

CENSUS OF AGRICULTURE 2021



**Enumerator
CAPI Manual of Instruction**

November 2021

CHAPTER 1

GENERAL INFORMATION ABOUT THE CENSUS OF AGRICULTURE AND FISHERIES

1.1 Importance of the Census of Agriculture and Fisheries

Agriculture and fisheries are very important activities in the economy of the Cook Islands in terms of food production, foreign exchange earnings, employment generation and economic activity. These sectors contributed about 14 million to the country's Gross Domestic Product in 2019.

The first census ever conducted for agriculture was in 1988. Since then a Census of Agriculture and Fisheries has been conducted in 2000, 2011 and 2021 being the fourth census.

To date, the agricultural data of the country in terms of land resources and its capability to produce crops remain dependent on what was described in the last census of agriculture in 2011. In addition, the recent changes in the economy due to the impacts of covid19 place great importance on the need to collect agricultural information to update the statistics on agriculture and fisheries in order to determine its present situation and to have timely, accurate and reliable data for economic planning and policy making.

1.2 Objectives of the 2021 CAF

In support of the strategic plans and programmes of the Government on agriculture and fisheries, the 2021 Census of Agriculture and Fisheries (CAF) aim to:

- a) make an inventory of the agricultural and fisheries resources of the country;
- b) provide benchmark or basic data on agriculture and fisheries that will be useful for planning and decision-making; and
- c) provide a frame from which samples can be drawn to study certain aspects of agricultural and fishing activities in greater depth.

1.3 Authority for Undertaking the 2021 CAF

The 2021 CAF will be conducted by the Ministry of Agriculture in cooperation with the Ministry of Marine Resources, Outer Island Governments and the Statistics Office. Authority for the census will rest with the Government Statistician who has the legal power to collect such information under the Statistics Act 1966.

1.4 Confidentiality of Information Collected

This same act provides for the total confidentiality of the information collected in the census. The information can only be used for the purpose of compiling statistics and no individual information can be disclosed to anyone outside the

census organization.

1.5 Coverage and Scope of the 2021 CAF

The 2021 census will cover all households and agricultural holding in the Cook Islands. Items to be covered will include:

- a) location of the household
- b) level of agricultural activity
- c) size, number of separate parcels and location of holdings
- d) crops currently growing and/or planted and harvested for minor agricultural activities
- e) livestock and poultry
- f) household composition by sex and age group
- g) proportion of household income from agriculture
- h) loans by the household for agriculture purposes
- i) equipment in operational condition
- j) use of fertilizers, agricultural chemicals, selected agricultural activities and improved varieties
- k) fisheries: types of fishing forms, number of fishing trips, average number of hours per fishing trips, fishing boats used, proportion of fish sold, proportion of fish consumed and number of household member engaged in fishing by sex
- l) area and location of holding
- m) number, area, location, land tenure, land use and number of years used/fallow of each separate parcels
- n) labour inputs
- o) crops planted and harvested during the last twelve months, area harvested, number of plants, and proportion sold

1.6 Census Methodology

The Ministry of Agriculture with the help of the Outer Island Governments, Statistics Office and Ministry of Marine Resources will identify the trainers and supervisors for Rarotonga, Other Southern Islands and the Northern Group. The trainers/supervisors will recruit the enumerators in their respective assigned areas.

The workload and number of trainers/supervisors and enumerators will be computed using the results 2011 Census of Population and Dwelling Units.

There are two levels of training that will be held for this 2021 CAF: the first for the trainers/supervisors and the second for the enumerators. This information will be detailed by the census manager.

For the purpose of the census, the country is divided into Census Districts. Each district is further sub-divided into a number of Enumeration Areas. Each enumerator will be assigned to handle at least one enumeration area and will be provided with Household List, enumeration area map, codes of districts and enumeration areas, census questionnaires, instruction manual, summary form and other control forms.

Each enumerator will be responsible for completing the work in his/her assigned enumeration area(s) and he/she must make every effort to do the work to the best of his/her ability.

CHAPTER 2

DUTIES AND RESPONSIBILITIES

2.1 The Job of an Enumerator

As an enumerator, you will be given at least one “Enumeration Area” or “EA” to work on. An Identification card (ID) will be provided, which you need to wear during the enumeration period. This card entitles you as an official enumerator of the 2021 Census of Agriculture and Fisheries.

Your main duties are as follows:

- a) Wear your ID card every time you go out to interview households.
- b) Visit all households in your assigned area.
- c) Conduct the interview using the tablet to record all responses.
- d) Make sure that all new households that are not accounted in the map or in the Household list given to you are also interviewed. No household in your assigned enumeration area should be left out.

2.2 Census Field Supervisor

Your field supervisor will give your enumeration area assignment and supply you with the forms you need to carry out your job. He will review your work every now and then and if necessary, he will explain to you how you should improve your work. It is his duty to see that you complete your assignment as quickly and accurately as possible.

Whenever, you have some problems or questions that you cannot solve from the instructions in this book, write them down and consult your field supervisor for help. Also let him / her know in advance if you need more control forms or other materials, so that your work will not be delayed or interrupted.

Any problems that you encounter during the census such as refusals, absent households, etc, must be reported to your field supervisor at the earliest opportunity. You will also find it useful to keep a record of any problems you encounter.

2.3 Hours of Work

No specific hours have been prescribed. However the most important thing is that you must complete your work on or before 18 December 2021. You should plan your hours of work accordingly. In most cases, you will have to adjust your working hours to the time when you are most likely to find the people at home. The most likely or convenient time may be early in the morning or in the evening or during weekends.

2.4 Confidentiality of Census Information

As stated in the Statistics Act of 1966, all information collected in the census are confidential and should not be revealed to anyone except to the 2021 CAF Supervisors and Officials. This means that you may not give any census information even to members of your family. You will take an oath of office requiring you to keep the information confidential.

2.5 How to Conduct an Interview

It is important that you develop effective interviewing habits and that you know what to do in each household and how to do it quickly and efficiently.”

Here are some points:

- a) Try and make good impression on the respondent right from the start. Be friendly and polite but do not waste time in small talk. Wear neat clothes suitable for the areas where you are enumerating.
- b) Begin the interview with a pleasant greeting or use any courteous introduction.
- c) Spend a minute or so in general conversation or make a complimentary remark about some interesting feature of the place, in which the respondent can take pride. Then you can begin to undertake the questions in the Household Questionnaire.
- d) Ask the questions as worded on the screen. Be careful not to change their meaning.
- e) Use probing questions that will help you get the accurate answers of the respondents.
- f) Try to interview privately. Avoid group interviewing. Talk to the head of the household or any responsible member of the household who can accurately answer the questions. If not find out when some responsible member of the household will be at home and take note of this.
- g) Listen carefully to the respondent's answers. You may get answers to several questions at once. Do not reveal your opinion on census questions. Do not show surprise, approval or disapproval of the replies either by the way you look or by the tone of your voice.
- h) If a respondent does not understand a question, it is sometimes helpful to repeat it. Show him the questions on the screen of the tablet if it will help him understand.
- i.) Do not lose any control forms, household lists, or maps whether completed or not. Upon completion of all control forms, put them carefully into the envelope provided and mark the envelope as specified.

- j) If the respondent seems reluctant or hesitant in answering, mention the importance and value of census information. Explain that it is strictly confidential and cannot be used for purposes of taxation, investigation or regulation.
- k) Do not discuss politics or other controversial subjects.
- l) Make an appointment to interview or to complete an interview at the respondent's request.
- m) Always thank the respondent when the interview is completed. Let him know that you appreciate his contribution to the success of the census.

2.6 Refusals

Most people cooperate fully in the undertaking of the census in the Island. Refusals are rare. You may find a respondent who is a little bit reluctant to give information mainly because he/she does not understand why it is necessary. In such cases, explain to him/her the importance or objectives of the census.

Explain politely that everyone is required by law to give census information and emphasize that all information is confidential. Explain the importance of census information.

Under the Statistics Act of 1966 every person commits an offence if he refuses to answer any question lawfully addressed to him by the Census Enumerator or Supervisor or any other official authorized to conduct the census.

Your attitude in a refusal situation is an important factor in creating goodwill towards the census. You should try to remain calm and courteous. Do not argue and do not lose your temper. You should also inform the person that you are obligated to report the refusal to your supervisor who will take further action in this matter.

CHAPTER 3

ENUMERATION AREA MAPS AND HOUSEHOLD LISTS

3.1 Enumeration Area (EA) Map

Your EA map is the best detailed map available from the Statistics Office. It is important to learn to read and use your map accurately. You will be issued a map of your assigned enumeration area. Know your boundaries. The side lines show the EA'S boundaries. These may be recognized by the roads, streams or by your supervisor.

If you cannot identify your boundaries, inform your field supervisor. Do not proceed to the enumeration of households until you are sure of your exact boundaries. You cannot be paid for working in the wrong EA. Also, if you miss household(s) in your EA, you will be required to return and enumerate them before your field supervisor can accept your work as complete.

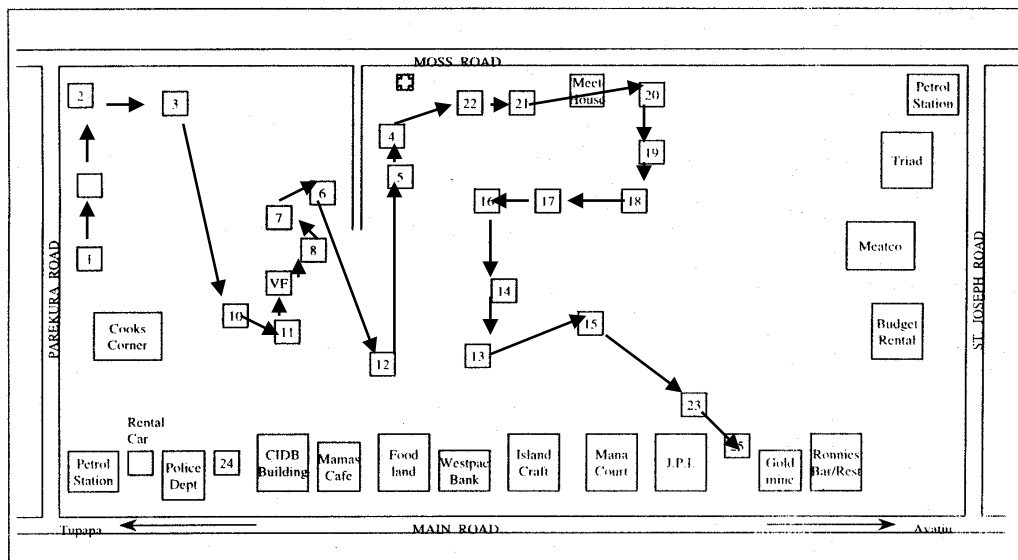
3.2 Route for Visiting Households

The Enumeration Area map given to you outlines the route to be followed. You should strictly adhere to this route. Never visit household in a haphazard manner. They should be visited in a logical sequence for example going along the roads in a clockwise direction. You may have to work out a special route to visit households with difficult access. Do not forget to go to those points of your block where there are no households according to the map. Verify whether this is the case.

HOUSEHOLD LOCATIONS

ISLAND: RAROTONGA
AREA: TUTAKIMOA-TEOTUE

CD: 03
EA: 01



3.3 Household List

In addition to the Enumeration map you will also be supplied with a Household List. This household list has been used in the 2016 Census of Population and Dwellings. Some changes might have taken place since then.

The majority of agriculture households to be interviewed will be sourced from the Ministry of Agriculture registry of farmers. The remaining households will be referred to the CAF 2021 team from the population census team as they will interview every household and pass on the list of households that are engaged in agriculture and / or fisheries. Upon receiving this list, CAF 2021 team will proceed to enumerate these households. Check for the name of the head of the household to ensure you have located the right household and proceed to interview responsible individual.

CHAPTER 4

INSTRUCTIONS FOR FILLING IN THE CENSUS QUESTIONNAIRES

4.1 General Instructions

Unlike the CAF of 2011 where there were three separate paper forms on which to record responses, the CAF of 2021 has combined these 3 forms into one comprehensive electronic CAPI questionnaire with 8 main sections including a cover page.

- a) Section 1 - Household composition
- b) Section 2 - Crop production activity of the household
- c) Section 3 – Livestock and poultry
- d) Section 4 – Land operated by the household
- e) Section 5 – Crops planted and / or harvested
- f) Section 6 – Non – household labour input
- g) Section 7 – Household income and loans / grants by and for agricultural purposes

Questions that require you to record area should be specified in acres and fractions of acres (e.g. 1/8, 1/4, 1/3, etc). Do not use decimal notation. Areas in square meters (sq. m.) should be specified in whole numbers.

Questions that require you to record monetary values should be rounded to the nearest dollar and no cents should be recorded.

Appendices are located at the back of the manual that contain agricultural concepts and definitions for most sections of the questionnaire.

4.2 Household Questionnaire

This electronic household questionnaire will be used in enumerating all the households in the Cook Islands. This contains eight (7) sections which are for the agricultural operation.

4.2.1 Geographic Identification and Other Relevant Information

This cover page identifies the island, district, enumeration area, and the household number. You must fill in correctly the identification particulars.

Agriculture Census 2021

MINISTRY OF AGRICULTURE AND STATISTICS OFFICE



MINISTRY OF AGRICULTURE
COOK ISLANDS

Household Schedule

Enter the Island

Rarotonga

Aitutaki

Atiu

Mangaia

Mauke

Island

Select the Island that you are working in.

Enter the District

Pue-Matavera

Tupapa

Takuvaine

Tutakimoo-Teotue

Avatiu

Nikao

Ruaau

District

Depending on the selected island, only the relevant census districts will appear. For example, if the island of Rarotonga is selected you will only see a display of census districts that correspond to Rarotonga. Select the appropriate district. If you are not sure in which district you are working you will find this on the Agri Intel list or the household list provided for you.

The screenshot shows a data entry form with two sections. The first section is titled 'Enumeration Area' and contains a text input field with the value 'EA' and a clear button (X). The second section is titled 'Household Number' and contains a text input field with the value '100' and a clear button (X).

Enumeration Area

Using the Agri-Intel register or the household list provided to you, enter in the enumeration area that has been assigned to you. Note that this enumeration area is text and no numbers are allowed in this field.

Household Number

Enter the household number as given in the column of Dwelling Number in the Household List. Note that only digits will be accepted in this field. If there is a change in the number because of updating, enter the new number in the field. See the instructions in Chapter 3, Section 3.3

The screenshot shows a data entry form with a section titled 'Date of the enumeration'. Below the title is a large button labeled 'Record current time'.

Date of enumeration

By tapping this field CAPI will automatically record the date and time the interview started. It is important that you do not skip this field as it will cause other problems in the questions that will follow i.e “date of birth.”

4.2.2 Section I – Household composition (as on the day of enumeration)

S101 Household Composition

To begin completing this section it is important to understand that a household is composed of persons, individually or in groups, who make common provision for food and other essentials for living. They may be related or unrelated or a combination of both. Refer to Appendix A for the definition of household.

When recording the usual members of the household include temporary visitors who have been staying with the household for three months or more, but exclude those who have been with the household for less than three months. Furthermore, include household members who have been away for less than three months, but exclude those who have been away for three months or more. Starting with the head of household enter in the full name of household members. Remember that you must press “**done**” to allow CAPI to add another line to continue entering the names of all household members. Once you start entering names of household members you will activate a roster and you will have to tap each individual’s name to begin entering detailed information on each member. Once you complete all details for an individual, the box for that individual will turn green.

S101: Full Name of the Household member

Please enter the name of the household head first followed by other household members

Enter new item

S102 Relationship of the individual to the Head of Household. For each household member you must indicate what is his / her’s relation to the household head. Only one response can be selected. If you make a mistake simply select a different option.

S102- Relationship with the head of the household

Self

Spouse

Son/Daughter

Daughter-in-law / Son-in-law

Grand Child

Parent


In-laws

Other Relative

Not- related

S103 Sex. For each household member select either “male” or “female.”

S104 Date of birth. Be sure to follow the format given (DD/MM/YYYY)



S104- Date of Birth

DD/MM/YYYY

Enter text (/ /)

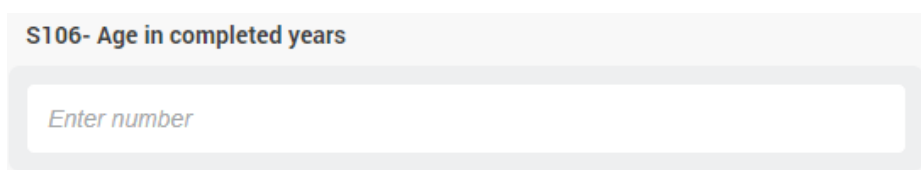
Try your best to get all the information correct. There may be some cases where the person giving the information may not recall the date of birth of one of the household members. Sometimes the person will recall the month but not the date and year, and sometimes they will remember the year but cannot recall the correct month or date. Other times they may only know the household member’s age but not the birthdate. You can calculate what year the individual was born if you know the age. In any event, some information although incomplete is better than none at all or using “99/99/9999.”

- Cannot recall at all = 99/99/9999
- Recall only the year = 99/99/1984
- Recall only the month and year = 99/08/1984
- Recall only the date and month = 01/08/9999

S106 Age in completed years.

This question is to verify that the birthdate given in S104 is accurate. If the reported age is inconsistent with the reported date of birth, an error message appears; check again with the respondent to ensure you entered the information correctly or to find out if the respondent made an error in relaying the information to you. Notice that once the error message appears, CAPI will automatically calculate the household member’s completed age based on the birthdate that was entered.

Error or warning messages will also appear if ages seem unusual, such as too old or too young. These should be clarified.



S106- Age in completed years

Enter number

S107 What is your marital status?

For each household member select the appropriate marital status. The options are shown below.

S107- What is your marital status

- Never Married
- Defacto
- Married
- Widowed
- Separated / Divorced

S108 What main activity did you do last week?

S108- What main activity did you do last week?

- Employer (including Self-employed)
- Employed in Govt/ Public Sector
- Employed in Private Sector ✕
- Producing goods/services for family consumption
- Voluntary / Community Work
- Domestic Duties
- Student
- Retired/ Too old
- Unemployed

ONLY HOUSEHOLD MEMBERS AGED 15 AND ABOVE ARE ASKED THIS QUESTION.

This question applies to the person's **main activity** during the previous **one week**. Be careful to ask the question exactly as given in the questionnaire to ensure that the information reported is correct. Select the appropriate code for that activity. Sometimes respondents may report that they have more than one activity. In this case you should probe the respondent to determine which activity took up most of their time in the last week. There can only be one main activity selected.

Below is a detailed description of common main activities to help you select the most appropriate option.

1 *Employer* – a person who hires employees/workers to perform work for them/business. Workers are either paid a salary or wage for their labour. This would also include a person who runs his / her business (self – employed), runs his / her own taxi, or engages in agricultural activities such as crops, livestock and fishing for sale.

2 *Employed in Govt / Public Sector* – a person who works in a paid job or earns an income from a job where the employer is the government, including quasi government; e.g., those working in government ministries and corporations.

3 *Employed in private sector* – a person who works in a paid job or earns an income from a job where the employer is a private company, a non-government organization, or a religious organization; e.g., customer service agent, pastor, store clerk, baker, fisherman, security guard.

4 *Producing goods / services for family consumption* – a person who works primarily in subsistence activities such as agriculture, livestock, fishing **mainly for home consumption.**

5 *Voluntary / community work* – a person who is engaged in community work for free.

6 *Domestic Duties* – a person who stays at home mainly doing household work such as looking after the elderly and the sick, preparing or cooking food for the family, caring and looking after children, and doing other chores at home.

7 *Student* – a person who is attending an educational institution full-time.

8 *Too young / Retired / too old* – a person who is too young to attend school or have a main activity. Includes a person, due to old age, is not able to perform any activity. A person who has reached retirement age but is actively pursuing other activities should be recorded under that activity; e.g., a retired person running a small shop should be coded “1” instead of “8”. Just because an individual has reached or passed retirement age does not always mean that their main activity is retired/old age.

9 *Unemployed* – A person who is still looking for paid form of employment

S109 What is the extent of engagement in main activity?

S109- What is the extent of engagement in main activity

Full-Time

Part-Time

None

Depending on the response in S108 on main activity, this question now asks to clarify how involved the household member is in the main activity. Select the appropriate response. Only one answer can be selected.

S110 What is the average number of hours / week did you work on the holding in the last week?

S110: what is the average number of hours/ week did you work on the holding?

Enter number

does not work on the holding

For those household members who have indicated that they performed agriculture work on the household holding whether for subsistence, semi-subsistence, or commercial should be asked about the average number of hours they worked on the household holding each week. Record the appropriate number of hours worked or select “does not work on the holding” if the individual did not perform any agriculture work on the household holding.

S111 Are you the agricultural holder?

S111- Are you an agriculture holder?

Yes

No

This question aims to identify the person in the household exercising management control over the operation of the agricultural holding. Where the holding is being operated by a single household the head of the household is in most cases the operator. Select the appropriate response.

4.2.3 Section II – Crop production activity of the household

This section of the questionnaire will ask the household about their crop production in the last 12 months. It will also ask about commercial farming, bee keeping, hydroponic crop production, floriculture, and the production of value added products and cooked food and how and where it is being sold.

S201 Did your household grow and / or harvest garden crops, coconut trees, pawpaw trees, or any other crop during the last 12 months?

S201 -Did your Household grow and / or harvest garden crop(s), Coconut trees, pawpaw trees or any other crop during last 12 months?

Yes ×

No

Select the appropriate option.

S202 Did your household have more than 64M² (8Mx8M) of land under garden crops, coconut trees, pawpaw trees, or any other crop during the last 12 months?

S202-Did your Household have more than 64 M2 (8Mx8M) land under crops/ garden crops, Coconut trees, pawpaw trees or any other crop during last 12 months?

Yes

No

This question is trying to gauge the area operated by the household for agriculture purposes. To give some context, $\frac{3}{4}$ of the boardroom is about the equivalent size of 8M x 8M. Select the appropriate response.

S203 Did your household sell / export any crop produce, fruits, vegetables or other agricultural produce during the last 12 months?

S203- Did your Household sell / export any crop produce, fruits, vegetables or other agricultural produce during last 12 months?

Yes

No

S204 What do you consider is the main purpose of your crop production?

S204- What do you consider as the purpose of your crop production?

Subsistence

Semi-Subsistence

Commercial

Other (specify)

There are 4 options provided. Select the appropriate response.

Subsistence - The household produces crops for the main purpose of feeding itself, but does not sell for any significant amount.

Semi-Subsistence - The household's main purpose of agricultural production is to feed itself (subsistence) but some crops or surplus crops are sold as in copra production.

Commercial - Households in this category main purpose of production is to sell their produce either locally or for export.

S205 If household is engaged in commercial farming, did the proceed from sale of crops in last 12 months exceed NZD \$1000.

S205- If the household is engaged in commercial farming, did the proceed from sale of crops in the last 12 months exceed NZ\$1000?

Yes

No

S206a Did the household own / operate bee keeping for honey production during the last 12 months?

S206a(i) How many hives do you have? (on the day of enumeration)

S206a(ii) How much honey was harvested during the last 12 months (in litres)?

S206a(i)- how many hives do you have?

Enter number

S206a(ii)- How much honey was harvested during last 12 months (in Litres)?

Enter number

It is important to remember that when asking how many hives the household operates, the question is referring to the number of hives kept as of the day of enumeration. If during the 12 months the household was operating 3 hives and 4 months before the census interview they discarded 2 hives due to damage and only have one hive in operation then you would record 1 for this question.

Similarly in question S206a(ii) the household may have harvested more honey in the last 12 months because they had more hives in operation before they discarded the 2 hives. In reality it is possible to record more liters of honey than there are hives. It is important to listen carefully to the response.

S206b Did the household own / operate any hydroponic crop production during the last 12 months?

S206b(i) What is the capacity of the operation?

S206b(i)- Capacity of the operation

Acres ×

Square meters

S206b(i)- What is the total capacity in acres?

For a response of yes in S206b the respondent will be required to now disclose the capacity of the hydroponic operation. There are 2 ways in which this can be reported; acres or square meters (select the appropriate response). You will be required to input this information as a whole number. If the respondent is more comfortable reporting in square meters then this should also be keyed in as a whole number.

S206b(iii) What crops did you grow and harvest during the last 12 months in the hydroponics operation?

S206b(iii)- What Crops did you grow and harvest during last 12 months in the hydroponics operation?

Lettuce

Pepper(Capsicum)

Cucumber

Herbs

Tomato

Others, specify

This question is a multi - select question where you can select more than one answer. Select all applicable responses as relayed by the household. If the response provided does not match what is listed select “other” and specify the hydroponic crops grown by the household.

S206(ii) What was the quantity of pepper (capsicum) grown or harvested during the last week in kilograms?

S206(ii)- What was the quantity of Pepper(Capsicum) grown or harvested during the last week in kilograms?

For every hydroponic crop that was selected in the previous question, follow up questions will be asked about the quantity grown or harvested to be reported in total kilograms with a reference period of the last one week. In the example above since pepper and herbs were selected then you would expect to enter in the quantity for both these crops in subsequent questions.

S206c Did the household own / operate floriculture for commercial puposes during the last 12 months?

S206c(i) Which flowering plants did you or any member of the household sold in the last 12 months?

S206c (i) - Which flowering plants did you or any member of the household sold in the last 12 months?

- Orchids
- Tiare Maori
- Anthurium
- Gardenia
- Ginger
- Desert Rose
- Bougainvillea
- Others

This question is a multi - select question where you can select more than one answer. Select all applicable responses as relayed by the household. If the response provided does not match what is listed select “other.”

S206c(ii) What was the total quantity of “orchids” sold during the last 12 months?

S206c(ii)- What was the total quantity of orchids sold during last 12 months

Enter number

For every plant selected in the previous question you will be required to enter the quantity sold for each selected plant. In the example above both “orchids” and “ginger” have been selected so you would expect to fill in the quantity of each plant that was sold in the last 12 months. If “other” varieties are identified by the household that are not listed enter the “other” variety and its corresponding quantity sold.

S206c(i) Did you or any member of the household sell any of the following flowers in the last 12 months?

S206c (i) -Did you or any member of the household sell any of the following flowers in the last 12 months?

Maire Leis

Tiare Maori flowers

Tiare Maori leis

Gardenia flowers

Ginger/Heliconia Bouquets

Others, specify

This question is a multi - select question where you can select more than one answer. Select all applicable responses as relayed by the household. If the response provided does not match what is listed select “other” and specify the variety of flower.

S206(ii) What was the total quantity of Tiare Maori Flowers sold during the last 12 months?

S206c(ii)- What was the total quantity of Taire Maori flowers sold during last 12 months (bags)

Enter number

For every flower selected in the previous question you will be required to enter the quantity sold (in each specified unit) for each selected flower. Simply key in the quantity of each variety of flower sold in the last 12 months. Note that in the multi – select question S206c(i) only those varieties that were selected will enable a question requiring the quantity sold. Because Tiare Maori Flowers

was one of the flowers selected CAPI will automatically ask for the quantity of Tiare Maori Flowers sold in “bags”.

S206d Did you or your household engage in any value added agricultural activities?

S206d What type of value added products do you or household engage in?

S206d- What type of value added products do you or household engage in?

<input checked="" type="checkbox"/> Powdered Products
<input checked="" type="checkbox"/> Chips
<input type="checkbox"/> Chutney
<input type="checkbox"/> Turmeric Paste
<input type="checkbox"/> Ginger Paste
<input type="checkbox"/> Jam
<input type="checkbox"/> Coconut Products
<input type="checkbox"/> Others, please specify

This question is a multi - select question where you can select more than one answer. Select all applicable responses as relayed by the household. If the response provided does not match what is listed select “other” and specify the value added product.

S206d(i) What type of powdered products did the household sell in the last one week?

S206d(i) What type of powdered products did the household sell in the last one week?

<input type="checkbox"/> Moringa
<input checked="" type="checkbox"/> Starch
<input checked="" type="checkbox"/> Turmeric

Powdered products is broken down into 3 varieties and multiple selections can be made. For each powdered product selected follow up questions will be asked on the average quantity sole in a week.

S206d(i) Provide average quantity of starch powdered products (in zip lock bag) sold in last one week?

S206d(i)- Provide average quantity of Starch Powdered Products (in zip lock bag) sold in last one week?

Enter number

For every value added powdered product selected in the previous question you will be required to enter the average quantity sold (in each specified unit) in the last one week. For example, “starch” and “turmeric” powdered products were selected so you would expect follow up questions regarding quantity sold for these 2 varieties of powdered product. Note that in the multi – select question S206d only those varieties that were selected will enable a question requiring the quantity sold. Because Powdered products (in zip lock bag) was selected CAPI will automatically ask for the type and quantity of powdered products (in zip lock bag) sold in a week.

S206d(i) What type of chips did the household sell in the last one week?

S206d(i)- What type of Chips did the household sell in last one week?

Maniota

Kumara

BreadFruit

Taro

Other, please specify

If the value added product of chips was selected in S206d a follow up question on the varieties of chips sold will appear. Again this question is a multi - select question where you can select more than one answer. Select all applicable responses as relayed by the household. Depending on the number of varieties selected in this question subsequent questions regarding the quantity of chips sold in a week will appear. Key in the appropriate responses as prompted.

S206d(i) What type of chutney did the household sell in the last one week?

S206d(i)- What type of Chutney did the household sell in last one week?

Lime

Tamarind

Others, specify

If the value added product of chutney was selected in S206d a follow up question on the varieties of chutney sold will appear. Again this question is a multi - select question where you can select more than one answer including

“other” if a variety is identified that is not listed; remember to specify. Select all applicable responses as relayed by the household. Depending on the number of varieties selected in this question subsequent questions regarding the quantity (in small and large bottles) of chutney sold in a week will appear. Key in the appropriate responses as prompted.

S206d(i) What type of jam did the household sell in the last one week?

S206d(i)- What type of Jam did the household sell in the last one week?

<input checked="" type="checkbox"/> Pawpaw
<input checked="" type="checkbox"/> Ginger
<input checked="" type="checkbox"/> Lime
<input type="checkbox"/> Others, please specify

If the value added product of jam was selected in S206d a follow up question on the varieties of jam sold will appear. Again this question is a multi - select question where you can select more than one answer including “other” if a variety is identified that is not listed; remember to specify. Select all applicable responses as relayed by the household. Depending on the number of varieties selected in this question subsequent questions regarding the average quantity (in small and large bottles) of jam sold in a week will appear. Key in the appropriate responses as prompted.

S206d(i) What type of coconut products did the household sell in the last one week?

S206d(i)- What type of coconut products did the household sell in the last one week?

<input checked="" type="checkbox"/> Coconut Cream
<input checked="" type="checkbox"/> Coconut Oil
<input checked="" type="checkbox"/> Coconut Soap

If the value added product of coconut products was selected in S206d a follow up question on the types of coconut products sold in a week will appear. Again this question is a multi - select question where you can select more than one answer. Select all applicable responses as relayed by the household. Depending on the number of varieties selected in this question subsequent questions regarding the average quantity (in corresponding units) of coconut production sold in a week will appear. Key in the appropriate responses as prompted.

S206e Did you or your household engage in selling any cooked food during the last week?

S206e(i) What type of cooked food did the household sell in the last one week?

S206e(i)- What type of cooked food did the household sell in the last one week?

- Chestnut
- Coconut Sauce
- Pudding(Chestnut/Banana/Poke Nita/Cassava)
- Cooked banana/Maniota/Taro/Kumara/Tarua
- Taro Leaves
- Others, please specify

This question is a multi - select question where you can select more than one answer. Select all applicable responses as relayed by the household. If the response provided does not match what is listed select “other” and specify the cooked food sold.

S206e(ii) Provide average quantity of Chestnut (in zip lock bag)?

S206e(ii)- Provide average quantity of Chestnut (in zip lock bag)?

Enter number

For every cooked food product selected in the previous question you will be required to enter the average quantity sold (in each specified unit) in the last one week for each selected product. Note that in the multi – select question S206e(i) only those varieties of cooked food that were selected will enable a question requiring the quantity sold. Because Chestnut (in zip lock bag) was selected, CAPI will automatically ask for the quantity of Chestnut (in zip lock bag) sold in a week (as shown above). Same process will be repeated for “pudding (chestnut / banana / poke / nita / cassava)” and “taro leaves” as these options have been selected.

S206e(ii) What type of pudding did the household sell in the last one week?

S206e(ii)- What type of pudding did the household sell in the last one week?

- Chestnut Pudding (kanaka)
- Banana Pudding (Poke Meika)
- Pawpaw Pudding (Poke nita)
- Cassava Pudding (Maniota)

If the cooked food product of pudding was selected in S206e(i) a follow up question on the varieties of puddings sold will appear. Again this question is a multi - select question where you can select more than one answer. Select all applicable responses as relayed by the household. Depending on the varieties selected in this question, subsequent questions regarding the average quantity of puddings (in their corresponding units) sold in a week will appear. Key in the appropriate responses as prompted.

S206d(i) What type of staple cooked food did the household sell in the last one week?

S206d(i)- What type of cooked food did the household sell in the last one week?

<input checked="" type="checkbox"/> Taro
<input checked="" type="checkbox"/> Maniota
<input checked="" type="checkbox"/> Kumara
<input type="checkbox"/> Banana
<input checked="" type="checkbox"/> Tarua

If the cooked food product of staple food was selected in S206e(i) a follow up question on the varieties of staple foods sold will appear. Again this question is a multi - select question where you can select more than one answer. Select all applicable responses as relayed by the household. Depending on the varieties selected in this question, subsequent questions regarding the average quantity of staple food (in their corresponding units) sold in a week will appear. Key in the appropriate responses as prompted.

S206e(iii) Where did you sell?

S206e(iii)- where did you sell?

<input checked="" type="checkbox"/> Roadside
<input type="checkbox"/> To Shops
<input checked="" type="checkbox"/> Market
<input type="checkbox"/> Others, specify

The final question in this section seeks to identify where all the food products mentioned in section II are sold. It is important to recognize the possible options for where these cooked foods might be sold. Roadside stalls are makeshift kiosks or tents on the side of the road where people sell food products. Shops refer to retail shops, specialty shops, and dairies. Market refers to the open market where anyone can sell products whether they are fresh produce, ornamental plants and cuttings, cooked food and drinks, handicrafts etc. These are the most common in Cook Islands.

4.2.4 Section III – Livestock and Poultry (as at day of enumeration / visit)

This section relates to the livestock kept by the household as of the day of visit or enumeration. This should be asked for all households regardless of the level of agricultural activity.

First establish whether the household has any livestock.

S301 Does your household have any livestock or poultry?



S301- Does your Household have any livestock or poultry?

Yes

No

S302 What was the type of operation during the last 12 months?



S302- What was the type of operation during last 12 months?

Commercial

Semi-Commercial

Subsistence

There are three possible options available to choose from and only 1 option can be selected. Select the appropriate code that best matches the response given by the household and place it in the box provided.

Commercial - Households in this category main purpose of production is to sell their livestock either locally or for export.

Semi-Commercial - The household's main purpose of livestock production is profit maximization after satisfying the need to feed itself (subsistence).

Subsistence - The household raises livestock but does not sell for any significant amount.

S303 What kind of livestock does your household keep?

Livestock has been divided into the following categories with their corresponding types listed below.

S303-What kind of Livestock does your household keep?

<input checked="" type="checkbox"/> Pigs
<input checked="" type="checkbox"/> Goats
<input checked="" type="checkbox"/> Cattle
<input type="checkbox"/> Chicken
<input checked="" type="checkbox"/> Ducks
<input checked="" type="checkbox"/> Horses

Because question S301 was answered with a “yes,” this multi – select question is enabled where you can select more than one answer. Select all applicable responses as relayed by the household. For every animal selected subsequent questions will follow asking for more details regarding each selected animal. In this case further questions will be asked for “pigs,” “goats,” “cattle,” “ducks,” and “horses.”

S303 What type of pigs are kept?

What types of Pigs are kept?

<input type="checkbox"/> Weaners
<input checked="" type="checkbox"/> Growers
<input type="checkbox"/> Boars
<input checked="" type="checkbox"/> Sows
<input checked="" type="checkbox"/> Piglets

Because “pigs” was selected in the previous question, this question now asks to identify the type of pigs kept. There are 5 options available to choose from and multiple types can be selected based on household response (see appendix B for definitions of pig types). For each livestock selected a roster will be activated that will ask further detailed questions regarding the total number, main rearing system used, total consumed (if applicable), slaughtered, sold, or given away along with any income derived from sales of selected livestock.

S3032 What is the total number of “growers” kept?

Type of pigs kept - *Growers*

S3032-Number kept

on the day of the enumeration

This question requires a total number of growers kept to be entered. If you had also selected other types of pigs such as “weaners” and “sows” this and subsequent questions will also be repeated.

S3033 What is the main system of rearing for “growers” kept?

S3033-Rearing System used

Free Range

Tied on Rope

Enclosed on own land

Enclosed on another households land

This question is about the **main** system of rearing each type of pig. There are 4 options to choose from. A household may use various systems of rearing pigs – we are asking for what the household considers as the main system of rearing.

S3034 What is the number of grower pigs that were slaughtered and consumed during the last 12 months?

S3034- Number slaughtered and consumed during last 12 months

Record the total amount of growers slaughtered and consumed.

S3035 What is the number of growers slaughtered and gifted during the last 12 months?

S3036 What is the number of growers slaughtered and sold during the last 12 months?

S3037 What is the number of growers sold alive during the last 12 months?

S3038 What is the number of growers gifted alive during the last 12 months?

S3039 What was the total revenue from sales of growers in the last 12 months?

Questions S3035-S3039 attempt to show the subtractions from the pig herd in the last 12 months. Be sure to ask each question to the household and record the responses given.

S3041 What types of cattle is kept / owned?

What types of Cattle are kept?

Bulls

Cows

Calves

Because “cattle” was selected in question S303, this question now asks to identify the type of cattle that the household is keeping or owns (see appendix B for definitions of cattle types). There are 3 options available to choose from and multiple types can be selected based on household response. Similar to the questions on pigs, for each type of cattle selected, a roster will be activated that will ask further detailed questions regarding the total number kept, main rearing system used, total consumed (if applicable), slaughtered, sold, or given away along with any income derived from sales of selected livestock. Follow the prompts and key in the responses.

S3052 What type of goats is kept / owned?

What types of goats are kept?

Bucks

Does

Kid

If “goats” was selected in question S303, this question now asks to identify the type of goats that the household is keeping or owns (see appendix B for definitions of goat types). There are 3 options available to choose from and multiple types can be selected based on household response. Similar to the questions on pigs, for each type of goat selected, a roster will be activated that will ask further detailed questions regarding the total number kept, main rearing system used, total consumed (if applicable), slaughtered, sold, or given away along with any income derived from sales of selected livestock. Follow the prompts and key in the responses.

S3062 What types of horses is kept / owned?

What types of horses are kept?

Stallion

Mares

Foals

If “horses” was selected in question S303, this question now asks to identify the type of horses that the household is keeping or owns (see appendix B for definitions of horse types). There are 3 options available to choose from and multiple types can be selected based on household response. Similar to the questions on pigs, for each type of horse selected, a roster will be activated that will ask further detailed questions regarding the total number kept, main rearing system used, total consumed (if applicable), slaughtered, sold, or given away along with any income derived from sales of selected livestock. Follow the prompts and key in the responses.

S3072 What types of chickens is kept / owned?

Types of Chicken kept

Chicken-Broilers

Chicken-Layers

Chicken-Local

If “chickens” was selected in question S303, this question now asks to identify the type of chickens that the household is keeping or owns (see appendix B for definitions of chicken types). There are 3 options available to choose from and multiple types can be selected based on household response. Similar to the questions on pigs, for each type of chicken selected, a roster will be activated that will ask further detailed questions regarding the total number kept, main rearing system used, total consumed (if applicable), slaughtered, sold, or given away along with any income derived from sales of selected livestock. Follow the prompts and key in the responses.

S3082 What types of ducks is kept / owned?

What types of ducks are kept?

Drakes

Hens

Ducklings

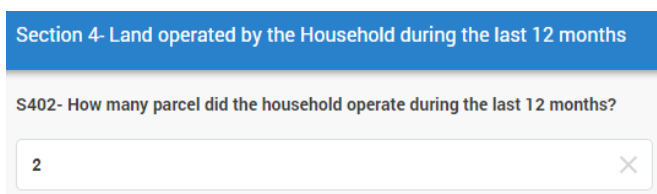
If “ducks” was selected in question S303, this question now asks to identify the

type of ducks that the household is keeping or owns (see appendix B for definitions of duck types). There are only 3 options available to choose from and both types can be selected based on household response. Similar to the questions on pigs, for each type of duck selected, a roster will be activated that will ask further detailed questions regarding the total number kept, main rearing system used, total consumed (if applicable), slaughtered, sold, or given away along with any income derived from sales of selected livestock. Follow the prompts and key in the responses.

4.2.5 Section 4 – Land operated by the household (*during the last 12 months*)

This section asks about some important characteristics of the land operated by the household such as location, area, land tenure, period of use in years, soil conservation methods, soil testing, and land under crops, livestock, and non-agricultural use. Household land refers to land operated exclusively by the household.

S402 How many parcels of land did the household operate during the last 12 months?



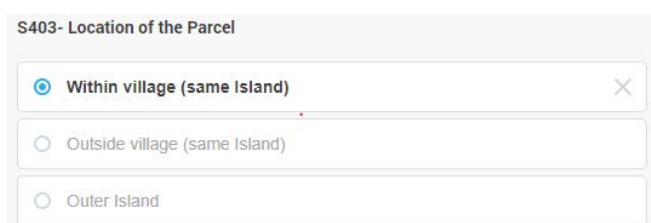
Section 4- Land operated by the Household during the last 12 months

S402- How many parcel did the household operate during the last 12 months?

2

In this first question on how many parcels is operated by the household, depending on the number of parcels reported a roster will be activated for every parcel. In this case 2 parcels has been reported so the respondent will answer a roster of questions for each parcel. You must explain to the respondent that parcel 1 should always be the homestead where the operator's home is or where he resides. After filling in information about parcel 1, you should continue to record parcel 2 and repeat the same process.

S403 This question asks about the location of the parcel. There are 3 possible choices to choose from.



S403- Location of the Parcel

Within village (same Island)

Outside village (same Island)

Outer Island

Remember that parcel 1 is always the parcel that contains the homestead, where the household lives. In almost all cases “within village (same island) should be the option selected for parcel 1.

In another example, a household might live in Rarotonga but operates a parcel of land in rural areas on Rarotonga. In this case parcel 2 should be shown as being in an "outside village (same island)". Should the same household operate a parcel on a different island you would select option "outer island".

S403(a) What island is the parcel located?

S403 (a)- Location of the Parcel

<input type="checkbox"/> Aitutaki
<input type="checkbox"/> Atiu
<input type="checkbox"/> Mangaia
<input type="checkbox"/> Mauke
<input type="checkbox"/> Mitiaro
<input type="checkbox"/> Manihiki
<input type="checkbox"/> Palmerston
<input type="checkbox"/> Penrhyn
<input type="checkbox"/> Pukapuka
<input type="checkbox"/> Nassau
<input type="checkbox"/> Rakahanga

If the response in S403 is "outer island" this question will be enabled to select which island the parcel is located. Only 1 island can be selected for each parcel that is located in the outer island.

S404 What is the total area of the parcel?

S404- Total area of the Parcel

Acres ×

square meters

S404a - Total Parcel Area in acres

Whole Acres
Enter 0 here if area is less than an acre

0 ×

S404b - Fraction of an Acre (x/y)

Enter "0" if area is whole number (i.e., no fraction)

1/2 ×

Questions S404 – S404b asks for total area of the parcel. The response can be given in either acres and / or fraction of acres or in square meters (S404). In the event that the response is given in acres it is important that you record a fraction and not a decimal. Example: ¼ acre, ½ acre, 1 ½ acres. NOT 0.25, 0.5, 1.5. If the respondent is more comfortable using square meters then select square meters in S404 and record the response in whole numbers. Either record in acres or square meters but not both.

Take note that if the area of the parcel is less than 1 acre such as ¼, ½, or ¾, or any other fraction you must enter 0 in S404a. If you do not record 0 in S404a this question will be counted as an unanswered question and will cause your questionnaire to be incomplete. In cases where the area of the parcel is more than 1 acre such as 1 ½, 3 whole acres or any other combination then you would key in 1 in S404a for whole acres and ½ in S404b. In the event that the parcel is reported in whole acres then you would key in 3 in S404a and 0 in S404b.

S406 What is the land tenure?



S407- Land Tenure

Borrowed Land

Leased Land

Occupation Right Land

Customary Land

This question pertains to the land tenure of the parcel. **Land tenure** refers to the arrangements or rights under which the household holds or uses the agricultural land. There are 4 classifications of land tenure to be considered and only one option can be selected. Based on the response from the household choose the appropriate code for each parcel reported.

Borrowed land is a land belonging to another household or person that the borrower has borrowed for use usually on a temporary basis. Terms of the agreement are between the two parties concerned; i.e. it need not go through the court.

Leased land is a contract by which one party (lessor), usually in consideration of rent, conveys land to another (lessee) for specified time period.

Occupation right land is where the operator (or his / her spouse) has an exclusive right to use a piece of land, such right being obtained through the land court system of the Cook Island.

Customary land (alias native land, native freehold land) is a land which, being vested in the Crown, is held by natives or the descendants of natives under the native customs and usage in the Cook Islands. Customary land is not investigated by the land court but is being looked after and handled by the natives.

S407 How many years has the household operated the parcel?

This question asks about how long the parcel has been operated by the household. This answer should be recorded in the number of years the parcel has been operated by the household. If the response is less than 12 months you should record 0.

S408(a) Did you practice any soil conservation methods in the last 12 months?

S408(b) What was the main soil conservation method used?



S409- What is the soil conservation methods have you used on the parcel?

Crop Rotation

Mulching

Cover Cropping

Inter-cropping

Contour farming on sloping land

These questions are two part and pertain to soil conservation methods (see appendix A) used for each parcel reported. In question S408(a) only a response of “yes” or “no” is required. The question is whether or not the household practiced any soil conservation methods on the reported parcel in the last 12 months. Select the appropriate answer. If the answer to question S408(a) was “yes”, question S408(b) should also have a response. Question S408(b) has the following corresponding codes to choose from above. Households may practice the use of more than one soil conservation method but we are looking at the main method used, therefore, only one option can be selected from the list. Based on the response given by the household choose the most appropriate option.

S409 In the last 12 months did you conduct any soil testing?

This question seeks a “yes” or “no” response to determine whether or not soil testing was conducted on each parcel reported in the last 12 months. Select the appropriate code.

S410(a) – S417(a)

The roster of questions ranging from S410(a) – S417(a) will be asking for all

responses to be recorded in acres or square meters using whole numbers and fractions. These columns are still referring to the parcels that were recorded in S402. For every parcel reported you must record the number of acres of land (using whole numbers and fractions) **under tree crops, root crops, temporary crops (other than root crops), mixed crops, fallow, virgin bush, livestock or poultry, and non-agricultural use**. Note that the acres recorded in S410(a) – S417(a) should add up to the total acres recorded in S404(a) and S404(b). Follow the prompts and record the responses accordingly. If the household reports more than 1 parcel then you will repeat the roster of questions for each parcel.

S410(a) - Land area under Tree Crops (in acres)

Whole Acres
Enter 0 here if area is less than an acre

Enter number

4.2.6 Section 5 – Crops planted and / or harvested (during last 12 months)

This section is designed to record all the crops that were planted and / or harvested during the last 12 months by households engaged in crop activity. Below is the information that should be recorded.

1. Name of the crop
2. Method of planting
3. Area under specified crop
4. Number of trees / plants
5. Average age in years
6. Traditional or improved seeds or plant material used
7. Main method of irrigation
8. Total production
9. Total proportion consumed, sole, or given away

There should not be any new parcels added in this section of the questionnaire. Using the same parcels from section 4, the following questions will now ask you to record the crops that were planted and / or harvested in the last 12 months parcel by parcel.

S511 Did the household plant and / or harvest on this parcel?

SECTION 5: CROPS PLANTED AND/OR HARVESTED DURING THE LAST 12 MONTHS /

Crop Planted and/or Harvested During the last 12 months - 7

S511- Did the household planted and/or harvested on this parcel?

Yes

No

This question is a simple yes or no question to ensure that the parcel reported was used to plant or harvest agricultural produce. Select the appropriate response.

S512 What crops were planted or harvested on this parcel during the last 12 months?

S512- Name of the crop planted and or harvested during the last 12 months

<input type="checkbox"/> Abiu (Eggfruit)
<input type="checkbox"/> Apple Star
<input type="checkbox"/> Avocado
<input type="checkbox"/> Banana, cavendish
<input type="checkbox"/> Banana, cooking (Plantain)
<input type="checkbox"/> Banana, ducasse
<input type="checkbox"/> Banana, fei (Utu)
<input type="checkbox"/> Banana, ladyfinger
<input type="checkbox"/> Barbados cherry (Acerola, West Indian Cherry)

This question will call up a list of over 100 crops (only a selection of crops are shown above) that are common in the Cook Islands. It is also a multiple – select question where you can select as many crops as relayed by the household. For each crop selected a roster will be triggered and will follow up with additional questions regarding **method of planting, estimation of area under crop or the number of trees, type of seed or planting material used, main method of irrigation, total production (in kgs), total proportion consumed, sold, or given away.**

S514 What was the method of planting used?

S514- Method of planting used

<input type="radio"/> Single Row
<input type="radio"/> Double Row
<input checked="" type="radio"/> Mixed Crop ×
<input type="radio"/> Scattered

There are 4 possible options to choose from. Select the appropriate code.

Single row refers to “one crop” planted over a plot in a regular pattern of “single rows.” If there are a few scattered trees or plants of different crops within the plot, the plot is still considered to be single rows.

Double row refers to “one crop” planted over a plot in regular pattern of

“double rows.” If there are a few scattered trees or plants of different crops within the plot, the plot is still considered to be double rows.

Mixed crop refers to “two or more crops” which are inter-planted over a plot in a regular pattern such as rows. Sometimes there are few scattered plantings of other crops but not considered to be as part of the mixed crops.

Scattered crop refers to trees or plants, which have not been planted with any uniform method of spacing over a plot. Important timber trees including; Miro, Tamanu, Tou shall also be recorded.

S514 What is the crop estimation method?

S514- Crop estimation method

Area under crop

number of trees ×

In this question you will be required to select “area under crop” or “number of trees.” If you select area under crop you will be required to key in the area under each crop reported.

S515 What is the total crop area?

S515- what the total crop area?

Acres ×

Square Meters

S515 (a) - what is total area under the crop (in acres)?

Whole Acres
Enter 0 here if area is less than an acre

Enter number

S515a_under - Fraction of an Acre (x/y)

Enter "0" if area is whole number (i.e.,no fraction)

Enter text

If you select the option of “area under crop” then you will be given the option to report in acres or square meters. Ensure that the area is reported in whole acres (or square meters) and fraction of acres and not decimals.

S516 What was the number of trees or plants grown or harvested?

S516- what was the number of trees or plants grown or harvested?

If you selected “number of trees” in S514, then this question will be enabled and you can now enter the number of trees or plants grown or harvested in the last 12 months as reported by the household. In some cases, there will be trees that are growing on the parcel that were planted in previous years. However, harvesting the fruit or nuts from those trees occurs every year. For example, harvesting mangoes from existing trees planted 10 years ago will require you to give the number of mango trees on that parcel.

S517 What is the average age of trees?

S517- what is average age of the trees planted?

the age should be enter in the number of years

In this question you are required to give the average age of each tree crop reported in years. If you have a response in S516 you will now record the average age in years. As in the example above, mango was listed as a crop that was harvested during the last 12 months, 5 mango trees have been growing on the parcel for 10 years, therefore the years in which the mango trees have been growing on that parcel must be recorded. A best guess from the respondent is much better than leaving the space blank.

S518 What type of seed / plant material was used?

S518- type of seed/plant material used

traditional

improved

For crops that were planted, this question asks for the type of seed that was planted or the plant material used. There are 2 options to choose from. **Improved seeds and planting materials** refers to high yielding varieties that could have been used by the holder whereas traditional of plant material does not involved genetically engineered seeds or plant material.

S5110 What is the main method of irrigation used?

S5110- What is the main method of irrigation used

Drip tape irrigation

Sprinkler irrigation

Irrigation Water Pump

Water Tank

Others

The main method of irrigation (see appendix A for definitions) used on the reported parcel is what should be recorded here and only one option is allowed. Households may employ more than one method of irrigation, however, in this question it is important that you probe the respondent to give the main method of irrigation for each parcel listed. Take the method used the most.

S5113 What is the total production in kilograms?

S5113- What is the total production in kilograms?

150

This question asks about the household's total production for each crop planted or harvested from each reported parcel for the last 12 months. This response should be recorded in kilograms.

S5115 What is the total proportion consumed by the household?

S5115- What is the total proportion consumed by the household

please enter the percentage, like 90 for 90%

50

This question asks about the proportion consumed by the household and should be recorded as a percentage. In this case for example, a total of 150kgs of mango was produced or harvested and of that 150kgs, 50 percent of it was consumed by the household.

S5116 What is the total proportion sold by the household?

S5116- What is the total proportion sold by the household?

please enter the percentage, like 90 for 90%

25

This question asks about the proportion sold by the household (if applicable) and should be recorded as a percentage. In this case a total of 150kgs of mango was produced and of that 150kgs, 50 percent of it was consumed by the household and 25 percent was sold for income.

S5117 What is the total proportion gifted by the household?

S5117- What is the total proportion gifted by the household

please enter the percentage, like 90 for 90%

This question asks about the proportion gifted by the household and should be recorded as a percentage. In this case a total of 150kgs of mango was produced and of that 150kgs, 50 percent of it was consumed by the household and 25 percent was sold for income and 25 percent was gifted to other households or organizations etc. It is important to note that the proportions **consumed, sold, and gifted** should always equal to 100%.

S521 Did you or your household use / apply any inorganic fertilizers during the last 12 months?

This question asks the respondent to answer “yes” or “no” if they had used any organic / inorganic fertilizers in the referenced period.

Inorganic fertilizers are manufactured mineral substances applied to soil, or irrigation water, to supply plants with the necessary nutrients.

Organic fertilizers are materials of organic origin, either natural or processed that can be used as sources of plant nutrients. The most commonly used are compost, chicken manure or other animal manure, etc.

S522 Which of the following inorganic fertilizers do you or your household use in the last 12 months?

S522- Which of the following inorganic fertilizers do you or your household use in the last 12 months?

- Ammonium Sulphate
- Ammonium Nitrate
- Urea
- Calcium Ammonium Nitrate
- Superphosphate
- Sulphate of Potash
- Nitrophoska Extra
- Nitrophoska Perfekt

This question is a multi - select question. Because the respondent answered “yes” in S521, you will now be required to select all inorganic fertilizers relayed by the household. For each inorganic fertilizer selected, a follow up question (see below) regarding quantity used in specified unit (either kgs or liters) will be asked. Follow the prompts accordingly.

S526 (a)- Quantity used for Sulphate of Potash(kg)

S5217 Did you or your household use / apply organic fertilizers on the crops grown during the last 12 months?

This question asks the respondent to answer “yes” or “no” if they had used any organic fertilizers in the referenced period. If the response to this question is yes, follow up questions will be enabled regarding the type of organic fertilizers and the quantity used.

S5218 Which of the following organic fertilizers do you or your household use in the last 12 months?

S5218- Which of the following inorganic fertilizers do you or your household use in the last 12 months?

- Nitrosol Inorganic
- Alaska Fish Fertilizer 511
- Good Enough
- Others (specify)

This question is a multi - select question. Because the respondent answered “yes” in S5217, you will now be required to select all organic fertilizers used by the household. For each organic fertilizer selected, a follow up question (see below) regarding quantity used in specified unit (either kgs or liters) will be asked. Follow the prompts accordingly.

S5218(a)- Quantity of Alaska Fish Fertilizer 511 used in (kg)

S5221 Did you or your household use / apply any compost & animal manure on the crops grown during the last 12 months?

S5221- Did you or your household use/apply any compost & animal manure on the crops grown during last 12 months?

Yes No

S5221(a)- Quantity used compost & animal manure used (kg)

Enter number

This question has 2 parts. First part requires a simple yes or no selection. If you respond “yes” question S5221(a) is enabled and you will now be required to enter the quantity of compost and animal manure used in kgs.

S5301 Did you or your household use / apply any of the following chemicals on your crops grown during the last 12 months?

S5301- Which of the following chemicals on your crops grown during last 12 months?

Glyphosate (Round-up, Sting, G360, Proclaim)

Paraquat (Gramoxone, Agriquat)

Fluazifob-p-butyl (Fusilade)

Imidacloprid (Cyrus, Velcloprid, Confidor)

Abamectin (Avid, Abamectin, Vertex)

Permethrin + pirimiphos-methyl (Attack, Ambush)

Mineral oil (DC Tron, Conqueror oil, Sunspray oil)

Agricultural chemicals are chemicals such as pesticides, herbicides, fungicides, insecticides, and fertilizers used in agriculture to control pests and disease or control and promote growth.

This question asks about the use of agricultural chemicals in household agricultural activities. In this multi – select question you will select all the agriculture chemicals used by the household in the last 12 months. For each chemical selected, a follow up question (see below) regarding quantity used in specified unit (either kgs or liters) will be asked. Follow the prompts accordingly.

S5301(a)- Quantity of Glyphosate used (Litres)

10

S5401 Did you or your household import any of the following plant / material from overseas during the past 12 months?

S5401-Did you or your household import any of the following plant / material from overseas during the past 12 month?

Seeds

Tissue Cultured Food crop Plants

Tissue Cultured ornamental / flower Plants

Nursery Food crop Plants

Nursery Ornamental / flower Plants

This multi – select question asks about the importing of plants and / or planting material from overseas in the last 12 months. For every type of planting material selected, follow up questions will be enabled to record more details.

S5401 Which of the following **seeds** did the household import?

S5401- Which of the following seeds did the household import?

Pawpaw

Watermelon

Tomato

Cabbage

Herbs

Corn

Bean

Chinese Cabbage

Others, please specify

Because “seeds” was selected in the previous question, question S5401 is enabled listing the common seeds imported from overseas. This is a multi – select question and you will select all responses given by the household regarding seeds that were imported for their agricultural activities. This would include seeds or planting materials hand carried from overseas for which an import permit is required. As in previous multi – select questions, follow up questions will be enabled to collect more detailed information such as quantity of imported seeds.

S5401 Which country did the household import the seeds from?

S5401- Which Country did the household import the seeds from?

- Australia
- New Zealand
- Fiji
- Tahiti
- Others, specify

This multi – select question asks about what country(s) the seeds were imported from in the last 12 months. Select all countries relayed by the household. Remember if “other” is selected you must specify which country the imported seeds came from.

S5402 Which of the following **tissue cultured food crop plants** did the household import?

S5402- Which of the following tissue cultured food crop plants did the household import?

- Breadfruit
- Sweet Potato/kumara
- Taro
- Others, please specify

Because “tissue cultured food crop plants” was selected in question S5401, this question now lists the common tissue cultured food crop plants imported from overseas. This is a multi – select question and you will select all responses given by the household regarding tissue cultured food crop plants that were imported for their agricultural activities. As in previous multi – select questions, follow up questions will be enabled to collect more detailed information such as quantity of imported tissue cultured food crop plants.

S5402 Which country did the household import tissue cultured food crop plants from?

S5402- Which Country did the household Import tissue cultured food crop plants from?

<input type="checkbox"/> Australia
<input type="checkbox"/> New Zealand
<input type="checkbox"/> Fiji
<input type="checkbox"/> Tahiti
<input type="checkbox"/> Others, specify

As in previous question regarding the country from which imports came, you must select the country(s) from whence the tissue cultured food crop plants came from.

S5403 Which of the following **tissue cultured ornamental / flower plants** did the household import?

Similar to previous multi – select questions this question will call up a list of tissue cultured ornamental / flower plants such as orchid and anthurium. Select all options as relayed by the household. Subsequent questions regarding the quantity of plants imported will be asked also. The country from where the plants were imported from will be asked with similar options from previous questions. Follow prompts and record appropriate information.

S5404 Which of the following **nursery food crop plants** did the household import?

S5404- Which of the following nursery food crop plants did the household import?

<input checked="" type="checkbox"/> Citrus
<input checked="" type="checkbox"/> Rambutan
<input checked="" type="checkbox"/> Logan
<input checked="" type="checkbox"/> Lychee
<input type="checkbox"/> Others, specify

Because “nursery food crop plants” was selected in question S5401, this question now lists the common nursery food crop plants imported from overseas. This is a multi – select question and you will select all responses given by the household regarding nursery food crop plants that were imported for their agricultural activities. As in previous multi – select questions, follow up questions will be enabled to collect more detailed information such as quantity of imported nursery food crop plants. Similar to previous import questions select the country(s) in which the plants were imported. Follow the prompts and record appropriate information.

S5405 Which of the following ornamental / flower plants did the household import?

S5405- Which of the following ornamental/flower plants did the household import?

<input checked="" type="checkbox"/> Orchid
<input checked="" type="checkbox"/> Anthurium
<input checked="" type="checkbox"/> Desert Rose
<input type="checkbox"/> Cordyline
<input checked="" type="checkbox"/> Diffenbachia
<input type="checkbox"/> Others, specify

Similar to previous multi – select questions this question will call up a list of ornamental / flower plants. This list is highlighting ornamental flower plants and not tissue cultured ornamental / flower plants as detailed in an earlier question. There is a difference between cultured tissue versus conventional growing of ornamental plants. When using cultured tissue the propagation rate is higher.

Select all options as relayed by the household. Subsequent questions regarding the quantity of plants imported will be asked also. The country from where the plants were imported from will be asked with similar options from previous questions. Follow prompts and record appropriate information.

4.2.7 Section 6 – Non – household labour input

This section seeks to establish the labor inputs utilized on the holding for carrying out the agricultural activity. This should include all persons aged 15 years and over who worked on the holding whether in a paid or unpaid capacity during the last month prior to the enumeration day.

S601 Did the household employ any non – household member to work on the holding during the last month?

This question is a simple “yes” or “no” question. Notice that the reference period for this question is the last 1 month. Select the appropriate code.

S601(a) What type of labour did the household employ?

S601 (a)- Type Of Labour

<input checked="" type="checkbox"/> Non-Household Labour (Cook Islander)
<input checked="" type="checkbox"/> Foreign Labour

There are two types of labour available to choose from. **Non - household labour** from the Cook Islands simply refers to any local labour hired from outside the household. This type of labour also refers to Cook Island Nationals. **Foreign labour** refers to a person hired from outside the household that is from another country who may be working on a work permit or in other words a non - Cook Island resident. This is a multi – select question where it is possible that a household may have employed both types of labour in the last month.

It is important to note that the same questions will be repeated if both types of labour are selected. In the following questions an example of employing foreign labour is given but the exact same questions will be asked if the household employed “non – household labour” or local Cook Island residents.

S601 How many foreign labour were employed during the last month?

S601 - How many foreign labour were employed during the last month?

Enter number

S601 - How many non-household labour from Cook Islands were employed during the last month?

Enter number

The questions above are asking for the total number of each type of outside labour that was employed by the household in the last month.

S602 – S604

S602- What is the age of the foreign labour

25

S603- What is the Sex of the foreign labour

Male

Female

S604- What is the number of hours worked during the month by the foreign labour

85

For each person that was employed as outside foreign labour these questions will now require to collect the age, sex, and number of hours worked during the last month. An example is given above.

S605 Did you make any cash payment to the foreign labour?

S605- Did you make any cash payment to the foreign labour?

Yes No

S605(b)- What was the amount paid in (NZ\$) to the foreign labour during the last one month?

650

Questions S605 and S605(b) asks whether the hired individual as foreign labour was paid in cash (yes or no) and if so how much was paid to him / her in the last month. The response for S605(b) should be recorded in NZD and if any cents are reported you must round the value to the nearest dollar. An example is provided for you above.

S606 – S608

S606- Was there any free/subsidized house provided to foreign labour?

Yes No

S607- Was there any free meals provided to foreign labour?

Yes No

S608- Was there any other benefits provided to the foreign labour?

Yes No

In many cases when households hire individuals from outside whether foreign or local labour, in addition to cash payments sometimes the household will also compensate the individual with payments in kind. In other cases households will not pay out cash but compensate the worker with in kind payments only. The questions above attempt to capture some of these payments such as subsidized or free housing, free meals, or other benefits such as free transport, mobile top-up etc. Only a yes or no response is required for each question.

4.2.8 Section 7 – Household income and loans / grants for agricultural purposes

This section seeks to find out the proportion of household income derived from agriculture, whether or not the household received any loans or grants for agriculture, the sources of the loan or grant, and the purpose for which they used the loan or grant.

S701 What was the proportion of your household's total income (in cash / or in kind) usually derived from agricultural activities during the last 12 months?

S701 - What was the proportion of your household's total income (in cash / kind) usually derived from agricultural activities during last 12 months.

Note that "in kind" means agricultural products that were received at no cost and consumed by the household during last 12 months or may be wages received in terms of agricultural products by any member employed in own household other household's holding

None

About 1/4

About 1/3 ×

About 1/2

About 3/4

All

This question asks about the proportion of income derived from agriculture to the total income that the household received during the last 12 months. The household may have received income from different sources.

Income includes wages and salaries received by any employed member of the household from a particular occupation, net receipts derived from the household entrepreneurial activities such as crop farming, livestock raising, fishing, manufacturing, etc. and from other sources of income such as gifts received from relatives or friends whether in cash or in kind, winnings, housing rentals, etc. Note that net receipts derived from entrepreneurial activities specifically from crop farming and livestock raising should include those that were produced and consumed by the household for the last twelve months. Wages received in terms of agricultural products by any member employed in the own holding or other household's holding should also be considered as part of the income of the household.

Example: The household received its income for the last twelve months in the following sources:

Wages of the eldest son employed in a private company:	NZ\$12,000.00
Net receipts derived from vegetable garden and papaya:	6,000.00
Net receipts derived for selling three pigs:	1,500.00

It also consumed vegetables from its produce amounting to NZ\$50.00.

Total income: NZ\$19,550.00

Income derived from agriculture: 7,550.00

Proportion of income from agriculture to total income: 39%.

S702 Did you obtain or receive any loan and / or grant for your households' agricultural activities?

This question seeks to find out whether the household had availed loans or grants to finance its agricultural activities for the last 12 months. The loan that should be considered here was the loan availed and used for agricultural activities in the last 12 months. Any loan that was taken out prior to the last 12 months that is still being serviced or repaid should not be included as a loan taken out in the last 12 months. The loan used for consumption or social and religious functions should not be included here. The same is true for grants received, only grants received within the reference period should be counted. A "yes" or "no" should be selected.

S703 What was the main source of the loan and / or grant that you used for your household agricultural activities?

S703- What was the main source of the loan and/or grant that you used for your household agricultural activities?

Bank of the Cook Islands (BCI)

Other Commerical Bank (ANZ or BSP)

Government Support

Other Sources (e.g. relatives, farmers association etc)

Since the household answered yes to the previous question, this question now asks to indicate where the loan or grant was sourced from. There are 4 options to choose from and multiple answers can be selected.

S704 What was the main purpose of the loan and / or grant that you used for your household agricultural activities?

S704- What was the purpose of the loan and/or grant that you used for your household agricultural activities?

<input type="checkbox"/> Hand Tools (e.g. shovel, spade, machete, garden fork)
<input checked="" type="checkbox"/> Vehicles
<input checked="" type="checkbox"/> Small Machinery/equipment (knapsack, mist blowers)
<input type="checkbox"/> Chemicals
<input type="checkbox"/> Seeds
<input checked="" type="checkbox"/> Irrigation Materials
<input type="checkbox"/> Fertilizer
<input type="checkbox"/> Labour
<input type="checkbox"/> Others, Specify

This question seeks the main purpose of the loan or grant. This question is also a multiple select question in which more than one answer can be selected.

S705 What future support does the household require to assist with your agriculture project?

<input type="radio"/> Tractor Services
<input type="radio"/> Water Tank
<input type="radio"/> Agriculture equipment - rotary, knapsack, sprayer
<input type="radio"/> Technical Advice
<input type="radio"/> Research
<input type="radio"/> Other – please specify

This last question for this section is a single select question where only one answer can be selected. Farming households may have numerous areas where they would require assistance from government and other development organizations, but this question is seeking the main area of support they feel they need to further their agriculture development.

4.2.9 Section 8 – Fisheries, pearl farming, and aquaculture (during the last 12 months)

This section is especially designed to capture the households engaged in fisheries activities during the last 12 months. Note that fishing as a hobby or sport fishing is not included in this section. It is also important to note here that if anyone in the household is engaged in fishing, pearl farming, or aquaculture in the reference period this section must be completed. Sometimes the household member being interviewed is not the member that is usually engaged in fishing and may sometimes respond that he does not engage in fishing but there is another household member that does. It is important that you try and catch this household member at home or schedule a time where you can interview this person if the respondent is not able to give the information needed in this section. This section should be asked for all households.

Fisheries include the following activities:

- 1 – capture fishing and other marine products either in the lagoon or within the reef or outside or over the reef through the use of fishing gears and with or without fishing boat; Seafood products harvesting includes other seafood collection (eg rori, trochus, paua, rimu, crab etc); deep-sea fishing is included here;
- 2 – pearls and pearl farming include pearl farming, retail, wholesale and artisan/craft of pearls etc.
- 3 - Aquaculture

S801 – Which of the following activities did you or your household engage in during the last 12 months?

The fisheries section is divided into three sub sections.

Yes / No

/ Capture Fishing / Seafood products harvesting

/ Pearls and Pearl Farming

/ Aquaculture

Only 2 responses are available for each subsection. A “yes” or “no” response. You are required to read out each option to the household and record the appropriate answer.

For every subsection you record a “yes” response, you will be asked more detailed questions in connection with that subsection later in the questionnaire. Should you respond with a “no” to any particular subsection it will not be enabled for further responses.

S802 – Where does your household engage in fishing / seafood product

harvesting? (multi-select option)

Yes / No

/ Lagoon

/ Reef (outer reef slope)

/ Outside or over reef

/ Inland (freshwater)

This is a multiple response question where you must respond “yes” or “no” to more than one option. The household could be engaged in one or more fishing locations; for example, it could do both “reef / outer reef slope” and “outside or over reef” fishing. Fishing in the lagoon or reef / outer reef slope is considered in-shore fishing while offshore fishing is fishing outside or over reef or in the open ocean. Freshwater fishing is fishing in lakes or rivers. There are 4 options available for multi-select. You are required to read each response to the respondent and select the appropriate answer whether yes or no.

S802.a – Do you fish on any Fish Aggregating Devices (FADS)?

Yes

No

FADS are anchored around the island, and is made up of anchor block, rope lines, floats and aggregate such as coconut fronds (kikau) or bamboo. This question is a single select question. Select the appropriate response.

S802.a.i – Name the two FADS you fish on the most.

Click to answer

Search

Rarotonga-Arorangi-Edgewater-Shallow

Rarotonga-Nikao-Seawall-Shallow (Met Office)

Rarotonga-Avarua-Avarua Harbour-Shallow

Rarotonga-Arorangi-Arorangi Primary School-Shallow

Rarotonga-Ngatangiia-Avana-Deep

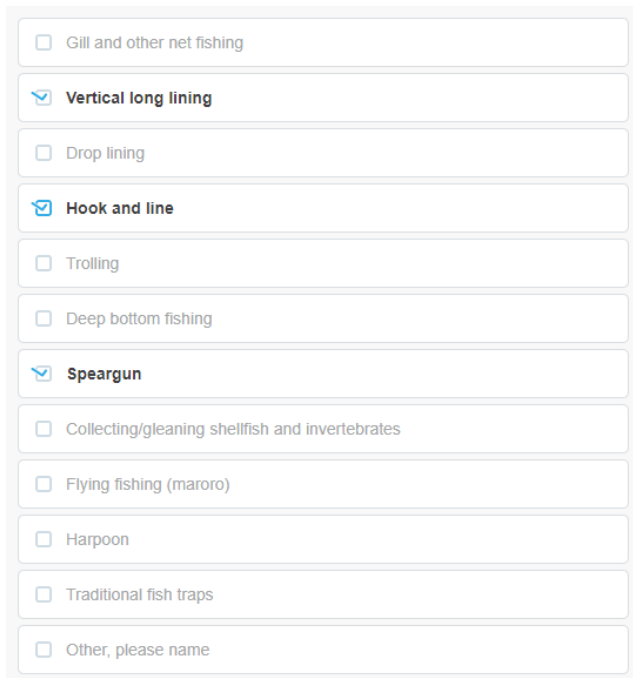
Rarotonga-Nikao-Panama-Deep

Rarotonga-Arorangi-TheRarotongan-Deep

There are 38 FADS around the islands and the list above is not a complete list

of FADS but is given here as an example. The possible options will be displayed as a drop down menu. This is a multiple select question where more than 1 answer can be selected, however, remember that the question is only asking you to select only 2 responses. You may read out the various options to the respondent if they are unsure.

S802.b – What methods did your household use for fishing / seafood product harvesting in the last 12 months?

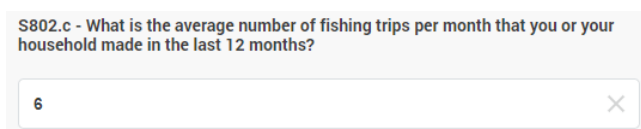


A screenshot of a multiple select question interface. The question is "S802.b – What methods did your household use for fishing / seafood product harvesting in the last 12 months?". The interface shows a list of options, each with a checkbox. The selected options are "Vertical long lining", "Hook and line", and "Speargun".

<input type="checkbox"/> Gill and other net fishing
<input checked="" type="checkbox"/> Vertical long lining
<input type="checkbox"/> Drop lining
<input checked="" type="checkbox"/> Hook and line
<input type="checkbox"/> Trolling
<input type="checkbox"/> Deep bottom fishing
<input checked="" type="checkbox"/> Speargun
<input type="checkbox"/> Collecting/gleaning shellfish and invertebrates
<input type="checkbox"/> Flying fishing (maroro)
<input type="checkbox"/> Harpoon
<input type="checkbox"/> Traditional fish traps
<input type="checkbox"/> Other, please name

This multi – select question asks the respondent to identify all the different fishing methods used in the last 12 months. Select all that apply. Should the respondent give a fishing method used that is not on the list, be prepared to specify that method in a follow up question.

S802.c – What is the average number of fishing trips per month that you or your household made in the last 12 months?



A screenshot of a text input question interface. The question is "S802.c - What is the average number of fishing trips per month that you or your household made in the last 12 months?". The input field contains the number "6".

S802.c - What is the average number of fishing trips per month that you or your household made in the last 12 months?

This question requires the respondent to give the average number of fishing trips per month in the last 12 months. As the number of fishing trips may vary from month to month due to seasonality or weather conditions, it is important that the respondent give an average number of fishing trips per month over the reference period of 12 months. You must type in the numerical value.

S802.d – In which months would you go fishing more?

Select all Months that apply

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

Now that an average number of fishing trips has been given in the previous question, this question now asks to identify the month(s) in which most of the fishing takes place. There is no limit on how many months can be selected. Select all that apply.

S802.e – Please give the reasons why you fish more during (selected months).

- Unemployed and fish for livelihood
- Seasonal worker - fish only to supplement livelihood**
- Season for catching target species
- Time of year with better weather/conditions
- To support community driven activity**
- Market demand increases
- Other, please specify

This question is a follow up question to S802.d in that you will now probe the respondent to give the reason why more fishing takes place in the particular months selected in S802.d. This question is a multi-select question in which more than one answer can be selected. If “other” option is selected, be prepared to specify the reason that is not listed above in a follow up question.

S802.f – Which months would you go fishing the least?

<input checked="" type="checkbox"/> January
<input checked="" type="checkbox"/> February
<input type="checkbox"/> March
<input type="checkbox"/> April
<input type="checkbox"/> May
<input type="checkbox"/> June
<input type="checkbox"/> October
<input type="checkbox"/> November
<input type="checkbox"/> December

This question now asks the respondent to identify the months in which he / she fishes the least or has the least fishing trips. Select all months that apply.

S802.g – Please give the reasons why you fish less during (selected months).

<input type="checkbox"/> Timing of the tides clash with other activities
<input type="checkbox"/> Seasonal worker - employment commenced
<input checked="" type="checkbox"/> Not the season for catching target species
<input type="checkbox"/> Time of year with bad weather/conditions
<input checked="" type="checkbox"/> Market declines
<input type="checkbox"/> Other, please specify

This is a follow up question to the answers provided in S802.f about the months least fished. This multi select question are some of the common reasons why households or fishermen tend to reduce fishing trips in some months. Select all that apply and should you select “other” be prepared to list an option that is not listed above in a follow up question.

S802.h – What is the average number of hours that you would spend on each fishing trip in the last 12 months?

S802.h - What is the average number of hours that you would spend on each fishing trip in the last 12 months?

This question is now asking for the respondent to give the average number of hours spent on each fishing trip. An estimated guess is better than no answer at all. Key in the numeric value given.

S802.i – What is your MAIN purpose for fishing?

Only for home consumption

Mainly for home consumption and some for sale ×

Mainly for sale and some for home consumption

Only for sale

Other (specify)

Only one answer can be selected for this question. See appendix A for the meaning of each option. Should you choose the “other” category be prepared to list a main purpose that is not listed above in a follow up question.

S802.j – Name the top 5 target species that you fished for in the last 12 months.

This question will require you to list the top species the respondent will give. If the respondent clearly only fishes 2 or 3 species throughout the year, then you will only list those 3 species. Do not worry that you have to give 5 species every time you ask this question. 5 spaces are given in the event you come across fishermen that fish more than 5 species, we are only interested in the top 5.

S802.j.i – Select which months you go fishing for (species listed in previous question).

January

February

March

April

May

June

July

August

September

October

November

December

This question is connected to S802.j. For every species listed in the previous

question you will now be required to select which months you go fishing for that particular species. Select all months that apply.

S802.j.ii - What is the MAIN fishing method that you or your household use to catch fish species?

- Gill and other net fishing
- Vertical long lining
- Drop lining ×
- Hook and line
- Trolling
- Deep bottom fishing
- Speargun
- Collecting/gleaning shellfish and invertebrates
- Flying fishing (maroro)
- Harpoon
- Traditional fish traps
- Other, please name

For the top 5 fish species listed in S802.j, this question now asks to identify the MAIN method used for catching that particular fish species. Only 1 answer can be selected in this question so probe the respondent to give the main method. If you select the “other” option be prepared to list the method that is not shown on the list above in a follow up question.

S802.j.iii – How much fish species did you catch on average per fishing trip?

This question requires a numeric value to be keyed in and will be asked for every fish species that was given as the top 5. The answer should be given in kilograms (kg).

S802.j.iv – What proportion of fish species did your household sell?

- All sold
- About 1/4
- About 1/3 ×
- About 1/2
- About 3/4
- All Consumed, none sold

For every fish species specified as the top 5, you will be required to select the proportion of fish that was sold in the last 12 months for each species. In this question, ask the respondent for the best estimate of the proportion of fish or other aquatic products sold. In other words, of the total quantity of fish or other aquatic products obtained from capture fisheries in the last 12 months, what proportion was sold. **Sales** include selling for cash or in exchange for other produce (barter). Disposal of fish produce in other ways – for example, for payment of labour, sending to family members, or as gifts – should not be considered as sales.

S802.j.v – What processing state is your fishing species mainly sold at?

- Gilled and gutted
- Gilled and gutted and tailed
- Whole gutted only
- Fish, partial, fillet / loin / truck
- Headed and gutted
- Shellfish or invertebrate meat /gonad etc only
- Whole
- Smoked
- Other

Some fishermen add an extra step of processing such as gilling and gutting the fish or fillet before selling to customers or retailers. This question will be asked for each of the top 5 specified fish. Only one answer can be selected for each species.

S802.j.vi – What storage state is your fishing species mainly sold in?

- Fresh
- Frozen
- Dried/dry salted
- Pickled/preserved
- Other

Again with the top 5 species identified you are required to select the storage state that the fish is sold in. Choose from the options above and only one response can be selected for each species.

S802.j.vii – Which top 2 islands is your fishing species sold in?

Aitutaki
 Atiu
 Mangaia
 Manihiki
1 **Mauke**
 Mitiaro
 Nassau
 Palmerston
 Penrhyn
 Pukapuka
2 **Rakahanga**
 Rarotonga
 Exported overseas

This is a multi-select question that will require only 2 options to be selected. In connection with the top 5 fish species already identified, this question is asking to identify the top 2 island in which these fish species are sold.

S802.j.viii – What MAIN market in top 2 islands is your catch sold to?

Village/town market
 Roadside ×
 Service industry e.g. restaurant, café, hotel
 Retail sector –e.g. shop, supermarket (on home island)
 Fish broker/wholesaler (on selling to other markets e.g. hotels, shops)
 Sell from home (advertised online...eg. facebook community pages)
 Other

For each island selected you will be asked about the **main** markets the household sold their fish to. If for example, you select Rarotonga as one of the islands in which your fish species is sold, a list of markets applicable to that island will appear. Only one market / retailer / service industry etc. can be selected so probe the respondent to identify the **main** market.

S802.j.ix – What proportion of fish species did you sell in top 2 islands in the last 12 months?

None
 About 1/4
 About 1/3
 About 1/2
 About 3/4
 All

This question now drills down the question for top 5 fish species and top 2 islands and asks to select the proportion of fish / aquatic plants sold in the last 12 months. Ask the respondent for the best estimate of the proportion of fish or other aquatic products sold. In other words, of the total quantity of fish or other aquatic products obtained from capture fisheries in the last 12 months, what proportion was sold taking into account the fish species and islands selected in previous questions. **Sales** include selling for cash or in exchange for other produce (barter). Disposal of fish produce in other ways – for example, for payment of labour, sending to family members, or as gifts – should not be considered as sales.

S803 – In the last 12 months, how many MALE members of your household were normally engaged in fishing / seafood product harvesting?

This question requires you to key in a numeric value to show the total number of male members that are “normally” engaged in fishing or seafood product harvesting. “Normally” means the household members that are expected go fishing and not a “one-off”. If the household hired males to help with fishing and / or harvesting seafood products then they should not be counted in this total. Only male members of the household aged 15 years and over should be counted.

S803.a – What was male members main fishing activity in the last 12 months?

Lagoon fishing
 Fishing Outside the reef
 Gleaning or Harvesting
 Processing
 Selling

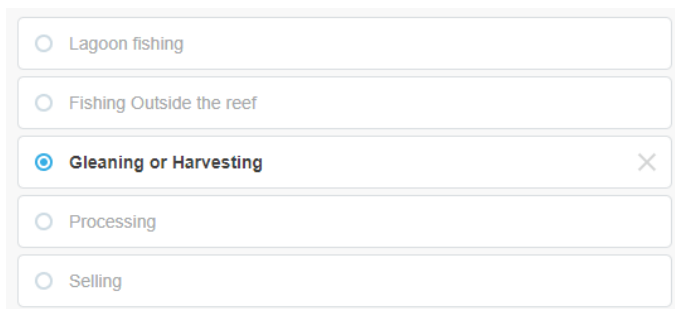
This question will generate a roster that will list the number of all male members that were entered in the previous question. For example, if 3 was entered for S803 to identify 3 male members 15 years and over of the household who are normally engaged in fishing and seafood product harvesting

then there would now be a roster of 3 male individuals that will generate follow up questions regarding each male individual. The first question seeks to identify the main fishing activity for each male in the last 12 months. Only one answer can be selected and although the individual may engage in more than one type of fishing activity, this question seeks the MAIN fishing activity. The fishing activity that took up most of his time in the past 12 months.

S804 – In the past 12 months, how many FEMALE members of your household were normally engaged in fishing / seafood product harvesting?

This question requires you to key in a numeric value to show the total number of female members that are “normally” engaged in fishing or seafood product harvesting. “Normally” means the household members that are expected go fishing and not a “one-off”. If the household hired females to help with fishing and / or harvesting seafood products then they should not be counted in this total. Only female members of the household aged 15 years and over should be counted.

S804.a – What was female members main fishing activity in the last 12 months?



The image shows a digital form with five radio button options. The options are: "Lagoon fishing", "Fishing Outside the reef", "Gleaning or Harvesting" (which is selected with a blue dot and has a small 'x' icon to its right), "Processing", and "Selling".

This question will generate a roster that will list the number of all female members that were entered in the previous question. For example, if 2 was entered for S804 to identify 2 female members 15 years and over of the household who are normally engaged in fishing and seafood product harvesting then there would now be a roster of 2 female individuals that will generate follow up questions. The first question seeks to identify the main fishing activity for each female in the last 12 months. Only one answer can be selected and although the female individual may engage in more than one type of fishing activity, this question seeks the MAIN fishing activity. The fishing activity that took up most of her time in the past 12 months.

S805 – Please select from the following list of equipment for fishing and / or seafood product harvesting activities your household **used** in the last 12 months.

<input checked="" type="checkbox"/> Canoe
<input type="checkbox"/> Aluminum dinghy / Boat
<input type="checkbox"/> Inflatable dinghy
<input type="checkbox"/> Outboard motor
<input type="checkbox"/> Boat or Charter
<input type="checkbox"/> Kayak
<input checked="" type="checkbox"/> Fishing Rod
<input checked="" type="checkbox"/> Life Jacket
<input type="checkbox"/> VHF Radio
<input type="checkbox"/> Flares
<input type="checkbox"/> EPIRB (Emergency Position Indicating Radio Beacon)

Equipment that are normally used in capture fishing and seafood product harvesting are listed above. This is a multi - select question in which more than one answer can be selected. Note that this question asked for the equipment “used” and not owned. If a household borrowed a canoe from a friend or neighbor to carry out their fishing activities then you would still select canoe. Select all equipment that were used by the household in the last 12 months.

S805.n – S805.n.i

Any other equipment not listed earlier?

Please specify other equipment.

These 2 questions give the respondent an opportunity to identify some equipment that may have been used to carry out their fishing activities that are not listed in question S805. Should there be any “other” equipment mentioned, you must specify it in the follow up question.

S805.a – Is this equipment used owned by the household, or was it hired, borrowed or shared?

S805.a - Is this Canoe owned by the household, or was it hired, borrowed or shared?

<input type="radio"/> Owned
<input type="radio"/> Hired or Rented
<input checked="" type="radio"/> Borrowed ×
<input type="radio"/> Shared

For every equipment selected in S805 the respondent will be asked follow up

questions on ownership, hiring or rental, borrowing, and / or sharing of the equipment. Only one answer can be selected. In order for the household to “own” a piece of equipment, it must be in working order on the day of visit. For example, if the household indicates on the day of interview that they own a canoe but it is broken and needs repair then you will not select “owned” in this question but other options that they may have used in the last 12 months.

S805.d – How many equipment used does your household own?

If you select “owned” in S805.a then this follow up question will require you to record the number of each equipment the respondent says it owns. Key in the numeric value of each equipment owned.

S805.a.i – S805.b.i

Is this other fish equipment owned by the household, or was it hired, borrowed or shared?

How many “other fish equipment” does your household own?

This question(s) is being called up because questions S805.n and S805.n.i have been answered listing “other” fishing equipment the household used. You will now be required to identify the status of these “other” fishing equipment that were identified as being used in the last 12 months on whether they were owned, hired, borrowed, or shared. If “other” equipment was owned you will be required to specify the numeric value owned.

S806 – Did Covid19 influence your household’s fishing activities in the last 12 months?

This is a simple single select yes or no question.

S806.a – How did Covid19 influence your household’s fishing activities?



The image shows a screenshot of a survey question with five radio button options. The first option is selected and has a small 'X' icon to its right. The options are:

- Caused household to start fishing/harvest activities i.e. don't usually or never have fished/harvested seafood products
- Increased fishing/harvesting activities
- Decreased fishing/harvesting activities
- Stopped fishing/harvesting activities
- Other (specify)

If the respondent answered “yes” in S806, this follow up question will be asked. A few common reasons that may have influenced household fishing activities by Covid19 are listed with the option of selecting “other” if the household’s reason is not captured in the list above. Be prepared to specify the “other” factor brought on by Covid19 in a follow up question S806.n.

PEARLS AND PEARL FARMING

S807 – How many farm areas does your household currently operate?

This question is connected to question S801 in the beginning of the fisheries section. If the household responded yes to engaging in “pearls and pear farming,” a series of associated questions will now be asked. This question asks for the numeric value of pearl farm areas the household operates. Key in the numeric value.

S808 – How many farm lines does your household own on the farm?

Farm lines are main lines used to hang cultures black pearl oysters. Ask the respondent the number of farm lines that his / her household owned in their pearl farm during the last 12 months. Enter the numeric value.

S809 – Does your household collect spat?

This is a simple yes or no answer.

S809.a – How many spat collectors do you have in the water?

Spat collector lines are lines used to hang spat collectors for the collection of larval phase of black pearl oysters. This question asks to record the total number of spat collectors that are in the water on the day of visit. If the respondent says “none” you will enter in 0. If the respondent is not sure encourage him to give a best estimate. Enter the numeric value.

S809.b – How often do you put spat collectors in the water?

The image shows a digital form for selecting the frequency of putting spat collectors in the water. It consists of five vertically stacked radio button options, each in a light gray box. The first option is 'Seasonally'. The second option is 'Annually', which is selected, indicated by a blue dot and a small 'x' icon to its right. The third option is 'All year round'. The fourth option is 'Certain months'. The fifth option is 'Other (specify)'. The entire form is enclosed in a light gray border.

There are 4 options on how most pearl farmers put spat collectors in the water. Only one answer can be selected. Should the “other” option be selected to identify the frequency in which spat collectors are put in the water (that are not already listed) then be prepared to specify this option in question S809.n.

S809.d – Which are the certain months that you put spat collectors in the water?

<input checked="" type="checkbox"/> January
<input type="checkbox"/> February
<input checked="" type="checkbox"/> March
<input type="checkbox"/> April
<input type="checkbox"/> May
<input checked="" type="checkbox"/> June
<input type="checkbox"/> July
<input type="checkbox"/> August
<input checked="" type="checkbox"/> September
<input type="checkbox"/> October
<input type="checkbox"/> November
<input checked="" type="checkbox"/> December

If the option of “certain months” was selected in the previous question, then you will now be required to indicate which months that spat collectors were put in the water in the last 12 months. If the option of certain months was not selected this question will not be enabled. Select all that apply.

S810 – Which farmed shells do you currently have in the water?

<input checked="" type="checkbox"/> Seeded Shells
<input checked="" type="checkbox"/> Virgin Shells

One or both options can be selected and are based on the type of shells that are currently in the water on the day of visit.

Seeded shells are cultured black lip pearl oysters which have nucleus inserted into their gonads. These are being hanged on farm lines.

Virgin shells are cultured black lip pearl oysters, which are hanged on farm lines for further growth out. These shells being grown to suitable size for seeding. It also includes shells, which have been seeded and have rejected the nucleus and will be seeded for the second time at a later date.

S810.a – S810.b

How many seeded shells do you currently have in the water?

How many virgin shells do you currently have in the water?

Both of These question ask you to record the number of shells reported by the household with regards to seeded shells and virgin shells. Key in the numeric value.

S811 – Please select from the following list of equipment / facilities for the pearl farming activities your household used in the last 12 months.

<input checked="" type="checkbox"/> Scuba Tanks
<input checked="" type="checkbox"/> Scuba gear set (i.e BCD, regulators, weight belt, fins, masks)
<input checked="" type="checkbox"/> Scuba Compressors
<input checked="" type="checkbox"/> Set of Snorkeling gear
<input checked="" type="checkbox"/> Motorized Boats
<input type="checkbox"/> Seeding equipment/ Tools
<input type="checkbox"/> Seeding houses / Platforms

This question is similar to the equipment question for capture fishing / seafood product harvesting. Multiple responses can be selected if they had been used for the household's **pearl farming** activities in the last 12 months. Select all that apply.

S811.n – S811.n.i

Any other equipment / facilities not listed earlier?

Please list the **other** pearl farm equipment.

The questions above are still referring to pearl farming and asks the respondent to identify any other equipment or facilities used in their pearl farming activities that were not listed on the list in question S811. If there are “other” equipment that were used select “yes” for S811.n and then enter the “other” equipment in S811.n.i.

S811.a – How many times a week do you use the pearl equipment?

For each piece of equipment selected in question S811 you will now be required to record the number of times a week the household used the equipment for their pearl farming activities in the last 12 months. Perhaps not every week may be the same in terms of the frequency they used each piece of equipment so an average number of times will suffice for this question. Key in the numeric answer.

S811.b – Is this pearl equipment owned, hired, borrowed or shared by your household?

The image shows a vertical list of four radio button options within a light gray bordered container. The first option, 'Owned', is selected, indicated by a blue dot inside the radio button. The other three options, 'Hired or Rented', 'Borrowed', and 'Shared', have unselected radio buttons. A small 'X' icon is visible in the top right corner of the container.

For every equipment selected in S811 the respondent will be asked follow up questions on ownership, hiring or rental, borrowing, and / or sharing of the equipment. Only one answer can be selected. In order for the household to “own” a piece of equipment, it must be in working order on the day of visit. For example, if the household indicates on the day of interview that they own a motorized boat but it is not in working condition (on the day of interview) and needs repair then you will not select “owned” in this question but other options that the household may have used in the last 12 months.

S811.n.ii – S811.n.iii

How many times a week do you use the “other” pearl equipment?

Is this “other” pearl equipment owned, hired, borrowed, or shared by your household?

This question(s) is being called up because questions S811.n and S811.n.i have been answered listing “other” pearl farming equipment the household used. You will now be required to record how many times in the week the equipment is used as well as the status of these “other” pearl farming equipment that were identified as being used in the last 12 months on whether they were owned, hired, borrowed, or shared. If “other” equipment was owned you will be required to specify the numeric value owned.

S812 – S813

How many shells do you intend to have seeded in the pearl farm over the next 3 years?

How many shells do you intend to have seeded in the pearl farm over the next 5 years?

This question asks about the perception of the household regarding the number of seeded shells that the household is aiming to have in three or five years from now. Record the total number reported by the respondent in the appropriate space for 3 years and 5 years. An estimate is better than a blank space.

S814 – What is the proportion of your household total income (in cash / in kind) usually derived from pearl farming in the last 12 months?

None
 About 1/4
 About 1/3
 About 1/2 ×
 About 3/4
 All

Similar to previous questions related to proportion of income derived from agricultural activities, this question relates to the proportion of income derived specifically from pearl farming activities. Note that net receipts derived from entrepreneurial activities specifically from pearl farming should include those oyster taken from the farm and consumed by the household for the last 12 months. Wages received by any member employed in own pearl farm or other household's pearl farm should also be considered as part of the income of the household. Six options are available to choose from. Select the appropriate answer.

S815 – Did your household take out any loan or receive a grant for pearl farming in the last 5 years?

Yes, loan only
 Yes, grant only
 Yes, both loan and grant ×
 No

The loan that should be considered here was the loan availed and used for the pearl farm operation in the last 5 years. The loan used for consumption or social and religious functions should not be included here. In addition, if the household was eligible to receive a grant (in the last 5 years) this should be considered here also. Select the most appropriate answer.

S815.a – What was the source of the loan / grant that you used for your household pearl farm in the last 5 years?

<input checked="" type="checkbox"/> Bank of Cook Islands
<input type="checkbox"/> Other Commercial Bank
<input checked="" type="checkbox"/> Island Government administered fund
<input type="checkbox"/> Cook Islands Government administered initiative e.g. MFEM or other ministry/agency
<input type="checkbox"/> Other non-bank financial institutions
<input type="checkbox"/> Family / friend
<input type="checkbox"/> Other Sources

This question attempts to identify the source of the loans / grants used for the household pearl farming activities. Households may have received a combination of loans and grants from government or development partner organizations. Multiple answers can be selected.

S816 – What value added and / or byproducts are derived from your household’s pearl farming activities (other than black pearls that are sold as pieces or parcels)?

<input checked="" type="checkbox"/> Pearl oyster meat (korori)
<input type="checkbox"/> Pearl shell
<input checked="" type="checkbox"/> Jewelry
<input type="checkbox"/> None
<input type="checkbox"/> Other

A list of common byproducts or value added products usually derived from pearl farming are displayed above. More than one answer can be selected here including an “other” category in which case a follow up question will be asked for you to list the “other” byproduct(s).

AQUACULTURE

S818 – Where is your aquaculture located (site)?

<input checked="" type="radio"/> Land Based	X
<input type="radio"/> Inland Waters	
<input type="radio"/> Coastal Waters	

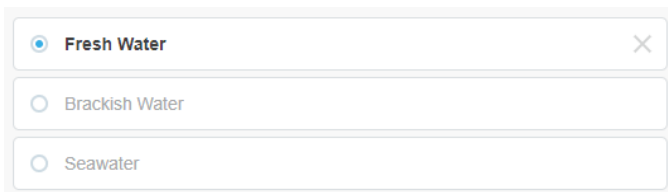
Aquaculture is the farming of aquatic organisms such as fish, molluscs, and crustaceans. There are 3 main methods in which aquaculture is usually practiced. Only 1 option can be selected for this question.

Land based aquaculture is aquaculture practiced in ponds, tanks, raceways and other land areas.

Inland waters covers aquaculture practiced in dams, reservoirs, lakes and rivers.

Coastal waters covers aquaculture in lagoons, estuaries, shallow and open seas, bays and coves.

S819 – What type of water was used in carrying out your aquaculture?



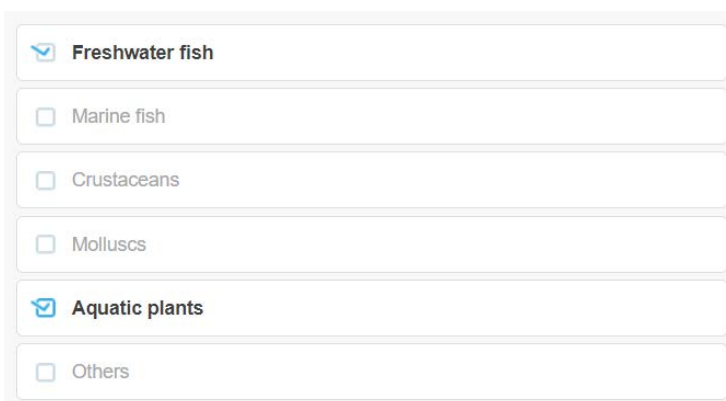
A screenshot of a web form for question S819. It features three radio button options stacked vertically. The first option, "Fresh Water", is selected, indicated by a blue dot and a small 'x' icon to its right. The second option, "Brackish Water", and the third option, "Seawater", are not selected, indicated by empty circles.

Fresh water refers to aquaculture in reservoirs, rivers lakes, and canals with consistently negligible salinity. **Brackish water** refers to aquaculture in waters with appreciable salinity but not to constant high level, characterized by fluctuations due to regular influxes of freshwater or seawater such as in estuaries, coves and bays. **Sea water** refers to aquaculture in coastal and offshore waters where salinity is high and is not subject to significant daily or seasonal variations.

If “land based” or “inland” is selected in S818, at least one of “fresh water” or “brackish water” must be selected.

If “coastal waters” is selected in S818, at least one of “brackish water” or “sea water” must be selected.

S820 – What type of aquatic organisms were cultivated?



A screenshot of a web form for question S820. It features six checkbox options stacked vertically. The first option, "Freshwater fish", and the fifth option, "Aquatic plants", are checked, indicated by blue checkmarks. The other options—"Marine fish", "Crustaceans", "Molluscs", and "Others"—are not checked, indicated by empty boxes.

There are 6 options available and multiple selections can be made. Should the respondent identify an organism that is not listed, you may select “other” and list the response in a follow up question S820.n.

S821 – What was the MAIN purpose of your household’s aquaculture activity in the last 12 months?

Only for Home Consumption

Mainly for home consumption and some sale ✕

Mainly for Sale and some home consumption

Only for sale

Other (specify)

There are 5 possible responses and only 1 option can be selected. The first response (only for home consumption) is selected where the household does not sell any aquaculture produce at all. If a household does sell some aquaculture produce, the choice is between the second and third responses according to whether the aquaculture is carried out mainly for home consumption (2 – mainly for home consumption and some sales) or mainly for sale (3 – mainly for sale and some home consumption). The term **main** means which of the two – own consumption or sale – represents the larger volume of aquaculture production. Option 4 – only for sale should be selected if the household does not consume any of the aquaculture produce harvested and option 5 – other (specify) is selected should the response not fit into any of the above descriptions and you are asked to specify the main purpose of the household’s aquaculture activity in S821.n.

APPENDIX A

CONCEPTS AND DEFINITIONS

An **Agricultural Holding** is 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. Single management may be exercised by an individual or household, jointly by two or more individuals or households, by a clan or tribe or by a juridical person such as a corporation, cooperative or government agency. The holding's land may consist of one or more parcels, located in one or more separate areas or in one or more enumeration areas, providing the parcels share the same production means utilized by the holding, such as labour, farm buildings or machinery.

A **Holding Parcel** is any piece of land entirely surrounded by other land, water, road, forest, etc. not forming part of this holding. A parcel may consist of one or more plots adjacent to each other.

A **Plot** is a part or whole of a parcel on which a specific crop or crop mixture is cultivated. A plot can also be fallow land or land ready for planting.

The concept of a **Household** is based on the arrangements made by persons, individually or in groups, for providing themselves with food or other essentials for living. A household may be either:

- (a) a one person household, that is, a person who makes Provision for his or her own food or other essentials for living without combining with any other person to form part of a multi-person household; or
- (b) a multi-person household, that is, a group of two or more persons living together who make common Provision for food or other essentials for living. They may be related or unrelated persons or a combination of both. They may live in one house or in more than one house.

An **Institution** is an organization providing a specified service or performing some general public function -for a group of individuals such as a Prison, hospital, hotel, boarding school, etc. Institutions will be covered separately.

A **Holder or an Operator** of an agricultural holding is the person exercising management control over the operation of the agricultural holding. Where the holding is being operated by a single household the head of the household is in most cases the operator. A holding can have more than one operator

Crop production activity of the household

Non-Agricultural - the household does not engage in any crop production (such households may own or look after land not in use and also own or look after livestock).

Minor Agricultural Activity - the household has only very few crops defined as less than 64M² (8M X 8M) of land under garden crops or less than 10 coconut trees or less than 10 banana plants or less than 10 trees bearing other tree crops.

Subsistence - The household produces crops but does not sell for any significant amount.

Semi-Commercial - The household's main purpose of agricultural production is profit maximization after satisfying the need to feed itself (subsistence).

Commercial - Households in this category main purpose of production is to sell their produce either locally or for export.

Other ornamental plants are those plants used for beautification or decoration whether indoor or outdoor. Example of these are bougainvillea, orchids, etc. However, report only those for sale. Do not include if the household is planting these plants as a hobby.

Land operated by the household

A **Partnership** holding is operated in association with one or more partners who may be related or not related but who live in different households.

Land tenure refers to the arrangements or rights under which the holder holds or uses the agricultural land.

Customary Land (alias Native land, Native Freehold land) is a land which, being vested in the Crown, is held by Natives or the descendants of Natives under the Native customs and usage in the Cook Islands. Customary land is not investigated by the land court but is being looked after and handled by the Natives.

Freehold Land is a land, which have been investigated by the land court and held by individuals under the following terms:

Leased is a contract by which one party (lessor), usually in consideration of rent, conveys land to another (lessee) for a specified time period.

License (borrowed) is a land belonging to another household or person that the borrower has borrowed for use usually on a temporary basis. Terms of the agreement are between the two parties concerned; i.e. it need not go through the court.

Occupation right is where the operator (or his/her spouse) has an exclusive right to use a piece of land, such right being obtained through the land court system of the Cook Islands.

The **Physical Land or Farm Area** is the actual measure of the land or farm used for agricultural activities or agricultural lands left fallow or idle or under

virgin bush. The land or farm area will be measured in acres or in some cases square meters. There are 4,840 sq yds or 4,046 sq m in an acre. As a rough guide the following proportions of an acre are represented by squares whose sides have the following lengths.

Area in Acres	Length of Sides of Square in Yards	Length of Sides of Square in Meters
1	70	64
$\frac{3}{4}$	60	55
$\frac{1}{2}$	50	48
$\frac{1}{4}$	35	32
$\frac{1}{8}$	25	23

Fallow lands are idle lands that are not prepared and not ready for planting.

Lands Under Virgin Bush are lands that are not cultivated with grasses and bushes all around. These are good as grazing ground for cattle, horses and goats.

Crop rotation is the practice of planting different crops sequentially on the same plot of land to improve soil health, optimize nutrients in the soil, and combat pest and weed pressure.

Mulching is simply a protective layer of a material that is spread on top of the soil. Mulching **enriches and protects soil, helping provide a better growing environment.**

Cover cropping are plants that are planted to cover the soil rather than for the purpose of being harvested. Cover crops manage soil erosion, soil fertility, soil quality, water, weeds, pests, diseases, biodiversity and wildlife.

Inter cropping is a farming method that involves planting or growing more than one crop at the same time and on the same piece of land.

Contour cropping on sloping land is the practice of tilling sloped land along **lines of consistent elevation** in order to conserve rainwater and to reduce soil losses from surface erosion.

Crops planted and / or harvested

Inorganic fertilizers are manufactured mineral substances applied to soil, or irrigation water, to supply plants with the necessary nutrients.

Organic fertilizers are materials of organic origin, either natural or processed, that can be used as sources of plant nutrients. The most commonly used are compost, chicken manure or other animal manure, etc.

Single row refers to “one crop” planted over a plot in a regular pattern of “single rows.” If there are few scattered trees or plants of different crops within the plot, the plot is still considered to be single rows.

Double row refers to “one crop” planted over a plot in a regular pattern of “double rows.” If there are a few scattered trees or plants of different crops within the plot, the plot is still considered to be double rows.

Mixed crop pattern refers to two or more crops, which are interplanted in a regular pattern such as rows. Sometimes there are few scattered plantings of other crops but not considered to be as part of the mixed crops.

Scattered crop refers to trees or plants, which have not been planted with any uniform method of spacing over a plot. Important timber trees including; Miro, Tamanu, Tou shall also be recorded.

Drip tape irrigation is a pipeline with a dripper manufactured inside the pipeline. It is a thin-walled tube rather than a structure pipe, with the common wall-thickness being 0.2mm (8mil). Commonly a seasonal product used in market gardens or rows of crops. The tape is low pressure and low flow system that has evenly spaced emitters built into the tubing.

Sprinkler irrigation is a method of applying irrigation water which is similar to natural rainfall. Water is distributed through a system of pipes usually by pumping. It is then sprayed into the air through sprinklers so that it breaks up into small water drops which fall to the ground.

Irrigation water pumps are machines for moving water, they play a fundamental part in agriculture as they move water from its source to the fields and crops. Water pumps can be used with many forms of irrigation, such as drip, sprinklers or with a hose.

Water tanks store water on-site allows your irrigation system to pump water much faster than the main water supply is able to, improving the efficiency of your irrigation.

Reference Period

Enumeration Period – November 15 to December 18, 2021

2021 CAF – last twelve months (November 15, 2020 to October 31, 2021)

Livestock and Household Composition – as of day of enumeration

Labour Inputs – one month prior to the day of enumeration

Loans for Agriculture & Fisheries Purposes – last twelve months

Other Items – last twelve months (November 15, 2020 - October 31, 2021)

Appendix B - Livestock

The categories of **Livestock** stated should include all such animals, regardless of age. For example, in the first category pigs, state all the animals (sows, boars, weaners fatteners) kept by the household.

Pigs

Piglets are newborn pigs still nursing from the sow.

Weaners are piglets separated from sow. Their live weight is less than 24kg.

Growers are pigs from 3-months after weaning. Their live weight ranges from 20 – 40 kg.

Fatteners are middle aged pigs. Their live weight ranging from 40 kg.

Sows are adult female pigs that has given birth at least once.

Boars are adult male pigs. Their live weight is over 40 kg.

Cattle

Bulls are adult male cattle.

Cows are adult female cattle

Calves are young cows or bulls

Goats

Bucks are adult male goats.

Doe are adult female goats.

Kids are goats under 1 year of age.

Horses

Stallions are adult male horses.

Mares are adult female horses.

Foals are young horses under 1 year of age.

Chickens

Chicken – broilers refers to chicken raised for meat and not for eggs.

Chicken – layers refers to chicken raised for laying eggs.

Chicken - local refers to chickens of local breed (moa kainga).

Ducks

Drakes refers to male ducks.

Hens refers to female ducks.

Ducklings are young ducks under 16 weeks.

Appendix C – ALL CROPS

Tree Crops are trees bearing edible fruits or nuts. The trees themselves should usually have an economic life of more than five years. Examples include mango, litchi, banana, spondias, avocado, coconut, citrus, custard apple, macadamia, chestnut, carambola, pawpaw.

Other Crops are field crops that usually have a life cycle of less than a year. Usually a field crop can be planted and harvested more than once a year.

Apple star is a round fruit with juicy flesh and purple-coloured skin. Eaten fresh after removal of skin.

Avocado (Apuka) is a seasonal, pear-shaped nutritious tropical fruit.

Banana-Cavendish (Meika amoa) has two varieties: tall (taunga) and dwarf (kauare). Both exported to NZ from Aitutaki.

Banana-plantain has all varieties of cooking bananas, e.g. meika-utu, meika ma-ori, meika tarua.

Banana-other has any other variety not belonging to the banana plantain, eg. meika tiki.

Breadfruit (Kuru) is a seasonal and round-shaped starchy fruit eaten after cooking.

Carambola (Raparapa) is a five-angled fruit and star-shaped in cross section, ripening translucent yellow with crisp, juicy, aromatic flesh. Used in fruit salads and drinks.

Chestnut (I'I) is a nut with red/brown/green coloured skin eaten after cooking.

Citrus-grapefruit is a poor man large orange-like citrus variety usually globe-shape, 8-15 cm in diameter.

Citrus-lemon (Remene) is a sour or bitter citrus, not eaten as fresh fruits but used in the preparation of lemonade, squashes and as a flavouring and garnish.

Citrus-lime (Tiporo) is used for fresh juice but mainly as a flavouring.

Citrus-mandarin (Anani Papaa) is a fruit usually orange-red and yellow in colour when ripe.

Citrus-orange has two main varieties: Rarotonga Seedless and Late Valencia. Local names include anani Matavera, anani Maori, anani Late. Eaten as a dessert fruit or made into juice.

Citrus-tangerine has fruits usually pale orange-yellow when ripe.

Cocoa tree can grow up to 12 meters tall. It is a member of the Sterculiaceae family and thrives between 15^oC north and south latitude. It requires 18^o-32^oC, 1500-2000 mm rain with high humidity.

Coffee belongs to the family of Rubiaceae. All species of coffee are woody, ranging from small shrubs to large, robust trees 10 meters tall. The three economically important species are: Coffee arabica L. (arabica coffee), Coffee canephora Pierre ex Froehner (robusta coffee), and Coffee liberica Bull ex Hiern (Liberian coffee).

Coconut (Akari or Niu) is a tropical fruit tree providing food, drink, oil, medicine, fibre, timber, thatch, mats, fuel and domestic utensils hence sometimes referred to as the tree of life!

Custard apple (Katarapa) is a yellowish-green, heart-shaped fruit, 7-10 cm in diameter, covered, birth rounded. fleshy tubercles which represent the loosely-cohering carpels, and separate readily when ripe. Also known as sweetsop.

Granadilla (Parapotini mamaata) is a large fleshy fruit growing from vines. The flesh and the pulp of the fruit are edible and are eaten alone or in fruit salads and drinks.

Guava (Tuava papaa) is a fruit taken raw or after removal of the seeds, made into preserves, jam, jelly, paste, juice and nectar.

Jackfruit (Barrel) is a pear-shaped fruit measuring a 30-90 x 25-50 cm. The pulp of the ripe fruit is eaten fresh or preserved in syrup.

Litchi is a fruit, usually red when ripe. Eaten fresh and is also canned in syrup. Trees come into bearing in 4-6 years.

Kava (Piper methysicum Forst) is a member of the pepper family, Piperaceae. It has been grown in the Pacific Islands for centuries and is used as a drink to induce relaxation. It is a hardy, slow-growing perennial that can attain heights of more than three meters.

Macadamia Nut has fleshy husk and single spherical seed up to 2 cm in diameter, with hard brown shell. Eaten raw or roasted.

Mango (Vi) is a seasonal, pear-shaped fruit with yellow flesh when ripe. Ripe fruits are eaten raw as a dessert fruit and are used in the manufacture of juice, squash, jams, jellies and preserves.

Nono (Morinda citrifolia) is used for traditional healing. The tree grows to 6-10 meters tall on most soil types and is salt tolerant. The fruit possesses antibacterial, anti-inflammatory and cancer inhibiting characteristics.

Passion fruit (Parapotini) is an edible fruit of a type of climbing vine. The pulp and seeds may be eaten directly from the shell or used in fruit salads.

Pawpaw-solo (Nita) is a tropical fruit eaten for breakfast and dessert and in

fruit salads. Also used for making soft drinks, jams, ice cream flavouring, crystallized fruit and are canned in syrup. This variety originally came to Rarotonga from Hawaii and is the variety exported mainly to New Zealand.

Pawpaw-wild (Nita) is a local variety, not exported.

Sapodilla are globe-shaped fruits, 5-10 cm in diameter, grayish to rusty brown, with yellowish-brown flesh. Eaten fresh as a dessert fruit. Trees bear fruit 3-4 years after planting, the fruit taking 4 months to mature.

Spondias (Vi kavakava) is a rounded-shaped fruit ranging in size from a golf ball to a medium-sized orange. Has a fibrous seed structure.

Soursop is a dark green ovoid fruit, 15-25 cm long, covered with recurved fleshy spines. Fruit are often distorted and kidney-shaped due some of the ovules are not being fertilized.

Bean-export (Pi) has variety with average length about 15 cm.

Bean-snake (Pi) is also known as runner beans due to its lengthy structure, which may reach up to 50 cm. It is usually sold locally.

Broccoli is a hardy kind of cauliflower with numerous white or purple sprouts (flowerheads), each like a small cauliflower.

Brussels Sprouts are buds about 3 cm in diameter growing thickly on the stem of a cabbage-like plant. Eaten after boiling.

Cabbage-Chinese (Pinapi) is a leafy vegetable commonly eaten after cooking.

Cabbage-European (Kapati) is leafy vegetable with a round head (also called the heart) of thick green/white leaves. Eaten after cooking or used in salads.

Capsicum is also known as sweet peppers. Eaten raw in salads and cooked in various ways. Colours are green and red depending on the variety.

Carrot is a yellow or orange-red root used as a vegetable. Eaten cooked as mixed in soups, stews, curries and other dishes; or used in salads.

Cassava or Arrowroot (Maniota or Pia) is a starchy roots from which cassava flour may be extracted. Eaten after cooking. Flesh -yellow or white in colour depending on the variety.

Cauliflower is a cabbage-like plant with a large, white flower head used as a vegetable.

Celery is a garden plant of which the stems are eaten raw as salad or cooked as a vegetable.

Chilli (Oporo veravera) is a small sized vegetable used fresh or dried as a hot ingredient in various dishes.

Choko is a vegetable growing from vines. The flesh is eaten after cooking. Light green in colour.

Courgette is also known as zucchini. Small green marrow eaten as a vegetable. Younger stage of marrow. **Marrow** is a later stage of courgette. Vegetable of the gourd family, like a large fat cucumber.

Cucumber is a creeping plant with long, green-skinned fleshy fruit, usually sliced and eaten in salads, or made into pickle.

Eggplant is a plant with purple or light green-yellowish, egg-shaped fruit, hence, also known as eggfruit.

Ginger is a spice widely used in cookery and medicine and is esteemed for its flavour, pungency and aroma.

Kape is a rootcrop belonging to the taro family.

Sweet potato (Kumara) is an edible tubers eaten boiled or baked. It matures 3-6 months depending on the variety.

Lettuce (Tarati) is a widely cultivated leafy vegetable specifically used for salads. The leaves may also be boiled as spinach.

Maize is a grain vegetable crop used for human consumption but mainly for livestock feed. Plant stands 1-4 meters high, 3-4 cm in diameter. Looks exactly like a sweet corn.

Melon-musk is a vegetable from the melon family.

Melon-rock is a vegetable from the melon family.

Melon-water (Merani) is a round and/or elongated (depending on variety) juicy fruit growing on vines trailing along the ground.

Okra is a tender fruit used as a vegetable either boiled or sliced and fried.

Onion (Oniani) is a vegetable plant with a round bulb of many concentric coats, a strong smell and flavor, used in salads, cooking and pickles.

Parsley is a garden plant with crinkled green leaves, used in seasoning and sauces and for garnishing (decoration) food.

Peanut (Aratita) is a ground nut eaten raw or after roasting. Nuts are used in confectionery and in curries. Also made into peanut butter.

Pineapple (Ara painapa) is a cylindrical tropical juicy averaging 20.5 cm long and 14.5 cm in mid-diameter and 2.2 kg in weight used as dessert fruits.

Potato (Pitete) is a rounded tubers eaten as vegetable.

Pumpkin (Motini) is a large round orange-yellow fruit with many seeds in it, used as a vegetable. Grows from vines.

Puraka is a tuber crop from the taro family.

Radish is a salad plant with a white or red edible root. Has a pungent flavour.

Rukau is a young leaves of some taro varieties used for cooking as a vegetable. Usually mixed with coconut cream when cooking.

Silverbeet is a leafy crop eaten as vegetable.

Snowpea is a vegetable from the pea family. Exported to NZ.

Spinach is a vegetable with green leaves, cooked and eaten as a vegetable.

Spring onion (Oniani) is an onion grown specifically for the use of its top green leafy part mainly in salads.

Sweet corn (Koni) is a grain vegetable crop containing a glossy sweetish endosperm which is translucent when immature and dries to give a wrinkled appearance. Eaten after boiling. Also used for canning and freezing.

Taro-dry is a tuber crop, matures between 8-12 months depending on the variety. Taro-dry is any variety planted on dry land (e.g. like kumara).

Taro-wet (flooded) is any taro variety planted in areas where water is allowed to flow through the plot.

Taro-wet (raised bed) is any taro variety planted on raised beds/patches in swamp-land areas.

Tarua is a tuber crop with one main tuber, the edible parts being the side shoots or tuberlets.

Tawa is a rootcrop used to make flour (pia) for use in the preparation of puddings (poke). The crop was commonly used before the introduction of cassava.

Tomato (Tomati) is a soft, juicy, red or yellow fruit usually eaten with meat, in salads, and in sauces. Eaten raw or cooked.

Turmeric Renga is a root crop used as a coloring substance and a flavouring, especially in the making of curries.

Yam (U'I) is a root crop rich in carbohydrate, grows from vines.

Vanilla is a creeper or vine and belongs to the orchid family, Orchidaceae. It grows well in most soil types provided it is well drained and rich in organic matter. Temperatures ranging from 20^o-30^oC is ideal for good growth with adequate rainfall required and about 30%-50% shade.

Appendix D Fishing

Gill and other net fishing are used to catch a number of different reef fish in a lagoon or along a reef edge. These include the use of gill nets, scoop nets, cast nets, etc.

Vertical long lining is used to catch tunas. Its gear consists of a main line between 100 to 300 kg breaking strength with several branch lines between 10 to 20 attached to the mainline via quick release clips. The gear is left to soak from two to four hours before hauling. This method is generally used around fish aggregating devices (FADs).

Drop lining is usually hooked to around 50 meters in depth to target deep-sea fish species such as groupers and snappers and pelagic fish like tuna, wahoo and marlin. The gear included in this method is l'i or drop stone fishing.

Hook and line fishing is one of the oldest methods for catching fish. It is considered an environment-friendly method as it catches primarily target species, inflicts minimal injury to the fish, and causes minimal damage to the surrounding habitat. The gears used in this fishing method are matira or takiri, tiritiri and matau tamoe.

Trolling is one of the methods used for catching oceanic species of fish. It includes trolling lures, using rod and reels.

Deep bottom fishing (in excess of 200 m) is used in catching tuna and other pelagic fishes in big quantities. Manga is included in this method.

Spear gun fishing is a traditional fishing method using javelin-like wooden spear or the metal or rubber powered spear and is being done along the shore or in the surf or over the reef. Examples of this are the pata spearing, throw spearing, spear guns, etc.

Collecting / gleaning shellfish and invertebrates is gathering of seafood like clams, sea urchins, sea cucumbers, turban snails, oyster meat, octopus, crabs, etc., through the use of limited equipment and specialized gear. It is usually being done during low tide.

Flying fishing (maroro) is an angling method that uses a light-weight lure called an artificial fly to catch fish. The fly is cast using a fly rod, reel, and specialized weighted line. The light weight requires casting techniques significantly different from other forms of casting. The flies may resemble natural invertebrates, baitfish, or other food organisms.

Harpoon is a long spear – like instrument and tool used in fishing, whaling, sealing, and other marine hunting to catch large fish or marine mammals.

Traditional fish traps are traditional trapping methods used in some rural villages and outer islands to catch fish.

Other forms of fishing include trapping, freshwater fishing, etc.

APPENDIX E – Conversion Table

Crop		Avg wgt (g)	Unit	Avg wgt (Kg)
1	Abiu (Eggfruit)	Single		
		220g		
2	Apple Star	Single		
		325g		
3	Avocado	Single		
		200g (Hass avocado)		
4	Banana, cavendish	Single	Bunch	26Kg
		190g single/500g hand		
5	Banana, cooking (Plantain)	Single	Bunch	10Kg (bluggoe)
		200g		
6	Banana, ducasse	Single	Bunch	20Kg
		60g		
7	Banana, fei (Utu)	Single	Bunch	15Kg
		200g		
8	Banana, ladyfinger	Single	Bunch	15Kg
		80g		
	Barbados cherry (Acerola, West Indian			
9	Cherry)	Single		
		5g		
10	Basil	bundle		
		225g		
11	Bean, climbing (Pole beans)	bundle		
		450g		
12	Bean, snake	bundle		
		400g		
		ziplock		
13	Bean, winged (Four-cornered bean)	bag		
		145g		
14	Bean, yardlong (Cowpea)	bundle		
		500g		
15	Bele (Rukau viti)	Not Sold		
16	Bitter Melon (Balsam bear)	Single		
		200g		
17	Breadfruit	Single		
		1300g		
18	Broccoli	Single		
		370g		
19	Cabbage	Head		
		1300g		
20	Capsicum	Single	Bag	1Kg
		135g		
21	Cauliflower	Single		
		420g		
22	Chestnut		Bag	
23	Chilli, birdseye (Tabasco)	Single		
		0.6g		

24	Chilli, habanero (Bongo)	Single	5.0g			
25	Chilli, jalapeno	Single	8.0g			
26	Chinese Cabbage	Single	350g	Bag	1.37Kg	
27	Chive	bundle	100g		\$5	
28	Choko	single	410g			
29	Citrus, grapefruit	single	1000g			
30	Citrus, kumquat	Single	12g			
31	Citrus, lemon	bag			1.47Kg	
32	Citrus, lime	bag			600g	
33	Citrus, mandarin	bag			1Kg	
34	Citrus, orange (Anani matavera)	bag			4.5Kg	
35	Citrus, pummelo	Single	910g			
36	Citrus, satsuma	Single	100g			
37	Citrus, tangerine	Single	85g			
38	Cocoa	Single	400g			
39	Coffee	Single	0.15g			
40	Coriander	bundle	100g			\$5
41	Corn	Single	200g	bag	1.1Kg	
42	Courgette (Zucchini, Marrow)	Single	90g	bag	1Kg (8-10 courgettes)	
43	Cucumber	Single	395g	bag	1Kg	
44	Custard Apple (African pride, cherimoya)	Single	500g			
45	Dill	bundle	80g			\$5
46	Dragonfruit	Single	500g	Bag	2Kg	
47	Drinking Nut (Nu, Niu)	Single				\$3
48	Durian	Single	2Kg			

49	Eggplant	Single	350g	bag	1Kg	
50	Giant Swamp Taro (Puraka)	Single	5Kg			
51	Ginger			Bag	1Kg	
52	Granadilla (Maratini)	Single				
53	Guava	Single	60g			
54	Herbs (mix)		100g			\$5
55	Polynesian Plum (Spondias)	Single	90g			
56	Jackfruit	Single	10Kg			
57	Kale			bag		
58	Kumara (Sweet potato)	Single	150g	bag	5Kg	
59	Lemongrass (Ti Varani)	bundle	200g			\$2.50
60	Lettuce	Single	200g	bag		
61	Long Kong (Langsat)	Single	20g			
62	Longan	Single	10g			
63	Loquat (Ko'ata)	Single	15g			
64	Lychee (Litchi)	Single	15g			
65	Malayapple	Single	60g			
66	Mango	Single	200g small; 450g large fruit	bag		
67	Mangosteen, purple (Sweet)	Single	65g			
68	Mangosteen, yellow (Astringent)	Single	25g			
69	Maniota (Cassava)	bag	3.5Kg	sack	20Kg	
70	Melon, honeydew	Single	1800g			
71	Melon, rock (Cantaloupe)	Single	1500g			
72	Melon, water	Single	8000g			
73	Mint	bundle	100g			\$5
74	Nono (Noni)	Single	130g			

75	Okra	Single	18g		
76	Parsley	bundle	65g		
77	Passionfruit, purple	Single	90g	Bag	600g (7 fruits)
78	Passionfruit, yellow	Single	90g		
79	Pawpaw, pink lady	Single	900g		
80	Pawpaw, solo sunrise	Single	500g		
81	Pawpaw, solo waimanalo	Single	950g		
82	Pili nut (Canarium)	Single	20g		
83	Pineapple, champarka	Single	2000g		
84	Pineapple, MD2	Single	1600g		
85	Pineapple, ripley queen	Single	800g		
86	Pineapple, smooth cayenne	Single	1700g		
87	Pomegranate (Remuna)	Single	270g		
88	Pumpkin, butternut	Single	1000g		
89	Pumpkin, crown	Single	3000g		
90	Pumpkin, local	Single	5500g		
91	Radish	single	160g		
92	Rambutan	Single	40g		
93	Rollinia	Single	350g		
94	Rosemary	bundle	100g		
95	Rukau, taro	bundle			1.27Kg
96	Rukau, tarua	bundle			1.27Kg
97	Sapodilla	Single	150g		
98	Sapote, pink (Mamey)	Single	500g		
99	Sapote, ross	Single	80g		
100	Sapote, white	Single	25g		
101	Silk Squash (Luffa)	Single	700g		

102	Silverbeet (Swiss chard)	bundle			300g
103	Snowpeas			Bag	300g
104	Soursop (Guanabana)	Single	1850g		
105	Spinach	bundle	200g	Bag	
106	Spring Onion	bundle			150g
107	Starfruit (Carambola)	Single	230g		
108	Surinam cherry	Single	5g		
109	Sweetsop (Naponapo, Tapotapo)	Single	200g		
110	Tamarind			bag	500g @\$6
111	Taro	bag	4Kg	sack	45Kg onion sack
112	Tarua	bag	4Kg	sack	20Kg potato sack
113	Tawa (Pometia)	Single	15g		
114	Tomato , cherry	punnet	250g		
115	Tomato, fresh	Single	150g	bag	1Kg
116	Turmeric (Renga)			bag	1Kg
117	Vanilla	Single			
118	Watercress	bundle	150g		
119	Yam bean (Jicama)	Bag		bag	1Kg
120	Yam, apirika (African yam)	Bag		bag	4Kg
121	Yam, etene	Bag		bag	4Kg
122	Yam, pacific (Pacific yam)	Bag		bag	4Kg
123	Yam, parai	Bag		bag	4Kg
124	Yam, toka	Bag		bag	4Kg