



TADEP+ Collaborative Research Grants mid-term reporting template

This Collaborative Research Grant funding is designed to enable newly-identified opportunities for cross project collaboration, cross-project capacity building, new activities that could directly address high-level targets of the Australian aid program and in doing so, enhance the value of the Program beyond the sum of its five component projects.

This mid-term reporting template is provided to capture the key activities, outputs, emerging impacts and learnings to date from the Collaborative Research Grant project.

Summary (as per application)	
Title	Initiating vegetable cultivation to improve nutrition in Bougainville.
Goal	To improve vegetable production and nutrition for cocoa farmers through targeted education and training
Summary	We will pilot an intervention aimed at improving the diets of people living in 10 villages (South, Central and North Bougainville) identified from the survey results (HORT/2014/094) that have a high prevalence of severe stunting and childhood malnutrition as well as 42 percent accessing unsafe water. The 2019 IFPRI report Papua New Guinea: Survey Report: Rural Household Survey on Food Systems noted the link between agricultural productivity with overall consumption and nutrition outcomes concluding that households in Southern Bougainville are not consuming sufficient calories or protein to sustain a healthy life. The IFPRI report identified that Starches are the main food group being consumed (roots, tubers and sago) and that the majority of households in Southern Bougainville did not treat their water. A baseline survey will be administered documenting current food choices and diets. We already have the data about unsafe water sources from the Livelihood Survey which included the villages in this intervention. The intervention includes three components: - (1) building capacity for Government staff in nutrition, safe water and gardening cultivation (2) providing nutrition and gardening education to the selected villages and (3) delivering Family Farm Team workshops to the selected villages. The Departments of Health and Agriculture have nominated will employ 19 staff to be trained facilitators to deliver a nutrition and vegetable gardening program as well as provide monthly support, mentoring and data collection using CommCare (tablets). The FFT program will be a 1-day workshop in each village



	delivered by accredited FFT trainers. At the end of 12 months we will re-survey the villages about their food choices and diets to see if a change occurred.
Number and title of projects with which this application was associated	HORT/2014/094: Developing the cocoa value chain in Bougainville ASEM-2014-095: Improving opportunities for economic development for women smallholders in rural PNG
Partner organisations	ABG Department of Primary Industries (DPI), ABG Department of
Program objectives this activity addressed	<input type="checkbox"/> Private sector-led development <input checked="" type="checkbox"/> Agricultural productivity, quality and value <input type="checkbox"/> Access to market and value chains <input checked="" type="checkbox"/> Gender equality and women’s empowerment <input checked="" type="checkbox"/> Individual and institutional capacity building
If this activity <u>specifically</u> addressed higher level targets of the Australian aid program, which ones?	<input type="checkbox"/> Engaging the private sector <input checked="" type="checkbox"/> Empowering women and girls

Summary

This pilot project commenced in May 2019. The first phase of the project has been completed. Information sessions and survey materials were developed, DPI and health staff from each region were recruited and upskilled on nutrition and vegetable cultivation and the use of CommCare. The baseline survey and nutrition and vegetable cultivation information and demonstration sessions were conducted in 10 villages by the trained staff in May 2019.

Monthly monitoring visits commenced immediately following the information sessions in June 2019. Two visits have been made in the North, 1 in the Central and 1 in the South. The small number of visits has been the result of a series of delays caused by factors outside the projects control- The 2019 Referendum, unable to access villages due to heavy rain and flooding and the COVID-19 Pandemic where Bougainville was in a State of Emergency for 3 months. Monthly monitoring visits have recommenced as of June 2020. Food dairies are also being collected from each of the now 9 villages to assess whether there are any changes in household dietary intake and behaviour.

Family Farm Teams Training was conducted for 3 villages in the North in Feb/Mar 2020. The central and South training is scheduled for July/Aug 2020.

The feedback from the training and information sessions has been positive. From the initial monitoring visits we have recorded self-reported changes being implemented within the communities to improve their health, nutrition and vegetable cultivation practices. Such changes have included adding gates on kitchens to keep animals out, improving preparation and storage of



food, improving how drinking water is collected and stored, adding more variety into diets and building compost bins. These small but important changes could lead to improvements in health and nutrition and the overall productivity of these cocoa farming communities.

Background

The Bougainville Cocoa livelihood survey (2017; Aim 2 of HORT/2014/094) showed stunting of children (<5 years) is a significant problem affecting over half of children (58%), with 36% in the moderate to severe stunting range. In addition, one third of all children (n=1312) in Bougainville were underweight and one-fifth showed signs of wasting. The 2019 IFPRI report [1] also noted stunting in Southern Bougainville (23 %; n=161). These children will likely be developmentally delayed, have impaired cognitive abilities, be more susceptible to disease and infections, develop chronic diseases (diabetes, cardiovascular disease cancer, mental disorders and obesity).

The IFPRI report [1] also noted the link between agricultural productivity with overall consumption and nutrition outcomes concluding that households in Southern Bougainville are not consuming sufficient calories or protein to sustain a healthy life. The main food group being consumed is starches (roots, tubers and sago) and that the majority of households in Southern Bougainville did not treat their water [1].

Directly associated with nutrition is the requirement for safe water. The IFPRI Report [1] showed that more than half of surveyed households in Southern Bougainville used unprotected water sources. Our Livelihood survey [2] showed that 42% of households surveyed drank from unsafe water sources, similar figures (42%) were also reported for the whole of PNG in the 2017 WHO report Drinking Water and Sanitation and Hygiene [3].

Under-nutrition in cocoa farming communities is associated with direct losses in cocoa production from

- (1) a reduction in physical productivity due to illness, fatigue and other health related problems (already documented in the Report on the Livelihood survey);
- (2) A reduction in cognitive development and educational performance due to malnutrition in early life;
- (3) Losses in household resources from increased healthcare costs. ¹

¹ Schmidt, E., Gilbert, R., Holtemeyer, B., Rosenbach, G., & Benson, T. (2019). *Papua New Guinea survey report: Rural household survey on food systems (Vol. 1801)*. Intl Food Policy Res Inst.

² ACIAR HORT/2014/094: *Developing the cocoa value chain in Bougainville, Report on the Results of a Livelihood Survey of Cocoa Farmers in Bougainville, September*

³ World Health Organization and the United Nations Children's Fund (2017) *Progress on Drinking Water, Sanitation and Hygiene*

Methodology/approach

This pilot project involves 9 (previously 10) villages South (4), Central(2) and North(3) Bougainville who will participate in an intervention to test if families can improve their diets. The selected villages have high prevalence of childhood malnutrition. The intervention involves providing education and skills in safe water, nutrition, healthy eating and vegetable gardening as well as training households in Family Farm Team methods. A baseline survey has been administered documenting current food choices and diets. Data about unsafe water sources is already available from the Livelihood Survey which included the villages in this intervention.

The intervention includes three components: -

- (1) building capacity for Government staff in nutrition, safe water, gardening cultivation and the use of CommCare on tablet devices.
- (2) providing nutrition and gardening education to the selected villages and
- (3) delivering Family Farm Team workshops to the selected villages.

The research will demonstrate the merits of this intervention which, if successful, can be replicated in other villages – in PNG and other farming communities in low resource countries.

CRG project objectives

- 1) To identify the barriers and facilitators to improve water for all members of a household
- 2) To identify the barriers and facilitators to improve diets for all members of a household
- 3) To identify the capacity of households to implement and sustain vegetable gardens
- 4) To develop a proof of concept for a model for improving water, diets and nutrition within a household
- 5) To build capacity of ABG, DoH, DPI, BWF and UNRE in a range of competencies relating to household water, nutrition and food security

Project variations from the original CRG application

- Due to circumstances out of the projects control one of the villages in the North (Sing) has been excluded from the study for safety reasons.
- Timeline of the project has been affected due to a series of delays caused by the 2019 Referendum for Independence, heavy rainfall and flooding causing villages to be inaccessible and COVID-19 where Bougainville was in a State of Emergency for 3 months. Following the referendum, a 6-month extension was granted for the project to now be completed in December 2020.

Achievements to date against CRG activities and outputs

No.	Activity	Outputs	Timeline
Phase 1			
1.1	ABG, District, CoE and village consultations	Coordinated plans for implementing pilot at each level Activity Update Report provided to Key stakeholders	May 2019 Completed Ongoing



1.2	Engage local experts on vegetable cultivation, nutrition and Family Farm Teams Training	Expert in vegetable cultivation identified and recruited to facilitate workshops and support village information sessions Certified Family Farm Teams trainer identified and recruited to run workshops in selected villages	May 2019 Completed
1.3	Design Baseline Survey	Survey developed and translated Survey developed in CommCare to be used on tablets	May 2019 Completed
1.4	Develop Nutrition and vegetable garden manuals and workshop materials	Nutrition manual developed Vegetable cultivation manual developed PPT presentations developed	May 2019 Completed
1.5	Recruit and upskill DPI and health staff from each region for pilot implementation and conduct upskilling workshops on Nutrition vegetable cultivation and the use of CommCare	The Departments of Health and Agriculture have nominated staff to be trained facilitators to deliver a nutrition and vegetable gardening program as well as provide monthly support, mentoring and data collection using CommCare (tablets). Conduct nutrition and vegetable garden workshop in each region to upskill Health and DPI staff members	May 2019 Completed More seeds will be distributed to villages in June/July 2020
1.6	Baseline information collection and analysis	Baseline data collected from 32 households in each village Analyse baseline data and provide factsheets for each region and share at the 2019 Bougainville chocolate festival	May 2019 Completed July 2019 Completed
1.7	Conduct Nutrition and vegetable cultivation information and skill development sessions	Information shared by DPI and Health staff to 10 villages on nutrition and vegetable gardens and seeds, watering cans provided to villages	May 2019 Completed
Phase 2			
2.1	Monthly village monitoring visits	Regional teams will visit each of the villages located in their area to conduct monthly monitoring and support visits to the 32 households interviewed in the sample villages over a 11 month period. During these visits the trained health and DPI staff will select and provide refresher information on topics covered during the information sessions. Other information captured will be whether the household has started to grow new vegetables or changed their diet.	Ongoing July 2019- Dec 2020 There have been delays with monitoring visits due to the Referendum, flooding, COVID-19 2 visits have been made to Northern villages 1 visit to central villages 1 visit to southern villages Monitoring visit information analysed and feedback provided to teams. Food diaries were administered to households in May 2019 but were not completed



			appropriately. The diaries have been distributed again. The monitoring teams will provide additional support to ensure households understand and are able to complete the diaries appropriately. Monthly monitoring re-commenced in June 2020
2.2	Master training on Family Farm Teams approach for Health and DPI staff	Selected staff from Health and DPI will be given certification training in the Family Farm Teams approach by Barbara Pamphillon.	Dec 2020
2.2	Family Farm Team Training for 10 villages	Each village will also receive Family Farm Training (FTT) from accredited trainers Josephine Saul and Robert Taula. The villages will learn about (1) how to work as a family team; (2) how to feed the family; (3) Planning the family farm for healthy meals; (4) leading the family for a healthy future. This training will reinforce and expand on the previous nutrition and vegetable garden training sessions. Maria books will be provided to each of the 10 villages	Ongoing July 2019- August 2020 3 Northern villages have received FFT training The remaining 6 villages will be completed in July/August 2020 Maria books distributed
Phase 3..			
3.1	Endline surveys	Survey developed and translated Survey developed in CommCare to be used on tablets After 12 months the Health and DPI trained staff will return to the 10 villages to re-survey the households about the diet, eating behaviours, access to food, food production	Dec 2020
3.2	Focus group discussions with men, women and teams from health and DPI	Focus groups will be conducted with a sub-sample of men and women from the selected villages. A focus group will also be conducted with the Health and DPI staff conducting the monthly monitoring to discuss what worked well and what were the limitations to implementation.	Dec 2020
3.3	Analyse endline survey and focus group data	Assess the impact of the pilot and identify opportunities for scale-up	2021
3.4	Dissemination of findings	A presentation of the activity outlining its purpose and objectives at the TADEP Annual Meeting. Report developed and shared with key stakeholders	2021

Emerging impacts against TADEP+ program objectives

Agricultural productivity, quality and value



- Following the initial nutrition and vegetable garden information and demonstration sessions, we have monitored a number of changes being implemented in these communities including improvements in the way food is prepared and stored, installation of gates on kitchens to keep animals out, improving the way water is collected and stored as well as increased diversity in daily diets. These changes could help to improve the nutrition and health of these farming communities, which could in turn reduce expenditure on healthcare, improve schooling performance and overall farming productivity.

Gender equality and women's empowerment

- Family Farm Teams training provides the knowledge and tools for women and men to work toward a more equitable and planned approach to running the family farm together as a small business. This is encouraged through effective distribution of workloads within the households and farm, making decisions as a family. The training encourages women's participation and voice within households and community. From the trainings that have been conducted so far, the feedback has been positive from both men and women.
- Vegetable gardens will allow women another potential source of income from selling excess vegetables at the market; a potential increase in income for the family

Individual and institutional capacity building

- Both Health and DPIMR staff received upskilling in nutrition and vegetable cultivation. The workshops facilitate cross-discipline collaboration and learning and provide staff with the skills to successfully approach and address issues from a One Health perspective.
- DPIMR and Health staff received training in the use of CommCare a digital data application for data collection. The use of digital platforms to capture data is rapidly increasing and will eventually replace paper-based collection entirely. The Health and DPI staff will be able to take these newly acquired skills and apply them not only for use in this project but in their future workplace.
- Three out of nine villages have received Family Farm Teams training by certified trainers. Both men and women attended the training ranging in age from 20-60yrs. Topics covered were (1) how to work as a family team; (2) how to feed the family; (3) Planning the family farm for healthy meals; (4) leading the family for a healthy future. This training reinforces and expands on the previous nutrition and vegetable garden training sessions. When farmers are trained in planned farming and understand the nutritional values of their local foods, they can ensure that their own family grow and use their local vegetables and livestock for maximum family health, as well as for sustained incomes. As the trained family team farmers change their practices and their families become healthy and strong, the 'copycat' dynamic occurs as others in the region adopt similar practices. These leading farming families become role models and local resource people for the wider community. Feedback from the villages has been very positive so far. Training for the remaining 6 villages will take place in July/August 2020.
- From the HORT/2014/094 livelihoods survey and the nutrition and vegetable garden training sessions in this pilot study, it is evident poor water and sanitation are a major issue within these villages. Demonstrations on how to build appropriate Pit Toilets will be provided in both the pilot and bigger project. During the village monitoring visits we have found that households have already started to make changes within their living environments to improve hygiene and water quality. For example, placing a gate on the kitchen to keep



animals out, placing a lid on drinking water and storing clean containers, keeping food safely stored.

Collaboration

- **Examples of collaborative approaches, methodologies, etc**
 - The monitoring visits enable the villages to give feedback on progress and identify challenges. This allows the teams to adapt the support they provide to the needs of the household and village.
- **What is working, what isn't working, areas for improvement**
 - The food diaries we distributed were not well-understood. Teams have been re-trained and will provide extra support to households in completing these booklets.
 - While villages received seeds during the initial information sessions. There was not enough for all the households. More seeds will be distributed in July 2020.