

Linking Population and Agricultural Census In Indonesia

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ABSTRACT

Recently, BPS-Statistics Indonesia is conducting the Population Census 2010. The Population Census 2010 activities consist of several stages which are Area mapping and Census Block development and identification; listing of households and buildings; population data collection; and data dissemination. Another census conducted by BPS is agriculture census. The last agriculture census was in 2003 and the upcoming census is the Agriculture Census 2013 which is now in preparation stage. In general, the objectives of the agricultural census are to obtain a clear picture of agriculture structure in Indonesia; to obtain a sampling frame that will be used as the base of sample selection for agriculture surveys; and to obtain information on the population of agriculture households, landless agriculture households, area of food crops, number of trees and livestock, distribution of land holding, etc.

In general, there are several linkages between population census and agriculture census as follows:

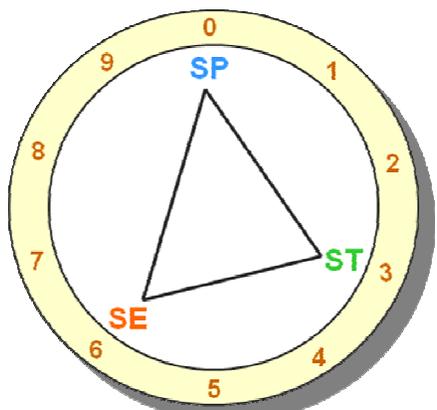
1. Census blocks developed or identified in population census are used in agriculture census as base of census budgeting, census design, and implementation.
2. One of variables accommodated in population census is main income sources or main industry such as agriculture, rice, corn, and other grains; agriculture horticulture; agriculture estate, agriculture animal husbandry; aquaculture, etc. Therefore, data resulted from the population census would be essential for prior information in agriculture census.
3. The population census provides information on demography in general for the whole households and population in the country. This will give prior information that could be use for comparison, evaluation, and validation of data resulted from the agriculture census.
4. The population census collects information on social economics characteristics related to housing unit such as primary source of lighting, the main source of energy for cooking, source of drinking water, etc, for the whole population. On the other side, agriculture census collects similar information with focusing on farmer households. Thus, both could be integrated for further analyses on farmer welfare.

In conclusion, data resulted from the population census could be very essential for the agriculture census in term of prior information. This information is essential for agriculture census budgeting, design, implementation, evaluation, and validation.

Keywords: Census, Agriculture, Population, Indonesia, farmer, economic characteristics

1. Introduction

Badan Pusat Statistik (BPS-Statistics Indonesia) is a Non-Departmental Government Institution directly responsible to the President. Since the function of statistics services is under BPS-Statistics Indonesia responsibilities, all censuses must be conducted and coordinated by BPS-Statistics Indonesia. Indonesia has three type of data collection by means of census which are Population Census (SP for Sensus Penduduk) that is conducted ten yearly in the year ending with “0” (2000, 1990, 1980 ...); Agricultural Census (ST for Sensus Pertanian) that is conducted ten yearly in the year ending with “3” (2003, 1993, 1983 ...); and Economic Census (SE for Sensus Ekonomi) that is conducted ten yearly in the year ending with “6” (2006, 1996, 1986 ...). In accordance with the ICAS-V theme, this paper is only concerning the linking population and agricultural census.



*Ten Yearly Cycle of Data Collection
by means of Census*

2. Population Census 2010

According to Government Regulation (Act 6/1960; Act 7/1960) Population Census is to be conducted every ten years. In its operations, population census employs complete enumeration where detailed information is collected.

De jure and de facto approaches are applied in order to catch all people in the enumeration areas. Those who have permanent residence are approached using de jure criterion, that is, they are recorded where they formally lived; while those without permanent residence are approached using de facto criterion and are recorded where they were found. All members of Diplomatic Corps and their families are excluded from the census. Common information collected are name, sex, age, relationship to the head of households, marital status, socio-economic characteristics of the respondents, education, fertility, mobility, and information on housing condition.

Based on the Population Census 2000, Indonesia population was 201 million people, with the growth as many as 1.34 percent per year for 1990-2000 periods. The figure has made Indonesia in the fourth biggest population countries in the world after China, India, and the United States of America. The preliminary figure of the Population Census 2010 reveals that Indonesia population is 237.6 million people with population growth as much as 1.49 percent.

Recently, BPS-Statistics Indonesia is conducting the Population Census 2010. The Population Census 2010 activities can be elaborated into several stages as follow:

1. Area mapping and Census Block development and identification.
This activity had been done in 2008 and 2009. The purpose of the activity was to develop working area of enumerators. The result of this activity will be then used as frame for many surveys conducted by BPS.
2. Listing of households and buildings.
This activity was conducted in the census month 1 till 31 of May 2010.
3. Population data collection.

This activity was conducted by enumeration of citizen with permanent residence address, conducted in 1-31 May 2010. For citizens who have no permanent residence, the enumeration was conducted on 15 May 2010 (the Census Day).

4. Data dissemination.

This activity is conducted when the data processing and tabulation has been finished. In August 2010, BPS-Statistics Indonesia will announce the preliminary figures in August 2010 and the final figures are planned to be disseminated in August 2011.

3. Agriculture Census 2013

The agricultural census was conducted in Indonesia for the first time in 1963. It was implemented only in rural areas in all Indonesia provinces, except Irian Jaya (Papua), which was excluded because of the lack of human resources and budget to cover this remote area. The smallest enumeration area was “lingkungan” (surroundings). The main goal of the 1963 agricultural census was to obtain data in the agriculture sector in order to make a complete description of agriculture structure in Indonesia. Information collected included land use, irrigation, fertilizer use, livestock, number of agricultural workers, transport facilities to market agricultural products, and agricultural equipment.

The last Agriculture Census was in 2003. Based on the census, number of farmers in Indonesia in 2003 was 34.99 million people and number of agriculture households was 24.87 million. The census revealed that 53.30 percent of the households occupied less than 5,000 m² of land. The upcoming Census is the Agriculture Census 2013 which is now in preparation stage.

The data obtained from the agricultural census has distinct characteristics compared with the data obtained from annual agriculture surveys. In general, the objectives of the agricultural census are:

- a. To obtain complete and accurate data in the agriculture sector in order to get a clear picture of agriculture structure in Indonesia
- b. To obtain a sampling frame that will be used as the base of sample selection for agriculture surveys.
- c. To obtain information on the population of agriculture households, landless agriculture households, area of food crops, number of trees and livestock, distribution of land holding, etc. hence, data obtained from the census can also be used as a base to correct the estimations of food crop production, horticulture, plantations, forestry, livestock and fishery.

4. Statistical units in the agricultural and population census

Both agricultural census and population census in Indonesia use the same statistical unit which is the term of household. An ordinary household is a group of persons who usually live together in a building or housing unit who make common provision for food and other essentials of living. One household could consist of only one household member.

However, agriculture census uses also the term of agriculture household which is a subset of the term of household. A household is considered to be an agricultural household when at least one member of the household is operating holding activities that produces agriculture product, either fully

or partly of the product is for commercial purpose in order to earn income on their own risk. The activities consist of farm cultivation, husbandry and poultry, aquaculture, and fish capture.

In addition, the characteristics of agricultural establishment are not collected in the census. They are collected in complete enumeration conducted annually. However, agricultural census conducts updating directory of agricultural establishments that can be use as base for the annual establishment complete enumeration.

5. Use of common concepts, definitions, and classifications

Some variables covered in both agricultural and population censuses are similar such as household as mentioned above, household member, head of household, age, term of the 'main' concepts, worker, employment, etc. In addition, both agricultural and population censuses use common concepts, definitions, and classification for each of variables. Therefore, the results are comparable and could be incorporated in comprehensive analyses.

6. Using the population census as a household frame for the agricultural census

One of essentials activities in population census is area mapping. This activity creates and updates the enumerator working unit which is called Census Block. Census Block (CB) is part of a village which is the working area for a enumerator. A CB has some criteria as follows:

- Every village is fully divided into some CBs
- A CB must have clear and eye catching borders either natural borders or manmade borders.
- Local administrative area borders under a village are prioritized as the CB borders.
- A CB must be in one single field.
- A CB consists of 80 up to 120 households.

Census Blocks developed or identified in the population census are used in agricultural census as base of census budgeting, census design, and implementation. The list of CB then becomes the frame for other censuses and surveys. The list of households in each CB then sometimes becomes a frame for sampling activity in the CB. Therefore, the agricultural census and population census use the same CBs.

7. Existing agriculture-related data in the population census

One of variables accommodated in population census is main income sources or main industry such as agriculture, rice, corn, and other grains; agriculture horticulture; agriculture estate, agriculture animal husbandry; aquaculture, etc. Therefore, data resulted from the population census would be essential for prior information in agriculture census.

The population census provides information on demography in general for the whole households and population in the country. This will give prior information that could be use for comparison, evaluation, and validation of data resulted from the agriculture census.

The population census collects information on social economics characteristics related to housing unit such as primary source of lighting, the main source of energy for cooking, source of drinking water, etc, for the whole population. On the other side, agriculture census collects similar

information with focusing on farmer households. Thus, both could be integrated for further analyses on farmer welfare.

8. Linking data from the agricultural and population censuses

The same households could be identified and observed both in population and agricultural censuses. In fact, the censuses are conducted in different year. Therefore, it is possible to conduct cohort or panel analyses by integrated and linked information from agricultural and population censuses. This is possible since the time lag is not very far. The agricultural censuses are conducted in the following three years after the population censuses. Another reason that the data resulted from the two censuses can be linked is both censuses use the same census blocks which make easier to match households identity in the censuses.

In addition, for the next agricultural census which is the Agricultural Census 2013, the data resulted from the Population Census 2010 will be very essential due to the modified methodology. As mentioned before, one of variables accommodated in population census is main income sources or main industry such as agriculture, rice, corn, and other grains; agriculture horticulture; agriculture estate, agriculture animal husbandry; aquaculture, etc. The information will be used as base for updating activities in the Agricultural Census 2013.

The Agricultural Census 2013 is planned to be started with updating activity that will be conducted by visiting all agriculture households that are listed on the list resulted from the Population Census 2010. The updating activity will verify the agriculture household location and head of household names in a certain CB. Beside, the enumerator must enrich the information on the form through respondent direct interview.

The next stage will be sweeping which is started with finding prior information from informants about the existence of agriculture households in the CB whose names are not on the list resulted from the Population Census (by showing the CB map under enumerator's responsibility). Afterwards, all head of agriculture household names informed by the informants and not yet on the list are then added to the list, whilst other information is questioned by the enumerator to respondents.

In conclusion, data resulted from the population census could be very essential for the agriculture census in term of prior information. This information is essential for agriculture census budgeting, design, implementation, evaluation, and validation. Some keys that could be beneficial when the agricultural census is linked to the population census are as follows:

- The population census can be use as prior information for other censuses such as agricultural census. Therefore, the census must be designed and conducted with concerning the integration of future plan of other censuses.
- Some variables collected in population census are similar to some collected in agricultural census. Hence, both censuses must use the same concepts and definitions that make the result comparable.
- The population census will be more beneficial for agricultural census if the result could identify some keys related to the agriculture potential.

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