Computation of Farm-Based SDG Indicators: Indonesia’s Experience in Conducting Agricultural Integrated Surveys

Dr. Kadarmanto, MA
BPS-Statistics Indonesia
Overview of Indonesian AGRIS Pilot

Methodology and Data Collection

Results

Lesson Learnt, recommendations, and way Forward
Overview of Indonesian AGRIS
Agricultural sector plays a strategic role in the process of economic development of a country.

there were 27.68 million farm households in Indonesia in 2018 (Results of SUTAS 2018)

62 percent of Indonesia’s poor live in rural areas (BPS)

A comprehensive, accurate, and cost-effective evaluation and monitoring of the development progress of the agricultural sector and rural areas are needed.

Key: Rural development by focusing on strengthening the agricultural sector
Calculation of these indicators requires the availability of detailed micro information based on farmers and gender.

No survey can adequately provide this key information in an integrated and comprehensive manner.

Unavailability of agricultural SDGs indicators.

Agriculture Integrated Survey is absolutely crucial, especially in supplying the calculation of the SDGs for agriculture and other substantial agricultural data.

The published results of the 2019 Data Needs Survey - BPS show that only around 17.58% of data consumers get production informations (including agriculture).
Overview

Pilot project implementation

SURVEY PREPARATION
- AGRIS Handbook translation and adaptation
- Questionnaire design
- Tabulation plan
- Sampling design
- Training of enumerators

DATA COLLECTION
- Household listings
- Sample selection (September 2020)
- Data collection using CAPI (September - October 2020)

DATA PROCESSING
- Dashboard monitoring → outlier check
- Data cleaning and imputation
- Weighted data analysis
- SDGs indicator calculation

REPORTING & VALIDATION
- Preliminary reports on November 23-24, 2020
- Final results on December 18, 2020
- SDGs result publication on January 22, 2021

DATA DISSEMINATION
- Full report (on progress)
Methodology and Data Collection
Household agricultural holding (individual)

Agricultural holding (non household) defines as follow:
1. Agricultural enterprises
2. Agricultural holding other than agricultural households and agricultural enterprises.
Methodology

Coverage of AGRISurvey

Agricultural activities covers:

Crops:
- Food Crop*
- Horticulture
- Estate crop

*Food crops (paddy and secondary crops) are counted even though they are not sold
Methodology

**Sampling Frame** for household agricultural holding (multistages random sampling)

Three frames are used for AGRIS Survey:

**Frame for selecting districts/city:** a list of districts/city providing an information about total agricultural household based on Agricultural Census 2013

**Frame for selecting census block:** a comprehensive list of census blocks provides a necessary information about total agricultural households and dominant sub sector in the census blocks

**Frame for selecting household:** based on household listing or updating in the census blocks
Indonesian AGRIS Survey (SITASI2020) preliminary survey conducted in:

- 3 Provinces
- 21 Districts
- 129 Census Blocks
- 1290 Agricultural Households

household sample size is designed for provincial estimation
Data Collection

- 60 days period of field enumeration (Sept-Oct 2020)
- Each field enumerator assigned 2-3 Enumeration Area (EA)

- The pilot used CAPI (Computer Assisted Personal Interview) -> Integrated Collection System (ICS)
- Data collection used field enumerators gadget (Bring Your Own Device/BYOD)
Data Collection Organization

*Team allocation is based on total sample target and workload
*Team is distributed hierarchically by provincial statistical office and district statistical office
03 Results
Result

Indicator 2.3.1

Production volume per unit of labour according to agricultural class / pasture / forestry holding size.

Labour productivity = \frac{Production Volume}{Number of workers}

Agricultural workers in the three provinces are able to generate US $ PPP 36.3 per day working.
Result

Indicator 2.3.2

Average income of small-scale food producers, by sex and indigenous status

The average income of small scale food producers = \( \frac{\text{Total income}}{\text{Number of small scale producer}} \)

The average income of small scale producers in agricultural enterprises in the three provinces is US $ PPP 641,97 per year.
Result

Indicator 2.4.1

Proportion of agricultural area under productive and sustainable agriculture

Around 89.72 percent of agricultural land uses in the three provinces falls under the standard of productive management to ensure sustainable agriculture.
In total, it can be concluded that the percentage of population in the three provinces who lived in the agricultural households and own agricultural land equals to **26.74 percent**.

Among all **men in the agricultural households**, around **39.67 percent** of them own agricultural lands.

For all **women in the agricultural households**, only **11.10 percent** of them own agricultural lands.

**Result**

*Indicator 5.a.1 (a)*
Result

Indicator 5.a.1 (b)

Around 18.95 percent of woman in the three provinces owns agricultural land with proof of certified ownership.
Lesson Learnt, Recommendations, and way forward
Lesson Learnt

BUDGET
Given the complexity of the survey, a good budget planning is needed to ensure that field enumerators are paid properly.

QUESTIONNAIRE
The questionnaire is quite complex and creates respondent burden during the enumeration. On average, it needs around 3 hours to complete one questionnaire customization and simplification.

TECHNOLOGY
A strong CAPI system is very crucial due to the complexity of the questionnaires. The use of CAPI also must be supported by gadget literacy and good internet connection.
Lesson Learnt

PANDEMIC
Management survey is very vital in implementing a face to face interview survey in the time of pandemic.

CONCEPT AND DEFINITION
Some key concepts and their specific definitions are uncommon in Indonesian context. Enumerators have difficulties in comprehending those concepts. 

Need an intense consultation with FAO experts.

METHODOLOGY
Sampling design must be determined properly and rigorously to ensure that the survey has a good coverage and expected results (level of estimation) 

FAO assistances
Recommendations

Assistances from FAO AGRIS team are needed for simplifying and customizing the questionnaires based on countries needs and circumstances.
**Indonesian AGRIS Survey 2021 (on going)**

Indonesian AGRIS Survey (SITASI2021) will cover:

- **34** Provinces
- **514** Districts
- **30,593** Census Blocks
- **303,766** Agricultural Households
- **2,755** Non Households

Household sample size is designed for district level estimation.
Thank you