculture
  o Multiple crops within a field season
  o Technical requirements
  o Financial costs (Time and technical requirements)
  o Quality check and data analysis
  o Estimation methods and how to deal with for missing data and duplications
  o Legal issues/confidentiality
- Publication and dissemination

2. EXPECTED OUTPUT OF THE ACTIVITY

- Activity report and recommendations

3. PARTICIPANTS

ICBS
Agriculture, Environment and Energy

- Dr. Moshe Yanai; BC Component Leader for Component C, Director, Agriculture, Environment and Energy Sector, Economic – Infrastructure Senior Department; yanaim@cbs.gov.il
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Various Departments

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MS Experts
- **Mr. Janusz Dygaszewicz**, Director Department of Programming and Coordination of Statistical Surveys, Central Statistical Office of Poland
  Specialist knowledge: Methodologies and GIS tools for managing and monitoring field work, Director of Central Census Bureau for Agriculture Census 2010 and Population Census 2011, Leader of the Eurostat projects on the linking administrative and spatial data for agriculture statistics, National coordinator on Big Data in Polish statistics, President of the European Forum for Geography and Statistics, Member of the Executive Committee of the United Nations Global Geospatial Information Management for Europe UN-GGIM:Europe
- **Mr. Artur Łączyński**, Director of Agricultural Statistics, Central Statistical Office of Poland, *Specialist knowledge: Responsible for data collection on agriculture statistics, including field operations using interviewers, methodologies and GIS tools for preparing sample frames and monitoring-managing sample surveys, Satellite imagery in agriculture surveys, Statistics on different domains of agriculture (food security, land use, animal production, agricultural economy, means in agricultural production).*

Twinning Staff
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4. STATUS OF INFRASTRUCTURES FOR AGRICULTURAL STATISTICS *(QUOTES FROM THE TWINNING CONTRACT-2015)*

The current structure of the agricultural economy in Israel is not clear enough and there is a need for further characterization. The main economic activity of many small farms is not always agricultural, but not taking into account those farms in the statistics would result in an under-estimate of the agricultural activity of Israel.

In many cases, administrative files do not provide comparable data, in terms of size, that would allow clear threshold settings. However, there is a need to improve their usability for the creation and maintenance of a register of farms.

The last agriculture census was conducted in 1981 and an extensive survey was conducted in 1995. Over these years the agriculture industry underwent numerous changes that affected the statistics in Israel, among others: The privatization of the agricultural sector, a change in the composition of the economic activities in farms, and a major decrease in the activity of organizations and associations of farmers (which were the main providers of data on agricultural activities).

The quality of many of the current administrative sources is poor and they cover only parts of the agricultural activities. As accurate and reliable agricultural data remains very important for various stakeholders, the ICBS and the Ministry of Agriculture and Rural Development (MARD) agreed on the need to upgrade the data regarding the agricultural infrastructure for the improvement of the quality of the Agriculture statistics, starting with the establishment of a farm register.

Efficient cooperation with the MARD will contribute to the successful implementation of the project. It is recommended that the Ministry is closely involved in relevant activities. Finally there is a need to combine business data with GIS layers in order to complete the picture on the Agricultural sector.

In Israel, the government has only partial information regarding the farming activities, and agricultural data are usually not collected directly from the farmers on a regular and complete basis. Taking these conditions into account, relevant expertise is needed for Agricultural Census.

One of the issues to be addressed is the generation of a sampling frame for agricultural farms in Israel, based on administrative files with poor quality. The challenge is also in bringing together different sources which cover different entities (financial data, agricultural area, livestock) with different IDs, and using them to establish harmonized sampling frame.

Once established, the challenge resides in maintaining updated farms register, and an updated interface with the business register.

One of the difficulties that Israel encounters in the production of agricultural statistics is the estimation of agricultural production used for self-consumption, mainly in traditional agricultural farms.

Program for Activity Cx: 07 December 2016

Infrastructure for agricultiral statistics:

Combining economic agricultural data with GIS data

07 Dec. 2016	Hour	Overall Subject: Combining economic agricultural data with GIS data **Location:** • Infrastructure-Economic meeting room (floor 2-West) *Participants: Selected ICBS and MARD Staff, MS experts, the Twinning team of Component C*
	09:10-9:30	*Welcome and introduction* (Dr. Moshe Yanai and Ms. Charlotte Nielsen) • *Presentation of the Terms of Reference and agenda*
	09:30-10:30	*CSO – Overview of Polish Agricultural Statistics*
	10:30- 10:45	Coffee break
	10:45-11:45	*CSO – Combining economic agricultural data with GIS data* i. Creation of a GIS database ii. Maintenance of a GIS database
	12:00-13:00	Lunch break
	13:00-14:00	*CSO – Combining economic agricultural data with GIS data* iii. Combining data from GIS database to economic data iv. Using GIS to capture, maintain and produce maps for data collection
	14:00 – 14:30	*MARD: GIS as a tool in agricultural census and farm register*
	14:30-14:45	Coffee break
	14:45-16:15	*Discussion* *Future implementations and recommendations*
	16:15-16:30	*Conclusion of the day*

Abbreviations:
BC = Beneficiary Country (Israel)
ICBS = Israeli Central Bureau of Statistics
CSO = Central Statistical Office of Poland
MS = Member State (Denmark)
IT = Information Technologies