

Family farm teams

ASEM/2014/095

- Barbara Pamphilon, Sanna Harri (UC), Doreen Tunama (NARI/IATP) and Josie Saul (CCI) travelled to New Ireland (NI) on August 21st to continue the Village Community Educator (VCE) training in Module 2— Planning your Family Farm as a Family Team. The first week was in Ward 7 and Ward 11, Tikana LLG, New Ireland. We are very grateful for the support of Gideon Bogosia (DPI Director) who ensured that our farmer families could be transported to the venue and that we also got there in a timely way. This meant we could spend maximise time with the VCE groups.
- We have begun a new initiative to select an advanced trainers group within our VCEs and offer them extra training in farmer-to-farmer learning and build their capacity to lead the teams of VCEs. We also combined the two sites advanced trainers' groups so that there could be cross fertilisation between the two areas – with the aim of developing a team that could offer the Family Farm teams to other LLGs across. The first workshop was very promising with 17 women and 9 men in attendance.
- The first women's leadership training was conducted in Kavieng. In past sites this training was only offered to community women but this time we are working with both community women leaders and DPI staff. The group worked extremely well together and found a lot of shared issues to discuss
- The team will be in Buka for a similar program with the Bougainville Women's Federation in the last week of August.

Highlands Activities

Given the election unrest, our activities in the highlands are just gearing up again.

- Dr Veronica Bue (UniTech) will be working with Voice for Change in our sites in Jiwaka to undertake case studies of four of our advanced VCEs - she will be looking at their ways of capacity building with farmers, seeking to deepen our understanding of village extension
- We are working with Baptist Union to provide training for farmers in the areas around the Kwinkya Women's Resource Centre – again, we will be trialling a training model using VCEs teams who were trained between 2015 and 2017 and looking at how they train others and adapt the materials that have been developed in the project.
- Dt Lalen Simeon (PAU) and Jeromy Kavi (NARI) completed the independent evaluation of our program in the Asaro valley sites (Eastern Highlands) and Waghi valley sites (Jiwaka). We are keenly looking forward to their report to see what impacts continue (or not).

Publications

Please find accompanying this Update our most recent journal article Bringing together learning from two worlds: *Lessons from a gender-inclusive community education approach with smallholder farmers in Papua New Guinea*

Canarium

FST/2014/099

Progress towards objectives

Develop and undertake research-based interventions that address the needs of the private sector including smallholders, small scale entrepreneurs (especially women) SMEs, and large scale processors.

- A workshop was held on the 2nd of August for small scale women farmers selling their produce in the Kokopo market. Brett Hodges (USC), Shahla Hosseini-Bai (USC), Simaima Kapi and Dalsie Hannet (NARI) ran the workshop. The workshop included demonstrations on how to dry galip using a stove, the snap test, value adding salt and sugar, and making galip cookies.



Figure 1: Dalsie and Simaima demonstrating how to make galip cookies to participants



Figure 2: Elevator section of the processing line.

Develop an appropriate commercial model for a medium scale value adding factory for the canarium industry.

- The new processing line has been completed and sent to Johannesburg for crating and freighting. It is anticipated that it will arrive at NARI by the end of October.
- Kim Jones checked the operation of the dryer at the NARI Kerevat factory. He also completed a number of cracking trials, where by adjusting the cracking rollers improved the whole kernel crack-out percentage.
- Shahla and Dalsie worked together to finalise factory protocols for roasting of snacks and natural product.

Create a model for public- private partnerships in the canarium industry in PNG.

- Godfrey Hannet and the team developed a CommCare survey that has been launched on a dedicated tablet with the buying team and on staff phones so that data can be collected from all sellers to the factory, whether they are at the farm gate or factory door. The data collected will include the date, weight of galip sold, location of sale, the seller's district, local level government area and ward, gender, number of children, how many trees and whether they are NARI elite or wild stock.

Good news/impact stories

- MFAT has agreed to support a commercial partner to invest in a processing facility in East New Britain. This could see the first public/private partnership investing in a commercial canarium factory. We continue to support this application with advice and information since their first scoping visit in 2016, where we demonstrated the progress that the project has made in processing. This played a major role in building the confidence of the group to progress their application to co-invest in the industry.
- We are also working with the another group with an interest in commercial processing. This group is planning a canarium project based around single species plantings as a timber species, with the opportunity to develop the canarium industry on the side. They are presently putting together a proposal to begin processing on New Ireland and are being assisted by the project with information and advice on how to proceed.
- There has been an increase in nuts being delivered to the factory by smallholder farmers with more awareness and a higher price being offered for nut in pulp delivered to NARI. Similar to copra and cocoa buying points, the factory have been fielding farmers each day selling their galip to the factory at 1Kina 50Toya per kilo. Many of the sellers have been mothers with their children, whom have sometimes carried up to 30kg with them, caught PMV's and walked the rest of the way. When asked about what they would spend the 50 Kina on that they had earned, often ladies would suggest that the money would go to food and supplies for the household.



Figure 3: Mother and daughter with galip to sell at NARI Kerevat factory

Forward plans

- A galip awareness presentation was planned for the next August meeting of the East New Britain Women and Youth in Agriculture Co-operative Society Association (ENBWYiACSA).
- A seminar will be hosted at the Papua New Guinea University of Natural Resources and Environment for the 2017 World Food Day celebrations. The seminar will be aimed at graduating agricultural students and will focus on the project, its progress, and the opportunities it presents for the region.

- Grant Vinning wrote two Cocoa Marketing Newsletters. The second resulted in considerable correspondence on the issue of achieving better prices for cocoa growers through various price support mechanisms. The issue of statutory marketing where a designated body compulsorily acquires the whole crop was a hot button issue.
- In July and August Grant Vinning and Andrew Sale worked with the three grower-based marketing companies to achieve the groups' wish to market their beans directly to buyers in Singapore and elsewhere. For farmers to be able to market their beans directly, the current restrictive export licensing arrangements would have to change, as the two bag license limit makes it very difficult to develop exports to bean-to-bar specialist chocolate makers.
- Andrew Sale and Grant Vinning have been asked to provide grower-based marketing company Directors a week-long training around tasks involved with actual export of cocoa beans. The training, in October, will include reps from customs, quarantine and shipping agents, and will provide an opportunity for the group to establish contacts and relationships.
- Grant Vinning will give presentations on the project and the world cocoa market context to the AHC and Commodity Support Fund (CSF) in Port Moresby in October.
- Through Grant Vinning we have spent a lot of time organizing the 2017 Bougainville Chocolate Festival including arranging collection and processing of the bean samples, organising the judges, and developing the judging criteria. Judging will take place in Port Moresby on Friday 1 September. There will be competitions for Big Beans, bean counting and the best young farmers.
- Analysis of flavour development under different roasting conditions, using gas chromatography-mass spectrometry, continues at Sydney University.
- Suri Thomas Taisa, Hosea Turbarat and Gerald Enda from UNRE conducted goat husbandry training visits to Bougainville in August. They have identified existing goat farms as foundations upon which to establish breeding facilities at Konga DPI Station in the south and Pearson's Goat Farm in the central and northern regions.
- CCI and UNRE are preparing displays and demonstrations on their activities in this project for the Festival, coordinated by Joe Yabom. Eremas Tade, Robert Seneka, Jeffrie Marfu and David Yinil will represent CCI. Demonstrations will include cocoa breeding, bean fermentation and drying, and goat husbandry.
- Josephine Saul-Maora worked with the Family Farms Project team in Bougainville in late August. They are training the Bougainville Women Farmers in Module 2 of the women's leadership program.
- The cocoa farmer livelihood and health surveys have now recommenced in central and northern Bougainville.
- We are now working with Alison Pearce and Chris Brown, statisticians from the University of Sydney, to analyse data and prepare reports from the cocoa farmer livelihood and health surveys. Data from the completed surveys will be presented to Stakeholders in Buin during the week of the Bougainville Chocolate Festival.
- A Stakeholders Reference Group meeting will be held in Arawa on Thursday 7 September. Invitations have been sent to all seven ABG Ministers, as well as other stakeholders.
- We are very pleased to welcome James Butubu to the role of Bougainville Project Coordinator. James brings his energy, experience and skills as a cocoa breeder back to his home province.

Phil visited PNG from 2 to 26 August, accompanied by Trevor in East Sepik from the 3rd to 11th, and Alfred in Madang from 15th to 26th.

East Sepik

- In the CCI office in Wewak staffed by Jimmy Risimeri and Chris Toli. It was evident that CMFTs feel free to come in to arrange materials and visits for their sites. John Meth (Cocoa Board) explained how he is resuming a full budding program at the Hawain Nursery and Training Centre. John Worowan, the head of DAL East Sepik, proposed bringing four females and a male from the milk goat breeding program at Erap, Morobe, to be housed at Niumindogum with CMFTs Leah Kowi and Edmund Huiwali as a model site.
- We visited Cherobim Songai, the CMFT at Reinimbo Village near Hawain, and saw his success with budding and regenerating an old block. He will be going to Paris as part of his prize from the Cocoa Warwagira

Festival in Kokopo in May 2017. We visited the mature budwood garden with the 10 second release clones at Yarapos and the temporary nursery, which will be developed to supply clones while Hawain is occupied with PPAP; the budder there has been training budders at the CMFT sites.

- On Saturday 5th August the team travelled to Burui Village (CMFTs Moses and Antonia Maka) with DPI officer Angela Gossiba and saw the establishment of a budwood garden under temporary shade and the enthusiasm of the group. They will be establishing cocoa under *Gliricidia* on kunai grassland on a floodplain near the Sepik River and their work will be a good test of cocoa planting on kunai grassland. We then travelled 3 hours up river in a canoe (with outboard motor) to Ambunti to attend the Crocodile Festival where Jimmy manned a stall showcasing the project. A CMFT from 2 hours further upstream came down to discuss his work. We returned downstream early on Monday and travelled with Angela to Blamda Village (CMFTs Kenny and Leone Nako) near her DAL station and saw their near mature budwood garden; they are now ready to receive training in nursery establishment and budding. We also visited Yekimbole (CMFTs Nola and Chris Sasingian) and saw their budwood garden maturing, their initial success in budding, and their fermentary and solar drier. Then we visited Leah Kowi and Edmund Huiwali at Niumindogum for a meeting with their farmer group in their new meeting house. They are building a guest house and it will be an ideal site for a training centre.
- On Tuesday 8th August we drove to Aitape, West Sepik (5 hours west of Wewak) to see Wilson Miroi's cocoa project. Through attending Kula Daslogo's training session in Nov 2016 with his wife Cathy, who is one of our CMFTs in New Ireland, and on-going discussions with her and Jimmy Risimeri, Wilson has implemented the CCI/ACIAR Project strategy independently in his father's home area of Malol, just west of Aitape. He has established a budwood garden of the 18 CCI clones and an extremely active nursery with many capable budders, and is selling CCI clones to the PPAP program in East Sepik as well as providing 300 clones to all his farmer collaborators. Altogether he has established 33 CMFT groups servicing 822 farmers throughout West Sepik. Wilson is a civil engineer who runs a successful road-building and construction business in Aitape and set up his cocoa project using his own funds with his company staff to give them a livelihood between projects. He has already built a combination solar/kiln drier on the Panamecho (Kula Daslogo) model, has successfully dried his first batches of cocoa, and is fielding interest from niche markets. One of his lead office (and nursery) staff and a CMFT in his project, Grace Klembasa, won several awards at the Warwagira Festival and will later travel to Paris as part of her award. We visited several of the farmer groups and saw excellent nurseries stocked with seedlings ready for budding, and blocks marked out for planting with clones. Wilson runs budding sessions at the farmer nurseries where a team of budders bud many seedlings while training members of the group. Many villages in the Malol, Poro and Arop areas, including Grace's, were affected by the tsunami that killed 3000 people in July 1998. Wilson's project is an outstanding example of what can be achieved with private spirit and funds, following the CCI/ACIAR Strategy.
- On Thursday 10th August the team visited Saparu Village with Sperian and Bernard Kapia (3 hours by road from Wewak to the river and then 2 hours by speedboat down the Sepik and up the Yuat River) for a great sing-sing welcome as usual, and a meeting and inspection of their budwood garden and nursery. The garden is mature and ready for certification and CCI has given them permission to sell clones to PPAP, which has a desperate need. The nursery was a hive of activity, with about 20 budders working from budwood taken up there from Hawain the night before (a 5 hour trip each way, as above). This was a magnificent effort by Chris Toli and the village team and shows the endeavour of all concerned. The budders were using an assortment of knives, including Trevor's hacksaw blades and sharpened Chinese kitchen knives. At the end of the day we visited Tambanum Village further up the Sepik River, returning back down the river to the vehicle after dark by torchlight.
- Jimmy, Chris, Phil and Timothy met with Allan Bird, the new Governor of East Sepik. As an experience cocoa and vanilla grower, he expressed an interest in the project and will support it, possibly by subsidising the distribution of clones. He will soon host a visit from a Belgian group representing the European Union with an interest in developing cocoa in East Sepik, and this may involve a link to the CCI/ACIAR strategy. Phil, Chris and Jimmy prepared a two-page outline of the strategy for presentation to the Provincial Government and EU visitors.
- The team also visited CMFT groups in Bararat on the Sepik Plains (LLG Sauso, Scott and Maureen Yangon); they have four CCI clones in a budwood garden, a site for a nursery, and have been chupon budding many trees. We called in at Wingei (Toby and Caroline Gaundu) and saw the site for the budwood garden and nursery there. Later the team talked to Yr 9 and 'troubled' students at Boys Town School in Wewak, encouraging them to become interested in cocoa growing. Visits were made to the CMFT group at Paliama (LLG Passam, Jonathan Poema) where they have some clones in a budwood garden and are starting a

nursery. Some LLGs in East Sepik (Passam, Sauso) are negotiating to contribute K150,000 to support project activities, depending on funds being available.

- Chris followed up with visits to Paliama and Bararat to provide materials and advice for construction of budwood gardens and nurseries. Angela will soon receive her motorbike from the project and begin to learn to ride it on the walking tracks around Blamda. On 23rd August, Jimmy took a group of farmers from Yuwat to visit Wilson Miroi's budwood garden, nursery and cocoa drier at Aitape. Wilson reported in an email on 25th that the number of farmer groups linked to his network in West Sepik has expanded to 48 with 1,131 farmers with support from Francisco Lauten of the Cocoa Board who is supplying materials for nurseries. Wilson reported a 'cocoa craze', with farmers forming groups spontaneously and Wilson's team struggling to keep up with their registration. 'We are not saying no to anyone', Wilson writes.
- Trevor arranged shipment from Rabaul to Wewak of a container load of project materials and equipment (motor bikes, bicycles, chainsaws, plastic for the solar driers, shade cloth, cocoa mesh, tools) for distribution to CMFTs.

Madang

- On 16th August Alfred, Phil, Aitul Weoh (Project Coordinator in Madang) visited Balama Village (CMFT Dero Doho) where a nursery is partly completed. The farmers did a deal with the nearby logging company to clear about a hectare of plantation forest (*Acacia mangium*) for the garden and nursery, in exchange for a chook. We visited Tamane Village (Kokurai and Judith Omurup) to see their nursery (about to fill polybags) and returned there later after they had received a wheelbarrow from the project. It became evident that a wheelbarrow is important for filled polybags and, especially, containers with water for the nurseries because the current drought is creating a problem for nurseries located some distance from a water source.
- On the 17th and 18th the team travelled to Bogia (4 hours west of Madang near the East Sepik border) and visited CMFT sites at Sualu (CMFT Albert Sukua, to help with nursery layout), Iku Village (Roswita and Alex, to see a well-constructed nursery with seedlings nearly ready for budding and a space cleared for a budwood garden), and Amiten Village near Malala (Ismael and Jacinta with polybags ready for planting seed). Ismael later came to the CCI office in Madang to collect materials.
- On Saturday 19th and Sunday 20th, 6 budders from Murunas worked with farmers in their nursery at Erima (Daniel Sioba) to bud about 5000 plants and teach the farmers how to bud; the farmers each did about 10-20 buddings and will monitor their success. This is the same system of on-site training as being used by Wilson Miroi.
- On 22nd the team visited Gohe Village, Trans Gogol LLG, where the CMFT Donnisah Elsan supported by her uncle Samuel Osis, has a partly built large nursery and clearing for a budwood garden. Chris Anton and Stephen Singa slept for two nights in the village to help them with their work on Wednesday (the 'didiman day' for the farmer group) and Thursday. They carry compact, mosquito-proof tents for sleeping in the villages.
- Wednesday we drove to Rai Coast with Godfried Savi, Head of DAL, but couldn't cross the Guabe River and so couldn't get to the furthest Galeg CMFT site; instead we worked with an independent group of farmers at Bom Village near Erima, who were working on their 'didiman day' to severely cut back the cocoa and shade in a cocoa block for one of the farmers. So far they have cut back 11 blocks, working as a team with only bush knives, pruning saws and small axes. The group is lead by a 'Model Farmer' in the DAL system and it was this concept that influenced the Madang DAL staff to advise us to call our village extension workers 'Cocoa Model Farmer-Trainers'. It was decided to incorporate this group within the training schedule for our project and provide them with a small chainsaw. The small chainsaws are ideal for cutting back cocoa blocks.
- During the visit to East Sepik and Madang it was obvious that visits to many outlying sites are difficult because of the poor state of the roads, lack of bridges over rivers or dependence on calm weather for ocean travel. In these circumstances the role of a good CMFT becomes even more important.
- On Friday 25th August Godfried Savi and Alfred held a meeting of 10 local CCI and DAL staff to confirm that the project is also important mainstream DAL work, and that extra pay should not be expected for involvement in the project, other than travel and subsistence allowances for overnight stays away from home. Godfried has seconded several excellent staff to work with Aitul, resulting in an excellent field team (CCI staff - Stephen Singa, Chris Anton; DAL seconded staff Tomoli Wowomi, Ralph Kolokol and Alex James) some of whom stay in villages overnight.

New Ireland

- Kula visited all his 28 CMFT sites to organise further developments, and give training and encouragement. It is evident that the best training is given one-on-one to each group during regular site visits. Josie worked with the Family teams project at Manggai and Luapul on 24-25 August.

Simbu and the Highlands

- Trevor and Peter Bapiwai visited Simbu, Eastern Highlands and Jiwaka Provinces from 20th to 26th August, to work with John Konam, and they held discussions with supportive Provincial Government officials, and saw cocoa growing and producing well in various locations. It has not been possible to visit Karamui because of trouble arising from the death of a candidate during the election, but the Provincial Government is planning on returning staff there (including our project officer, John Thomas) within the next few weeks. John is now keen to follow up on Trevor's contention that there are many sites in the highlands, already with road links, with potential for cocoa equal to or better than Karamui. Provincial officials confirmed their enthusiasm to support cocoa growing in the Highlands, and we are going to work further afield than Karamui, supporting John for three days per week. The Simbu Provincial Government is going to provide a 10-seater Toyota for the project and Trevor is tendering for a second hand vehicle for him to be able to travel to neighbouring provinces. Many tethered goats and cattle were seen grazing on the roadside during their travels there, and it is evident that the highlanders are increasingly becoming aware of their value.

Sweetpotato

HORT/2014/097

- Activity in PNG slowed around the election, with travel restrictions in place for key PNG staff, but getting back to full speed now. Research in Australia has progressed well during this period.
- The 2x tunnel screen houses shipped to PNG for NARI are at Lae wharf and we are currently trying to get our application for exemption from GST and import duty through Custom/IRC.
- Seven rolls of insect-proof screen for large scale on-farm propagation house construction have been shipped to PNG and collected from Lae by FPDA. Johnny Wemin is working with 17 growers identified through the value chain mapping survey to design and erect the houses. A fabrication company has been lined up to sew the material but work has been delayed while an initial structure is erected so the fabricators can design the most effective sewing pattern.
- Bennie Atigini, ANUE capacity building coordinator embedded within FPDA, is beginning to roll out activities. Bennie has conducted socialisation visits with selected farmer groups. The first two organisational/enterprise planning workshops are scheduled for September.
- Bennie Atigini attended 'Highlands Food Security Cluster Meeting' in Mt Hagen on 17th July - attended by CARE, World Vision, Baptist Union, Red Cross, DAL, NARI, FPDA, IOM (International Organisation of Migration), Districts.
- Organisational training suite completed, in collaboration with CARE, as per images below.



- Community Development Training for FPDA extension staff and community-based extension staff in place.
- All commercial grower data from the CommCare Value Chain Mapping survey has been entered and analysis is currently being undertaken.
- Craig Henderson and Rachael Langenbaker have liaised with the CSIRO team (led by Dr Richard Stirzaker) undertaking a Land and Water ACIAR project into Africa (LWR/2014/085) developing cheap, effective soil water sensors for enhancing irrigation learning and improvement in developing countries. Craig and Rachael have sourced around 20 sensor arrays and field readers, and deployed them in sweetpotato plant beds and commercial crops in Rockhampton and Bundaberg. Sweetpotato growers exposed to the technology have been so excited that they've purchased their own sensor arrays, to the extent that the CSIRO team has had to put a temporary halt on new orders!

- The Australian research team is using the sensors to refine irrigations strategies in plant beds, hopefully overcoming problems with premature breakdown of bedding roots providing commercial sweetpotato cuttings. It is anticipated that the same sensors can be successfully deployed to improve cutting production in PNG, once the operational protocols for effective use are developed.
- Craig, Rachael and Sandra have assisted Dr Bree Wilson (USQ) engage with the Australian industry, collecting sweetpotato soil insect pests (mainly weevils to date), to support the aligned ACIAR project HORT/2014/083 developing improved sweetpotato crop protection options. Apart from establishing colonies of local weevil strains, Craig, Sandra and Rachael have also worked with Australian growers to supply field soil samples to Bree, so she can identify potential beneficial pest management organisms, as well as assess the capacity of the soils to support strategically applied bio-pesticides.
- Sandra and Bree have been working together on improving the diagnostic accuracy of the LAMP machines, used for rapid screening for viruses and phytoplasmas on minimally processed sweetpotato samples. Their experiences indicate substantial work is required on fine-tuning primers, operational parameters and sample preparation, to maximise detections and minimise false negatives. Sandra has successfully detected Feathery Mottle Virus in asymptomatic sweetpotato plant material, a very positive diagnostic outcome.
- Sandra has collected additional sweetpotato samples from North Queensland farmers' markets, and the plants being grown out are expressing a large array of virus symptoms. It confirms that area as a key region for biosecurity watch for the Australian industry, particularly planting materials and sweetpotato roots supplied by small, part-time growers or home gardeners.
- Sandra has partnered with NARI scientists Myla Deros and Winnie Maso in importing reagents to PNG, and affirming protocols for confirming CSV status of suspect samples in PNG. A positive confirmation will have important biosecurity implications for both PNG and Australian sweetpotato growing, and it reinforces the importance of the clean kaukau schemes in both countries.
- Sandra is progressing primer design for several other important sweetpotato viruses in Australia and PNG.