

- The highlight of the last month was the graduation of our village community educators (VCEs) in New Ireland and Bougainville:
 - **New Ireland Ward 7** — 50 people received University of Canberra certificates of participation (28 F, 22 M). Thanks to Lucy Siki and Robert Taula of the NGO Target Community Empowerment for their excellent organisation of the graduation.
 - **New Ireland Ward 11** — certificates to be presented in December.
 - **Bougainville Halia constituency** — 29 Certificates of Completion, 20 Certificates of Participation and 20 Leadership (10 F, 10 M). Thanks to our field staff, Ian Viore and Sherdrick Nana, for the organisation of the graduation and Barbara Tanne, former Director of Bougainville Women's Federation for her powerful speech.
- Josie Saul and Barbara Pamphilon conducted a three-day Training of Trainers for the Bougainville Cocoa project in Malagar Women's Resource Centre, Buka Island. We had a wonderful group of participants who will now be able to support the integration of Family farm teams work into the cocoa project activities. ToT certificates were presented to 10 women from Bougainville Women's Federation, 16 men and 6 women from the Bougainville cocoa project and 3 men and 3 women from DPI. Special thanks to James Butubu from DPI for his efficient organisation and support for the workshop.
- Jo Caffery and Deborah Hill have published a new article – *Expensive English: an accessible language approach for Papua New Guinea agricultural development*.¹
- Language used in capacity development programs is usually that of the donor country, often English. However, research shows that the language used can be detrimental to the success of the program. Little attention has been given to the issue of language, yet it is important that program participants fully understand the capacity development program's concepts to ensure that the program achieves its full potential. This article explores an accessible language approach to a Papua New Guinea development program. Arguments are based on an in-country research project designed to provide women and men with deeper understanding of gender equity.
- We would like to invite any interested people to join us at NARI Lae for our final project conference — Wednesday 21 and Thursday 22 November – to register please contact Barbara Pamphilon, Barbara.pamphilon@canberra.edu.au

Factory and sales update

- The factory has broken all previous records and purchased 207 tonnes of Nut in Pulp this year in just two months (compared with 65 tonnes last year). Around 2,000 farmers have now supplied to the factory. There is strong demand for the products and the supermarkets sold out within two weeks of the product launch. NARI is on the third repeat order with CPL and nuts have been out of stock in retail outlets.

¹ Caffery, J & Hill, D (2018) Expensive English: an accessible language approach for Papua New Guinea agricultural development, Development in Practice, DOI: [10.1080/09614524.2018.1530195](https://doi.org/10.1080/09614524.2018.1530195)



Figure 1: Prof Helen Wallace in front of some of the Nut in Shell (NIS) purchased at the factory.



Figure 2: Prof Helen Wallace in a CPL supermarket where *The Galip Nut Co* product range are being sold

Processing progress and challenges

- *The Equanut Company* completed its first trials of the mechanical cracker on Friday 9 November and attempted to process 100kg of nut in shell. These nuts were sourced from the 2017 season and were all smaller in size which had seen them rejected. Twelve staff had been assigned for the task, with the assistance of the NARI cracking team.
- Several minor issues were identified before commencement and during the operation of the machine. Many of these issues were to be expected and can be addressed simply, whilst others are going to require modifications and adjustments to the process line.
- A total of 85.8kg was cracked and produced 2.8kg of whole kernel and 11.4kg of broken kernel. This was the first run of small nuts and areas for improvement were identified.
- The major problems have been that the factory is not big enough and has been unable to keep up with either supply or demand. Purchasing has been suspended by NARI and will recommence with *Equanut* soon. We are in the process of purchasing and constructing more driers and cold rooms to cope with the volumes.

Workshop expos

- A women's workshop expo was held in New Ireland by Tio Nevenimo (NARI), Simaima Kapi (NARI), Carolyne Miesel (WYiA), Dorothy Luana (Galip Club), Brett Hodges (USC), Emma Kill (USC) and Nicole McMullen (USC). The expo was delivered as a part of two **Collaborative Research Grants** for projects within TADEP:
 - Sharing income generating ideas for women market sellers across provinces
 - Organic wastes or wasted opportunities
- The expo was very well attended with 76 participants. The workshop covered the following key topics:
 - The galip factory
 - Solar drying
 - Baking
 - Health and nutrition
 - Food preservation
 - Composting
- Highlights of the workshop included a hands-on baking demonstration using a wood fired oven and incorporating galip into breads and biscuits (conducted by Carolyne Miesel and Dorothy Luana). Carolyne from the Josein Co-operative of the Women and Youth in Agriculture Co-operative Society Association (WYiACSA) demonstrated the techniques and recipes that she follows to bake breads which she sells in East New Britain. Dorothy, founder of the Galip Club in East New Britain, demonstrated baking galip biscuits which she sells in ENB and POM.



Figure 3: Participants with Dorothy who led the galip cookie baking workshop.



Figure 4: Carolynne leading the galip bread baking workshop.

- The workshop included a session on the preservation of surplus fruits and vegetables into jams, cordials and chutneys. This session was designed to encourage participants to produce their own preserved products utilising locally grown fruit and vegetables, including pineapples, bananas, mangos, choko, pawpaw and ginger.



Figure 5: Participants cooking over the fire.

- The workshop also included a session on composting. Discussions also touched on the process of plant uptake of nutrients from the soil via roots into leaves and fruits which can then be consumed by us.
- The following process of composting was discussed:
 1. Digging a hole
 2. Adding in green and brown waste and what falls into these categories
 3. Turning/digging two times per week to aerate
 4. Cover to create heat to allow soil microbes to do their work and to break waste down
 5. Ready for use in three to six months

- Farmer training was conducted in collaboration with the Cocoa Board at Soroken plantation in the north for farmers from Hahaon, Kunua, Torokina and Bana districts. The training covered nursery establishment, cocoa management (pruning, CPB control, composting production etc.), cocoa quality, harvesting, fermentation and drying as well as chocolate processing.
- A Family Farm Teams training was conducted at Malassang women’s resource centre by Canberra University’s Professor Barbara Pamphilon and Dr Josephine Saul-Maora in the North on October 31st-November 2nd. The training participants came from all regions in Bougainville comprising of DPIMR officers, ACIAR regional coordinators, Village extension workers, Bougainville women’s federation representatives, numbering approximately 36. Certificates were awarded to all participants on completion of the training.



Figures 6 and 7: Family Farm Teams training

- Budwood garden materials were distributed to the remaining Village Extension Workers (VEWs) in both Central and South Bougainville.
- Assistance was also provided to Steven and Elizabeth Saveke and his wife (Chocolate Festival ‘Best of Show’ winners) in preparing to get their passport for the Choc swap show in Australia. Arrangements for a media opportunity are in the planning stage.
- Grant Vinning distributed Cocoa Market Report #26. It highlighted the start of the cocoa season 2018-2019 showing higher deliveries (165,000 tonnes) from the Ivory Coast, the world’s number one producer, compared to the previous cocoa year (see Figure 8 right). However week-by-week delivery showed a declining trend and there is a general fear of predicted natural disaster (El Nino), which might affect cocoa yield/production.
- The Chocolate Processing Lab continued to attract interest from schools, farmers and leaders alike. Bean samples from individual farmers and farmer groups were received, assessed and chocolates produced for their own tasting and evaluations. We expect this to become an ongoing activity going forward. There was some awareness on good quality bean production and local chocolate production conducted in October, for example at Hamatana primary school day in Hagogoe, Buka island.



The price on 25.10.2018 was US\$2,196 / tonne.

Figure 9: (right) School students surrounding an esky of chocolate tasting and buying chocolate.





Figures 10, 11, 12 and 13: (above) Activities to improve training on vegetable production by devising affordable methods on seed germination and vegetable planting at Kubu Nursery continued in October.

- Preparations have been made for three officers; Inia Bunsu (UNRE), Elizabeth Pisiai and Joshua Koles (DPIMR) to attend the IVTC vegetable production training in Thailand from 19 November 2018.
- Preliminary discussions were held with AROB Secretary for Health Clement Totavun about holding a Health Summit in 2019. The idea is bring together key stakeholders to present findings from the survey and facilitate dialogue on priority health issues and interventions. Funding for this would be externally sourced.
- David Guest met with the UNRE Executive and gave a **Pop-in Seminar** on Bougainville cocoa farmer livelihoods and health at UNRE, Vudal on 24 October. He also inspected the goat facility at UNRE and saw the goats ready for shipment to Bougainville.
- After having to turn back in October because of engine failure, our foundation herd of 20 goats collected from the Highlands left Rabaul for Kieta aboard the Gazelle Coast on 5 November.



Figure 14: (left) Kairak Training Centre Manager Hosea Turbarat with the goats destined for Bougainville.

Simbu Province, Karimui

- John Konam visited Karimui this month. Cocoa Model Farmer-Trainers (CMFT) farmers are still very supportive despite tensions there. The proposed collaborative training with Family Farm Teams, Kairak and our project, planned for Karimui in November, had to be put off because of a death and disturbance in Karimui. It is expected the training will now be held in January 2019.

New Ireland

- Following Kula Das Logo's departure from CCI to take up a senior position with the Kokonas Industri Korporasen (KIK), an emotional handover of cocoa extension resources from Kula to John Joseph, his replacement as Head of Extension in the Cocoa Board Kavieng REDS team, took place at Kopkop Station on Tuesday 9 October, witnessed by Trevor Clarke (ACIAR Cocoa Project), Nason Laki (Cocoa Board Kavieng), Gideon Bogasia (DAL Director Kavieng), Kunibert Tibil (Head of Provincial Government Cocoa Development Project) and staff. Materials and equipment, including roles of shade cloth and plastic, a motorbike and an outboard motor, were handed over, and a 67 page handover document was presented by Kula. Kula was thanked for his excellent contributions to the initiation of the cocoa project in New Ireland, including the establishment of CMFT sites on outer islands of New Ireland Province. Kula has agreed to continue to cooperate with our project. The following week there was a handover of equipment and materials to the Provincial Government.
- The CMFT from Laraibina, David Waulas, has been identified to oversee the goat project and discussions with Kairak were held regarding the supply of goats from Vudal.
- In collaboration with the Galip Nut project, 20 kg of galip nut seeds were sent to New Ireland for planting in CMFT nurseries with a view to planting them out as shade for new cocoa blocks.

East Sepik

- Work continued to supply CMFTs with nursery materials and cocoa clones to complete budwood gardens and nurseries.
- The trip to Lumi in West Sepik to continue collaboration with the Tenkile Conservation Alliance has also been delayed because of fighting in the Lumi area, targeting DAL employees, three of whom have been killed.
- Kanika Singh and Chris Fidelis have set up a small trial with pigeon pea on grassland alongside the soil fertility trial at Wingei 2. A student will monitor pink disease and pests.
- Plans for a field day to be held at Yekimbole on 29 November are being made. The day will include official opening of the solar dryers, demonstration of fermentation and solar drying as conducted at Yekimbole, demonstration of budding of seedlings, and demonstration of composting and the soils project to be led by Kanika Singh and Chris Fidelis.
- CMFT farmers and their group members from the areas accessible to Yekimbole will come into the CMFT site at Yekimbole run by Nola and Chris Sasingian and learn from displays presented. The Governor of East Sepik, Alan Bird, and provincial government representatives, along with District and Local Level Government representatives will be invited. There will be demonstrations on budding, especially use of cheap budding knives and available plastics for budding tape, and the reason for using clones will be discussed.
- Registration and commercial nursery operation, and opportunities for selling clones and seedlings to PPAP and other farmers after group farmers needs are satisfied will be discussed. Use of a tractor and implements will be demonstrated. Use and advantages of pigeon pea as temporary shade will be demonstrated.
- The soil fertility team will address the concept of soil security and view a soil pit and core with farmers and discuss their understanding of soil structure and quality. The concept of cocoa soil nutrition and what makes pod and beans will be discussed. Options for maintaining soil will be discussed and a small-scale and farmer friendly compost hut and compost preparation will be demonstrated.
- There will be an official opening of the solar dryers and the advantages and management of solar dryer, especially options for ventilation and management in rainy conditions, will be discussed.
- Thompson Fafungian has been on site in Yekimbole helping his family with cocoa developments there, noting some great successes and setbacks (such as problems with water supply to the nursery) which will be relocated to a new site in Hagama. Thompson took a sample of solar dried cocoa beans to Paradise Foods in Port Moresby. The beans were determined as being of high quality and produced good quality chocolate. As a result, Paradise Foods have requested to purchase 100 bags of solar dried beans per month from Yekimbole. To meet that target, work is in progress on building a third large solar dryer. The pigeon pea seeds left for testing in Yekimbole have struck well and 40 plants are growing. Some of the clones in the older budwood garden are now producing many pods. It has proved difficult to source a tube for the tractor tyre but Thompson will try to source one in Port Moresby.

Madang

- Discussions were held between the Provincial Project Team and a Middle Ramu farmers group and a visit was planned for late October to advise on establishment of a budwood garden and nursery. The district DAL office through the manager Mogia Los is assisting with some funds for budwood gardens (BWG) and budding of +9,000 rootstocks at Aiom and Jitibu nurseries. The team of budders and officers will travel at the same

time. Trevor and Aitul received the following note from a farmers group in Middle Ramu - *“Dear Trevor, Please help us, the Ndram Banggu Group carry on the cocoa project in the Middle Ramu, Zitibu village. The Ndram Banggu Group is very keen and interested. This is a way we can alleviate poverty and improve the standard of lives in my village and the neighbouring villages. God bless your hearts. Andrew Miskoi”*

- Visits to CMFTs continued to oversee completion of budwood gardens and nurseries. Visits were made to Aiom and Jitibu by Emma Dorr (DAL officer, 20 farmers present, 4000 rootstocks ready for budding, BWG not planted - budwood will have to come from elsewhere). Visits were made to Kaviak, Klumlang, Ruben’s BWG and nursery at Erima which could supply other places, Balama (2 visits), Amiten, Sualu, Kumisanger (Tomoli), I guruwe, Danaru, Gohe, Dumpu, Korona, Bunu, Karkum.
- Money for purchase of goats has been delivered to Steven Topoti at Korona. He now has four female goats in his enclosure and a male goat is to be brought from a farm near Dumpu in November.
- The KIK Management at Murnass Station has put a stop to movement of all cocoa planting materials out of Murnass. This is causing inconveniences for the CB/ACIAR project which have been operating a small section of nursery at Murnass to produce clones to supply the 24 project sites for the establishment of budwood garden. We still have five BWGs to be established and many need infilling. We still have clones for planting left in the nursery but it is likely to be abandoned. We will have to source clones from CMFT nurseries that have already been established. These can be set up as commercial suppliers of clones, thus making them sustainable in the long run.

East New Britain

- Trevor held discussions with the Cocoa Board Financial Officer, Ellina Iamu, regarding setting up four new bank accounts in the four provinces, with Finance Port Moresby to implement them. Funds were transferred to New Ireland, East Sepik, Madang and Simbu Provinces.
- A pigeon pea trial has been set up at Tavilo in collaboration with Chris Fidelis, Cocoa Board Agronomist, and Kanika Singh, ACIAR Soils Project.
- Peter Bapiwai, Cocoa Board Agronomist, is commencing a trial on use of different types of common plastics (e.g. shopping bags, glad wrap, bale tape) as budding tape, in place of the commercial rolls of tape which are very expensive. Many farmers are now using cheaper substitutes as budding tape.
- Trevor continues to fine tune the solar dryer at Tokiala in collaboration with Graham McNally of Agmark. In September, Agmark sent a sample of beans from the dryer to one of their regular customers in Europe and received the following comment - *“No specific defects for this sample...very different from those we used to receive [i.e. from Agmark in PNG], close to West African profiles (dried fruits, chocolate taste, no acidity...)”*. This is interesting as all West African cocoa (80% of the world’s supply) is sun dried. Graham pointed out that this was only the best sample of a batch that included some mouldy cocoa, and the dryer has to be improved to allow more outflow of humid air.
- It has been learned that the Cocoa Board intends to reinstate Dr Josephine Saul-Maora and Dr Peter Epaina, which will greatly boost the research and development capacity of the Board.

Sweetpotato

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- The first draft of the grower best practice manual/factsheets for screenhouse and clean seed planting material management has been completed.
- Draft manual for pathogen tested (PT) plantlet production in PNG is at planning stages.
- Data from the next gen sequencing is being consolidated.
- LAMP assay developments continue with new assays being evaluated.
- Matt Kanua and Mike Bourke spent 10 days in the field in October-November. Visits were made to 9 of the 14 farmers who have been given insect-proof screenhouses, as well as to other commercial sweetpotato growers, traders and a couple who are using clean seed sweetpotato as part of their rehabilitation program for drug users.
- Mike Hughes and Sandra Dennien are scheduled to visit Aiyura in November, with Mike staying on to visit farm sites.
- The manuscript *‘Local value chain interventions: a systematic review’* has been submitted for publication in the Journal of Agribusiness in Developing and Emerging Economies.