Pacific Community
Communauté du Pacifique

SPC Headquarters
95 Promenade Roger Laroque
BP D5, 98848 Noumea Cedex
New Caledonia
Email: spc@spc.int
Phone: +687 26 20 00
Fax: +687 26 38 18

Siège de la CPS
95 Promenade Roger Laroque
BP D5, 98848 Nouméa Cedex
Nouvelle-Calédonie
Email : spc@spc.int
Tel : +687 26 20 00
Fax : +687 26 38 18

2018 OCT PSMB MEETING

DOCUMENT Nº 1:

HOUSEHOLD INCOME AND EXPENDITURE SURVEYS (HIES) IN THE PACIFIC REGION

Prepared by the
Michael Sharp, Bertrand Buffiere and Olivier Menaouer
Statistics for Development Division (SDD)
of the
Pacific Community (SPC)

October 2018

Pacific Community (SPC) Headquarters: Noumea, New Caledonia. Regional Offices: Suva, Fiji;
Pohnpei, Federated States of Micronesia; Port Vila, Vanuatu. Country Office: Honiara, Solomon Islands.
www.spc.int spc@spc.int

Siège de la Communauté du Pacifique (CPS) : Nouméa (Nouvelle-Calédonie). Antennes régionales : Suva (Fidji) ;
Pohnpei (États fédérés de Micronésie) ; Port-Vila (Vanuatu). Bureau de pays : Honiara (Îles Salomon).
www.spc.int spc@spc.int

EXECUTIVE SUMMARY

1. Household income and expenditure surveys (HIES) are conducted in the Pacific to serve data needs for a multitude of users. It is an important nationally representative survey that feeds information to inform key economic and social indicators, such as gross domestic product and poverty.

2. The regionally standardized HIES methodology was developed in 2011 under the guidance of a Technical Working Group, however there are new data demands and some inherent methodological issues with the current methodology that are driving the need to test new methodologies for capturing, in particular, consumption data. Additionally, there's increasing data demands and a need for integrated surveys, and technological change presents opportunity to improve data quality and survey management.

3. To test new HIES methodologies and field implementation protocols, a HIES experiment is being conducted in the Republic of the Marshall Islands with the objective to test: (i) the use of technology to collect and backup HIES data in remote island locations; (2) the inclusion of new modules in the HIES questionnaire to integrate complementary data and to avoid the need to conduct costly stand-alone surveys; and (3) to test different means to collect consumption-related data.

4. The results of the HIES experiment will serve to guide recommendation for endorsement by the Pacific Statistics Methods Board to form the updated regionally standardized HIES methodology.

PURPOSE

5. The purpose of this paper is to invite the Pacific Statistics Methods Board (PSMB) to:

   5.1. Note the history of household income and expenditure surveys (HIES) in the Pacific region;

   5.2. Note the current regionally standardised HIES methodology;

   5.3. Note the key challenges in conducting HIES under the "regionally standardised" methodology in the Pacific region;

   5.4. Note the HIES methodological experiment that is currently being conducted in the Republic of the Marshall Islands ("the RMI HIES experiment"); and

   5.5. Endorse the recommendation for PMSB to review the results of the RMI HIES experiment at PMSB's third meeting to be held in 2019 in order to make an informed recommendation to the Pacific Island countries and territories on the optimal methodology to conduct HIES.

BACKGROUND

6. HIES is a multi-purpose and multi-user survey, which has traditionally been conducted in the Pacific region with the following objectives:

   6.1. To provide data to estimate the household component of gross domestic product (GDP);

   6.2. To update the basket of goods to rebase the consumer price index (CPI); and

   6.3. More recently, to conduct poverty analysis and to report on progress towards achieving the Millennium Development Goals (MDGs).

7. HIES generates a wealth of social and economic data that can be used for general demographic and socioeconomic analysis and, in the past decade or so, researchers and policy makers have extended the use of HIES to estimate apparent household consumption and/or access to calories and nutrients. The nutrition-oriented application of HIES data are particularly interesting in consideration of the triple burden of malnutrition[1] in the Pacific region and general lack of nationally representative nutrition data.

8. HIES is directly responsible for supplying data for the calculation of 17 of the 132 Pacific Sustainable Development Goal indicators (13 percent), and it also contributes data for an additional six indicators,

[1] *The coexistence of undernutrition, nutrient deficiencies and obesity.*

thereby contributing to the reporting on 17 percent of the Pacific subset of indicators under the Sustainable Development Goals.

9. HIES is a core national statistical collection that, with exception of Pitcairn Islands, has been conducted by all Pacific Island countries and territories (PICTs). Given its wide user base in a multitude of varying social, macro-and-micro economic applications, it's of high importance that the HIES methodology is optimized to ensure the production of high quality, yet low-cost, statistics that meet user demand.

HISTORY OF HIES IN THE PACIFIC REGION

10. A total of 70 HIES, or its equivalent, have been conducted in the Pacific region since 1943 (Figure 1). Since the Millennium Development Goals (MDGs), there has been an increased frequency of HIES conducted, which is presumably driven by user demand and by PICTs trying to meet their reporting obligations under the MDGs.

11. Fiji was the first country in the region to conduct HIES, running 10 (of its 13) surveys from 1943 to 1990. Of the other 20 countries, with exception of Pitcairn Islands, each have conducted between 5 and 1 HIES (Figure 2; Appendix 1), with more than 60 percent of surveys being conducted since 2000.

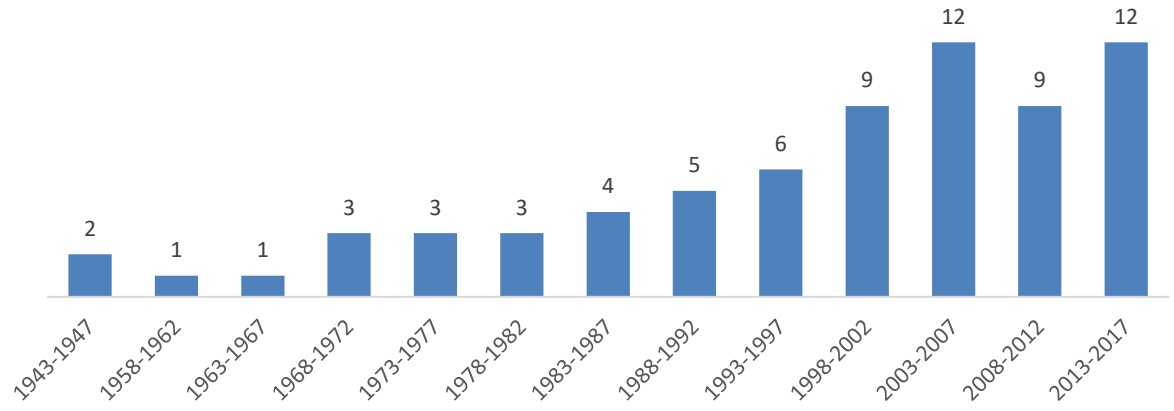

Figure 1: Number of household income and expenditure surveys conducted in the Pacific region, in 5-yearly intervals

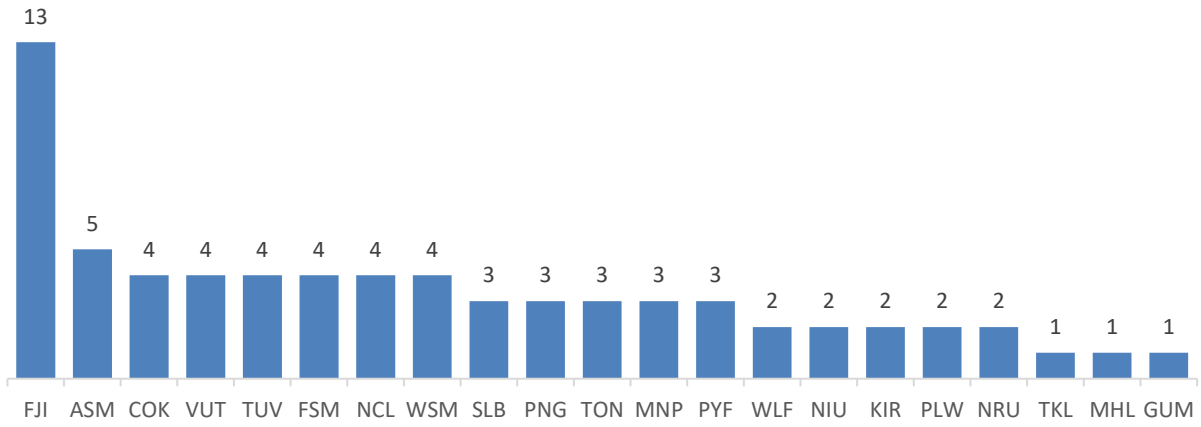

Figure 2: Number of household income and expenditure surveys ever conducted, by Pacific Island country and territory[2] (nb: PCN = 0)

12. It is noted that Guam, the Marshall Islands (RMI) and Tokelau have only conducted one HIES, which is an undesirable situation from the perspective of using data for economic and social purposes,

[2] American Samoa (ASM), Cook Islands (COK), Fiji (FJI), Micronesia (Federated States) (FSM), Guam (GUM), Kiribati (KIR), Marshall Islands (MHL), Northern Mariana Islands (MNP), New Caledonia (NCL), Niue (NIU), Nauru (NRU), Palau (PLW), Papua New Guinea (PNG), French *Polynesia (PYF), Solomon Islands (SLB), Tokelau (TKL), Tonga (TON), Tuvalu (TUV), Vanuatu (VUT), Wallis and Futuna (WLF), Samoa (Western) (WSM).*

particularly in the monitoring of poverty trends. In addition to these PICTs, it is noted that Kiribati, Papua New Guinea (PNG) and Wallis and Futuna (W&F) have not conducted HIES since prior to 2010, despite having conducted two or more HIES, making their most recent data considerable out of date. It is, however, noted that Guam, RMI, PNG, Tokelau, Kiribati and W&F plan to conduct HIES in 2018/19[3], so this situation will be rectified in the near future. As such, by 2020, all PICTs will have conducted at least two HIES with the most out of date data being in 2012.

13. In order to ensure that HIES data users have regular access to up-to-date data, it is desirable to conduct HIES every three-to-five years. This, however, comes at a cost (both financial and in terms of burdening the National Statistics Office (NSO), the respondent, the donor and technical assistance provider), so there is a need to identify more efficient means to conduct HIES.

14. Appendix 2 displays when the last HIES was conducted and when the next is scheduled for each PICT, and the cost of conducting the previous HIES, where available. On average, HIES costs USD 341 per sampled household or USD 10 per capita. The cost of conducting HIES is high and economies of scale are achieved for more populated countries, which further reinforces the need to identify efficient means of conducting HIES, particularly in small PICTs where more efficient methodologies can be identified to balance the cost with the demand for producing highly disaggregated significant statistics.

THE REGIONALLY STANDARDISED HIES METHODOLOGY

15. The "regionally standardized" HIES methodology, which is the method that SPC has been supporting PICTs to implement since 2011[4], was developed under the guidance of a Technical Working Group[5] (TWG). The TWG held three meetings to develop various aspects of the HIES methodology. The first meeting, held in 2011, reviewed and endorsed the HIES instruments and field implementation protocols. The second meeting, held in 2013, guided the method for construction of the household consumption expenditure and income aggregates. The third, held in 2015 and inclusive of various data users, guided the HIES report structure.

16. Below, we present the main aspects of the regionally standardized HIES methodology.

Survey instruments

17. The regionally standardized HIES questionnaire consists of four modules, which include:

17.1. Module 1: Demographic information

17.1.1. General demographic information collected for each household member (person record) is captured in this module.

17.1.2. Module consists of the following sections: demographic profile; activities last week (labour force status); education status; health status; communication status; and previous household members.

17.1.3. Anthropometric (height and weight) data collection is optional and its inclusion is determined by the implementing PICT.

17.2. Module 2: Household expenditure

17.2.1. General information on the dwelling and information on household-level types of expenditure (household record) is captured in this module.

17.2.2. Module consists of: dwelling characteristics; dwelling tenure status and expenditure; utilities and communication; land and dwelling; goods and assets; vehicles and vehicle

[3] http://sdd.spc.int/en/stats-by-topic/collections
[4] *Appendix 2 shows which PICTs have adopted the regionally standardised HIES.*
[5] *The Technical Working Group comprised of: the Australian Bureau of Statistics, the Asian Development Bank, the Pacific Financial Technical Assistance Centre of the International Monetary Fund, SPC, the World Bank and a number of representatives from PICT National Statistical Agencies (FSM, Nauru, Palau and Solomon Islands).*

related expenditure; private travel (domestic and abroad); services; cash contribution to special occasions; provision of financial support; insurance and taxes; and loans.

17.2.3. Imputed rents[6] are estimated by the household based on the respondent's estimate of what they would you pay if they were to rent this dwelling.

17.2.4. Ownership of durables is reported in Module 2 and, if they were purchased in the last 12-months, the expenditure amount is also captured.

17.3. Module 3: Individual expenditure

17.3.1. Expenditure related to each household member, which are more easily captured at the individual level are collected in this module.

17.3.2. Module consists of the following sections: education; health; clothing; communication; luxury items; and alcohol, betel nut, kava and tobacco.

17.3.3. The alcohol, betel nut, kava and tobacco section was added as a "seven day recall module" as it was identified that expenditure on these goods were underreported in the diary. The collection of prevalence of use of alcohol, betel nut, kava and tobacco was also deemed appropriate given the prevalence of non-communicable diseases in the Pacific region.

17.3.4. Deprivation section, which is used to collect data to conduct consensual poverty analysis, is an optional section and its inclusion is determined by the implementing PICT.

17.4. Module 4: Household and individual income

17.4.1. All income generated by the household (income record) and its members are captured in this module.

17.4.2. Module consists of the following sections: wages and salaries; agriculture and forestry; fishing, gathering and hunting, livestock and aquaculture; handicrafts and home processed foods; non-subsistence business; property, transfer and other income; and remittances and cash gifts.

17.5. Household diary (week 1 and 2)

17.5.1. All cash and non-cash expenditure, gifts received, and home production of the household is captured through the completion of the two-week diary.

17.5.2. Module consists of the following sections: cash expenditure on food and non-food items; cash expenditure on services; goods and services received for free; home produced items by purpose (home consumption, to give away and to sell).

18. Appendix 4 presents information on the coverage and recall period for each module/section.

Sampling strategy

19. The sampling strategy depends on the country context and the domains for which the data are to be disaggregated by. Appendix 3 provides sampling information for the most recent HIES conducted by each PICT. In most cases, a two stage sampling approach (probability proportion to size[7]) is adopted with the primary sampling unit (PSU) being the enumeration area (EA). There are, however, examples where one stage (household being the PSU) and/or cluster-based sampling approaches are adopted.

20. Financial and logistical constraints occasionally result in the need to group like islands and to sample a subset of islands that are deemed to be representative of that domain. There are also cases where certain islands (or locations) are deemed to be out-of-scope due to very small populations and/or significant financial and logistical constraints.

---

[6] The value of services that an owner occupier derives from living in their own dwelling.

[7] Enumeration area household populations are recommended to be harmonised in order to maximise the likelihood of random sampling and, in most cases, enumeration areas are split or merged in order to ensure that this is the case.

21. SPC is developing guidelines to optimize sampling strategies in order to minimize design error and to conduct low-cost efficient surveys that meet data user needs. This is particularly important in small-island scenarios under the Sustainable Development Agenda, which calls for the reporting of highly disaggregated, yet significant, statistics.

22. Depending on how current the sampling frame is, some PICTs draw a sample from the most recent population and housing census. There are occasions where PICTs have conducted a full or partial household listing in advance of drawing of the HIES sample and, on other occasions, the household listing is updated within each selected EA on day one of field operations in that EA. In this situation, the selection of households is performed (using random statistical formulas) immediately prior to enumeration in each EA.

23. The regionally standardized HIES methodology adopts a 12-month continuous rolling sample in order to capture seasonal fluctuations in income, expenditure, production and consumption patterns.

24. Inverse probability weighting, adjusted for response rates, is used to derive the sampling weights.

Field schedule

25. Under the regionally standardized HIES, field operations occur continuously for a 12-month period for the reasons mentioned above. The use of the two-week diary is the main constraint that drives the field schedule as it required teams to work in an enumeration area for a period of three weeks[8]. As such, the regionally standardized HIES is broken down into 16 rounds of three weeks.

26. Field teams usually consist of one supervisor and two enumerators. The supervisor is responsible for the supervision of the field team, error checking and in-field data entry. The enumerators are responsible for conducting interviews and monitoring the completion of the diary. The number of teams required is determined by the sample size and geographic coverage.

27. Over the three week period of one round, enumerators are instructed to visit each household seven to eight times. The first four visits are designed to complete the module interviews, instruct the household to complete the diary and to monitor that the diary is being completed comprehensively. The last three-to-four visits are designed to conduct any error checking and to monitor the completion of the diary.

28. The supervisor progressively enters the module and diary data throughout each round (computer assisted field entry) as the questionnaire interviews are completed. By the end of the three-week round, all modules and diaries are entered into the system and computer-detected errors rectified.

29. In consideration of the time taken to complete the four questionnaire modules and to monitor completion of the two-week diary, each enumerator is able to interview between six and seven households per round – around 100 households per enumerator over the 16 HIES rounds.

Data capture and processing

30. The modules and diary data are captured through completion of paper-based questionnaires. The paper questionnaires are entered into a CSPro[9] data entry system under a computer assisted field entry (CAFE) scenario. The use of CAFE allows for implementation of validation checks to ensure that the data collected are consistent and of high quality. Should an error message or warning be triggered during data entry, the enumerator is instructed to return to the household to verify the data.

31. Data are processed using CSPro and adopting a two-stage process, which includes manual cleaning while referencing the questionnaire followed by computer-assisted code verification and, in some cases, imputation (top down or hot-deck).

---

[8] This allows field teams to complete the module interviews, monitor completion of the diary, to conduct in-field data entry and to return to the household to complete any error checks that the data entry system or supervisor detects.

[9] US Census Bureau (https://www.census.gov/data/software/cspro.html)

32. Upon completion of data processing, the data sets are aggregated into five records, including: person; household; income; expenditure[10] (used for national accounts); and poverty[11] (used for consumption).

Classifications

33. Occupation is classified in accordance to International Standard Classification of Occupations (ISCO-08) as recommended by the International Labour Organisation.

34. Industry is classified in accordance to International Standard Industrial Classification of All Economic Activities (ISIC) as recommended by the United Nations Statistics Division.

35. Income is classified in accordance to the Pacific Classification of Income (PACCOI) as recommended by the Pacific Community (SPC).

36. Goods and services are classified in accordance to the Classification of Individual Consumption by Purpose (COICOP) as recommended by the United Nations Statistics Division. SPC recently developed the Pacific Nutrient Database (PNDB), which maps COICOP to Food Nutrition tables to facilitate consistent and comparative analysis of HIES data for poverty and nutrition analysis. PNDB is directly linked to the COICOP, which is coded in the field and verified during data processing activities.

CHALLENGES WITH THE REGIONALLY STANDARDISED HIES METHODOLOGY

37. Despite the regionally standardized HIES meeting the multi-user needs, there are a number of inherent methodological issues with the current methodology, which range from high implementation cost and respondent burden to omission of key data items. Some of the methodological issues have been identified and addressed (e.g., the implementation of the alcohol recall when this good was identified to be underreported in the diary); some issues have only recently become apparent as the use of HIES data is further extended (e.g., into the nutrition space); and some would require major methodological overhaul, so they have been managed rather than changed.

38. The major challenges with the regionally standardized HIES methodology are summarized below.

High cost

39. As described above, the use of the two-week diary results in the need for field teams to be in an EA for a period of three weeks. The regional HIES methodology recommends good diary management practices whereby enumerators monitor that the diary is being comprehensively completed through visits to the household every two days.

40. This ultimately results in the need for more field staff increasing survey operating costs in the form of per diem (daily subsistence allowance), training cost and salaries.

Respondent and enumerator fatigue

41. The use of the diary is particularly onerous on households, especially where literacy is low or they are time poor, as it requires participation in the HIES for an intensive three-week period. It is also a burden to enumerators who are instructed to visit each household up to eight times over a single survey round.

42. The respondent and enumerator fatigue is evident when examining the number of items reported each day throughout the diary period (Figure 3). Across the seven PICTs presented in Figure 3, it can be seen that the number of transactions in diary week 2 are universally lower in week two when compared with week one. This is indicative of two potential issues. Firstly, the household is fatigued and it fails to comprehensively complete the diary over the full two week period. Secondly, field staff

[10] *Annual household expenditure = cash expenditure for use by the household + cash expenditure to give to another household + home production for use by the household + home production to give to another household + imputed rents + employment-related benefits.*
[11] *Annual household (apparent) consumption = consumption of cash purchases + consumption of home production + consumption of gifts received + imputed rents + consumption of employment-related benefits.*

are not following the recommended diary monitoring protocols, so the households are not supported (or supervised) in completion of the diary.

43. Well managed household diaries are considered to produce high quality food acquisition data (the use of a diary is often reported to be the "gold standard"), however the data show that the implementation of the diary is not well managed, ultimately undermining data quality. The reduction of transactions reported in the diary over the two-week period have adverse implication in estimating household expenditure, particularly where food is among the top two expenditure items for households in most PICTs. It also has adverse implications for data users who use food acquisition as a proxy for measuring consumption, such as in poverty and nutrition data applications.

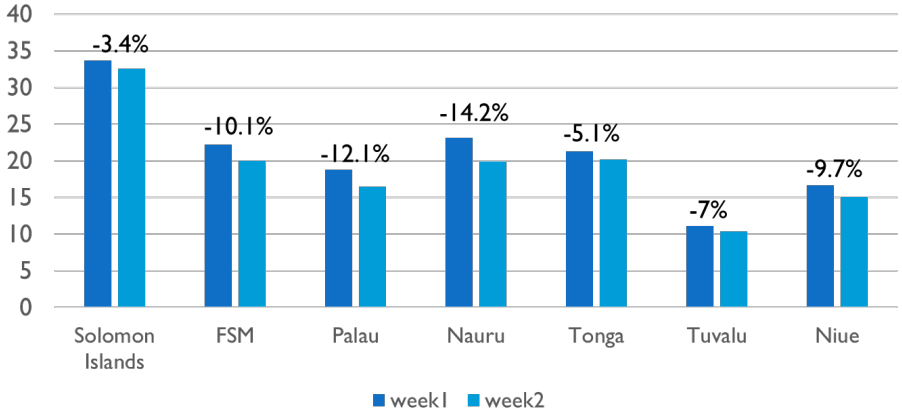

Figure 3: Average number of food transactions reported in diary week 1 versus diary week 2

Diary versus recall

44. As mentioned earlier, adjustments to the regional HIES method were made when it was identified that COICOP Division 2 (alcohol, tobacco and narcotics) were under reported in the diary.

45. Table 1 demonstrates the different annualized reported expenditure amount when using the two different sources for collecting these data: a 7-day recall and a two-week diary. Across all goods in COICOP Division 2, it can be seen that the use of the 7-day recall produces significantly greater annual expenditure estimates.

Table 1: Annual expenditure amount in COICOP Division 2 using diary and 7-day recall data sources

	Diary value	Recall value	Difference
Solomon Islands 2012 HIES	*SBD*	*SBD*	*%*
Spirits	1,280	3,110	143%
Wine	750	850	13%
Beer	28,000	165,090	490%
Tobacco	135,120	263,830	95%
Betel nuts	56,250	56,950	1%
Tonga 2015 HIES	*TOP*	*TOP*	*%*
Spirits	660	3,600	446%
Wine	270	520	93%
Beer	680	3,820	462%
Tobacco	7,800	16,800	115%
Kava	2,210	6,270	184%

Food away from home

46. Food away from home, which is defined to be food acquired and consumed away from the dwelling (e.g., restaurant, snacks at work, ceremonial feast), is anecdotally a significant source of calories in all

PICTs. The regionally standardized HIES methodology does not have a dedicated section that collects food away from homes. In Tonga, the 2009 HIES questionnaire had a dedicated section collecting expenditure on restaurants and takeaway whereas the 2015 HIES did not. The comparison of expenditure on restaurants between the two surveys in Tonga revealed a reduction in household restaurant expenditure over the period of 2009 to 2015.

47. Figure 4 shows the percentage of total food expenditure coming from COICOP Class 11.1 (restaurants and takeaway).

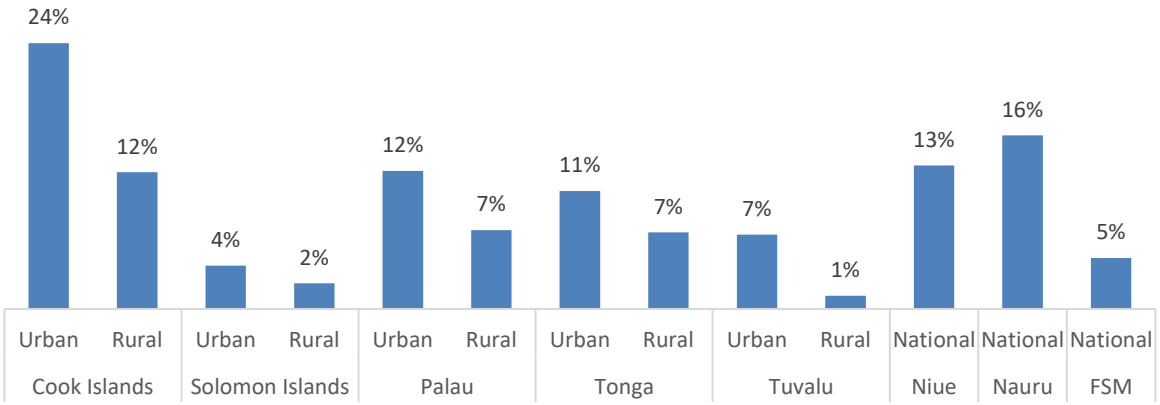

Figure 4: Proportion of expenditure in COICOP Class 11.1 over total food expenditure

48. 1,580 households (around 35 percent of sampled households) in the 2012 Solomon Islands HIES reported "pocket money" in the diary. This amounted to 5,860 transactions averaging SBD 41 per transaction and 6.7 percent of total cash expenditure reported in the diary. Whilst it's possible that pocket money was used for transport and other non-food expenditure, it's likely that a large proportion of pocket money was spent on food away from home.

Food acquisition as a proxy to estimate food consumption

49. The household diary reports food acquisition rather than consumption. Consumption estimates are necessary for poverty and nutrition analysis and, whilst the use of acquisition is a reasonable proxy for measuring consumption, it is not ideal. The issue with the diary is that there could be households that report very little acquisition, who simply consume stocks of food that the household held before the diary period, while there may be households that report a large amount of acquisition who retain stocks beyond the diary period. As such, you could have households that have a very low "apparent" consumption while others have a very high "apparent" consumption, however their extreme consumption patterns are driven by lack of acquisition throughout the diary period (consumption of food stocks) or high acquisition throughout the diary period (building of food stocks).

50. One other issue with food acquisition is the reporting of agricultural production for home consumption. The regionally standardized HIES collects information on the total harvest, by intended use (e.g., home consumption, to give away or to sell) for that diary day. That is, it does not ask for the production for consumption on that day, it asks for total production. This was established as it was thought that asking for production volume (and value) of home production for consumption on that day may result in underreporting of produce that was harvested on a prior day and held as stock until it was consumed. There may be cases where production is reported and held as stock for consumption after the diary period, thereby over estimating consumption. Conversely, there may be cases where home production stocks were produced prior to the diary period are consumed throughout the diary period, thereby underestimating consumption.

51. One solution to overcome this is through the collection of opening and closing stocks at the beginning and end of the diary period, respectively[12]. This was trialed in the Solomon Islands 2012 HIES and similar trends presented in Figure 3 above prevailed for food stocks. That is, opening stocks were, on average, universally higher than closing stocks, which indicated respondent and/or enumerator fatigue. There are also questions around the list of stock items of interest (e.g., should herbs and spices be included, or just major calorie/nutrient sources) and measurement challenges (e.g., half used bottles of sauces).

Non-standard units of measurement

52. Reporting of food acquisition quantities in non-standard units of measurement (e.g., sack of taro, string of fish, piece of fruit, bundle of cabbage) is not directly related to the regionally standardized HIES methodology – it is common across all HIES, or its equivalent – however it presents a challenge for data users, particularly when quantifying volume of apparent consumption.

53. Figure 5 shows the proportion of food items (by COICOP class) reported in non-standard units of measurement for a selection of PICTs. Whilst there are statistical methods for dealing with the conversion of non-standard to standard units of measurement, it is ideal to have a large number of transactions, by geographical domain and commodity, to ensure that the derived conversion factors are accurate.

54. Best practice would have specific collections, through market and producer surveys, which collect conversion factors (and prices) over a period of 12-months and over a wide geographic area. This would allow for the conversion of non-standard to standard units of measurement over time and geographic domain to improve food volume acquisition and apparent consumption estimates.

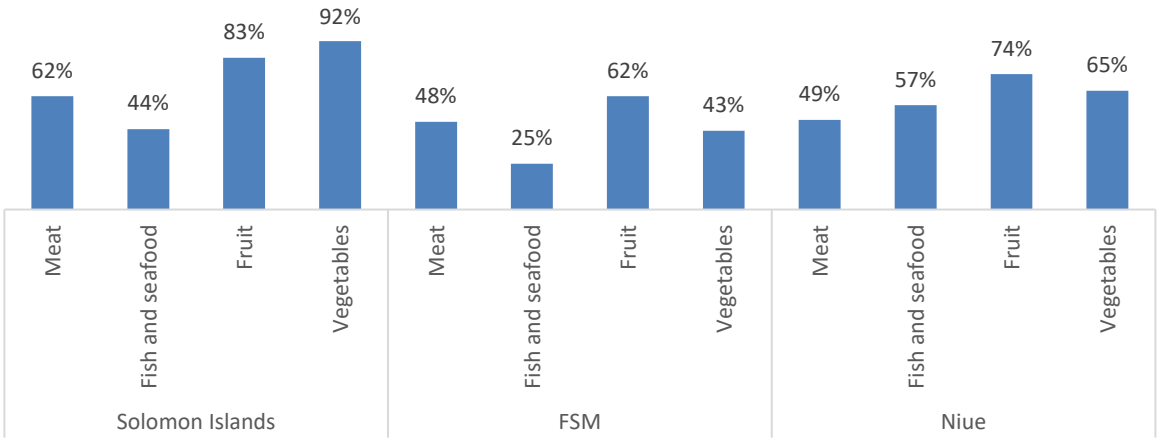

Figure 5: Proportion of transactions in non-standard units by COICOP class

Partakers

55. Partakers in meals are non-household members who consume the household's food and beverage items. The regionally standardized HIES collects information on the current location of household members, so there are data available to determine which household members are responsible for apparent consumption of the food acquired throughout the survey period. However, there is no module that collects the number of non-household members who partook in the consumption of each meal throughout the two week diary period. This may lead to over estimation of per capita (or per adult equivalent) apparent caloric intake, particularly when guests are present throughout the entire two-week diary period. Effectively, this would result in underestimation of household size when considering the number of mouths that were fed from the acquired foodstuffs.

[12] *Whereby consumption would equal: opening stock + food acquired – closing stock*

Imputed rents and consumption of fixed assets

56. Imputed rents are estimated by the household and, as much as possible, cleaned during data processing. In the Pacific region, however, there is often an insufficient rental market to use statistical models to predict imputed rent values (e.g., in Tokelau, less than 3 percent of households paid rent). There are, however, other means of estimating the value of the consumption of fixed assets (e.g., through understanding the house value and age), however these are not currently collected in the regionally standardized HIES.

57. Similarly, the current HIES methodology does not collect sufficient information to estimate the consumption of fixed assets (effectively the value of depreciation), which has implication for macroeconomic and welfare applications of HIES data. The regionally standardized HIES methodology collects the ownership of durable assets, however it does not collect the age and the purchase (or current) value of those assets.

THE RMI HIES EXPERIMENT

58. In response to the challenges with the regionally standardized HIES methodology and as demonstration of commitment to ensure that high quality data are efficiently produced, SPC, the World Bank and the Economic Policy, Planning and Statistics Office (EPPSO) of the Government of the Marshall Islands, among other partners[13], are conducting an experiment to test the optimal methodology and field implementation protocol for conducting HIES in the Pacific region. The results of the experiment will form the basis to guide the future development of the Pacific regionally standardised HIES.

59. The experiment is being conducted in RMI, from July to November 2018, with the objective to identify optimal methodologies to collect household consumption and expenditure data. EPPSO, the World Bank and SPC are contributing technically and financially. SPC's financial contribution was a co-investment by SPC and the Government of New Zealand, through the Ministry of Foreign Affairs and Trade, who are, along with EPPSO and the World Bank, gratefully acknowledged.

60. There are three main components to the experiment. The first component is testing the use of new technology in the form of using tablets to collect data through computer assisted personal interview (CAPI) and the potential use of new data backup protocols in small island states where internet connectivity is limited. The second is to test the inclusion of complementary survey modules to increase the production of complementary data through HIES so as to avoid the need for stand-alone surveys. The third component is to test new methodologies to collect consumption data through HIES. More detail on each component is provided below.

New technology

61. The RMI HIES experiment is testing the use of CAPI to collect HIES data. Given the complexity of the HIES questionnaire and the significant period of time that field teams spend in areas where internet connectivity and electrification is limited, it is necessary to test whether CAPI is an appropriate means for the capture of HIES data.

62. The experiment is testing the use of a satellite phone for data backup in remote island locations where there is no internet.

Complementary survey modules

63. In order to meet demand for more dynamic data and to eliminate the need to conduct stand-alone surveys, the below new survey modules are being tested for inclusion in the core HIES questionnaire.

---

[13] *The University of Waikato, The International Labour Organisation (ILO), the Food and Agriculture Organisation of the United Nations (FAO) and the United Nations Children's Fund (UNICEF).*

63.1. *Food away from home*: recall and diary-based modules are being tested to encourage more comprehensive reporting of food acquired and consumed away from the dwelling.

63.2. *Partakers*: recall and diary-based modules are being tested to capture partakers in meals in order to improve consumption estimates.

63.3. *Labour module*: newly designed module in accordance with the resolution concerning the International Classification of Status in Employment (ICSE).

63.4. *Food Insecurity Experience Scale (FIES)*: to measure experiences of moderate-to-severe food insecurity and to report against SDG indicator 2.1.2.

63.5. *Shocks*: household exposure to shocks through adverse environmental, economic and social change.

63.6. *Disability*: addition of the Washington Group six questions to identify vulnerable populations.

63.7. *Improved modules*: enhanced health and fisheries modules and improved means to capture information to better estimate household consumption of fixed assets.

Diary versus recall

64. There are five experimental arms, which are used to determine the efficacy of collecting consumption data through diary and 7-day recall means. The experimental arms are described below.

64.1. *Recall CAPI*: household members are asked to recall if they acquired and consumed food and non-food items in the last seven days; they are asked the number of partakers in each meal in the last seven days; and they are asked if the household members acquired food away from home in the last seven days. These answers are all provided by the respondent and entered into the tables by the enumerators.

64.2. *Bounded recall CAPI*: this is the same as *Recall CAPI*, however the enumerator will visit the household seven days before conducting the recall interview to ask the household to try to remember what was acquired/consumed over the next seven day period leading up to the interview.

64.3. *Diary CAPI – high monitored*: household members are asked to keep a 14-day diary of all food and non-food items that the household acquired each day; they are also asked to record if they acquired and consumed food away from home; the enumerator will visit the household every second day to enter the diary data into the tablet and to ensure that the household is completing the diary comprehensively.

64.4. *Diary PAPI – high monitored*: this is the same as *Diary CAPI – high monitored*, except the diary data is not entered into the tablet during the visit to the household; it is entered into a data entry system by EPPSO after each round; the enumerator will still visit the household every second day to ensure that the diary is being completed.

64.5. *Diary PAPI – low monitored*: this is the same as *Diary PAPI – high monitored*, however the enumerator will only visit the household to drop the diary off on day one, then pick up the first week diary on day seven and drop the second week diary, then pick up the second week diary on day 14. This is a poorly managed diary without regular monitoring of the household to ensure the diary is being completed.

65. The results of the RMI HIES experiment are expected to guide the development of an updated regionally standardised HIES, generally answering the following questions:

65.1. Is CAPI an appropriate data capture means for HIES?

65.2. Do the new survey modules produce the data required by the user?

65.3. Does diary or recall produce more comprehensive consumption data and which implementation protocol will result in the production of high quality consumption data?

66. Field work for the RMI HIES Experiment will finish in November and the results will be analysed and reported on up until April 2019. It is at this time when conclusions will be made as to the optimal methodology for conducting HIES in the Pacific region. In drawing of the conclusion, all data applications (e.g., for national accounts, CPI, poverty, nutrition and food security) will be taken into consideration to ensure that the new HIES methodology continues to meet its multi-user needs.

RECOMMENDATION

67. Pacific Statistics Methods Board is invited to:

67.1. Note the history of household income and expenditure surveys (HIES) in the Pacific region;

67.2. Note the current regionally standardised HIES methodology;

67.3. Note the key challenges in conducting HIES under the "regionally standardised" methodology in the Pacific region;

67.4. Note the HIES methodological experiment that is currently being conducted in the Republic of the Marshall Islands ("the RMI HIES experiment"); and

67.5. Endorse the recommendation for PMSB to review the results of the RMI HIES experiment at PMSB's third meeting to be held in 2019 in order to make an informed recommendation to the Pacific Island countries and territories on the optimal methodology to conduct HIES.

Appendix 1: Inventory of HIES conducted in the Pacific region

Table 2: Number of household income and expenditure surveys ever conducted in the Pacific region

Country	Survey year	Country	Survey year	Country	Survey year	Country	Survey year	Country	Survey year	Country	Survey year
ASM	1982	FJI	1943	GUM	2005	NRU	2006	TKL	2015	WLF	1982
ASM	1988	FJI	1944	KIR	1996	NRU	2012	TON	2000	WLF	2005
ASM	1995	FJI	1959	KIR	2006	PLW	2006	TON	2009	WSM	1997
ASM	2005	FJI	1965	MHL	2002	PLW	2014	TON	2015	WSM	2002
ASM	2015	FJI	1968	MNP	1998	PNG	1975	TUV	1994	WSM	2008
COK	1986	FJI	1972	MNP	2005	PNG	1996	TUV	2004	WSM	2013
COK	1998	FJI	1973	MNP	2016	PNG	2009	TUV	2010		
COK	2005	FJI	1977	NCL	1969	PYF	1986	TUV	2015		
COK	2015	FJI	1983	NCL	1981	PYF	2000	VUT	1985		
FSM	1989	FJI	1990	NCL	1991	PYF	2015	VUT	1997		
FSM	1998	FJI	2002	NCL	2008	SLB	1992	VUT	2006		
FSM	2005	FJI	2008	NIU	2002	SLB	2005	VUT	2010		
FSM	2013	FJI	2013	NIU	2015	SLB	2012				

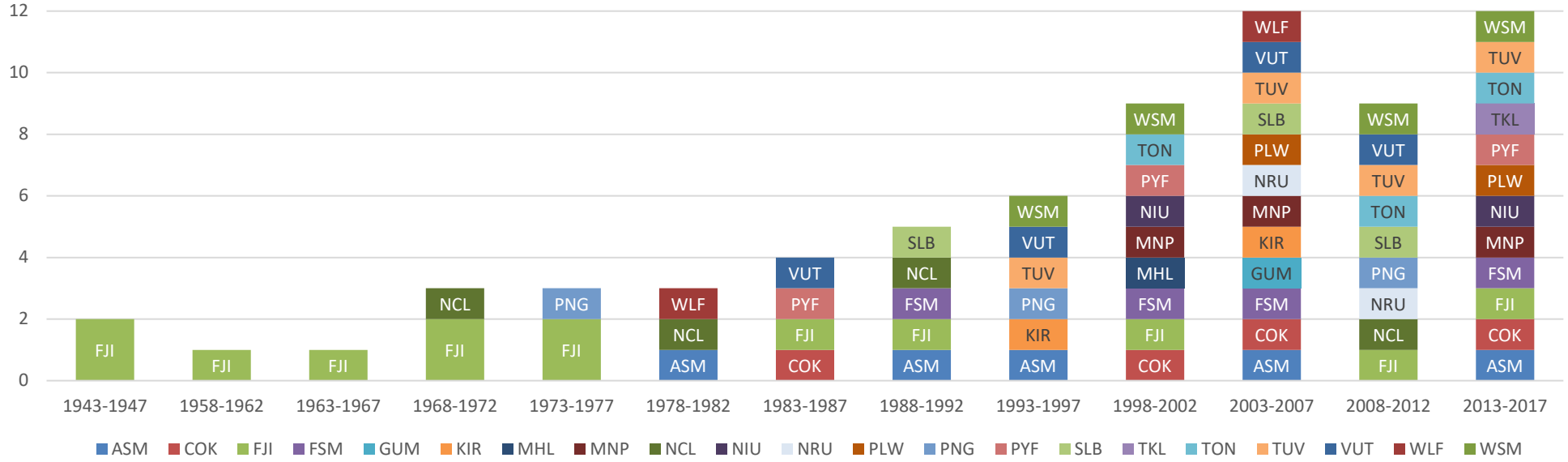

Figure 6: Number of household income and expenditure surveys conducted in the Pacific region, in 5-yearly intervals and by Pacific Island country and territory

Appendix 2: HIES cost and next scheduled survey

Table 3: Previous HIES and cost (total, per sampled household and per capita) and next scheduled HIES, by PICT

	Last HIES	Regionally standardised?	Total cost (USD)	Cost per sampled household (USD)	Cost per capita (USD)	Next HIES
ASM	2015	No	-	-	-	2025
COK	2015	Yes	195,000	244	13	Unknown
FJI	2013	Partially	-	-	-	2019
FSM	2013	Yes	416,000	250	4	2019
GUM	2005	No	-	-	-	2018
KIR	2006	No	625,510	313	5	2019
MHL	2002	No	640,000	800	12	2019
MNP	2016	No	-	-	-	Unknown
NCL	2008	No	-	-	-	2018 (ongoing)
NIU	2015	Yes	42,250	264	28	Unknown
NRU	2012	Yes	-	-	-	2019
PLW	2014	Yes	-	-	-	2019
PNG	2009	No	-	-	-	2019
PYF	2015	No	-	-	-	Unknown
SLB	2012	Yes	3,000,000	651	4	2020
TKL	2015	Yes	32,500	271	23	2019
TON	2015	Yes	321,200	176	3	2020
TUV	2015	Yes	170,400	237	17	2021
VUT	2010	No	786,922	262	3	2019
WLF	2005	No	-	-	-	2019
WSM	2013	Partially	570,000	285	3	2018 (ongoing)
			Mean	**341**	**10**	

Appendix 3: Sampling information on the most recent HIES conducted by each PICT

Table 4: Sampling information on the most recently conducted HIES in each PICT

Country	HIES	Collection period	Collection phases	Sampling frame	Sampling approach	PSU	Total sample size (HHs)	Rural sample size (HHs)	Urban sample size (HHs)	Total sample fraction (%)	Rural sample fraction (%)	Urban sample fraction (%)	Food data source
ASM	2015	-	Continuous	2010 census	2 stage	EA	1,838	-	-	20%	-	-	1-week diary
COK	2015-2016	11/15 to 11/16	Continuous	2011 census	2 stage	EA	691	421	270	15%	33%	8%	2-week diary
FJI	2013	-	Continuous	-	2 stage	EA	6,020	-	-	3%	-	-	-
FSM	2013-2014	07/13 to 07/14	Continuous	2010 census	2 stage	EA	1,664	957	707	10%	10%	11%	2-week diary
KIR	2006	10/06 to 11/06	One shot	1995 census	2 stage	EA	1,546	1,216	330	11%	14%	6%	2-week diary
MHL	2002	-	-	-	-	-	-	-	-	-	-	-	2-week diary
MNP	2016	-	-	2014 HH register	-	HH	-	-	-	-	-	-	2-week diary
NCL	2008	-	-	2004 census	2 stage	EA	3,696	2,160	1,536	6%	-	-	2-week diary
NIU	2015-2016	10/15 to 10/16	Continuous	2011 census	-	-	156	-	-	30%	-	-	2-week diary
NRU	2012-2013	07/12 to 06/13	Continuous	2011 census	1 stage	HH	280	-	-	17%	-	-	2-week diary
PLW	2014	11/13 to 10/14	Continuous	2012 census	2 stage	EA	869	316	553	15%	32%	11%	2-week diary
PNG	2009-2010	-	Continuous	2000 census	2 stage	EA	4,191	2,268	1,923	-	-	-	2-week diary
PYF	2015	11/14 to 10/15	Continuous	2012 census	2 stage	EA	3,729	2,604	1,125	5%	7%	3%	2-week diary
SLB	2012-2013	10/12 to 10/13	Continuous	2009 census	2 stage	EA	4,479	3,206	1,272	4%	4%	7%	2-week diary
TKL		05/15 to 02/16	4 phases	2013 HH listing	1 stage clustered	HH	119	-	-	47%	-	-	2-week diary
TON	2015-2016	10/15 to 10/16	Continuous	2015 HH listing	2 stage	EA	1,803	479	1,324	10%	12%	10%	2-week diary
TUV	2015-2016	10/15 to 10/16	Continuous	2015 HH listing	1 stage clustered	HH	706	328	378	38%	33%	43%	2-week diary
VUT	2010	10/10 to 12/10	One shot	2009 census	2 stage	EA	4,377	3,314	1,063	9%	9%	9%	2-week diary
WLF	2006	06/05 to 05/06	Continuous	2003 census	2 stage	EA	1,025	-	-	34%	-	-	2-week diary
WSM	2013	04/13 to 03/14	4 phases	2011 census	2 stage	EA	2,348	1,858	490	8%	8%	9%	2-week diary

Appendix 4: Information on the regionally standardised HIES modules

Table 5: Coverage and reference period of each section in the regionally standardised HIES questionnaire

Module / section	Coverage	Reference period
Module 1: Demographic information		
Demographic profile	All current HH members	Not applicable
Activities last week (labour force status)	Age 15+	7-days
Education status	Age 3+	Not applicable
Health status	All current HH members	Not applicable
Communication status	Age 10+	30-days
Previous household members	Previous household members	12-months
Module 2: Household expenditure		
Dwelling characteristics	Dwelling	Not applicable
Dwelling tenure status and expenditure	Household	30-days
Utilities and communication	Household	30-days and 12-months
Land and dwelling	Household	12-months
Goods and assets	Household	12-months
Vehicles and vehicle related expenditure	Household	30-days and 12-months
Private travel (domestic and abroad)	HH and individuals	90-days and 12-months
Services	Household	12-months
Cash contribution to special occasions	Household	12-months
Provision of financial support	Household	12-months
Insurance and taxes	Household	12-months
Loans	Household	12-months
Module 3: Individual expenditure		
Education	HH and non-HH members	12-months
Health	HH and non-HH members	90-days
Clothing	HH and non-HH members	90-days
Communication	HH and non-HH members	30-days and 12-months
Luxury items	HH and non-HH members	12-months
Alcohol, betel nut, kava and tobacco	All current HH members	7-days
Module 4: Household and individual income		
Wages and salaries	All HH members	12-months
Agriculture and forestry	Household	90-days
Fishing, gathering and hunting, livestock and aquaculture	Household	90-days
Handicrafts and home processed foods	Household	12-months
Non-subsistence business	Household	12-months
Property, transfer and other income	Household	12-months
Remittances and cash gifts	Household	12-months
Household diary		
Cash expenditure on food and non-food items	Household	1-day
Cash expenditure on services	Household	1-day
Goods and services received for free	Household	1-day
Home produced items	Household	1-day