

APPENDIX 1

METHODOLOGY FOR SAMOA AGRICULTURE CENSUS 2019

Introduction

The Samoa Agriculture Census 2019 was undertaken as part of the ten-yearly international programme of agricultural censuses sponsored by FAO. FAO issues guidelines to help countries conduct agricultural censuses. The current round of censuses is the World Programme for the Census of Agriculture 2020¹, which covers censuses undertaken between 2015 and 2024.

The aim of the agricultural censuses is to provide basic structural data on agriculture such as farm size, cropping patterns, and use of machinery and inputs. Because the census is done ten-yearly, the focus is on aspects that do not change significantly from year to year.

The census is part of the national census/survey programme included in the Samoa Strategy for the Development of Statistics 2011-2021. The strategy provides for an agricultural census to be conducted every ten years. The Samoa Agriculture Census 2019 is the fourth agricultural census conducted in Samoa – previous censuses were undertaken in 1989, 1999 and 2009.

The Samoa Agriculture Census 2019 was conducted by SBS in collaboration with MAF.

Authority for the census

Authority for the census rested with the Government Statistician, who has the legal power to collect such information under the Statistics Act 2015. The Act provides for

confidentiality of the information collected in the census.

An Agricultural Census Office was established in SBS in Apia to conduct the census.

Coverage of the census

The Samoa Agriculture Census 2019 covered the whole of Samoa, including urban areas in Apia. The census covered all crop and livestock activities carried out in the country, including households and institutions.

Most households in Samoa are engaged in some crop or livestock activity. Sometimes, this is growing vegetables in a small kitchen garden or raising a few chickens. Therefore, the census included all households in the country, except for households living in institutional housing such as hotels and boarding schools.

Statistical unit

In its guidelines for agricultural censuses, FAO defines the main statistical unit for agricultural censuses as the agricultural holding, defined as “an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form or size.” The holding’s land consists of one or more parcels, located in one or more separate areas.

Most agriculture in Samoa is carried out by households. Most households operate land that

1. See FAO *Statistical Development Series, No. 15; World Programme for the Census of Agriculture 2020, Volume 1: Programme, Concepts and Definitions*, FAO 2017.

they consider to be their own. However, sometimes, they also have access to family land that they operate jointly with other households in the family. For agricultural activities undertaken by households on their own land, the household is considered to be the same as the agricultural holding unit.

There are three types of agricultural holding in the census.

- agricultural household, comprising all crop and livestock production activities undertaken by the household on its own land;
- joint family holding, comprising all crop production activities undertaken as a partnership between households in a family on joint family land; and
- institutional holdings, which are agricultural production units not in the household sector, such as businesses, churches and government research stations.

Agricultural households and joint family holdings were identified in the census, based on responses to the questionnaire, and data were collected separately for the two units. A household may be an agricultural household as well as being part of a joint family holding. For the purpose of the census, partnership arrangements between households other than within the family were disregarded.

Census frame

The frame for the household component of the census was the list of households from the Samoa Population Census 2016.

For census purposes, each village in Samoa was divided into enumeration areas (EAs). Household lists were provided for each EA and these were updated during the census enumeration, so that the census covered all households in Samoa as at the time of the census. EA maps were also provided.

The household updating process involved identifying changes in the households living in an existing house, vacant or demolished houses, and new houses constructed since 2016.

For the institution component, a list of agricultural institutions was obtained from MAF.

Topics covered in the census

The topics included in the census were determined based on FAO recommendations, taking into account agricultural conditions in Samoa. Consideration was also given to data needs for monitoring the Sustainable Development Goals (SDGs) and the Samoa Agriculture Sector Plan 2016-2020. A user workshop was held in June 2019 to identify agricultural data needs in MAF and elsewhere.

There were two census questionnaires: one for households, which covered agricultural households and joint family holdings; the other for institutions.

The household questionnaire included questions under eight headings: household composition, land, crops, livestock, fishing, agricultural equipment, farm labour, and other topics. A list of data items under these headings is shown in Appendix 3.

The institution questionnaire was similar to the household questionnaire. Items on household composition, household farm labour, family land, purpose of production, and fishing were excluded.

The data collected in the census were more comprehensive than in the previous agricultural census. A comparison of data items in the household component of the two censuses is shown in Table A1.

Table A1: Samoa Agriculture Census 2019 – main changes in data items from Samoa Agriculture Census 2009 (household component)

Topic	Changes from Samoa Agriculture Census 2009
I. Household composition	Relationship to household head, secondary activity, and industry/occupation of main/secondary activity added; activity status categories expanded to be consistent with other SBS surveys.
II. Land	Land questions strengthened to distinguish between land operated by the household itself and extended family land to which the household has access; period of land use and types of forestry trees omitted.
III. Crops	The concepts of temporary/permanent crops and number of trees/area planted introduced; detailed data collected only for core crops; detailed sales data included for core crops; crops growing under protective cover, whether the household is an organic farmer, water sources, household members' work on crops, and main purpose of crop production added; age of plants omitted.
IV. Livestock	More detailed breakdowns of livestock by type and age provided; changes in herd structure, rearing methods, pasture types, supplementary feed, milk production, cattle paddocks, pigsties, earnings from the sale of livestock products, bee raising, household members' work on livestock, and main purpose of livestock production added.
V. Fisheries	Fishing habitats and a range of aquaculture data added.
VI. Labour inputs	Questions expanded to cover employment of groups or organizations, as well as individuals.
VII. Equipment	Concept of use of equipment applied.
VIII. Other topics	Sources of agricultural information, use of MAF services, participation in MAF's programmes, main source of income, and challenges faced added. Servicing of loans omitted.
Consumption of crops	Omitted.

Census reference period

The general reference period for the census was the calendar year 2019. Reference periods for specific topics were:

- Household composition: covers usual residents; activity data refers to the previous week.
- Land: day of enumeration.
- Crops: 2019 for temporary crops; day of enumeration for permanent crops.
- Livestock: day of enumeration for number of animals and related data; 2019 for sales.
- Fisheries: previous three months for most items; previous week for number of fishing trips.
- Farm labour: previous week.
- Equipment: 2019.
- Income and credit: 2019.

Use of Computer Assisted Personal Interviewing

The census enumeration was carried out using the Computer Assisted Personal Interviewing (CAPI) methodology, based on the *Survey Solutions* software. Each census enumerator was provided with a tablet computer for use in the census data collection, replacing the paper questionnaires used in past censuses. CAPI was used for both the household and institution questionnaires.

The census questionnaires were designed to accommodate the CAPI methodology. Questionnaires were loaded into the tablets. Census enumerators asked the questions as displayed on the screen and entered responses directly into the tablets. Once an interview was completed, the questionnaire was submitted electronically to the Agricultural Census Office in Apia.

Within the CAPI system, the questionnaires were structured to provide a coherent sequence of questions and to lead the enumerator efficiently through the questionnaire. Each question to be asked was displayed on the screen; questions that were not relevant based on the answers to previous questions were automatically skipped.

A comprehensive array of data validation checks was incorporated into the CAPI data collection system to help enumerators identify errors or possible errors in the data reported. This was done as the responses were recorded so that enumerators could correct the data on the spot. This greatly improved data quality compared with previous censuses.

There were two types of validation checks. The first was a check for data that were incorrect, such as the number of cattle by type not adding to the total number of cattle. Here, an error message was displayed on the screen, and the enumerator was required to correct the data. The second was a check on data that might be wrong or were unusual in some way, such as a household having 1,000 cattle. Here, a warning message was displayed on the screen, and the enumerator had to verify with the respondent that the data were correct.

Organization of the census

The Agricultural Census Office was headed by the Census Administrator who had overall responsibility for the census. Regional Managers were appointed to oversee data collection in each region. CAPI supervisors worked in the census office to receive completed questionnaires from the field. CAPI supervisors were senior SBS and MAF staff assigned to work on the census.

Census enumerators were recruited to collect the census data for the household component. The enumerators worked under the control of field supervisors. The field supervisors were senior SBS and MAF staff assigned to this task. Institutions were enumerated by senior SBS and

MAF staff.

Enumerators were allocated to teams of 8-10 under the control of a field supervisor. The field supervisor was responsible for organizing enumeration workloads and supervising the data collection work of the enumerators. Each field supervisor was allocated a number of EAs for his/her enumerators to complete during the census enumeration period. Each enumerator interviewed 8-10 households per day.

Enumerators submitted completed census questionnaires to the Agricultural Census Office immediately after the household interview was completed or, if this was not possible due to connectivity issues, as soon as possible.

Completed questionnaires were received in the census office by the CAPI supervisors. Each questionnaire was checked and, if any errors or missing data were found, the CAPI supervisor returned the questionnaire to the enumerator (electronically). The enumerator was required to complete or correct the data, revisiting the household if necessary, before returning the questionnaire to the CAPI supervisor.

All census staff were trained prior to the census. Training was held in the census office in Apia. Training of field supervisors and CAPI supervisors was held from 24-28 February 2010. Training for enumerators was conducted from 2-13 March 2020. Field manuals were prepared to help field staff in their work.

The work plan called for the census enumeration to be undertaken immediately after the field training. A seven-week enumeration period was to be used. Fieldwork commenced on schedule on 16 March 2020 but was halted after three days because of the Covid-19 pandemic. It eventually resumed on 29 May 2020. Most of the fieldwork was finished by August 2020.

In all, there were 16 CAPI supervisors, 11 field supervisors, and 90 enumerators.

Census processing and tabulation

The CAPI system provided facilities to highlight errors or missing data in completed questionnaires to help CAPI supervisors check the questionnaires. The system also provided operational data to help senior census officials to monitor progress with the census and provide feedback to field staff, as necessary. Some summary statistics were also able to be produced, which was valuable in assessing data quality as well as in providing early indications of the final statistics.

A feature of CAPI is that most errors are identified and corrected during the census enumeration. This is done through the enumeration validation checks and the review of questionnaires by the CAPI supervisors. As a result, there were few errors in the data at the end of the census enumeration, and little data editing was required.

The questionnaires were largely self-coded, except for industry and occupation. These were coded by the CAPI supervisors based on descriptions provided by the enumerators.

The census tabulation was done using the software *Stata*. In all, 106 tables were prepared. Most of those tables are included in this report.

Non-response

In all, there were ? households in Samoa at the time of the census, of which ? were enumerated. Thus, ? households were not enumerated, a non-response rate of ?. All institutions were enumerated.

Non-response occurred because no household member was available for interview at the time of

the census, the household refused to participate in the census, or it was not possible to complete the questionnaire for other reasons. Non-responding households were not included in the tables; because non-response is low, this should have little effect on the census results.

Most questionnaires were completed in full. In some cases, missing data were able to be “imputed” based on responses to other questions. For some items, missing data are shown in the tables as “not reported”.

Data dissemination

This report presents the main results of the census. The report is available in hard copy form as well as on the SBS website. Tables are also available on the website in Microsoft Excel format to facilitate data analysis. Census metadata and other documentation are also shown on the website.

SBS will also produce additional tables on request. SBS will also consider releasing census microdata to government and international agencies, subject to its usual confidentiality conditions.

It is anticipated that further census analysis will be undertaken following the release of the census report. This might include in-depth studies on themes such as gender, the environment and agricultural marketing. An agricultural atlas, highlighting geographical elements of the census data, might also be prepared. It is also planned to link the agricultural census and population census data to analyze agriculture in relation to characteristics such as housing, literacy, migration, disabilities and employment abroad.

DEFINITIONS OF ITEMS USED IN THIS REPORT

Households and agricultural holdings

A household is a group of one or more people who live together and share their meals together or have just one “oven”. A household usually consists of relatives such as a spouse, children or parents, but sometimes includes unrelated people such as live-in household or farm workers. A household is not the same as a family, which consists of related persons often in more than one household.

Household size is the number of persons who usually live in the household. This means that the person spent most of the last three months living in the household unit.

An agricultural holding is the economic unit of crop and livestock production. There are three types of agricultural holdings: agricultural households, joint family holdings, and institutional holdings (see Appendix 1 under *Statistical Unit*).

An agricultural household is a household that is growing any agricultural crops on its own land or raising livestock. Agricultural households are determined based on the cropping activities during 2019 and livestock raising activities at the time of the census. A crop household is an agricultural household that is growing crops. A livestock household is a household raising livestock.

A crop household is classified as either a major or minor crop household. A minor crop household is a crop household with: less than 625 square yards of land under temporary crops; and less than 20 coconut trees; and less than 20 banana plants; and less than 20 other tree crops. A major crop household is a crop household that is not a minor crop household.

Data relating to joint family holdings were based on data reported by households. The household’s contribution to the joint family holding is estimated by dividing the family land data reported by the number of households making up the joint family holding. Thus, the number of joint family holdings is estimated as the sum of $(1/n_i)$, where n_i is the number of households with access to the family land for household i . The area of coconuts for joint family holdings is estimated as the sum of (A_i/n_i) , where A_i is the area of coconuts reported on family land by household i .

Land

Size of holding is the area of all agricultural and non-agricultural land operated by the agricultural household. This includes land on which agricultural activities are carried out, as well as non-agricultural land such as homestead land, forest land, fishponds, grazing land and wasteland. The size of holding is determined based on the land operated at the time of the census.

To operate land means to have management control over growing crops or other activities on that land. Thus, land operated by an agricultural household includes land owned and operated by the household, as well as land operated by the household but rented from someone else. Land owned by the household but rented out to someone else is excluded.

A land parcel is a contiguous piece of land operated by an agricultural household; that is, a piece of land entirely surrounded by other land, water, forest, road, etc., not forming part of the land operated by that agricultural household. A parcel may consist of one or more adjacent fields.

An agricultural household may have one or more parcels.

Land tenure refers to the arrangements or rights under which the household operates the parcel of land. *Customary land* is land owned by or belonging to a village or extended family that is currently operated by the household. *Leased customary land* is land owned by or belonging to a village or another extended family that is currently leased by the household, whether it is paying for it or not. *Leased government land* is land owned by or belonging to the government that is currently operated by the household for payment. *Own freehold land* is land that is privately owned by the household. *Leased freehold land* is land owned by a different household but currently being operated by the enumerated household, regardless of whether the household is paying any lease for the land. *Church lease* refers to land owned/belonging to a church that is currently used by the household, whether the household is paying any lease for the land or not. *Other* includes land not falling into any of the above categories.

Main land use refers to the main use of the parcel of land. If the parcel has two uses, it is assigned to one or the other land use type based on the economic importance of the two activities. *Land under livestock* refers to land that is currently used for raising livestock. *Land temporarily fallow* refers to land that: was used for growing crops sometime in the past; is not currently used for growing crops; and is not expected to remain idle for more than five years. *Land under non-agricultural use* refers to land that is under buildings, roads, etc.

Forest trees refer to any trees other than those used for harvesting agricultural crops. Forest trees may be planted for a variety of reasons, including protection of soil, for social or cultural reasons, or for timber or other forest products. Common forest tree types in Samoa are poumuli, tamaligi, gatae, tava, talie, malili, and ifilele. Data on forest trees refer to whether the household planted trees in 2019.

Crops

Temporary crops are crops with a less than one-year growing cycle. Data on temporary crops refer to the crops *planted* during the calendar year 2019. Those crops may or may not be in the field at the time of the census enumeration. For example, a taro crop planted in February 2019 and harvested in October 2019 is included, even though it had already been harvested by the time of the census. A ta'amu crop planted in October 2018 and harvested in June 2019 is not included because the planting took place in 2018. A cassava crop planted in January 2020 is in the field at the time of the census enumeration, but is not included because it was not planted in 2019.

If there is double cropping during 2019, each planting is counted. For example, if 1 acre of taro was planted in February 2019 and harvested in October 2019, and then the crop was replanted on the same land in November 2019, the area of taro planted in 2019 is 2 acres.

Permanent crops are crops with a greater than one-year growing cycle, such as fruit and nut trees, bananas, coffee, tea and cardamom. Data on permanent crops refer to the crops present on the day of enumeration.

Temporary or permanent crops grown as a single crop are those planted alone in a field, usually in a regular pattern. A mixed crop is a crop grown in a field together with one or more other crops, either as a mixture of crops or interplanted with other crops. Mixed cropping also includes scattered crops where there are a few plants grown in an irregular pattern.

Core crops are those considered to be most important for agriculture in Samoa. The core temporary crops are taro, ta'amu, head cabbage, Chinese cabbage, tomato, cucumber and pumpkin. The core permanent crops are coconut, cocoa, breadfruit, banana and kava. In the census, more detailed data were collected for the core crops.

Crop data were collected either as number of trees/plants or area, according to the ease of reporting by respondents. Much of the data were reported as number of trees/plants. Where area data were not available it was estimated by applying crop density factors to the reported number of trees/plants. The crop density factors were provided by MAF. These relate to recommended crop spacings which farmers may not use. This should be taken into consideration in interpreting crop area data.

Data on sales of crop produce were collected for core crops only. Sales data includes produce from both household and family land. The quantity of sales and value of sales in 2019 shown in the tables were not collected directly; instead, they were estimated based on data on the most recent sale and the number of sales during 2019 as reported in the census.

Livestock

Livestock refers to animals, birds and insects being raised in captivity, mainly for agricultural purposes. This includes cattle, pigs, sheep, goats, horses, other animals and poultry, as well as bees. Fish and other aquatic animals being raised are not considered as livestock. Domestic animals such as cats and dogs are not included. The term agricultural purposes means that the animals/birds/insects are raised for meat, skins, milk, eggs or other animal products. It also includes animals raised for draught purposes, such as horses.

A household is raising livestock if it has primary responsibility for looking after the animals on a long-term basis and making day-to-day decisions on the livestock. Most households own and raise their own livestock; however, some raise animals that they do not own.

Livestock numbers refer to those present on the day of enumeration.

Average cattle holding is the average for those households that are raising cattle (not the

average for all agricultural households). Average income earned for cattle is the average for those households that sold cattle. The same applies to other livestock types.

A paddock is an enclosed field used for keeping cattle. A pigsty is a pen or enclosure for keeping pigs.

Supplementary feed is any feed brought in from outside the farm to provide additional feed over and above that from normal grazing activities.

Fisheries

The census covers two types of fishing activities: capture fisheries and aquaculture. Capture fisheries involves catching aquatic animals or gathering aquatic plants “in the wild”, where the aquatic organisms being exploited are common property. Aquaculture is the rearing of aquatic organisms such as fish, molluscs and crustaceans in water bodies such as dams, rivers or the sea.

A fishery household is a household engaged in either capture fisheries or aquaculture. The reference period for defining a household engaged in capture fisheries is the last three months. The reference period for defining a household engaged in aquaculture is the calendar year 2019.

For capture fisheries, inshore fishing is fishing in the lagoon to just beyond the wave, normally using a fish net, fish fence, spear, gleaning, hook/line or fish trap. Offshore fishing is fishing in the open sea. Freshwater fishing is fishing in lakes and rivers.

Farm practices

Agricultural machinery used refers to the use of machinery by the household wholly or partly for crop, livestock or fisheries production purposes during 2019. Equipment may be owned by the household or hired/borrowed from someone else.

MAF's services refer to advisory services such as veterinary services and crop/fisheries advisory services. MAF's programmes refer to major national activities of MAF such as SACEP, coconut replanting, etc.

Inorganic fertilizers are manufactured chemical fertilizers which are applied to the soil to supply plants with nutrients or to enhance plant growth. Fertilizers contain the three primary nutrients (N, P₂O₅ and K₂O). Inorganic fertilizers may also be known as mineral fertilizers or chemical fertilizers. Data on inorganic fertilizers refer to their use during 2019.

Organic fertilizers refer to processed plant or animal material, such as manure and compost, and are usually produced from the household's own agricultural operations. Data on organic fertilizers refer to their use during 2019.

A certified organic farmer is one who has a certificate to certify that he/she is authorized to sell produce under the organic label.

Pesticides are materials intended to mitigate, control or eliminate pests in plants or animals, including insecticides, herbicides and fungicides. Data on pesticides refer to their use during 2019.

Protective cover for crops refers to crops grown in a permanent structure with a roof of glass, plastic or other material, used for protecting crops against the weather, pests or diseases.

Population

The population related data presented in this report presents data for all households, not just agricultural households.

A person's educational attainment refers to the highest level of education he/she has completed.

Employment related data are collected in the census for all persons aged 15 years and over. The data relate to the person's activities in the one week prior to the census enumeration. Data are collected for the person's main activity and

secondary activity. A person's main activity is the activity on which he/she spent most hours working in the previous week. A secondary activity is any other activity other than the main activity.

The census collected information on the activity status, industry and occupation for both the main and secondary activities.

Activity status refers to nature of the activity undertaken by the person. This can be a work activity, such as working on the family farm or having a job, or other activities such as being a student. An *employer* is a person who hires employees/workers to perform work. *Self-employed for sale* refers to work in the household's own business or on the household's own farm where the produce is mainly for sale. *Self-employed for subsistence* refers to work on the household's own farm that is mainly for home consumption. *Employee (public sector)* refers to work in a paid job where the employer is a government organization. *Employee (private sector)* refers to work in a paid job where the employer is a not a government organization. *Unpaid family worker (family business)* refers to work in a family business without pay. *Voluntary work* is community work undertaken for free. *Home duties* refers to a person who stays at home mainly doing household work. A *student* is a person whose main activity is attending an educational institution full- or part-time. *Other* includes persons who are retired or are unable to work because they are too old or are disabled.

A person is considered employed if they he/she is in any of the following activity status categories: employer, self-employed for sale, self-employed for subsistence, employee (public sector), employee (private sector), or unpaid family worker family business). A person is not employed if his/her activity is one of the following: voluntary work, home duties, student, or other.

Industry refers to the type of activity carried out by the organization or entity for which the

person works. Industry data only applies to persons who are *employed*. The industry data were collected using the International Standard Industry Classification (ISIC). Data were collected down to the ISIC class level (four digits). This report presents only summary data.

Occupation refers to the specific tasks performed by the person in his/her job. Occupation data only applies to *employed* persons. Occupation data were collected in the census using the International Standard Classification of Occupations (ISCO). Data were collected down to the ISCO unit group level (four digits). This report presents only summary data.

Farm labour

Outside labour refers to the employment of people, other than household members, to do crop, livestock or fisheries work for the household during the week prior to the census enumeration.

Outside labour can be in the form of individual workers or groups of workers. Individual workers are persons employed directly by the household. Group workers are those employed as part of a group or organization such as a youth group or aumaga.

For the purpose of the census, outside labour only includes labour performed in return for either cash payment or other non-cash benefits such as food or farm produce. Labour provided free or on a labour exchange basis is excluded. Outside labour includes persons working full-time, part-time or on a casual basis.

The crop operator is the person or persons in the household exercising management control over the household's crop cultivation activities. A sole operator is where one household member – often the head of the household – is the crop operator. The term joint operator refers to two or more people in the household – for example, husband and wife – making joint decisions on the management of the household's crop activities.

Household members normally engaged in crop activities are those normally engaged in the cultivation of crops, selling of crop produce or managing the household's crop activities.

Hours worked on crops by household members refers to the hours worked on crops in the week prior to the census enumeration.

Data on household members engaged in the household's livestock or fishery activities are based on similar principles to crop activities as described in the previous three paragraphs. The livestock operator is the person or persons in the household exercising management control over the household's livestock activities. The fishery operator is the person or persons in the household exercising management control over the household's fishing activities.

Income and credit

Main purpose of production is a broad indicator of the extent to which the household participates in the market economy. The main purpose of production is reported for each of crops, livestock and fishing separately.

Main source of income is a broad indicator of where the most cash income for the household comes from. There is no specific reference period.

Proportion of cash income from agriculture/fishing refers to the cash income received during 2019.

Loans refer to whether the household received a loan for crop, livestock or fisheries purposes during 2019. This includes loans for purchasing crop, livestock and fisheries inputs, constructing farm buildings, and purchasing farm or fisheries equipment. Loans not related to crop, livestock or fisheries activities are excluded. Loan data refer to whether the loan was obtained during 2019, not whether the loan was outstanding at the time of the census. Money may be borrowed through a lending institution, or other

organizations or persons.

Challenges faced data are based on a general question in the census on the main challenges faced by households in their crop, livestock and fishing activities. Data are presented in the tables in the form of the *main challenge faced* and *all challenges faced*.

General notes on the tables

The symbol “-” in a table means that the census figure is zero.

The symbol “.” in a table indicates that the table cell is not applicable.

The symbol “n.a.” in a table indicates that the data are not available.

In some cases, data in the tables may not add to totals because of rounding.

APPENDIX 3

SAMOA AGRICULTURE CENSUS 2019 – DATA ITEMS (HOUSEHOLD COMPONENT)

SECTION I: Household composition

- Household size
- Characteristics of each household member:
 - Relationship to head
 - Sex
 - Age
 - Level of education completed
 - Main economic activity last week
 - Occupation of main activity
 - Industry of main activity
 - Secondary economic activity last week
 - Occupation of secondary activity
 - Industry of secondary activity

- Crop stand (*single crop, mixed /scattered crop*)
- Number of trees/plants or crop area (for single crop)
- Number of trees/plants (for mixed/scattered crop)
- Source of planting materials (*MAF, shop, other farmers, self, other*)
- Whether the crop is affected by rhinoceros beetle (for coconut only)

For each non-core permanent crop:

- Whether the household grows the crop
- Number of trees/plants for each parcel of household land

SECTION II: Land

Household land

- Number of parcels of household operated land
- Characteristics of each household parcel:
 - Parcel location
 - Area
 - Land tenure
 - Main land use

Temporary crops on household land

For each core temporary crop (*taro, ta'amu, head cabbage, Chinese cabbage, cucumber, pumpkin*):

- Whether the household planted the crop in 2019
- Crop details for each parcel of household land:
 - Crop stand (*single crop, mixed/scattered crop*)
 - Number of trees/plants or crop area (for single crop)
 - Number of trees/plants (for mixed/scattered crop)
- Time gap between planting and harvesting (for taro and ta'amu only)
- Time gap between harvesting and replanting (for taro and ta'amu only)

Family land

- Number of parcels of family land
- Characteristics of each parcel of family land:
 - Parcel location
 - Area
 - Land tenure
 - Main land use
- Number of households with access to the family land

For each non-core temporary crop:

- Whether the household planted the crop in 2019
- Number of plants for each parcel of household land

SECTION III: Crops

Permanent crops on household land

For each core permanent crop (*coconut, cocoa, breadfruit puou, breadfruit maafala, other breadfruit, banana Israeli, banana other, kava*):

- Whether the household is growing the crop
- Crop details for each parcel of household land:

Crops on family land

For each core crop (*coconut, cocoa, breadfruit puou, breadfruit maafala, other breadfruit*):

- Whether the crop is grown on family land
- Crop details for each parcel of family land:

- Crop stand (*single crop, mixed/scattered crop*)
- Number of trees/plants or crop area (for single crop)
- Number of trees/plants (for mixed/scattered crop)
- Whether the crop is affected by rhinoceros beetle (for coconut only)

Sales of crop products

For each core crop (*coconut, cocoa, breadfruit, banana, kava, taro, ta'amu, head cabbage, Chinese cabbage, tomato, cucumber, pumpkin*)

- Proportion of crop produce sold in 2019
- For each unit of measure (e.g., piece, basket, pile, etc.):
 - Quantity of last sale
 - Value of last sale
 - Number of sales in 2019

Crop production methods

- Presence of crops growing under protective cover
- Number of tunnel houses present
- Number of greenhouses present
- Use of inorganic fertilizer in 2019
- Use of organic inputs in 2019 by type (*compost 1, compost 2, green manure, chili spray, other*)
- Whether the household is a certified organic farmer
- Use of agricultural chemicals for weeds, pests or disease control in 2019
- Water sources used for agricultural activities (*rainfall only, mains supply, water tank, water from river/dam/lake, other*)
- Identification of household members normally engaged in crop activity
- For each household member engaged in crop activity:
 - Hours worked on crop activities in the last week
 - Whether the person is the main crop operator in the household
- Main purpose of crop production (*only home consumption, mainly home consumption with occasional selling, mainly for sales*)

SECTION IV: Livestock

Cattle

- Number of cattle raised
- Number of cattle owned
- Number of cattle by type (*dairy cattle, calves, cattle 4 months to 1 year, cows 1-2 years, heifers 1-2 years, bulls 1-2 years, steers 1-2 years, cows 2 or more years, heifers 2 or more years, bulls, 2 or more years, steers 2 or more years*)
- Number of cattle slaughtered sold (retail), slaughtered sold (customary), sold live, slaughtered for customary purposes, given away, died, born, purchased, received as gifts during 2019
- Income from sales of cattle in 2019
- Whether produced any milk in 2019
- Income from sales of milk in 2019
- Main system of rearing cattle (*free range, enclosed on own land, enclosed on other land, tethered*)
- Number of fenced-off paddocks used for raising cattle
- Characteristics of each paddock:
 - Area of paddock
 - Main fencing material
 - Source of water
- Pasture types (*improved, native*)
- Use of supplementary cattle feed by type (*additional feed, tree legumes, poloka masima*)

Pigs

- Number of pigs raised
- Number of pigs by type (*piglets, male pigs, female pigs*)
- Number of pigs slaughtered sold (retail), slaughtered sold (customary), sold live, slaughtered for customary purposes, slaughtered for consumption, given away, died, born, purchased, received as gifts during 2019
- Income from sales of pigs in 2019
- Main system of rearing pigs (*free range, enclosed on own land, enclosed on other land*)
- Use of supplementary pig feed

Sheep

- Number of sheep raised
- Number of sheep by type (*lambs, male sheep, female sheep*)
- Number of sheep slaughtered sold, sold live, slaughtered for customary purposes, given away, died, born, purchased, received as gifts during 2019
- Income from sales of sheep in 2019
- Main system of rearing sheep (*free range, enclosed on own land, enclosed on other land*)
- Use of supplementary sheep feed

Chickens

- Number of chickens raised
- Number of chickens slaughtered sold, sold live, slaughtered for customary purposes, slaughtered for consumption, given away, died, hatched, purchased, received as gifts during 2019
- Income from sales of chickens in 2019
- Main system of rearing chickens (*free range, enclosed on own land, enclosed on other land*)
- Use of supplementary chicken feed

Other livestock

- Number of ducks raised
- Number of goats raised
- Number of horses raised
- Number of other livestock raised by type
- Whether household is raising bees
- Number of beehives

Livestock production methods

- Identification of household members normally engaged in livestock activity
- For each household member engaged in livestock activity:
 - Hours worked on livestock activities in the last week
 - Whether the person is the main livestock operator in the household
- Main purpose of livestock production (*only home consumption, mainly home consumption with occasional selling, mainly for sales, customary purposes*)

SECTION V: FishingCapture fishing

- Whether the household was engaged in capture fishing in the previous three months
- Types of capture fishing (*inshore, offshore, freshwater*)
- Fishing area/habitat (*mangrove, lagoons, coastal reefs, outer reefs, pelagic/open ocean, fresh water, fish aggregating device*)
- Fishing methods (*long line, fish net, fish fence, hook and line, spear, gleaning, fish trap, trolling*)
- Number of fishing trips last week
- Percent of capture fishing products sold
- Main purpose of capture fishing activities (*only home consumption, mainly home consumption with occasional selling, mainly for sales*)

Aquaculture

- Whether the household was engaged in aquaculture in 2019
- Location of aquaculture (*land based, inland, coastal*)
- Type of water (*fresh water, brackish water, sea water*)
- Type of aquatic organisms cultivated (*freshwater fish, marine fish, crustaceans, molluscs, aquatic plants*)
- Percent of aquaculture products sold
- Main purpose of aquaculture (*only home consumption, mainly home consumption with occasional selling, mainly for sales*)

Fishing labour

- Identification of household members normally engaged in fishing
- For each household member engaged in fishing:
 - Hours worked on fishing in the last week
 - Whether the person is the main fishing operator in the household

SECTION VI: Agricultural equipment

- Use of each specified item of machinery/

equipment for agricultural and fishing purposes in 2019

- For each type of machinery used:
 - Number of items owned
 - Whether the household hired or borrowed the machinery

SECTION VII: Labour inputs

Individual workers

- Employment of outside labour in the previous week (individual workers)
- For each individual employed:
 - Sex
 - Age
 - Main activity (*crops, livestock, fishing*)
 - Hours worked
 - Amount paid in cash
 - Benefits provided (*free/subsidized housing, free meals, other*)

Group/organization workers

- Employment of outside labour in the previous week (groups or organizations)
- For each group/organization:
 - Number of males
 - Number of females
 - Main activity (*crops, livestock, fishing*)
 - Hours worked
 - Amount paid in cash
 - Benefits provided (*free/subsidized housing, free meals, other*)

SECTION VIII: Other data

- Sources of agricultural information (*MAF, radio, television, newspaper, schools, Internet, agricultural suppliers, other farmers, other sources*)

- Awareness of MAF's services/programmes
- Use of MAF's services
- Whether MAF's services considered effective
- Participation in MAF's programmes
- Whether MAF's programmes considered beneficial
- Main source of cash income (*growing crops, raising livestock, fishing, own non-agricultural business, paid work in agricultural occupation, paid work in non-agricultural occupation, pension, remittances, other*)
- Proportion of household income from crops/livestock/fisheries activities
- Receipt of loans for agricultural or fishing purposes
- Sources of loans (*DBS, NPF, SBEC, SPBD, other banks, other*)
- Whether the household planted any forest trees in 2019
- Number of dogs owned and number de-sexed
- Number of cats owned and number de-sexed
- Main challenges faced in crop, livestock and fishing activities (*access to land or land tenure, land degradation or soil erosion, access to seed or other planting materials, access to fertilizer or other crop inputs, lack of transport or high fuel cost, access to farm or fishing machinery, lack of labour or high cost of labour, lack of water for crops or livestock, weather conditions or climate change, lack of knowhow, crop pests or livestock disease, credit and loan repayments, lack of markets, stray animals, problems in infrastructure, other challenges*)