

# Philippines - Palay Production Survey 2017

**Philippine Statistics Authority (PSA)**

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# Overview

## Identification

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### ID NUMBER

PHL-PSA-PPS-2017-v1.0

## Version

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### VERSION DESCRIPTION

v1.0: Division edits for preliminary estimates computation (raw, first output)

### PRODUCTION DATE

2018-01-20

## Overview

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### ABSTRACT

The Palay Production Survey is one of the two modules of the Palay and Corn Production Survey (PCPS), formerly known as the Rice and Corn Production Survey (RCPS).

The Palay Production Survey (PPS) 2017 is a quarterly survey conducted by the Philippine Statistics Authority (PSA). It aims to generate estimates on palay production, area and yield and other related information at the provincial level. The four rounds are conducted in January, April, July and October. Each round generates estimates for the immediate past quarter and forecasts for the next two quarters. Results of the survey serve as inputs to planners and policy makers on matters concerning the rice industry.

### KIND OF DATA

Sample survey data [ssd]

### UNITS OF ANALYSIS

Farming households;

Palay areas operated by farming households

## Scope

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### NOTES

The scope of the Palay Production Survey includes:

- Production, area planted/harvested and yield by ecosystem and seed type
- Usage of seeds, fertilizer and pesticides
- Source of irrigation water and adequacy
- Monthly distribution of production and area harvested
- Farm household disposition of production
- Area with standing crop
- Planting intention for the quarter

## TOPICS

Topic	Vocabulary	URI
Agriculture, forestry, fisheries	Philippine Statistics Authority	

## Coverage

## GEOGRAPHIC COVERAGE (1)

National, Regional

## GEOGRAPHIC COVERAGE (2)

Provinces in Regions (National Capital Region not included)

## GEOGRAPHIC UNIT

Barangay

## UNIVERSE

Farming households in palay producing barangays.

## Producers and Sponsors

## PRIMARY INVESTIGATOR(S)

Name	Affiliation
Philippine Statistics Authority (PSA)	National Economic and Development Authority (NEDA)

## FUNDING

Name	Abbreviation	Role
Government of the Philippines	GOP	Full funding

## Metadata Production

## METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Crops Statistics Division	CSD	Philippine Statistics Authority	Documenter

## DATE OF METADATA PRODUCTION

2019-05-07

## DDI DOCUMENT VERSION

Version 1.0 (March 2017) - Philippine Statistics Authority

## DDI DOCUMENT ID

DDI-PHL-PSA-PPS-2017-v1.0

# Sampling

## Sampling Procedure

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The sampling procedure used in the Palay Production Survey 2017 (PPS 2017) was first implemented in 1994. This is a replicated two-stage stratified sampling design with province as the domain, barangay as the primary sampling unit (psu) and farming household as the secondary sampling unit (ssu).

The 1991 Census of Agriculture and Fisheries (CAF) provides the primary basis for the sampling frame for the PPS. Except Isabela, Laguna and Bukidnon where the traditional complete enumeration strategy was employed, the 1991 CAF used sampling techniques for selecting the primary sampling units (the barangays) for these three provinces.

The results of the 1991 Census of Agriculture and Fisheries (CAF 1991) serve as sampling frame at the psu and ssu levels. In the said census, the largest barangay in a municipality is taken with certainty while a 50 percent sampling rate is used for selecting the remaining barangays in the municipality. This scheme effectively resulted in the generation of two sub-universes: a sub universe of barangays with probability of selection equal to one (these barangays are called 'certainty barangays') and another sub-universe of barangays with probability of selection equal to 0.5. This characteristic of the CAF 1991 data is used in the selection of sample barangays for the PPS.

The barangays are arrayed in ascending order based on palay area which are stratified such that the aggregate palay area of the barangays belonging to one stratum is more or less equal to the aggregate palay area of the barangays in any other stratum. Ten strata are formed for major palay producing provinces and five for minor producing provinces. In all these provinces, the last stratum consisted of the certainty barangays per CAF 1991 design.

For each stratum, four (4) sample barangays are drawn independently using probability proportional to size (pps) sampling with the barangay's palay area as size measure. This resulted with four (4) independent sets of barangays (i.e., four replicates) for the province. Systematic sampling is used in drawing the sample farming households in each sample barangay.

For economic reasons, sample size per barangay is limited to a minimum of four (4) and a maximum of twenty five (25). To correct for this limitation of the design, the use of household weights is instituted. A detailed discussion of weighting in the PPS is included in the survey's estimation procedure attached as a Technical Document.

Updating of frame on the list of agricultural households in the same sample barangays were generated through interview of key informants in 2007 and 2011 in order to get a precise estimate.

In November 2007, an updating of the list of farming households in all palay sample barangays nationwide is done to address the problem of non-response due to transfer of residence, stoppage of farm operation, passing away of operator etc. Consequently, a new set of sample households is drawn.

Respondents who refused to be interviewed, not at home, unknown and transferred to another barangay are treated as missing and are replaced at the Central Office for the next quarter's survey. The replacement samples are taken from the list of replacements (farming households) for the barangay and are reflected in the list of sample households for the next round.

## Weighting

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Sample weights are applied to all variables at the household-level. These are determined as a function of the uniform raising factor for the province, denoted by  $R_k$ , and the adjusted household weights.

$R_k$  is initially computed from the following characteristics: average total area planted to palay per stratum, average total area planted to palay per barangay, average number of farming households per barangay, average number of sample farming households per barangay and average number of sample barangays per stratum.

Sample size for the sample barangay is determined based on the following information:  $R_k$ , total number of farm households in the sample barangay, total palay area of the sample barangay, aggregate palay area in the stratum and number of sample barangays in the stratum.

For operational purposes, sample size per barangay is limited to a minimum of four (4) and a maximum of 25. To correct for this limitation, the use of a uniform sample weight for all sample households in the same sample barangay is instituted. Household weights are determined as a function of the computed sample size and the 'desired' sample size for the barangay, that is:

- a) 1.00 if the computed sample size was between 4 and 25;
- b) less than 1.00 if computed sample size was less than 4
- c) more than 1.00 if computed sample size was more than 25, and
- d) based on computed sample size and number of farming households in the barangay if computed sample size is less than 25 and said sample size is greater than total number of farming households in the barangay.

Household weights were encoded together with other household level data. During table generation, weighting adjustment was done to correct for sampling unit non-response due to the following reasons:

- refusal of target respondent or any other knowledgeable household member to be interviewed
- sample barangay was not accessible during the survey period
- entire household was temporarily away during the survey operation-
- sample household has transferred residence to another barangay
- sample household's residence could not be located / unknown in the sample barangay

Weighting adjustment was done for each sample barangay, whenever applicable. This was calculated by multiplying the original household weight by the reciprocal of the response rate. Response rate is the ratio of the number of sample households who responded to the survey (either palay household and non-palay household) to the total number of sample households in the barangay. Calculation of the final weight was done afterwards, by multiplying the adjusted weight by the uniform raising factor  $R_k$ .

Details of the above discussion on weighting adjustment procedures, are contained in the document describing the Palay Production Survey (PPS) sampling methodology provided attached as a Technical Document.

# Questionnaires

## Overview

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The questionnaire for Palay Production Survey (PPS) 2017 is written in English and is structured in format. It evolves from modifications in 2012 based on the commitment of making available to the public the reliable statistics in palay and continuous efforts in developing approaches and methodologies in estimating such statistics particularly improving the survey questionnaires. The Technical Working Group on Cereals Statistics of the Bureau reviewed simultaneously the PPS and CPS questionnaires and came up with sets of user-friendly survey instruments. The major features of the new set of PPS questionnaire are: shift from barangay level to farm level questionnaire i.e., from a maximum of five (5) households to one (1) household per questionnaire; change in questionnaire format; more detailed sample status categories; defined types of ecosystem; inclusion of items on labor inputs; and application of organic pesticides. These new set of questionnaire was used starting April 2012 survey round of the PPS.

The questionnaire was divided into the following blocks:

- Block A - Sample identification
- Block B - Sample particulars
- Block C - Information on paddy (palay) harvested
  - Block C.1 - Area, production, seed and irrigation information
  - Block C.2 - Fertilizer usage
  - Block C.3 - Pesticide usage
  - Block C.4 - Labor inputs
- Block D - Palay production disposition (all ecosystem)
- Block E - Palay production forecast (on standing crop)
- Block F - Palay planting intentions
- Block G - Respondent's assessment of the household palay production
- Block H - Farmer's participation in rice program
- Block I - Statistical Researcher, Supervisor, PSO and Encoder Identification

A detailed description of these blocks is provided under Technical Documents.

## Data Collection

### Data Collection Dates

Start	End	Cycle
2017-04-01	2017-04-10	April 2017 Round
2017-07-01	2017-07-10	July 2017 Round
2017-10-01	2017-10-10	October 2017 Round
2017-12-01	2016-01-10	January 2018 Round

### Time Periods

Start	End	Cycle
2017-01-01		April 2017 Round (Final estimates)
2017-04-01		April 2017 Round (Forecast based on standing crop)
2017-07-01		April 2017 Round (Forecast based on planting intention)
2017-04-01		July 2017 Round (Final estimates)
2017-07-01		July 2017 Round (Forecast based on standing crop)
2017-10-01		July 2017 Round (Forecast based on planting intention)
2017-07-01		October 2017 Round (Final estimates)
2017-10-01		October 2017 Round (Forecast based on standing crop)
2018-01-01		October 2017 Round (Forecast based on planting intention)
2017-10-01		January 2018 Round (Final estimates)
2018-01-01		January 2018 Round (Forecast based on standing crop)
2018-04-01		January 2018 Round (Forecast on planting intention)

### Data Collection Mode

Face-to-face [f2f]

### Data Collection Notes

Statistical Researchers (SRs) are hired to gather the data. Prior to data collection, training of the SRs is conducted to ensure that the procedures and concepts are understood. Mock interviews and dry-run exercises are parts of the training.

Prior to data collection in the sample barangays, a courtesy call is made to barangay officials by the SRs to explain the nature and purpose of the survey and to seek permission for its conduct in their area. At the household level, the objectives of the survey are explained by the SRs as well as an assurance that the information collected are treated with utmost confidentiality. Average interview time per sample household ranged from 30 to 45 minutes.

The SRs use the local dialect in the interview in accordance with the procedures prescribed in the manual of instructions and as discussed during the training. Problems encountered by the SRs are reported to their supervisors for appropriate action. The accomplished questionnaires are first edited by SRs for completeness, consistency and acceptability of the entries before submitting to the supervisors.

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Block H - Farmer's participation in rice program

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## Data Collectors

Name	Abbreviation	Affiliation
Philippine Statistics Authority	PSA	National Economic and Development Authority

## Supervision

Field supervision is undertaken by the Provincial Office (PO) staff in their respective municipalities of assignments. The Provincial Statistics Officer (PSO) serves as overall supervisor in the province, while the Regional Director (RD) is the overall supervisor in the region. Central Office technical staff also make field visits in some provinces to observe the field operations.

Among the responsibilities of the supervisor are to conduct SR training prior to data collection, make spotchecking and backchecking activities during and after data collection, edit completed returns, address problems encountered by the SRs under his/her supervision and report to Central Office the significant findings that may contribute to the analysis of the survey results.



# Data Processing

## Data Editing

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Data are processed in the PPS processing system developed using the Census and Survey Processing System (CSPPro). Data processing is decentralized at the Provincial Offices. The processing activities include encoding of the data from the edited survey returns, computerized editing, completeness check and generation of output tables.

Prior to data encoding, the accomplished survey returns are manually edited and coded. Manual editing involves the checking data items based on the pre-set criteria, data ranges, completeness and consistency with other data items in the questionnaire. Coding is the assignment of alpha-numeric codes for questionnaire items to facilitate data entry.

To validate, encoded data are subjected to computerized editing using a customized editing program. The editing program take into consideration the validation criteria such as validity, completeness and consistency with other data items. This activity is done to capture invalid entries that were overlooked during manual editing. An error listing is produced as output of the process. The errors reflected in said lists are verified vis-à-vis the questionnaires. The data files are updated based on the corrections made. Editing and updating are performed iteratively until a clean, error-free data file is generated.

Completeness check is done to compare the data file against a master file of barangays to check if the sample barangays have been completely surveyed or not. This activity is done after a clean, error-free data file is generated.

## Other Processing

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Data from the PPS are processed using a customized processing system developed using the Census Survey Processing (CSPPro) software by the Systems Development Division (SDD).

Decentralized processing is applied for the PPS. At the POs, processing activities include encoding of data from survey questionnaires; computerized editing, completeness checking, generation of expansion factor and generation of output tables.

The contents of the PPS questionnaire are inputted into the desktop computer using a data entry application program developed in CSPPro. The data entry program is composed of ten record types (RTs). Each record type represents a corresponding section of questionnaire except for RT 1 where it covers Sections A and B and RT 10 which includes Section C.4 and other single questions from Sections C.1, E.1 and F.1. These record types are:

- RT 1- Sample Particulars
- RT 2- Area and Production
- RT 3- Fertilizer Information
- RT 4- Pesticides Information
- RT 5- Production Disposition
- RT 6- Production Forecast
- RT 7- Planting Intentions
- RT 8- Assessment of Palay Production
- RT 9- Rice Programs Aailed
- RT 10-Other Questions

A program generating the appropriate household weights or correction factor is run using the clean data file. The generated household weights are then used in the estimation.

Output table generation is performed only after the activities of completeness check and generation of correction factor have been done. From PPS processing system, 13 provincial summary tables are generated. Soft copies of provincial data, specifically the clean data and the barangay master file, are submitted to the SDD for national consolidation while hard copies of the provincial reports are submitted to the Crops Statistics Division (CSD).

# Data Appraisal

## Estimates of Sampling Error

Not computed.

## Other forms of Data Appraisal

To ensure the quality of its statistical services, the PSA has mainstreamed a quarterly data review and validation process to ensure the quality of its statistical products. This is conducted in three (3) levels - the Provincial Data Review (PDR), Regional Data Review (RDR) and National Data Review (NDR). This done to incorporate the impact of events not captured in the survey.

The data review process starts at the data collection stage and continues up to the processing and generation of output tables. However, data examination is formalized during the PDR since it is at this stage where the data at the province-level is analyzed as a whole. The process involves analyzing the survey data in terms of completeness, consistency among variables, trend and concentration of the data and presence of extreme observations. Correction of spotted errors in the data is done afterwards. The output of the process is a clean data file used in the re-computation of survey estimates.

The estimates generated from the clean data set are thoroughly analyzed and validated with auxiliary information to incorporate the impact of information and events not captured by the survey. These information include results of the Monthly Palay and Corn Survey Reporting System (MPCSRs), historical data series, report on weather condition, area and crop condition, irrigation, levels of inputs usage, supply and demand, marketing of agricultural products, and information on rice and corn program implementation.

Details of the above discussion on data review and validation procedures are contained in the document describing the Palay Production Survey (PPS) Data Review and Validation provided attached as a Technical Document.