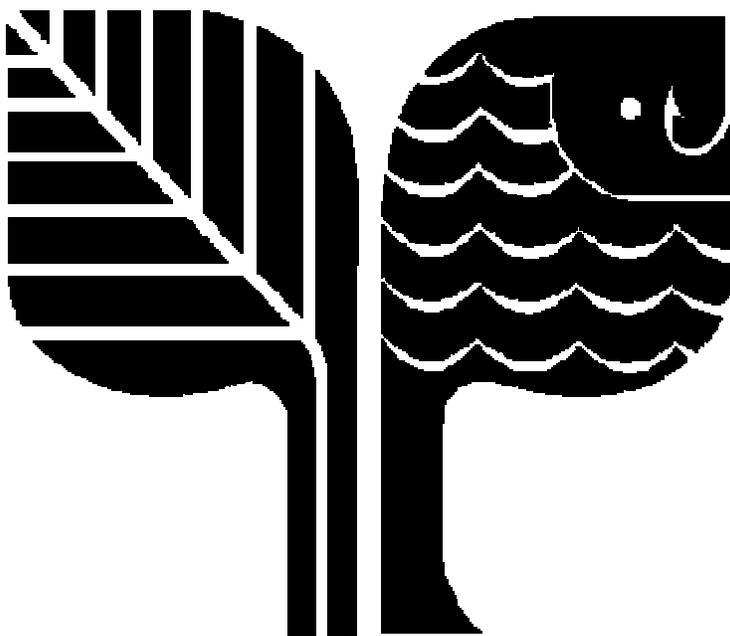


CAFE 2002

Explanatory Text

**2002 Census of
Agriculture**

PHILIPPINES



**Republic of the Philippines
NATIONAL STATISTICS OFFICE**

1. INTRODUCTION

The 2002 Census of Agriculture (CA 2002) is the fifth decennial census on agriculture undertaken by the National Statistics Office (NSO). Prior to CA 2002, the last agricultural census was undertaken in February 1992 with 1991 as reference period. Previous censuses on agriculture were also conducted in 1980, 1971, and 1960. Similarly, the collection of data on agriculture, although on a limited scale, was included in the Economic Census (EC) of 1903, 1918, 1939 and in the Census of Population of 1948. However, only the postwar census results are available.

The CA 2002 was conducted in March 2003 with 2002 as the reference period. This operation primarily involved listing of all households and enumeration of persons identified as agricultural operators in selected sample barangays.

The data in this report were tabulated according to the geographic location of the residence of the agricultural operators. Another report (Volume II) will contain the data based on the location of farms.

1.1 Objectives of CA 2002

The CA 2002 was envisioned with the following objectives:

- a. to determine the structure and characteristics of agricultural holdings;
- b. to determine the number and distribution of households and enterprises engaged in agriculture and to gather information on the operation of these households and enterprises;
- c. to provide the basis for sampling frame for other statistical undertakings; and
- d. to provide basic data for use in national as well as sub-national development planning.

1.2 Authority for CA 2002

CA 2002 was undertaken by NSO in compliance with Executive Order (EO) 121, which designated the NSO as the “major statistical agency responsible for generating general purpose statistics” and as mandated by Commonwealth Act 591, which authorized the Bureau of the Census (BCS), now NSO, “to prepare for and undertake all census of population, agriculture, industry and commerce.”

Moreover, Executive Order 352, otherwise known as the ***Designation of Statistical Activities That Will Generate Critical Data for Decision-Making of the Government and the Private Sector***, provides for the conduct of the census of agriculture every ten years by the NSO with the objective of providing government planners and policy-makers with data on which to base their plans for the country’s development.

1.3 Confidentiality of Information

Pursuant to Section 4 of Commonwealth Act 591, any information obtained from agricultural operators and from other individuals during the census operation shall not be divulged to any person except to authorized NSO personnel who are acting in the performance of their duties.

The individual data cannot be used for purposes of taxation, investigation nor for law enforcement. Any person violating these provisions shall, upon conviction, be punished by a fine of not more than five hundred pesos or by imprisonment of not more than six months, or both. Moreover, any NSO personnel who violates the rule of confidentiality shall be punished by fine, dismissal from work, loss of pay or shall be prosecuted accordingly.

1.4 Census Organization

The planning and preparation of CA 2002 had started as early as the middle of 2000. The Task Force on the 2002 Census of Agriculture and Fisheries (TF-CAF) was created on May 15, 2000 through NSCB Memorandum Order 006 Series of 2000 with NSO and the Department of Agriculture (DA) as Chair and Vice-Chair, respectively. Members of TF-CAF included government offices concerned on agriculture and fisheries, other statistical agencies and the academe. Their main functions were to recommend programs on methodology and strategies for more efficient census operation, and ascertain that relevant variables/data items were to be gathered, among others.

At the NSO Central Office, a Census Steering Committee for 2002 Census of Agriculture and Fisheries (CSC-CAF) and the different Working Groups (WG-CAF) were created on March 7, 2001 to provide over-all directions for the activities of CAF 2002 and to lay out plans and strategies for the census, respectively. The CSC-CAF was chaired by the NSO Administrator with the Deputy Administrator as Vice-Chair and assisted by the different Department Directors. The NSO field personnel were also consulted concerning field operation. Meanwhile, the Household Statistics Department (HSD) coordinated and monitored all matters pertaining to CA 2002 while the Census Planning and Operations Division (CPOD) was the subject-matter division mainly responsible for the conduct of the census.

The field operation of CA 2002 was a product of the cooperative effort between the NSO and the Bureau of Agricultural Statistics of the DA. The BAS, which is the major user of data from this census, provided additional facilities and manpower for the successful implementation of CA 2002 field operation.

2. SCOPE OF CA 2002

In line with the objectives of CA 2002, the following data items were included in the census:

- a. Holding Identification
- b. Demographic Characteristics of the Operator/Hired Manager
- c. Legal Status of the Holder
- e. Characteristics of the Holding
- f. Crops
- g. Livestock and Poultry
- h. Equipment, Machineries, Facilities and Other Farm Tools
- i. Selected Agricultural Activities
- j. Demographic Characteristics of Household Members

3. SURVEY DESIGN OF CA 2002

3.1 Sampling Design

The 2002 Census of Agriculture (CA 2002) adopted a systematic sampling of an ordered total farm area (TFA) from the 1991 Census of Agriculture and Fisheries (1991 CAF) and from the total number of households based on 2000 Census of Population and Housing (Census 2000).

3.2 Sampling Units and Sampling Frame

The 1,610 cities and municipalities were treated as the domains of CA 2002 and the barangays, as the ultimate sampling units. The sampling frame was constructed by integrating the Census 2000 barangay lists as of June 2002 with the number of households by barangay with data on TFA from the 1991 CAF. About 22,500 barangays (50%) were covered in the 1991 CAF.

3.3 Sampling Procedures

All barangays in a municipality except those in the National Capital Region (NCR) were grouped into three strata, as follows:

- (i) Barangays with the largest TFA in each municipality in the 1991 CAF was classified in Stratum 1;
- (ii) All other barangays covered in the 1991 CAF (Stratum 2);
- (iii) All other barangays (Stratum 3).

The 1991 sample barangays in each city/municipality for each province (excluding NCR) were ranked by descending values of TFA. Barangays with no TFA values because they were not samples during the 1991 CAF (Stratum 3) were arranged in ascending order of total number of households based on Census 2000. The barangays with the largest TFA in 1991, referred to as the certainty barangays, were automatically taken as samples (Stratum 1). In cases where the certainty barangay was split into two or more barangays as a result of a creation of a new barangay (as of June 2002 master list of barangays), the new barangay was also treated a certainty barangay. Twenty-five percent (25%) of the remaining barangays were selected using a systematic sample selection.

Meanwhile, NCR was subdivided into six districts, namely:

- (i) NCR I – Manila;
- (ii) NCR II – Quezon City;
- (iii) NCR III – San Juan, Cities of Mandaluyong, Marikina and Pasig;
- (iv) NCR IV – Malabon, Navotas, Cities of Kalookan and Valenzuela;
- (v) NCR V – Pateros, Taguig and Makati City, and;
- (vi) NCR VI – Cities of Pasay, Las Piñas, Muntinlupa, Parañaque

Sampling was done independently in each district. The foregoing sampling procedure was also followed, except that the sampling rates for Strata 2 and 3 were fifty percent (50%) and ten percent (10%), respectively.

A special case however, was adopted for the provinces of Laguna, Isabela, Bukidnon and Batanes as these areas were taken as full samples. In 1991 CAF, enumeration of all barangays in Marinduque and also in the four provinces mentioned was carried out.

On the other hand, all agricultural establishments as identified in the 2002 List of Establishments, regardless whether located in CA 2002 sample barangays or not, were enumerated. These included new-formed agricultural establishments during the time of census enumeration. However, agricultural establishments that had stop operation or no longer existing were excluded. About 1,613 agricultural establishments were enumerated.

3.4 Estimation Procedures

To come up with estimates of farm characteristics at the provincial level, the following formula was used:

3.4.1 Basic Weight

$$Y'_m = Y_{1mc} + \sum_{h=2}^3 \frac{N_{mh}}{n_{mh}} Y_{1mh} + Y_{2m}$$

where:

- h = 2, 3, refers to the number of strata
- m = 1, 2, ..., P, refers to city/municipality in a province
- j = 1, 2, 3, ..., k_m, refers to the *j*th non-sample barangay in a city/municipality

Y'_m = estimate of any farm characteristics in a city/municipality

Y_{1mc} = the characteristics of the farms which are household-based in the certainty barangay (Stratum 1) of a city/municipality

Y_{1mh} = the characteristics of the farms, which are household-based, in the *h*th stratum of a city/municipality

N_{mh} = total number of barangays in the *h*th stratum in a city/municipality

n_{mh} = number of sample barangays in the h^{th} stratum in a city/municipality

$$Y_{2m} = Y_{2mc, est.} + \sum_{h=2}^3 Y_{2mh, est.} + \sum_{j=1}^k Y_{2mj}$$

Y_{2m} = the sum of the total characteristics of the establishment-based farms in a city/municipality

$Y_{2mc, est.}$ = the characteristics of the establishment-based farms taken from the certainty barangay (Stratum 1) of a city/municipality

$Y_{2mh, est.}$ = the characteristics of the establishment-based farms in the h^{th} stratum of a city/municipality, where h which refers to strata 2 and 3

Y_{2mj} = the characteristics of the farms, which are establishment-based, in the j^{th} non-sample barangay of a city/municipality

3.4.2 Weight Adjustment Factor

For non-certainty barangays which were not enumerated

$$A1_{mh}' = \frac{n_{mh}}{n_{mh}}$$

where:

n_{mh} = number of sample barangays in the h^{th} stratum in a city/municipality

n_{mh}' = number of sample barangays actually enumerated in the h^{th} stratum in a city/municipality

3.4.3 Final Weight

$$Y_m'' = Y_{1mc} + \left[\left(\sum_{h=2}^3 \frac{N_{mh}}{n_{mh}} Y_{1mh} \right) \times A1_{mh}' \right] + Y_{2m}$$

To come up with the estimates of farm characteristics at the provincial level, the following formula was applied:

$$Y' = \sum_{m=1}^P Y''_m$$

4. CONCEPTS AND DEFINITIONS

Household

A social unit consisting of a person living alone or group of persons who sleep under the same roof and usually have common arrangement for the preparation and consumption of food.

Agricultural Operator

A person who takes the technical and administrative responsibility of managing a holding. He is responsible for making day-to-day decisions in operating the holding, including the management and supervision of hired labor. The operator may work on the land alone or with members of his household, or may not work on the land but may employ others to work on the land. He may or may not be the owner of the land. For purposes of CA 2002, persons operating as individual on own account although they hire persons to supervise the day-to-day operation of their holding are considered agricultural operators.

Holding

Any piece or pieces of land used wholly or partly for any agricultural activity (i.e. growing of crops, tending of livestock and poultry, etc.) and operated as one technical unit by one person alone or with others regardless of title, legal form, size, and location. A holding operated as one technical unit means that the pieces of land are operated under one management and that the financial resources needed for the operation of the holding come from the said management.

Holder

A civil or juridical person who exercises management control over the agricultural operation of a holding and takes major decisions regarding resource use. The holder has technical and economic responsibility for the holding and may undertake all responsibilities directly, i.e., he operates the holding, or delegates responsibilities related to the day-to-day work management to a hired manager.

Parcel

One contiguous piece of land under one form of tenure without regard to land use. Both the contiguity and one form of tenure conditions should be met for a piece of land to be classified as one parcel. Contiguous means that the piece of land is not separated by natural or man-made boundaries like road, river, canal, etc., that are not part of the holding.

Tenure

The right under which a holding/parcel is held or operated. A holding may be operated under a single form of tenure or under more than one form, in which case each form of tenure should be reported separately. A parcel may be owned, rented, leased or held under other forms like those held as mortgage, on squatter basis or rent-free.

a. Fully Owned – refers to the land operated with a title of ownership in the name of the holder and consequently, the right to determine the nature and extent of the use of the land. It includes lands whose absolute ownership is vested in the holder through sale, inheritance, etc. A parcel, which is a part of the holding, is also considered fully owned if the holder has an absolute deed to sale of the land. Likewise, lands of the tillers with Emancipation Patent are fully owned.

Emancipation Patent is the title of the land issued to a tenant upon paying completely his/her amortization of the land he/she tilled and upon compliance with all other government requirements. It represents the full emancipation of the tiller from the bondage of tenancy, hence, vested the absolute ownership of such land.

b. Tenanted – refers to the rented lands wherein the rental arrangement is in the form of share of produce or harvest.

c. Leased/Rented – refers to an area cultivated by a lessee, which belongs to or is legally possessed by another, the lessor. The rental payment is in the form of a fixed amount of either money, produce, or both.

d. Rent Free – refers to an area operated without title of ownership and without paying rent but with the consent or permission of the landowner.

e. Held Under Certificate of Land Transfer (CLT) or Certificate of Land Ownership (CLOA) – includes only those parcels that are still being paid by the holder under the government land reform program of Operation Land Transfer (OLT). OLT is a systematic transfer of ownership of tenanted rice and corn lands from the landowners to the tenant-tillers while CLOA is a title issued to farmers for their farmland as covered by Republic Act 6657, otherwise known as **Comprehensive Agrarian Reform Law (CARL)**. It must be noted that this category covers only those that are currently paying their amortization.

f. Ownerlike Possession Other Than CLT or CLOA – refers to the area of the land under conditions that enable a person to operate it as if he/she is the owner although he/she does not possess title of ownership. Area held under ownerlike possession includes those that are held under heirship and other forms in ownerlike possession.

A land is said to be held under heirship if it is inherited and the title of ownership has not been transferred to the heirs. Included are inherited lands without title of ownership.

Other forms of ownerlike possession include an area without legal title of ownership which is operated uncontestedly and uninterruptedly by the holder for a period of 30 years or more, even without the permission of the owner, and land being purchased on installment basis or under long-term contract.

g. Other Forms of Tenure – includes land held as mortgage and all other forms not categorized above including squatter of less than 30 years.

Physical area

The actual measurement of the land in hectares.

Land Utilization

It is the distribution of the physical area of land in the holding according to its main use during the reference period. Land utilization may be classified as follows:

a. Homelot – land used mainly for residential purposes of the agricultural operator, regardless of its location.

b. Land Under Temporary Crops – land planted to crops that are grown seasonally and whose growing cycle is less than one year and which must be sown or planted again for production after each harvest. Land which is planted with herbaceous forage crops mainly for sale is classified as under temporary crops even if part of the produce is used as feeds for livestock. Land planted with kangkong, alogbati, and similar plants whose growing cycle may be less than, equal to, or more than a year, and need not be replaced after each harvest shall be considered as under temporary crops. Land planted to crops which are grown for more than a year but have to be replaced after harvesting like cassava is also classified as land under temporary crops.

c. Land Under Permanent Crops – land planted to crops that occupy the land for a long period of time and do not need to be replaced after each harvest like fruit trees.

d. Temporarily Fallow – land which is purposely allowed to stay idle for a period of at least one year or at most 5 years in order to recover its fertility, after which period it is again planted to temporary crops.

e. Under Temporary Meadows and Pastures – land purposely used for temporary grazing of animals for a period of five years or less.

f. Under Permanent Meadow and Pastures – land used permanently or intended to be used permanently for more than 5 years for the purpose of growing herbaceous forage crops, either seeded or cared for or existing naturally. If the growing of the forage crops is considered the most important use of the area, the land should be considered as permanent pastures even if fruit trees and/or nut trees are grown on it. However, if the operator does not raise livestock but raises forage crops for sale, and sells most of the forage crops, the area is classified as under temporary crops.

g. Land Covered with Wood and Forest – part of the holding that is wood or forestland natural or planted. Forest concessions are not included under this category.

h. Other Form of Land Use Classification – include lands occupied by pigpen, poultry house, fishpond, wasteland and undeveloped land potentially productive for agriculture and other lands not included in the preceding land use classification. Wasteland comprises barren rocky land, sloping areas, etc., which are not used for any productive purposes.

Irrigation

This is the practice of artificially providing land with water to increase agricultural productivity. **Main Irrigation System** refers to the system from where the irrigated water was drawn most of the time. Such system includes the following:

- a. National** – the government-owned irrigation system built or constructed to provide continuous supply of water for agricultural purposes to farmers in exchange for a fee.
- b. Communal** – an irrigation system owned by the community, association, farmers' cooperative, etc.
- c. Individual** – irrigation means provided personally by the operator for his holding's irrigation needs.
- d. Other Irrigation System** – includes all irrigation systems not categorized in the above-mentioned systems.

Permanent Crops of Productive Age

Crops that are already capable of bearing fruits. The number of trees/vines/hills refers to the actual count of productive and non-productive trees/vines/hills found standing in a farm, whether these trees/vines/hills are categorized as scattered planting or compact planting.

Compact Planting

An agricultural practice wherein plants, trees or shrubs are planted in a regular or systematic manner. Plants, trees or shrubs forming an irregular pattern but are dense enough to permit the collection of information regarding the area are also considered compact planting.

Livestock

Domesticated animals with four legs with hoofs.

Poultry

Domesticated fowl collectively, especially valued for their meat and eggs.

Equipment, Machineries, Facilities and Other Farm Tools

Farm equipment and facilities used for agricultural activities. This includes large and small machineries and small farm implements and facilities that are semi-durable or have a lifetime of at least one year. For purposes of CA 2002, only those equipment, machineries and facilities owned and rented are included.

Highest Grade/Level Completed

The highest grade or year completed in school, college or university as of December 31, 2002 of an individual. This may be any one of the specific grades or years in elementary, high school, post secondary school, college and post-baccalaureate levels of schooling.

5. DATA LIMITATIONS

Users of this publication are reminded that the data presented in this report refer only to farms as defined in the next section. Agricultural lands of non-farm households, that is, households engaged in raising of crops, livestock and poultry but whose agricultural operations did not satisfy the definition of a farm are therefore excluded.

The data referring to farms in this report were tabulated according to the geographic area of the operator's residence which may not be the same as the actual location of the farm or farm parcels.

It should also be noted that the results of the 1960, 1971, 1980, 1991, and 2002 censuses may not be entirely comparable due to differences in the definition of farm, reference period, and sampling design. Furthermore, like any other data gathering activities, the results are also subject to sampling and non-sampling errors.

The reference period of the CA 2002 was from January 1, 2002 to December 31, 2002. However, the data on livestock and poultry for CA 2002 were recorded as of the date of visit of the enumerators, i.e., anytime from March 3 to April 5, 2003, while the 1991 Census of Agriculture and Fisheries (CAF) data for livestock and poultry were recorded as of August 31, 1991. Moreover, the reference period applied for the temporary crops during CA 2002 was from January 1, 2002 to December 31, 2002 while as of December 31, 2002 for the permanent crops. During the 1991 CAF, the reference period used for recording data on temporary and permanent crops was the past 12 months.

In 1991, pineapple was treated as temporary crop. Hence, the data for this crop was in terms of area planted and not the number of hills. Following the Food and Agriculture (FAO) classification of pineapple as permanent crop, data for this crop for CA 2002 was in terms of number of hills.

6. COMPARABILITY OF CA 2002 AGAINST THE PAST CENSUSES

The concepts and definitions, scope and coverage of the 1960, 1971, 1980, 1991 and 2002 census of agriculture are basically the same. However, there are some differences in the definition of farm, reference periods and sampling design which should be taken into account when comparing the data across the census years.

Data Items Compared	1960	1971	1980	1991	2002
6.1 Farm Definition					
- At least 1,000 sq. m. is used for raising crops and/or livestock and/or poultry, regardless of number	*	*	**	*	*
- Any land, regardless of size, used for raising of at least 20 heads of livestock or 100 heads of poultry	*	*	**	*	*

Data Items Compared	1960	1971	1980	1991	2002
5.2 Reference Period					
- Crop year	July 1959 to June 1960	July 1970 to June 1971			
- Calendar year			Jan. 1980 to Dec. 1980	Jan. 1991 to Dec. 1991	Jan. 2002 to Dec. 2002
5.3 Sampling Design					
- Method:	*	*	*	*	*
Stratified Sampling	*	*	*	*	*
Systematic Sampling					
- Domain:					
Municipality	*	*	*	*	*
- Primary Sampling Unit:					
Barangay	*	*	*	*	*
- Ultimate Sampling Unit:					
Household	*	*	*	***	***
- Number of Strata	2	2	2	2	3
Stratum 1	Area of at least 1,000 sq. m. to 10 has.	5 has. or over, at least 20 heads of live-stock, 100 or more poultry	Large farms (see note below)	Barangay with highest TFA or certainty barangay	Certainty barangays in 1991 CAF
Stratum 2	Area > 10 ha. or at least 20 heads of livestock /100 poultry	Area of at least 1,000 sq. m. to < 5 has.	Small farms (see note below)	Other barangays or non-certainty barangays	All other barangays covered in 1991 CAF

Data Items Compared	1960	1971	1980	1991	2002
Stratum 3					All other barangays
- Sample Size					
Stratum 1	33%	100%	100%	100%	100%
Stratum 2	100%	20%	10%	50%	25%
Stratum 3					25%

Notes:

* Applied in the census

** With the following specific and detailed farm definitions:

- a. at least 1,000 sq. m. devoted to crops,
- b. at least 10 hectares were under permanent meadows/pastures,
- c. at least 10 heads of large animals such as carabao, etc., regardless of age and kind, were raised,
- d. at least 20 heads of small animals such as hog, etc., regardless of age and kind, were raised,
- e. at least 100 heads of poultry such as chicken, etc., regardless of age and kind, were raised,
- f. at least 50 heads of rabbits, regardless of age and kind, were raised; and,
- g. the combination of land area and animals raised amounting to at least 10 agricultural units. One agricultural unit is equivalent to one tenth of the cut-off in each of the aforementioned categories.

A farm was considered large if it satisfied any of the following:

- a. area devoted to crops was at least 4 hectares;
- b. area under permanent meadows/pastures was at least 20 hectares;
- c. at least 10 heads of large animals such as carabao, etc., regardless of age and kind, were raised;
- d. at least 50 heads of small animals such as hog, etc., regardless of age and kind, were raised;
- e. at least 500 heads of poultry such as chicken, etc., regardless of age and kind, were raised; and,
- f. at least 50 heads of rabbits, regardless of age and kind, were raised.

Farms that did not satisfy any of the above conditions were considered small farms.

*** All household heads in the barangay were listed and all household members engaged in agricultural activity as operators were enumerated.