

# Cook Islands 2015/16 HIES project

## Survey Proposal

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### **A. Cook Islands HIES – overview**

- I. The Cook Islands NSO needs to conduct a HIES in 2015/16 as the previous one was conducted in 2004 and CPI / NA have to be updated in 2016. But the HIES will be used for extra purposes as well (gender analysis, MDG...)
  
- II. Cook Islands HIES has to provide HIES robust outputs at the island groups level and the National level as well, this is why the following domains have been retained:
  - Rarotonga
  - Southern Group
  - Northern Group
  
- III. The previous field operation NSO in Cook Islands conducted was the 2011 agriculture and household census and the previous HIES was conducted in 2004

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### **B. Standard HIES methods**

- IV. The standard method developed and proposed by SPC, endorsed by the Pacific Statistics Steering Committee in 2012 recommends the following:
  - Spread the HIES field operation across a 12 month period in order to cover seasonality of events (income, expenditure, fruits...)
  - Use the standard questionnaire developed by SPC in line with international household survey standard (e.g. section 1.2 labor force section recommended by ILO)
  - Use some international standard classifications (COICOP for goods and services, ISIC and ISCO for occupation and industry)

- As much as possible the data entry happens in the field in parallel of the interview (the same day of the day after the interview) in order to avoid:
    - Delay of data entry after the field operation (data will be entered at the end of the field operation) and speed up the report release
    - Bad data quality as the data will be edited in the same time, and amendments will be made based on field reality.
- V. The HIES covers only the private dwelling who live in the Cook Islands for more than 12 months or recently set up in the Cook Islands and intend to stay more than 12 months.
- VI. HIES staff will be organised in teams of 3, made of:
- 1 supervisor in charge of the quality of the data, the control of the interviewer in the field and the data entry
  - 2 interviewers in charge of the interview in the selected households
- VII. Each team will work in a specific island, their island of origin (where they have been selected)
- VIII. The 12 month period of field operation is organised in round. A round is a 3 weeks period that allows a team to interview enter and edit 10 households as show on the chart 1 (appendix 1 & 2).

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**C. HIES challenges**

- IX. They are many challenges in HIES, as it is a long and complex survey, NSO has to expect:
- To lose some interviewers during the field operation (resignation, fire...): good to train more people than we need, to have some back up (reserve)
  - To get some refusals from respondents: field staff has to be well trained in how to introduce themselves and convince the households to participate in HIES. Plus a good communication/publicity campaign will encourage the households to collaborate. Maybe some lottery gifts might help to give them motivation to fill up the diary
  - Some delays in data entry, which is why it is very important to put pressure on supervisor as they have to start data entry module 1 to 4 as soon as they were returned. Data entry of the current round has to happen during the collection.
  - Some improvement in the quality of the data collected rounds after round, but this quality will happen only if the NSO with SPC are able to provide feedbacks to the team on the data quality of the previous rounds
  - Charge laptop and data transfer: supervisors will use the laptop to do data entry and will need to access power point to charge them on a regular based. Once the round is finished, all the dataset will be sent to the NSO that will centralise a backup. All team and especially the outer islands team will need an internet connection to send the data over each round
  - The main challenge in HIES is for the NSO to keep the pressure on the HIES teams during 12 month period.
  - All HIES team have to follow the same schedule and respect the HIES agenda, it is crucial for the success of the entire operation.
  - HIES field operation will finish late November 2016 and might interfere in the census preparation work as the census field operation starts early December 2016.

## D. Sample design

- X. The HIES sample size is constrained by:
- A total sample size of approximately 800 households allowed by the budget
  - The 3 domains of report (Rarotonga, Southern and Northern group). In order to achieve those 3 domains, the sample has to be properly distributed across the Cook Islands territory. The following table 1 shows the required sample size for each of the domain of report:

Table 1: sample allocation – Cook Island HIES 2015/16

	# households 2011 census	Distribution (%)	Proportional allocation of the sample (hhs)	Final allocation of the sample (hhs)	Coverage (%)
1. Rarotonga	3,154	72%	577	320	10%
2. Southern Group	939	21%	172	320	34%
3. Northern Group	279	7%	51	160	57%
<b>Cook Islands</b>	<b>4,372</b>	<b>100%</b>	<b>800</b>	<b>800</b>	<b>18%</b>

- XI. Table 1 shows the proportional allocation of the 800 households within the Cook Islands according to the distribution of the households. This sample allocation will provide good outputs at the national level, but not at the island group level.
- XII. The final allocation presents in table 1 shows a different way to distribute the sample across the 3 domains of report. The smallest island group got a higher coverage which provides more robust results.
- XIII. The final sample allocation takes into account the workload of 1 team during 1 round (10 households) and the 16 rounds each team has to achieve in order to complete a full 12 month period. It results a total number of interviewed households of 160 per team in total.
- XIV. Sample limitation: due to high cost of travels, it is not possible to select some households in each single populated island in each domain, meaning that some islands will be excluded from the selection.

Table 2: sample limitation – Cook Island HIES 2015/16

	# households 2011 census	# households included in the selection	# households excluded of the selection	% of household excluded
1. Rarotonga	3,154	3,154	0	0%
2. Southern Group	939	789	150	16%
3. Northern Group	279	179	100	36%
<b>Cook Islands</b>	<b>4,372</b>	<b>100%</b>	<b>250</b>	<b>6%</b>

Table 2 shows that in total 6% of the households in Rarotonga are excluded from the sampling selection, but looking at the Northern group, more than a third of the households are excluded (36%)

- XV. The sample limitations happen only in the Southern and Northern groups as show on table 2. Those groups are made of scattered islands very hard and expensive to reach and most of them have very similar life style. Table 3 presents for both groups the difference in between the islands:

Table 3: classification of the outer islands according to the activities

	Rural 1	Rural 2
2. Southern Group	AITUTAKI	MANGAIA
		ATIU
		MAUKE
		MITIARO
3. Northern group	MANIHIKI	PUKAPUKA
		PENRHYN
		RAKAHANGA
		NASSAU
		PALMERSTON

Rural1 group represents the main islands of the group in terms of economic development, access to services, shops and flights to Rarotonga.

Aitutaki and Manihiki are islands that show a different economic profile within their group:

- a. Aitutaki accommodates a lot of tourists, hotels and resorts are settling there, and as a touristic destination a lot of people in Aitutaki works for wages in the private sector.
- b. Manihiki is the island where the black pearls industry is developed (most of the Cook Islands pearls come from Manihiki) and generates more private sector, infrastructures and air links with Rarotonga.

Rural2 group includes the remote islands of each group as show on table3:

- c. Southern group: Mangaia, Atiu, Mauke and Mitiaro
- d. Northern group: Pukapuka, Penrhyn, Rakahanga, Nassau and Palmerston

- XVI. Table 4 shows that 51% of the households in the Southern Group live in Aitutaki (rural1), and 49% are spread over the rest of the group (rural2). In the Northern Group, Manihiki (rural1) is made of 28% of the households in this group, the rest rural2 of Northern Group is scattered across the 5 other islands.

In terms of sample allocation, the Southern group is balanced 50% in rural1 (Aitutaki) and 50% in rural2 (16 rounds and 160 households in each). In the Northern group, as Manihiki (rural1) represents 28% of the households, only 5 rounds will be conducted there. The 11 rounds left will be conducted in rural2.

Table 4: allocation of the sample per island group

	Urban	Rural1	Rural2	Total
<b><i>Census 201 (#hhs)</i></b>				
1. Rarotonga	3,154	0	0	<b>3,154</b>
2. Southern group	0	482	457	<b>939</b>
3. Northern group	0	78	201	<b>279</b>
Total	3,154	560	658	<b>4,372</b>
<b><i>% distribution of hhs</i></b>				
1. Rarotonga	100%	0%	0%	<b>100%</b>
2. Southern group	0%	51%	49%	<b>100%</b>
3. Northern group	0%	28%	72%	<b>100%</b>
Total	72%	13%	15%	<b>100%</b>
<b><i>Sample allocation (#hhs)</i></b>				
1. Rarotonga	320	0	0	<b>320</b>
2. Southern group	0	164	156	<b>320</b>
3. Northern group	0	45	115	<b>160</b>
Total	320	209	271	<b>800</b>
<b><i># rounds</i></b>				
1. Rarotonga	32	0	0	<b>32</b>
2. Southern group	0	16	16	<b>32</b>
3. Northern group	0	5	11	<b>16</b>
Total	32	21	27	<b>80</b>
<b><i>Final sample size (#hhs)</i></b>				
1. Rarotonga	320	0	0	<b>320</b>
2. Southern group	0	160	160	<b>320</b>
3. Northern group	0	50	110	<b>160</b>
Total	320	210	270	<b>800</b>

In the Southern group the islands of Mauke and Mitiaro are excluded from the selection. As they belong to rural2 area and the assumption that household expenditure and income patterns are similar than in Mangaia and Atiu.

Regarding the Northern group, Penrhyn, Rakahanga, Nassau and Palmerstom are excluded from the selection, as we work under the assumption that the households living there show similar profiles than in Pukapuka (in terms of income and expenditure).

- XVII. As show previously in table 2, the survey limitations concerns 6% of the households in the Cook Islands. Table 5 presents the islands that are excluded from the selection:
- Southern group: Mauke and Mitiaro, that account for 16% of the households within this group
  - Northern group: Penrhyn, Rakahanga, Nassau and Palmserston that account for 36% of the households within this group

Table5: survey limitations - rural2 areas in Southern and Northern groups

	Rural2	
	included	excluded
2. Southern Group	Mangaia, Atiu	Mauke, Mitiaro
3. Northern group	Pukapuka	Penrhyn, Rakahanga, Nassau, Palmserston

- XVIII. Households living in Mangaia and Atiu are representative of the population of rural2 in the Souhtern group. In the Northern group, households living in Pukapuka represent Penrhyn, Rakahanga, Nassau and Palmerston. Due to the small population living in Pukapuka it will not be possible to interview 110 households, but only 80 households, as no other islands from the North rural2 can be selected (due to the high cost of transport).

Table6: final sample allocation

	Urban	Rural1	Rural2	Total
<i>Rarotonga</i>	320	0	0	<b>320</b>
Aitutaki	0	160	0	<b>160</b>
Mangaia	0	0	80	<b>80</b>
Atiu	0	0	80	<b>80</b>
<i>Southern group</i>	0	160	160	<b>320</b>
Pukapuka	0	0	80	<b>80</b>
Manihiki	0	50	0	<b>50</b>
<i>Northern group</i>	0	50	80	<b>130</b>
<i>Total</i>	320	210	240	<b>770</b>

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## E. Household selection

- XIX. Households are randomly selected within the selected islands presented in the sample design. The selection process is different according to the island.
- XX. In Rarotonga, the selection strategy is a 2 stages sampling selection. In the first stage the Primary Sampling Unit are selected (PSU). In the case of the Cook Islands, the Enumeration Areas (EA) from the census are used as PSU. In total 32 EAs in Rarotonga are randomly selected with probability proportional to their size in terms of households (based on the census 2011). Each team will be responsible for 1 EA each round. As the household listing in each selected EA is 4 years old now (census 2011), the HIES team will first update the listing and do the random selection themselves (using a random standard process). In each selected EA, 15 households will be selected:
- 10 to interview in priority: selected households
  - 5 reserved households in case of replacement (refusal, absence...)
- ⇒ Each team in Rarotonga has to update the household listing of the selected EA and complete the random selection of household within this new updated list at the beginning of each round.
- XXI. The two stages sampling selection requires the EAs to get harmonised number of households. The probabilities of each EA to be selected have to be similar. From the 2011 census, Rarotonga counts 78 EAs as show on table 7.

Table 7: revised listing of EAs – 2011 census / 2015 HIES

	Listing of EAs in Rarotonga	
	From 2011 census	From 2015 HIES
# EAs	78	92
# hhs	3,154	3,154
Maximum	111	58
Minimum	11	11
Average	40.5	34.2
Std dev	19	10.2

Table 7 shows that the biggest EAs have been cut in several EAs (2 or 3 parts). EA that counts more than 100 households have been cut in 3 parts, and al EAs that counts more than 60 households have been cut in 2 parts. The distribution of the number of household per EA is more homogenous for the 2015 HIES and the probabilities of selection are well balanced.

Table8: list of selected EAs that have been cut for the HIES sample selection in Rarotonga

ISLAND_NAME	DISTRICT	EA ID	Total # HHs	# of parts
RAROTONGA	Kiikii-Ooa-Pue	2	96	3
RAROTONGA	Kiikii-Ooa-Pue	3	111	3
RAROTONGA	Avatiu-Ruatonga-Atupa	402	64	2
RAROTONGA	Nikao-Panama	508	89	2
RAROTONGA	Ruaau-Arerenga	401	67	2
RAROTONGA	Ruaau-Arerenga	604	73	2
RAROTONGA	Ruaau-Arerenga	605	60	2
RAROTONGA	Ruaau-Arerenga	607	68	2
RAROTONGA	Titikaveka	902	66	2
RAROTONGA	Titikaveka	909	74	2
RAROTONGA	Matavera	1101	65	2
RAROTONGA	Matavera	1106	59	2

EA Id 2 has been cut in 3 parts of approximately 32 households each.

XXII. Regarding the outer islands (rura1&2 in Southern and Northern groups), the selection strategy retained is a simple random selection. This strategy consists in a selection of households directly in the household listing of this island. In total the sample size is increased up to 50% in order to get some replacement in case of refusal, absence... The household selection will be done by the statistics office staff (HIES manager) in collaboration with SPC.

- ⇒ The simple random selection requires that the household listing of all the islands are updated before the beginning of the HIES
- ⇒ Household listing of Aitutaki, Mangaia and Pukapuka have to be provided to the statistics office before December 2015.
- ⇒ Household listing of Atiu has to be provided to the statistics office before May 2016
- ⇒ Household listing of Manihiki has to be provided to the statistics office before August 2016



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## F. HIES staff

- XXIII. The HIES staff works in teams of 3 people, each team is made of:
- 1 supervisor: in charge of the overall quality of the data collected, the respect of the HIES schedule and the data entry of all the HIES forms during each round
  - 2 interviewers: both in charge of the interview in 5 households per round each
- XXIV. Table 9 presents the number of field staff required to complete the interviews, data entry and data editing in 800 households.

Table 9: HIES field staff

	Sample size	# rounds	# Teams	# supervisors	# interviewer	# reserve	# staff to train
<b>Rarotonga</b>	<b>320</b>	<b>32</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>10</b>
Aitutaki	160	16	1	1	2	4	7
Mangaia	80	8	1	1	2	3	6
Atiu	80	8	1	1	2	3	6
<b>Southern group</b>	<b>320</b>	<b>32</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>10</b>	<b>19</b>
Pukapuka	80	8	1	1	2	0 <sup>1</sup>	3
Manihiki	50	5	1	1	2	2	5
<b>Northern group</b>	<b>130</b>	<b>13</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>8</b>
<b>Total</b>	<b>770</b>	<b>80</b>	<b>7</b>	<b>7</b>	<b>14</b>	<b>16</b>	<b>37</b>

Table 9 shows that in total 7 teams are required to work on HIES, meaning that 21 field staff will be hired and paid during the field operation (7 supervisors and 14 interviewers).

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## G. HIES schedule training and field operation

- XXV. Each island group has to be covered during 16 rounds (12 months) in order to take into account the seasonality of the HIES related items. Table 8 illustrates the 16 rounds in each island group for each team.
- XXVI. Both teams in Rarotonga (team1.1 & 1.2) and the team based in Aitutaki (team2.1) will work during the entire period (16 rounds). As Mangaia, Atiu, Pukapuka and Manihiki are not surveyed the full period they will be partially employed:
- Mangaia 8 rounds (round 1 to 8) – team 2.2
  - Atiu: 8 rounds (round 9 to 16) – team 2.3
  - Pukapuka: 8 rounds (round 2 to 9) – team 3.1
  - Manihiki: 5 rounds (round 12 to 16) – team 3.2

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<sup>1</sup> No reserve staff in Pukapuka due to the high cost of the air fare to travel to Rarotonga for the training

- XXVII. As the field operation starts simultaneously in Rarotonga, Aitutaki, Mangaia and Pukapuka, all those teams will be trained in Rarotonga at the same time. A main HIES training is organised in November in Rarotonga and the staff hired in Aitutaki, Pukapuka and Mangaia will attend this training (26 field staff in total plus some NSO staff and the HIES management).
- XXVIII. The HIES training lasts 2 weeks (10 days in total) and cover the field operation, the questionnaire and the data entry. The last day of the training all the staff go through a comprehension test, the outputs of the test will help the NSO to select each staff and their position (supervisor, interviewer and reserve). The training in Atiu and Manihiki last for 1 week only due to the small group to train.

Table 10: HIES field operation schedule

	1. RAROTONGA GROUP		2. SOUTHERN GROUP			3. NORTHERN GROUP		Starting day	Ending day	Extra activities
	Team11	Team12	Team21	Team22	Team23	Team31	Team32			
	Rarotonga based		Aitutaki based	Mangaia based	Atiu based	Pukapuka based	Manihiki based			
	1 SESSION OF TRAINING IN RAROTONGA (team 1.1, 1.2, 2.1, 2.2 & 3.1)							11/11/2011	23/11/2011	
round1	RAROTONGA	RAROTONGA	AITUTAKI	MANGAIA				30/11/2015	20/12/2015	
	Christmas Break							21/12/2015	3/01/2016	
round2	RAROTONGA	RAROTONGA	AITUTAKI	MANGAIA		PUKAPUKA		4/01/2016	24/01/2016	Data assessment workshop in Raro (mid-February 2016)
round3	RAROTONGA	RAROTONGA	AITUTAKI	MANGAIA		PUKAPUKA		25/01/2016	14/02/2016	
round4	RAROTONGA	RAROTONGA	AITUTAKI	MANGAIA		PUKAPUKA		15/02/2016	6/03/2016	
round5	RAROTONGA	RAROTONGA	AITUTAKI	MANGAIA		PUKAPUKA		7/03/2016	27/03/2016	
	Easter Break							28/03/2016	3/04/2016	
round6	RAROTONGA	RAROTONGA	AITUTAKI	MANGAIA		PUKAPUKA		4/04/2016	24/04/2016	Training of team23 in Atiu (1 week full time)
round7	RAROTONGA	RAROTONGA	AITUTAKI	MANGAIA		PUKAPUKA		25/04/2016	15/05/2016	
round8	RAROTONGA	RAROTONGA	AITUTAKI	MANGAIA	Training	PUKAPUKA		16/05/2016	5/06/2016	
round9	RAROTONGA	RAROTONGA	AITUTAKI		ATIUI	PUKAPUKA		6/06/2016	26/06/2016	
round10	RAROTONGA	RAROTONGA	AITUTAKI		ATIUI			27/06/2016	17/07/2016	
round11	RAROTONGA	RAROTONGA	AITUTAKI		ATIUI			18/07/2016	7/08/2016	training of Team32 in Manihiki (1 week full time)
	Break						Training	8/08/2016	14/08/2016	
round12	RAROTONGA	RAROTONGA	AITUTAKI		ATIUI		MANIHIKI	15/08/2016	04/09/2016	
round13	RAROTONGA	RAROTONGA	AITUTAKI		ATIUI		MANIHIKI	05/09/2016	25/09/2016	
round14	RAROTONGA	RAROTONGA	AITUTAKI		ATIUI		MANIHIKI	26/09/2016	16/10/2016	
round15	RAROTONGA	RAROTONGA	AITUTAKI		ATIUI		MANIHIKI	17/10/2016	6/11/2016	
round16	RAROTONGA	RAROTONGA	AITUTAKI		ATIUI		MANIHIKI	7/11/2016	27/11/2016	

XXIX. The HIES field operation starts late November with round1 (30<sup>th</sup> of November). Each round lasts 3 weeks and starts a Monday. The first period of rest happens during the Christmas period lasts for 2 weeks. The following 3 months are dedicated to round 2 to round 5. The proposed HIES schedule is spread in 3 phases according to the following calendars.

Calendar 1: HIES schedule – phase 1 – round 1 to 5

Mon	30/11/2015	21/12/2015	11/01/2016	1/02/2016	22/02/2016	14/03/2016
Tue	1/12/2015	22/12/2015	12/01/2016	2/02/2016	23/02/2016	15/03/2016
Wed	2/12/2015	23/12/2015	13/01/2016	3/02/2016	24/02/2016	16/03/2016
Thu	3/12/2015	24/12/2015	14/01/2016	4/02/2016	25/02/2016	17/03/2016
Fri	4/12/2015	25/12/2015	15/01/2016	5/02/2016	26/02/2016	18/03/2016
Sat	5/12/2015	26/12/2015	16/01/2016	6/02/2016	27/02/2016	19/03/2016
Sun	6/12/2015	27/12/2015	17/01/2016	7/02/2016	28/02/2016	20/03/2016
Mon	7/12/2015	28/12/2015	18/01/2016	8/02/2016	29/02/2016	21/03/2016
Tue	8/12/2015	29/12/2015	19/01/2016	9/02/2016	1/03/2016	22/03/2016
Wed	9/12/2015	30/12/2015	20/01/2016	10/02/2016	2/03/2016	23/03/2016
Thu	10/12/2015	31/12/2015	21/01/2016	11/02/2016	3/03/2016	24/03/2016
Fri	11/12/2015	1/01/2016	22/01/2016	12/02/2016	4/03/2016	25/03/2016
Sat	12/12/2015	2/01/2016	23/01/2016	13/02/2016	5/03/2016	26/03/2016
Sun	13/12/2015	3/01/2016	24/01/2016	14/02/2016	6/03/2016	27/03/2016
Mon	14/12/2015	4/01/2016	25/01/2016	15/02/2016	7/03/2016	28/03/2016
Tue	15/12/2015	5/01/2016	26/01/2016	16/02/2016	8/03/2016	29/03/2016
Wed	16/12/2015	6/01/2016	27/01/2016	17/02/2016	9/03/2016	30/03/2016
Thu	17/12/2015	7/01/2016	28/01/2016	18/02/2016	10/03/2016	31/03/2016
Fri	18/12/2015	8/01/2016	29/01/2016	19/02/2016	11/03/2016	1/04/2016
Sat	19/12/2015	9/01/2016	30/01/2016	20/02/2016	12/03/2016	2/04/2016
Sun	20/12/2015	10/01/2016	31/01/2016	21/02/2016	13/03/2016	3/04/2016

Calendar 2: HIES schedule phase 2 – round 6 to 11

Mon	4/04/2016	25/04/2016	16/05/2016	6/06/2016	27/06/2016	18/07/2016
Tue	5/04/2016	26/04/2016	17/05/2016	7/06/2016	28/06/2016	19/07/2016
Wed	6/04/2016	27/04/2016	18/05/2016	8/06/2016	29/06/2016	20/07/2016
Thu	7/04/2016	28/04/2016	19/05/2016	9/06/2016	30/06/2016	21/07/2016
Fri	8/04/2016	29/04/2016	20/05/2016	10/06/2016	1/07/2016	22/07/2016
Sat	9/04/2016	30/04/2016	21/05/2016	11/06/2016	2/07/2016	23/07/2016
Sun	10/04/2016	1/05/2016	22/05/2016	12/06/2016	3/07/2016	24/07/2016
Mon	11/04/2016	2/05/2016	23/05/2016	13/06/2016	4/07/2016	25/07/2016
Tue	12/04/2016	3/05/2016	24/05/2016	14/06/2016	5/07/2016	26/07/2016
Wed	13/04/2016	4/05/2016	25/05/2016	15/06/2016	6/07/2016	27/07/2016
Thu	14/04/2016	5/05/2016	26/05/2016	16/06/2016	7/07/2016	28/07/2016
Fri	15/04/2016	6/05/2016	27/05/2016	17/06/2016	8/07/2016	29/07/2016
Sat	16/04/2016	7/05/2016	28/05/2016	18/06/2016	9/07/2016	30/07/2016
Sun	17/04/2016	8/05/2016	29/05/2016	19/06/2016	10/07/2016	31/07/2016
Mon	18/04/2016	9/05/2016	30/05/2016	20/06/2016	11/07/2016	1/08/2016
Tue	19/04/2016	10/05/2016	31/05/2016	21/06/2016	12/07/2016	2/08/2016
Wed	20/04/2016	11/05/2016	1/06/2016	22/06/2016	13/07/2016	3/08/2016
Thu	21/04/2016	12/05/2016	2/06/2016	23/06/2016	14/07/2016	4/08/2016
Fri	22/04/2016	13/05/2016	3/06/2016	24/06/2016	15/07/2016	5/08/2016
Sat	23/04/2016	14/05/2016	4/06/2016	25/06/2016	16/07/2016	6/08/2016
Sun	24/04/2016	15/05/2016	5/06/2016	26/06/2016	17/07/2016	7/08/2016

### Calendar 3: HIES schedule phase 3 – round 12 to 16

Mon	8/08/2016	29/08/2016	19/09/2016	10/10/2016	31/10/2016	21/11/2016
Tue	9/08/2016	30/08/2016	20/09/2016	11/10/2016	1/11/2016	22/11/2016
Wed	10/08/2016	31/08/2016	21/09/2016	12/10/2016	2/11/2016	23/11/2016
Thu	11/08/2016	REST	22/09/2016	13/10/2016	3/11/2016	24/11/2016
Fri	12/08/2016	1/09/2016	23/09/2016	14/10/2016	4/11/2016	25/11/2016
Sat	13/08/2016	2/09/2016	24/09/2016	15/10/2016	5/11/2016	26/11/2016
Sun	14/08/2016	3/09/2016	25/09/2016	16/10/2016	6/11/2016	27/11/2016
Mon	15/08/2016	4/09/2016	26/09/2016	17/10/2016	7/11/2016	
Tue	16/08/2016	5/09/2016	27/09/2016	18/10/2016	8/11/2016	
Wed	17/08/2016	6/09/2016	28/09/2016	19/10/2016	9/11/2016	
Thu	18/08/2016	7/09/2016	29/09/2016	20/10/2016	10/11/2016	
Fri	19/08/2016	8/09/2016	30/09/2016	21/10/2016	11/11/2016	
Sat	20/08/2016	9/09/2016	1/10/2016	22/10/2016	12/11/2016	
Sun	21/08/2016	10/09/2016	2/10/2016	23/10/2016	13/11/2016	
Mon	22/08/2016	11/09/2016	3/10/2016	24/10/2016	14/11/2016	
Tue	23/08/2016	12/09/2016	4/10/2016	25/10/2016	15/11/2016	
Wed	24/08/2016	13/09/2016	5/10/2016	26/10/2016	16/11/2016	
Thu	25/08/2016	14/09/2016	6/10/2016	27/10/2016	17/11/2016	
Fri	26/08/2016	15/09/2016	7/10/2016	28/10/2016	18/11/2016	
Sat	27/08/2016	16/09/2016	8/10/2016	29/10/2016	19/11/2016	
Sun	28/08/2016	17/09/2016	9/10/2016	30/10/2016	20/11/2016	

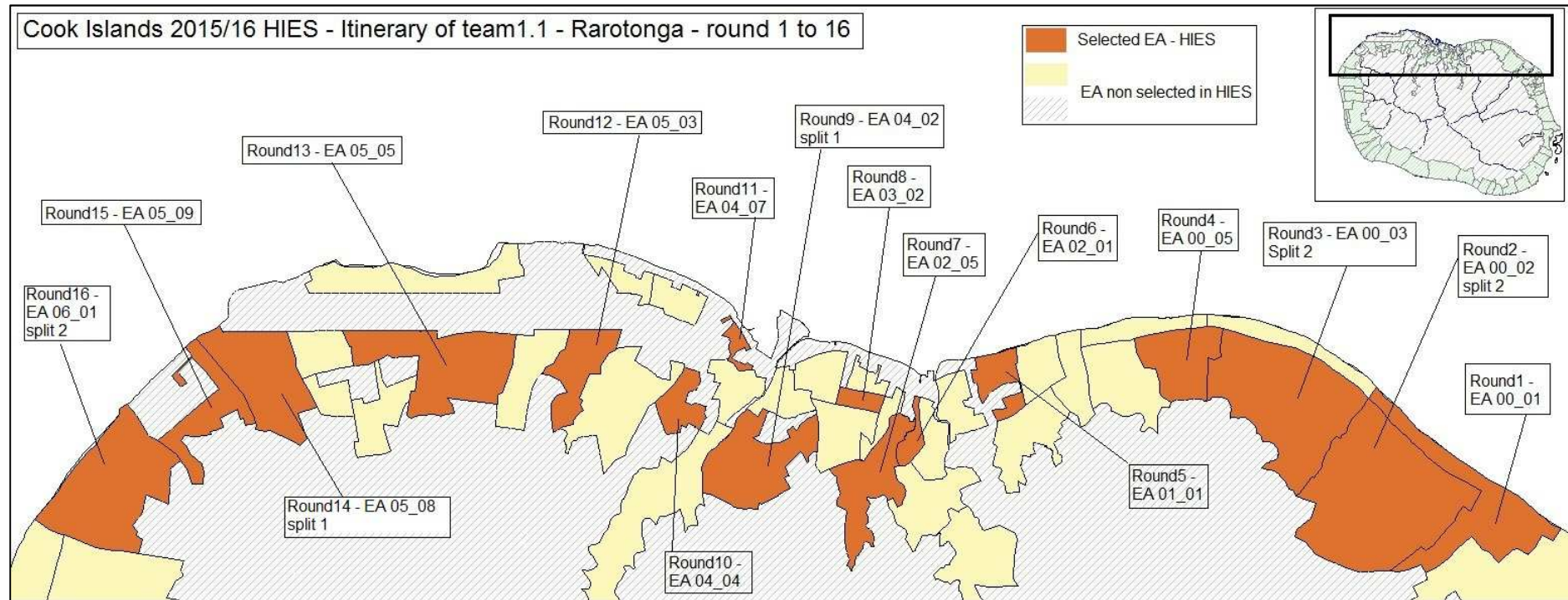
### H. Itinerary of the teams

XXX. The itinerary of the teams in Rarotonga is predictable, guided by the 2 stages sample process, 32 EAs have been randomly selected based on the 2011 census. Table 11 presents each the selection of the 32 EAs and the allocation for the Rarotongan teams.

Table 11: 32 selected EA in Rarotonga and allocation to teams and rounds

ROUND	Rarotonga	
	Team 1.1	Team 1.2
round1	EA ID 00_01	EA ID 06_04 - split 1
round2	EA ID 00_02 - split 2	EA ID 06_05 - split 1
round3	EA ID 00_03 - split 2	EA ID 06_07 - split 2
round4	EA ID 00_05	EA ID 07_02
round5	EA ID 01_01	EA ID 07_04
round6	EA ID 02_01	EA ID 08_01
round7	EA ID 02_05	EA ID 08_04
round8	EA ID 03_02	EA ID 09_01
round9	EA ID 04_02 - split 1	EA ID 09_03
round10	EA ID 04_04	EA ID 09_06
round11	EA ID 04_07	EA ID 09_09 - split 1
round12	EA ID 05_03	EA ID 10_02
round13	EA ID 05_05	EA ID 10_04
round14	EA ID 05_08 - split 1	EA ID 10_06
round15	EA ID 05_09	EA ID 11_02
round16	EA ID 06_01 - split 2	EA ID 11_05

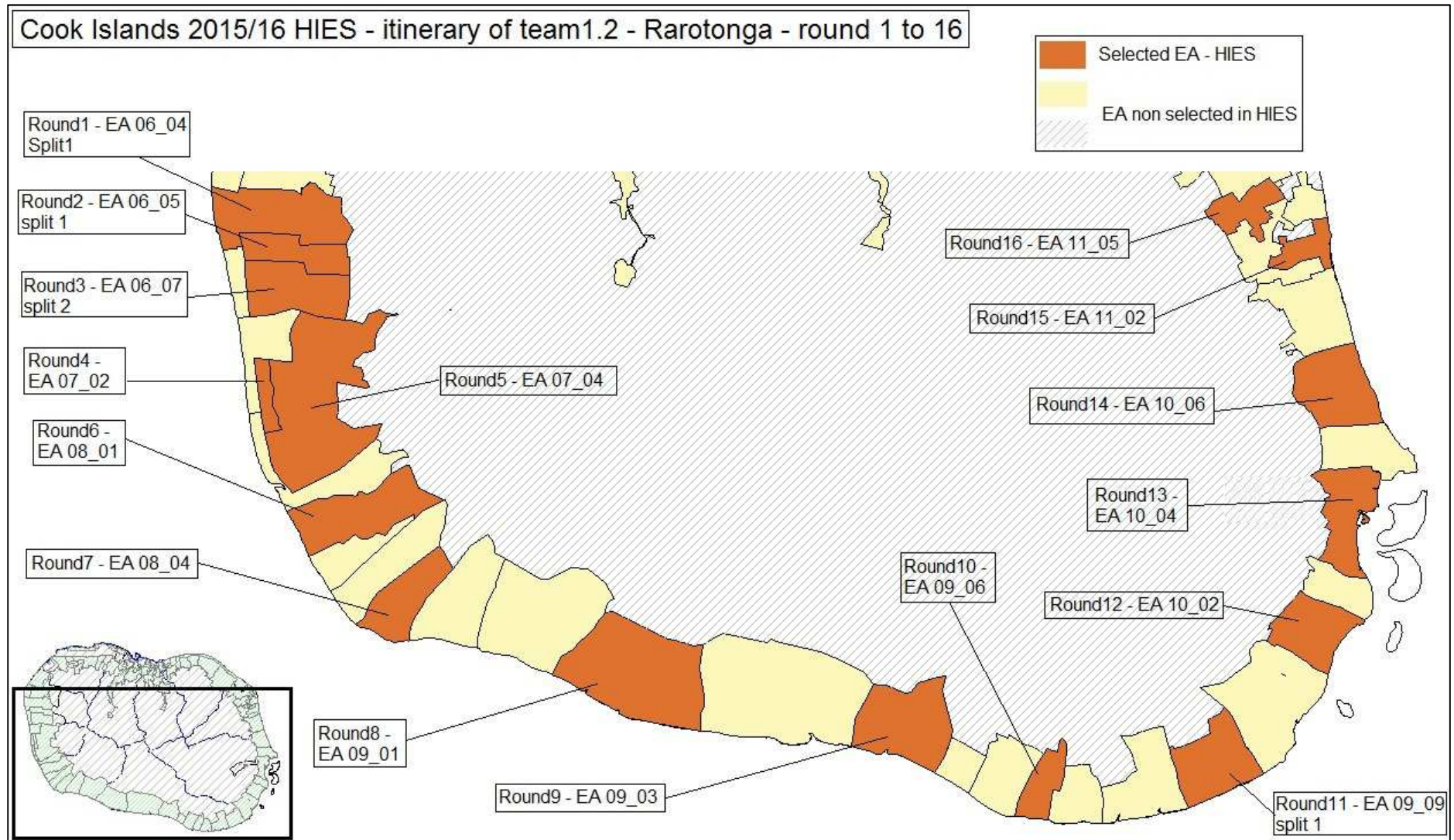
Map 1: itinerary of team 1.1 – Rarotonga



Team 1.1 will work in the northern part of Rarotonga, starting from the east coast all the way to the West coast. Each round is dedicated to 1 EA.

Map 2 shows the itinerary of the team in south Rarotonga, starting from round1 on the west coast and all the way to the east coast.

Map 2: itinerary of team 1.2 – Rarotonga



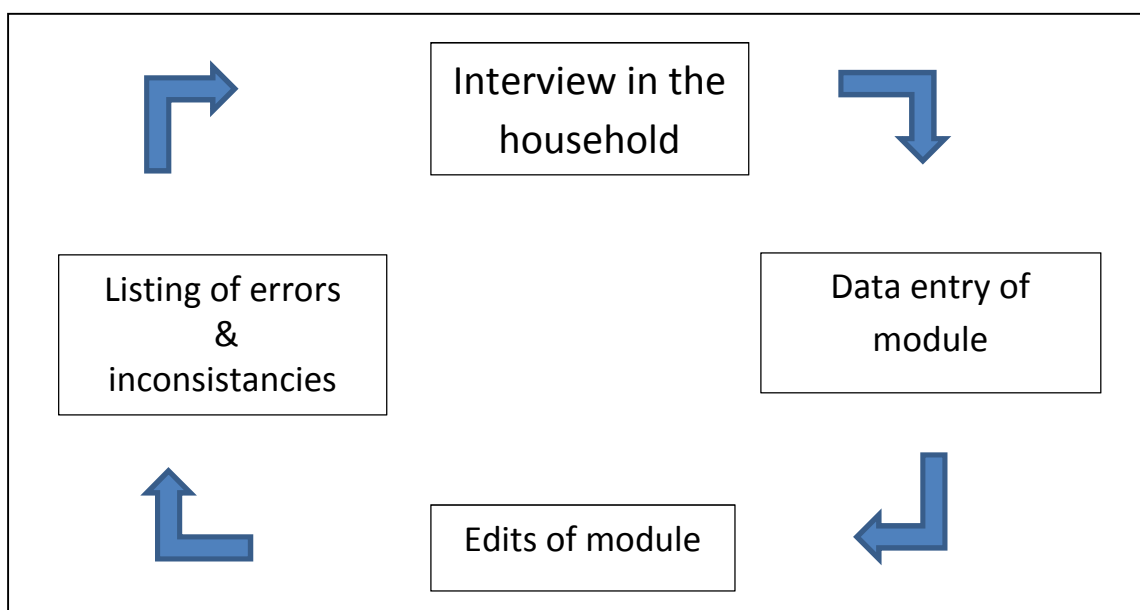
XXXI. Regarding the outer islands, the households will be selected directly from the updated household listing as soon as those ones will be available.

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## I. Data entry & transmission

- XXXII. In terms of data entry, HIES is different from all other census and survey. The long period of time spent in the field does not have to delay the data entry. Following the HIES method proposed, there will be no data entry period after the field operation, as data entry happens during the field operation, as closed as possible to the field. This method called CAFÉ (Computer Assisted Field Edits) guarantees the quality of the data.
- XXXIII. The supervisor of each team is in charge of the data entry of the forms of the current round (on laptop). Each module and diary completed have to be returned as soon as possible to the supervisor for data entry. The data entry system will report some messages to the supervisor regarding the quality of the data entered and all inconsistencies, missing information will be detected.
- XXXIV. Information of each round has to be entered during the current round. As data are edited in the field, all error messages reported by the system have to be cleared and amended during the round as the reality is in the field and not an office guess work.
- XXXV. Interviewers and supervisors have to meet every day to exchange the questionnaires and supervisors have to report to the interviewers on the quality of the data collected, and all errors to amend. All mistakes and errors regarding one household have to be amended during the next visit in this household (see chart 2).

Chart 2: exchange of questionnaire during the round





- XXXVI. Once the data are entered and edited (before the start of the next round) they will be automatically sent to the NSO and copy SPC. All the datasets received have to be saved and stored properly.
- XXXVII. Each round data have to be sent and some feedbacks on the data quality will be reported to the NSO and to the each teams (HIES monitoring).

## J. Budget











<b>HIES BUDGET SUMMARY: 2015-2016</b>				
<b>Component</b>	<b>Total</b>	<b>PERIOD 30.11.2015 TO 27.03.2016 (5 rounds)</b>	<b>PERIOD 04.04.2016 TO 07.08.2016 (6 rounds)</b>	<b>PERIOD 08.08.2016 TO end survey (field + report) (5 rounds)</b>
1. STAFFING COSTS	154,440	46,616	53,865	53,960
2 FIELD RECRUITMENT/TRAINING COSTS	59,087	50,353	8,734	-
3. PRINTING (Questionnaires) including freight	13,835	13,835	-	-
4. OPERATION COSTS	14,909	13,396	825	688
5. FIELD TRANSPORTATION	46,729	12,227	21,276	13,225
6. RELEASE OF RESULTS/ PUBLICITY/COMMUNICATION	12,660	4,250	1,500	6,910
<b>Sub Total - Budget</b>	<b>301,660</b>	<b>140,677</b>	<b>86,200</b>	<b>74,782</b>
Contingency	30,166	14,068	8,620	7,478
<b>Total - Budget</b>	<b>331,826</b>	<b>154,745</b>	<b>94,820</b>	<b>82,260</b>
<b>Funding</b>	<b>Total</b>	<b>PERIOD 30.11.2015 TO 27.03.2016 (5 rounds)</b>	<b>PERIOD 04.04.2016 TO 07.08.2016 (6 rounds)</b>	<b>PERIOD 08.08.2016 TO end survey (field + report) (5 rounds)</b>
Government	35,225	9,001	7,305	18,920
10% contingency	3,523	900	731	1,892
<b>Total Government</b>	<b>38,748</b>	<b>9,901</b>	<b>8,036</b>	<b>20,811</b>
Donor	266,435	131,677	78,895	55,863
10% contingency	26,643	13,168	7,890	5,586
<b>Total SPC</b>	<b>293,078</b>	<b>144,844</b>	<b>86,785</b>	<b>61,449</b>
<b>Total</b>	<b>331,826</b>	<b>154,745</b>	<b>94,820</b>	<b>82,260</b>

## K. Recommendations

- Household listing for Mangaia, Aitutaki, Pukapuka have to be ready before the end of November. The household listing for each island consists in a count of all the occupied dwelling and the name of the household head, starting from 1 to N (from one side to the island to another side). Every occupied dwelling have to be listed and localised on the maps.
- In order to be able to start the training mid-November, the recruitment campaign has to be achieved early November, and all the staff recruited have to be available for 12 month (in Rarotonga and Aitutaki) and 8 months in Mangaia.
- The questionnaire and the COICOP (list of goods and services) have to be amended and updated to the Cook Island context before the end of October

## Appendix 1 – HIES round in Rarotonga

- One round of survey in Rarotonga is organised as follow:
  - Day1:
    - Update of the household listing, the team goes all around the selected (maps provided) and lists and counts all the occupied dwellings on the listing and on the map,
    - Selection of 15 households, 10 households to survey (listA) and 5 households in case of replacement (listB, if any refusals absence...). The household selection is a random selection, field staff does not choose the households. They contact first the 10households selected in listA and go to listB if needed.
  - Day2 to 17:
    - Each enumerator is charge of 5 households in the selected households (7 visits per household)
    - Supervisor are in charge of field supervision, 1 visit every day with 1 enumerator, and data entry and edits, then transmission of error listing to the enumerator is crucial.
  - Day18 to 21:
    - If still some errors show up in the listing, enumerator must go back in the household for an extra visit to fix them
    - Supervisor complete the data entry of the 10 households (all modules and diaries)

HIES Round in Rarotonga - 3 weeks																					Next round	
Day1	Day2	Day3	Day4	Day5	Day6	Day7	Day8	Day9	Day10	Day11	Day12	Day13	Day14	Day15	Day16	Day17	Day18	Day19	Day20	Day21	Day1	
WEEK1							WEEK2							WEEK3							Week1	
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15						
<b>5 households to interview each (HH1 to HH5) per interviewer</b>																						
Update the hh listing of the selected EA  (all team members)  HH selection	HH1	HH4	HH1	HH4	HH1	REST	HH4	HH1	HH4	HH1	HH4	HH1	REST	HH4	HH1	HH4	REST	HH4	HH1	HH4	REST	
	HH2	HH5	HH2	HH5	HH2		HH5	HH2	HH5	HH2	HH5	HH2		HH5	HH2	HH5						
	HH3		HH3		HH3			HH3		HH3		HH3			HH3			HH6				
	Visit1		Visit2		Visit3		Visit3	Visit4		Visit5		Visit6		Visit6	Visit7			Extra time				
																						
	- HIES presentation		- Diary1 check		- Diary1 check		- Diary1 check	- Check and pick diary1		- Diary2 check		- Diary2 check		- Diary2 check	- Diary2 check and pick up			- Extra visit if needed (if still errors in the forms)				
- Convince the HHS to participate		- Module1 to 4 interviews		- Module 1 to 4 interviw	- Module 1 to 4 interviw	- Drop diary2		- Module1 to 4 feedbacks		- Module 1 to 4 feedbcks	- Module 1 to 4 feedbcks	- Module 1 to 4 feedbacks		- Get ready for the next round								
- Drop diary1		- Appointment for visit 3				- Module1 to 4 interviews		- Appointment for visit 6				- Thanks to the households										
- Module1 to 4 interviews				-App next visit 4	-App next visit 4	- Appointment for visit 5				-App next visit 7	-App next visit 7											
- Appointment for visit 2																						
<b>10 households to supervise enter and edit per supervisor</b>																						
- Help the interviewers for the visits							- Help the interviewers for the visits							- Data entry diary 2 - 10 households								
- Data entry module 1 to 4 - 10 households							- Data entry diary 1 - 10 households							- Final data entry module 1 to 4								
- Data editing module 1 to 4 - 10 households							- Data editing module 1 to 4 - 10 households							- Final data editing module 1 to 4								
														- Get ready for the next round								
																					Update the hh listing of the selected EA  (all team members)  HH selection	

## Appendix 2 – HIES Round in outer islands

- One round of survey in the outer islands is organised as follow:
  - Day1 to 16:
    - Each enumerator is charge of 5 households in the selected households (7 visits per household)
    - Supervisor are in charge of field supervision, 1 visit every day with 1 enumerator, and data entry and edits, then transmission of error listing to the enumerator is crucial.
  - Day17 to 21:
    - If still some errors show up in the listing, enumerator must go back in the household for an extra visit to fix them
    - Supervisor complete the data entry of the 10 households (all modules and diaries)

Household listing operation in the outer island will be complete before the beginning of the survey, and the household selection will be done directly from the updated listing for the 16 rounds (by NSO).

HIES Round in the outer islands - 3 weeks																					Next round			
Day1	Day2	Day3	Day4	Day5	Day6	Day7	Day8	Day9	Day10	Day11	Day12	Day13	Day14	Day15	Day16	Day17	Day18	Day19	Day20	Day21	Day1			
WEEK1							WEEK2							WEEK3							Week1			
Monday	Tuesday	Vednesda	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Vednesda	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Vednesda	Thursday	Friday	Saturday	Sunday	Monday			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15							1			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15									
<b>5 households to interview each (HH1 to HH5) per interviewer</b>																								
HH1	HH4	HH1	HH4	HH1	HH4	REST	HH1	HH4	HH1	HH4	HH1	HH4	REST	HH1	HH4	REST					HH1			
HH2	HH5	HH2	HH5	HH2	HH5		HH2	HH5	HH2	HH5	HH2	HH5		HH2	HH5		HH2	HH5	HH3	HH6				HH2
HH3		HH3		HH3			HH3		HH3		HH3			HH3			HH3		HH3					HH3
Visit1		Visit2		Visit3		REST	Visit4		Visit5		Visit6		REST	Visit7		Extra time					REST	visit 1		
↓		↓		↓			↓		↓		↓			↓		↓								
- HIES presentation - Convince the HHs to participate - Drop diary1 - Module1 to 4 interviews - Appointment for visit 2		- Diary1 check - Module1 to 4 interviews - Appointment for visit 3		- Diary1 check - Module1 to 4 interviews - Appointment for visit 4			- Check and pick diary1 - Drop diary2 - Module1 to 4 interviews - Appointment for visit 5		- Diary2 check - Module1 to 4 feedbacks - Appointment for visit 6		- Diary2 check - Module1 to 4 feedbacks - Appointment for visit 6			- Diary2 check and pick up - Module 1 to 4 feedbacks - Thanks to the households		- Extra visit if needed (if still errors in the forms) - Get ready for the next round								
<b>10 households to supervise enter and edit per supervisor</b>																								
- Help the interviewers for the visits - Data entry module 1 to 4 - 10 households - Data editing module 1 to 4 - 10 households							- Help the interviewers for the visits - Data entry diary 1 - 10 households - Data editing module 1 to 4 - 10 households							- Data entry diary 2 - 10 households - Final data entry module 1 to 4 - Final data editing module 1 to 4 - Get ready for the next round										

