

**Report of the technical regional workshop on the analysis of
national household survey data to inform SDG Target 2.1
indicators**

04 to 08 November 2019

Nadi, Fiji

Nathalie Troubat, Edith Faaola

November 2019



ACRONYMS

CAPI	Computer Assisted Personal Interviewing
DEC	Dietary Energy Consumption
FAFH	Food consumed away from home
FAOSAP	FAO Sub regional office for Pacific
FIES	Food Insecurity Experience Scale
GS	Government statistician
HIES	Household Income and Expenditure Survey
MDER	Minimum Dietary Energy Requirement
PAPI	Paper and Pencil Interviewing
PICs	Pacific Island Countries
P-SPAFS	Pacific Strategic Plan for Agricultural and Fisheries Statistics
RMI	Republic of Marshall Islands
SDD	Statistics for Development Division
SDG	Sustainable Development Goals
SPC	The Pacific Community
SBS	Samoa Bureau of Statistics
TCP	Technical Cooperation Program
VNR	Voluntary National Review

EXECUTIVE SUMMARY

In context of the two year Technical Cooperation Program Project (TCP/SAP/3705) developed in 2018 and aiming at strengthening national capacities to monitor SDG Target 2.1¹, the FAO Sub-Regional office for the Pacific, organized a one-week technical regional workshop on the analysis of national survey data to inform SDG Target 2.1.

The aim of the workshop was to expose representatives from National Statistics Office of Niue, Tuvalu, Nauru, Fiji, and Cook Islands (along with a representative from Ministry of Agriculture from Cook Islands) to methodologies and tools developed by FAO to estimate SDG Target 2.1 indicators (SDG 2.1.2 – Prevalence of undernourishment and SDG 2.1.2 – Prevalence of severe and moderate food insecurity based on the Food Insecurity Experience Scale (FIES)).

The SPC's Statistics for Development Division (SDD) as part of his mandate to strengthen the capacities of national statistical systems and social and economic planning agencies to supply data has been working closely with National Statistics Offices (NSOs) to build capacity and provide technical assistance on data collection, analysis and dissemination. Its current work aiming at standardizing HIES methodology in the region, is complimentary to the work planned for this TCP and an invaluable partnership in providing support to Pacific countries. Two representatives of SDD, Bertrand Buffiere and Michael Sharp, were therefore invited to participate to the workshop to share the results of a pilot methodology conducted in the Republic of Marshall Islands (RMI) and to give insight on the work that has been done in the Pacific using HIES. They both acted as facilitators of the workshop together with Nathalie Troubat, International consultant expert in food security and nutrition statistics and Edith Faaola, FAO consultant under TCDC/TCCT².

The workshop took place in Nadi, Fiji from 4th to 8th of November 2019. It was divided into theoretical and practical sessions during which, whenever available and quality of the data allowed, the food and the FIES data collected in the most recent survey conducted in targeted countries were analyzed to derive SDG Target 2.1 indicators as well as other food security and nutrition indicators using ADePT-FSM. Analytical software such as STATA and R were also used during the workshop.

Eight high level representatives of the National Statistical Offices (main stakeholders of the project) and one representative of the Ministry of Agriculture for Cook Islands participated in the workshop. The Government Statistician of Tuvalu was not able to attend due to not receiving

¹.SDG Target 2.1: “By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round”.

² FAO partnership program for the use of experts for TCDC (Technical Cooperation among Developing Countries) and TCCT (Technical Cooperation among Countries in Transition).

government clearance to attend the workshop. Representatives from Nauru experienced delays in their travel to Nadi and were not able to participate in the first day of the workshop.

During the one-week workshop, the main lines of the TCP were presented as well as the various tools, survey instruments and methodologies developed by FAO or SPC to assist countries in monitoring SDG and collect data. Working groups were organized beforehand to ensure there was a resource person assigned to work with participants from each country. There was an equal balance between plenary and working group sessions where theory and methodologies were presented for each indicator before countries and resource people worked on country data.

The opportunity given to the participants to view and handle their own survey data allowed them to feedback into some of the aspects that could still be improved such as conversion factors, data collection and non-standard unit measurement challenges. Participants committed to return home and have another look at the conversion factors to see commodities that may need some extra time to verify and send updated conversions to FAO team. In the case of Fiji where they are in the stage of data collection, the expectation for them in terms of the workshop was to give them an opportunity to use R and Shiny tools to analyze some FIES data they have already collected thus far and to use other country experiences to help them anticipate potential challenges that may arise in deriving SDG 2.1.1 as they are using both PAPI diary and CAPI recall method to collect expenditures.

At the end of the week-long workshop, a summary of the theoretical concepts behind SDG Target 2.1 was presented and discussions around each country's agenda related to SDG Target 2.1 monitoring took place. Representatives from each country were given an opportunity to share their experience with their own HIES data collection and reflect on what was learned during the week and how they could improve future HIES in their countries.

As resource partners, SPC brought in crucial experiences and feedback as they are the main counterparts helping the Pacific countries who are conducting HIES. They assist greatly with processing, editing, and cleaning of the data in preparation for further analysis. The workshop gave SPC an opportunity to take the data a step further to deriving food security indicators whereas before they were primarily focused on deriving poverty and hardship indicators and CPI rebase as HIES was traditionally designed for. SPC expressed their gratitude for an effective partnership with FAO in creating synergies that will benefit member countries and to further establish sustainability by training selected NSO persons who could be trained in this capacity to ensure long term sustainability in the region.

ACTIVITIES

The workshop was designed to be informal and very technical, hence giving as much space as possible for discussions with and between countries. The five days were divided between plenary sessions and working group sessions to really allow countries adequate time to handle the data, ask questions and discuss approaches to analysis that was appropriate and in the context of each country as the participants are the experts in the local knowledge of their own countries.

On the first day, Mr. Kimray Vaha, the Government Statistician of Niue Bureau of Statistics opened the week long workshop with a prayer. As the host country Fiji, Mr. Mosese Qaloewai of the Fiji Bureau of Statistics delivered welcome remarks to participants and shared his enthusiasm and expectations for the workshop. Mr Michael Sharp, economist of SPC offered opening remarks citing the timeliness and importance of the workshop as many countries in the Pacific have recently or will be in the near future conducting HIES. Participants were given the opportunity for introductions and Ms Nathalie Troubat delivered the workshop remarks and set the stage for the main objectives of the workshop and the importance of SDG monitoring recapping the main lines of the TCP and the connection of this workshop to output 3³ of the TCP. Workshop agenda was presented and adopted by all.

The second session in the morning were composed of 3 presentations. First presentation displayed the discussion around the SDG monitoring and where each country stands with respect to their Voluntary National Review showing a timeline for Pacific countries (up to 2021) who had already presented and those who are planning to present their VNR. A recap of SDG's was presented along with the indicators FAO is custodian. With this overview, an introduction to the SDG Target 2.1 monitoring was presented including a review on its evolvement from MDG and where it now sits in the SDG agenda. Introduction to the 2 indicators (SDG 2.1.1 & 2.1.2) for this target were explained and differentiated. The final presentation for this session was centered on the methodology for SDG 2.1.1, measuring the prevalence of undernourishment.

The third and fourth sessions of the workshop started with a presentation on data collected in household surveys to estimate SDG 2.1.1 and other food security indicators explaining repurposing of data collected from HIES diary in order to estimate SDG 2.1.1. It also outlined the differences in acquisition, consumption, and intake of food and estimation procedures for estimating Food Away From Home (FAFH). Michael Sharp also presented the results of the RMI experiment along with challenges and the Pacific Methods Board's recommendation following that experiment for member countries. In summary the recommendation was that the decision to adopt the CAPI 7 day

³ Output 3: "National capacities of PICs strengthened to produce SDG indicators 2.1.1 and 2.1.2 and other food security and nutrition indicators derived from household surveys".

recall method or to stay with the PAPI 14 day diary method was entirely up to the country but that certain considerations should be taken into account. In the end the results from the RMI experiment seemed to lean towards CAPI 7 day recall as there was really no huge differences in the results using CAPI 14 day diary vs CAPI 7 day recall. The real difference lies in the cost of administering the two methods. The CAPI 7 day recall cut survey costs by at least 60%. This opened up to a discussion among participants on their own experiences, challenges, apprehensions and future HIES in their respective countries.

The second day of the workshop began with a presentation on the estimation of the Minimum Dietary Energy Requirement (MDER), parameter needed for the estimation of the prevalence of undernourishment. The presentation looked at the requirements needed to estimate the MDER and building of the model of energy distribution in a country. This presentation led into the first hands on exercise for participants. Michael worked with participants from Cook Islands, Edith worked with participants from Niue, and Nathalie and Bertrand worked collectively with participants from Tuvalu, Nauru, and Fiji. The purpose of the exercise was to estimate the MDER in each participating country using data from their most recent national household survey. The afternoon session introduced the ADePT-FSM tool and the four main input files needed to run ADePT-FSM. Bertrand presented the process from taking the raw food data from data collection and turning it into a working file that can be used. This presentation shed light on the common mistakes that occur during field work, coding and data entry. Information on the editing and cleaning process was also shared as a lot of this work is being performed by SPC and therefore this session took some time as countries shared experiences and challenges in data collection and also possible solutions on how to improve data collection in a future HIES. Day 2 ended with working groups starting the work on preparing the files needed to run ADePT-FSM.

Day 3 was a full day of hands on working groups generating files for ADePT-FSM and estimation of the prevalence of undernourishment. These sessions gave participants an opportunity to use STATA⁴ in creating the four files namely HH (containing information on household characteristics), HM (containing information on household members), FOOD (containing information on food consumption), FNT (containing nutrient conversion factors needed to convert quantities into calories and other nutrient values). At the end of the day each working group had created the four files. However, the main output for day 3 was to derive SDG 2.1.1, the prevalence of undernourishment in their countries.

Day 4 started with running ADePT-FSM showing participants all the different tables that can be produced from ADePT using a selected country data. Time was taken in interpreting some of the statistics in the tables and what they mean with respect to food security. In the following session

⁴ A STATA 15 license was provided to each participant that did not have access to a formal license.

Nathalie introduced the Food Insecurity Experience Scale (FIES) and the theoretical concept behind the SDG indicator 2.1.2 (the prevalence of moderate and severe food insecurity based on the FIES). Introduction to the statistical validity test of the FIES was presented also using R. The day closed with working groups using their own country (where possible) data to run R and come up with preliminary SDG 2.1.2. Those who did not have data for FIES used a demo country data for this exercise. The FIES-Shiny-App was also introduced at the end of the day and was very well received by the participants who welcome the user-friendliness and flexibility of the application compared to the R syntax.

The final day of the workshop summarized the concepts that were learned throughout the week with respect to SDG 2.1.1 & 2.1.2. Discussions took place around the table regarding each country's agenda related to SDG Target 2.1 monitoring and next steps.

RESULTS

The preliminary analysis of the food data found that as it stands none of the survey can be used to produce a relevant estimate on SDG 2.1.1 or perform a food consumption analysis. The preliminary estimate for the Dietary Energy Consumption (DEC) (one of the main parameter in the estimation of the prevalence of undernourishment) and food consumption patterns in Tuvalu were found acceptable but according to the representative from NSO in Tuvalu some conversion factors needed to be revised. The preliminary DEC for Niue and Cook Islands were found too low and SPC will support Cook Islands to go again through the analysis and Edith will provided needed support to Niue. If no reliable information is coming out from this additional analysis, results will not be published.

As far as SDG 2.1.2 is concerned. Of the five countries, preliminary data on the FIES were available only for Fiji (collected in the on-going 2019 Household Income and Expenditure Survey) and Cook Islands (collected in the 2019 on-going Labor Force Survey). Results for Fiji found that the scale seems to perform relatively well in Fiji and there may be no need for further adaptation of the scale. In Cook Islands the small size of the sample did not allow for a reliable analysis of the performance of the scale. However more than 90% of the individuals that were interviewed answered no to the 8 questions which seems to point towards very low or inexistent severe food insecurity in Cook Islands.

All participants were grateful for the workshop and the information and hands on experience they received. In summary Cook Islands identified areas in their recent HIES where data collection was not well reported especially with FAFH with respect to certain sub regions in their country. They support a switch to CAPI 7 day recall for a future HIES. The workshop helped them see the importance of collecting good data for deriving defendable results for national, regional, and global monitoring. Participants from Nauru shared that they will be carrying out a HIES in 2020 and

depending on budget they will decide which method they will use for diary (PAPI or CAPI). Toakai from Tuvalu said he will take the preliminary results back to the GS for discussion and further action. He will relook at the conversions and revert back to FAO team once they are finalized. Nathalie shared that the main issue with Tuvalu's recent diary is the very low number of records recorded over 14 days that may seem like there is a bit of under reporting although at national level the pattern of the results looks reasonable, this may present challenges in disaggregating the data to lower levels. Participants from Niue acknowledged that there may have been some under reporting and realize that there is a bit of work that still needs to be done. The biggest takeaway was learning what the numbers mean and this will be crucial in conveying information for ministers and other department heads. They committed to relook at the conversions and report back to FAO team. Participants from Fiji shared that not too many NSO staff know about the tools developed by FAO and they will share this with their colleagues. Since Fiji has chosen to use both PAPI diary and CAPI recall methodologies for their current HIES, the workshop has given them some insight into potential challenges in data processing that may arise so they can start thinking ahead about how they will approach these challenges.

Partners from SPC expressed gratitude in partnering with FAO in monitoring SDG Target 2.1. As the focal point in the Pacific for member countries they also see the great need to help countries improve their data collection. They see the need to have better precision in food measurements as this greatly affects calories and missing even small data can impact results. An area of great concern for them was really working together with countries to improve all aspects of HIES as the risk of running a survey and then at the end of the day not being able to report because of methodological challenges would be a great waste of resources. Of equal importance is the importance to meet data demands without undermining the core outputs of HIES which is CPI, poverty, GDP and not overloading HIES questionnaires. They also reaffirm SPC's commitment in supporting member countries regardless of whatever methodology they choose for HIES.

Presentation of certificates for participation were given by Michael and Nathalie to all participants. Participants presented the workshop instructor Nathalie with a gift to show their appreciation, a prayer to officially close the week-long workshop was offered by Government Statistician of Niue Mr. Kimray Vaha and the technical workshop was officially closed on 08 November 2019.

FOLLOW UP ACTION

As main follow up action participant from Tuvalu, Cook Islands and Niue committed to review the conversion factors, and perform the analysis again together with FAOSAP and SPC to derive food consumption indicators.

Based on reliability of the results a country profile for Tuvalu, Niue and Cook Islands will be prepared.

Cook Islands and Fiji were invited to check again the validity of the Food Insecurity Experience Scale in their respective countries as soon as the complete dataset is available.

Annex 1. Agenda

Monday 4 November 2019		
8.30 – 10.00	<ul style="list-style-type: none"> • Opening prayer to the regional workshop • Opening words from representative of NSO of Fiji • Opening words from FAO and SPC • Presentation of the participants • Presentation of the workshop and adoption of the agenda 	Plenary session
10.00 – 10.30	<i>COFFEE BREAK</i>	
10.30 – 12.30	<ul style="list-style-type: none"> • Discussion around the SDG monitoring and where countries stand with respect to their Voluntary National Review • Introduction to SDG Target 2.1 indicators • Introduction of the prevalence of undernourishment – SDG indicator 2.1.1 	Plenary session
12.30 – 13.30	<i>LUNCH</i>	
13.30–15:00	<ul style="list-style-type: none"> • Use of food consumption data collected in household surveys to estimate SDG 2.1.1 and other food security indicators • Discussion around the food consumption data collected in HIES, main limitations, challenges 	Plenary session
15:00 – 15:30	<i>COFFEE BREAK</i>	
15:30 – 17:00	<ul style="list-style-type: none"> • How to improve survey design - presentation of the results of the RMI experiment 	Plenary session
Tuesday 5 November 2019		
08.30 – 10.00	<ul style="list-style-type: none"> • The main parameters needed to estimate the prevalence of undernourishment – Minimum Dietary Energy 	Plenary session
10.00 – 10.30	<i>COFFEE BREAK</i>	
11.00 – 12.30	<ul style="list-style-type: none"> • Exercise: estimation of the MDER of each participating country using demographic and anthropometric information 	Working group
12.30 – 13.30	<i>LUNCH</i>	
13.30 – 15.30	<ul style="list-style-type: none"> • Introduction to ADePT-FSM and the four main input files • From raw food data to working file – preparatory work performed by SPC (person and cover files) 	Plenary session
15:30 – 16:00	<i>COFFEE BREAK</i>	
16.00 –	<ul style="list-style-type: none"> • Preparation of files needed to run ADePT – HH and HM 	Working
Wednesday 6 November 2019		
8.30 – 10.00	<ul style="list-style-type: none"> • From raw food data to working file – preparatory work performed by SPC (HIES_poverty file) 	Working group

10.00 – 10.30	<i>COFFEE BREAK</i>	
11.00 – 12.30	<ul style="list-style-type: none"> The main parameters needed to estimate the prevalence of undernourishment – estimation of the average dietary energy consumption 	Working group session (STAT)
12.30 – 13.30	<i>LUNCH</i>	
13.30 - 15.30	<ul style="list-style-type: none"> The main parameters needed to estimate the prevalence of undernourishment – estimation of the coefficient of variation 	Working group
15:30 – 16:00	<i>COFFEE BREAK</i>	
16.00 – 17.30	<ul style="list-style-type: none"> Estimation of SGD 2.1.1 	Working session (STAT)
Thursday 7 November 2019		
8.30 – 10.00	<ul style="list-style-type: none"> Run ADePT-FSM Discussion around the results 	Plenary session
10.00 – 10.30	<i>COFFEE BREAK</i>	
10.30 – 12.30	<ul style="list-style-type: none"> Introduction to the Food Insecurity Experience Scale and the theoretical concept behind the SDG indicator 2.1.2 (the prevalence of moderate and severe food insecurity based on the Food Insecurity Experience Scale) Introduction to the statistical validity test of the Food Insecurity Experience Scale 	Plenary session
12.30 – 13.30	<i>LUNCH</i>	
13.30 – 17.30	<ul style="list-style-type: none"> Estimation of the SDG indicator 2.1.2 - hands on using demo file 	Working session (R)
Friday 8 November 2019		
9.00 – 12.30	<ul style="list-style-type: none"> Summary of the theoretical concepts behind SDG Target 2.1 indicators – what we learned Discussion around country's agenda related to SDG Target 2.1 monitoring – what is next Wrap up and conclusions Closing ceremony 	Plenary session
12.30 – 13.30	<i>LUNCH</i>	

Annex 2. List of participants

	PICs	Title	First Name	Family Name	Job Title	Organization	Email
1	Cook Islands	Mr	Tearoa	Iorang	Director of Policy, Planning & Projects	Ministry of Agriculture	Tearoa.iorangi@cookislands.gov.ck
2	Cook Islands	Mr	Jim	Nimerota	Deputy Government Statistician	Cook Islands Statistics Office	Jim.Nimerota@cookislands.gov.ck
3	Fiji	Mr	Mosese	Qaloewai	Government Statistician	Fiji Bureau of Statistics	mqaloewai@statsfiji.gov.fj
4	Fiji	Ms	Harieta	Sefeti	Statistician - Household Survey Unit	Fiji Bureau of Statistics	hsefeti@statsfiji.gov.fj
5	Republic of Nauru	Mr	Ramrakha	Detenamo	Senior Statistician	Nauru Bureau of Statistics	ramrakhadetenamo@gmail.com
6	Republic of Nauru	Ms	Trixi	Thoma		Nauru Bureau of Statistics	trixi.teabuge@gmail.com
7	Niue	Mr	Kimray	Vaha	Government Statistician	Statistics office Niue, Economic Planning Development and Statistics	Kimray.Vaha@mail.gov.nu ; statsniue@mail.gov.nu
8	Niue	Ms	Dana	Kulupa	Livestock Officer - Animal Health & Livestock Division	Statistics office Niue, Economic Planning Development and Statistics	Dana.Kulupa@mail.gov.nu
9	Tuvalu	Mr	Toakai	Puapua	Government Statistician	Central Statistics Division	toakaipuapua@yahoo.com
10	SPC	Mr	Michael	Sharp	Economic statistics and micro data specialist	Statistics Development Division	michaels@spc.int

11	SPC	Mr	Bertrand	Buffiere	Statistical methods advisor	Statistics Development Division	bertrandb@spc.int
12	Samoa	Ms	Edith	Faaola	Assistant Chief Executive Officer – Economics Statistics Division	Samoa Bureau of Statistics	edith.faaola@sbs.gov.ws
13	FAO	Ms	Nathalie	Troubat	Food Security Expert	FAO	nathalie.troubat@fao.org