



Armenian Experience on Agricultural Census

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ABSTRACT

The first Agricultural Census in Armenia was conducted in 2014. The legal basis to conduct the Agricultural Census was RA Law “On State Statistics” (2000), Three-year state statistical work program, RA Law “On Agricultural Census» (2008), RA Government Decree on 25 April 2013 “On implementation of Armenia Agricultural Census in 2014 and Pilot Agricultural Census in 2013”.

Totally 107 documents (55 Resolutions of the State Council on Statistics of RA) have been adopted.

The methodology of Agricultural Census includes the selection of time period for the census implementation, objectives and coverage of indicators, general population (census units) and methods (exhaustive and sampling), accounting period and census phases.

The Agricultural Census units were all legal persons dealing with agricultural production, individual entrepreneurs, group farms (correctional institutions, military units, orphanages, organizations of social services for the elderly and disabled, education, research and experimental units), individual households in rural and urban areas, and in horticultural companies, communities. Preparatory work has been done through the development of lists of farms in communities and organization plans, recruitment, staff training and publicity campaign.

The Census has been implemented by preliminary visit, control visit and publicity campaign. These activities have been followed by the acceptance of documents by checking/coding of questionnaires responses, questionnaires data entry and obtaining of output tables.

Legislation, methodology and standards have been developed by recommendations of international experts: UN FAO, US Department of Agriculture, EU/Eurostat (Denmark and Sweden) within the EU Twinning Project “Forwarding Armenian Statistics through Twinning” (2011-2013), as well as studying Agricultural Census experience in USA, Denmark, Sweden, Russia, Moldova, Georgia, and other countries. The funds have been provided by the World Bank, Austrian Development Agency/UNDP, EU/budget support, USAID.

Agricultural Census will enable to improve agricultural statistics, form complete statistical data system on agriculture, establish statistical registers for units engaged in agricultural activities, and ensure data international comparability.

Keywords: Agriculture, statistical data, households, questionnaire.

1. Introduction

Since the establishment of the United Nations (UN) in the second half of 20th century, humanity started worldwide the development of accounting systems and maintenance of statistics in accordance with unified and comparable definitions, classifications and methodology. This refers to all spheres of human activities, including agriculture, which is considered as one of the most important fields.

Many countries, including Armenia compile agricultural statistics based on reports from local authorities, because of lack of resources. This method of data collection affects on data quality and that is why an agricultural census is an irreplaceable tool to provide valuable information for agriculture statistics.

According to the World Programme for the Census of Agriculture 2020 (WCA 2020), “A census of agriculture is a statistical operation for collecting, processing and disseminating data on the structure of agriculture, covering the whole or a significant part of a country. Typical structural data collected in a census of agriculture are size of holding, land tenure, land use, crop area, irrigation, livestock numbers, labour and other agricultural inputs. In an agricultural census, data are collected at the holding level, but some community-level data may also be collected”.

UN Member States are required to conduct an Agricultural Census at least every 10 years in accordance with the guidelines defined by the FAO.

2. Need to conduct Agriculture Census in the Republic of Armenia

Statistical data on agriculture in the Republic of Armenia are collected, summarized and published by the National Statistical Service of the Republic of Armenia (NSS RA). Agriculture statistics is guided by the annual state statistical work program, according to the main strategic directions of statistics development that are stated in three-year state statistical work programs. Statistical data are collected directly (sampling) by direct enumeration of agricultural holdings and commercial enterprises engaged in agricultural activities, as well as from administrative registers (Ministry of Agriculture of RA, Ministry of Nature Protection of RA, Cadastre Committee), communities (866 rural and 49 urban). Statistical data on agriculture are presented monthly, quarterly and annually based on the current reports.

Until 2014 an agricultural census has not been conducted in the Republic of Armenia.

According to the existing methodology the Agricultural Census is statistical operation for collecting, processing and disseminating exhaustive data on the structure of agriculture, agricultural lands, livestock, agricultural machinery and buildings, existing resources (human and material) and their utilization.

Meanwhile the Agricultural Census was important for the Republic of Armenia, as the collected statistical data will be used for:

- poverty monitoring,
- food security monitoring,
- planning of agriculture and development of strategy in this area,
- gender statistics,
- improving current agricultural statistics,
- providing users with more comprehensive information and so on.

Conducting Agricultural Census in Armenia was also important because agriculture is considered as one of the most important sectors of economy, and the share of new value in Gross Domestic Product (GDP) during the recent years is 16-20%, and the number of employees in this field is about 37 % of the total employed population.

There are many and various economic entities in the field of agriculture, the majority of them are agricultural holdings (rural households). 90 % of GDP in agriculture belongs to these holdings and they may be described as follows:

- small sizes,
- lack of internal accounting,
- low marketability level (45 % of the products are produced for own consumption, 20 % belongs to in-kind payments and barter and only in average 35 % is monetized),
- low degree of specialization,
- small, limited amounts of investments and incomes,
- high level of changeability of economic activity and intra-sectoral activities (including seasonal).

Implementation of Agricultural Census will give a possibility to create overview of agriculture in Armenia characterized not only by internationally comparable disaggregated indicators, but also it will clarify the detailed structure and composition of agriculture as a field of entrepreneurship (type of economic activity). As a result, it will become possible to form new organizational and legal forms for 340,000 households engaged in agricultural activities, which will be a basis for administrative registration, and thus this field will be no more described as “informal activity”. According to the survey results in 2009 (“The Informal Sector and Informal Employment in Armenia” Country Report), the agriculture sector had the highest rate of informal employment (98.6%). The informal employment rate in agriculture has not been changed and was 99.3 % in 2015 according to the Labour Force Survey.

3. Legal basis for conducting Agricultural Census in the Republic of Armenia

Law on Agricultural Census was adopted in 2008, and that is in line with methodological approaches of the international practice.

This law stipulates the following provisional requirements for the Agricultural Census: objectives, units of the agriculture census and their obligations, bodies conducting Agricultural Census and their obligations, financing, liabilities for violation of the Agricultural Census legislation, etc.

According to the given Law the objectives of Agricultural Census are as follows:

- collection of information on agriculture structure, agricultural land, machinery, constructions, available resources (human, material) and their use at the republican, regional and community level,
- formation of complete statistical data system on agriculture,
- formation of statistical register for agricultural holdings,
- ensuring comparability with international statistical data.

4. Activities necessary for the preparation and organization of Agricultural Census in Armenia

The following activities have been defined to conduct the Agricultural Census in Armenia for the first time:

- to establish commissions (Republican and regional) for the preparation and conducting Agricultural Census,
- to prepare and adopt legal acts and documents (instruction, questionnaire, list, enumerators notebook),
- to develop a publicity campaign program (TV, radio, slogans, posters, booklets, messages, website, social network, etc.),
- to prepare budget estimates,
- to recruit and train staff,
- to prepare and conduct Pilot Agricultural Census (testing),
- to conduct Agricultural Census,
- to code questionnaires, checking, data entry, verification and aggregation,
- to publish and disseminate Agricultural Census data.

5. Preparation and organization of Agricultural Census in Armenia

Agricultural Census Department has been established in May 2013 for the preparation and conduction of the Agricultural Census.

The Pilot Agricultural Census has been conducted on 10 - 30 November 2013 to test the census procedures.

The Main Agricultural Census has been implemented on 11-31 October 2014.

Agricultural Census units were:

- all legal persons dealing with agricultural production,
- individual entrepreneurs,
- group farms (correctional institutions, military units, orphanages, organizations of social services for the elderly and disabled, education, research and experimental units),
- individual households in rural and urban areas, and in horticultural companies,
- communities.

The list of individual households was compiled in the following way:

- in rural communities with the population less than 2000 the lists of units have been formed by the village heads, based on data records of rural communities,
- in urban and rural communities with the population of 2000 or more, by specially hired employees to make a listing, based on the schematic plans of communities.

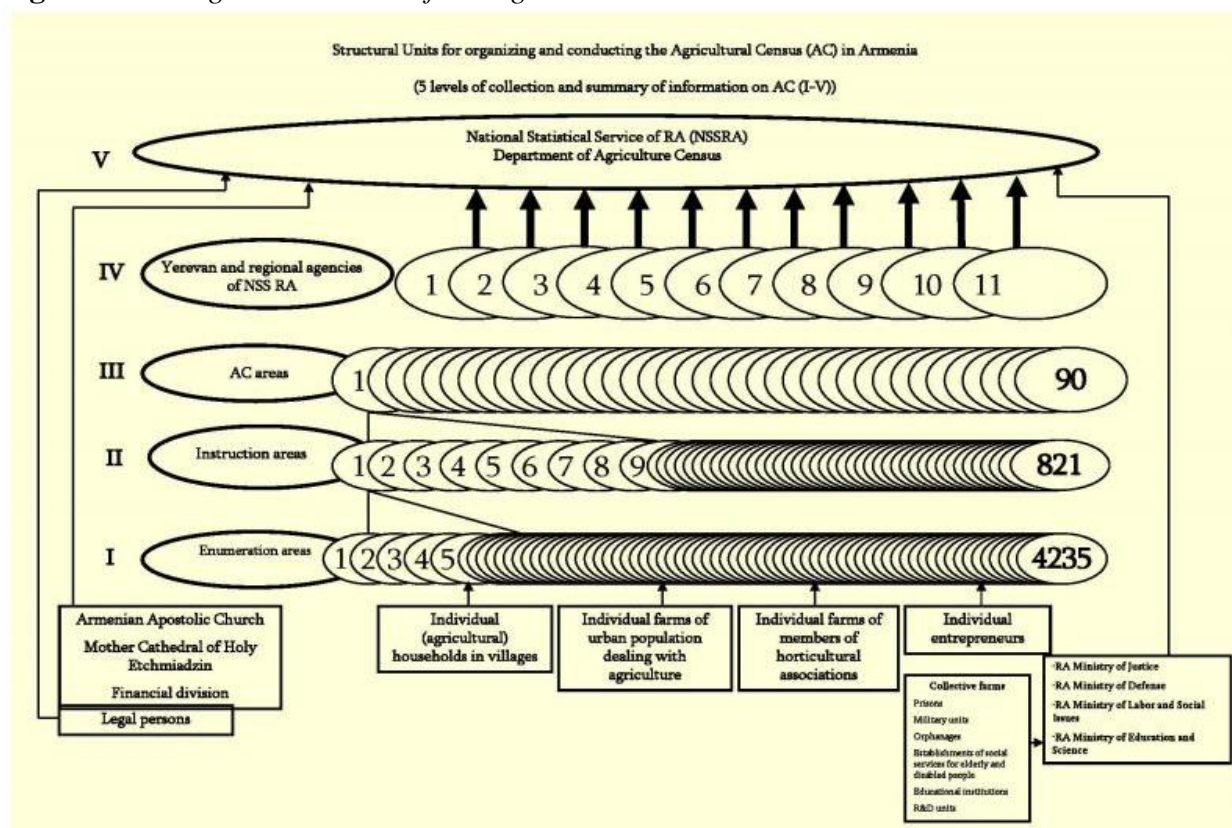
Data collection has been implemented by the completion of relevant questionnaires.

Around 250 characteristics have been included in the questionnaires, in particular the main recommended by FAO are:

- household address,
- household`s head gender, age, education, etc.,
- legal status of the household,
- the main purpose of production,

- land size, sowing areas, perennial areas,
- irrigated land and irrigation methods,
- fisheries,
- the availability and use of agricultural machinery,
- plant protection means and fertilizers,
- labour force,
- agro tourism, etc.

Figure 1: Management scheme of the Agricultural Census in Armenia



According to the organizational plan for 2014, 90 census areas, 821 instruction areas and 4235 enumeration areas have been established on the whole territory of the country.

Agricultural Census has been prepared and implemented by the following three stages:

1. Preparatory work
 - compilation of lists of farms in communities,
 - development of organization plans,
 - recruitment and staff training,
 - publicity and awareness campaign.
2. Carrying out of Agricultural Census
 - preliminary visits to households (farms),
 - carrying out of Agricultural Census,
 - conducting of sample control visit,
 - publicity and awareness campaign.
3. Acceptance of documents and information processing
 - acceptance of documents,
 - checking/coding of responses in questionnaires,
 - questionnaires data entry,
 - deriving of output tables.

To ensure the completeness and quality of daily collected data, operational controls of field work were carried out. The data field work was monitored in the following way. Enumerators work was monitored by instructors-supervisors, and their work by heads of census areas and their assistants, whose work in its turn by coordinators. The overall control has been implemented by heads of regional agencies of the NSS RA and the ones responsible for territorial units. International experts also participated in the field work monitoring process.

For data editing and imputation special software was developed using CSPro (Census and Survey Processing System) and SPSS that were localized and improved by international experts, taking into account the peculiarities of Agricultural Census implemented in Armenia.

6. Post- enumeration survey

Highlighting the importance of data quality, after the data collection, the post-enumeration survey has been implemented from 28 November to 14 December 2014 that comprised 3.5% of general population. Random sampling was carried out in 134 urban and rural communities of country's 10 regions.

Data are not yet finalized, and therefore at this stage it is not possible to reveal differences with other available sources.

It is foreseen to publish the Agricultural Census final results in the 4th quarter of 2016.

7. Donors support

The legislation, methodology and standards, questionnaires, publicity campaign materials, deriving of output tables, preliminary data release, etc. for 2014 Agricultural Census have been developed based on the FAO guidelines, recommendations and support of international experts, such as Mr. Michael Steiner, Expert, USDA, Mr. Rolf Selander, Senior Adviser, Statistics Sweden, Mr. Kristian Hulsager, Head, Agricultural Statistics Department, Statistics Denmark, Mr. Karsten Larsen, Head, Agricultural Statistics Division, Statistics Denmark, Mr. Thomas Bie, Resident Twinning Adviser, European Union (EU) Twinning Project “Forwarding Armenian Statistics Through Twinning” and Mr. Giorgi Kvinikadze, Mr. Oleg Cara, Mr. Vasile Petre, Experts, FAO, as well as with the support of staff of the Ministry of Agriculture of RA.

In the course of the Agricultural Census preparation, organization, implementation and data aggregation the NSS RA has studied the experience on Agricultural Census in USA, Denmark, Sweden, Russian Federation, Moldova, Georgia, Italy and Austria, and other countries. A delegation from the NSS RA visited FAO Headquarters in Rome to participate in meetings on the development of the agricultural statistics system in Armenia.

Funds have been provided by the World Bank, Austrian Development Agency/implementing agency UNDP jointly with FAO, EU budget support/ the European Neighborhood Program for Agriculture and Rural Development (ENPARD/ implementing agency FAO, United States Agency for International Development (USAID)/ implementing agency USDA.

The census budget amounted to \$ 5.1 million. The number of accounted farms was 418 880. The costs per unit were \$ 12.1.

8. Conclusion

Agricultural Census in the Republic of Armenia will improve current statistics, form complete statistical data system on agriculture, establish statistical registers for entities engaged in

agricultural activities, improve sample statistical tools and ensure their comparability with existing international standards, identify trends of changes in agricultural infrastructures throughout the years.

Agricultural Census will provide a wealth of new and reliable information to the Ministry of Agriculture for strategy formulation, policy making and focused action plans.

Challenges of Agricultural Census:

- lack of funds to conduct regular censuses
- lack of administrative registers
- lack of legal definition of farm, criteria for determining the farm (land size, heads of livestock, etc)
- difficulties on recruitment of large number of qualified enumerators and supervisors.

Recommendations:

- to create Farm Register
- to introduce agricultural statistics system based on Farm Register
- to introduce new methods of data collection.

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