



Transformative Agriculture and Enterprise Development Program

TADEP+ Update

January + February 2019

Key program activities

A new year, a renewed collaboration

You may have noticed some subtle changes in the TADEP+ Update, most notably the name change. As previously communicated, both the Galip Nut and Family Farm Teams projects have concluded and no longer form part of the initial TADEP program. ACIAR have commissioned a new project to build on the research of the previous Galip Nut project and the very successful Family Farm Teams methodology is being embedded in a ACIAR Small Research Activity (SRA).

Both the new Galip Nut project and Family Farm Teams SRA are both keen to continue to be involved in TADEP (hence TADEP+). The general ways in which they will be involved include:

- Inclusion in the TADEP+ Update
- Presence at the TADEP+ Annual Meetings
- Involvement in biannual Steering Committee meetings (approximately February and June)
- As partners in the Collaborative Research Grants
- Sharing of lessons learnt across the program, especially private sector engagement and women's empowerment

As you will note toward the end of the Update, there are summaries from the project and SRA.

TADEP+ Steering Committee Meeting

On 15 February, TADEP project leaders, including Family Farm Teams and the Galip Nut project, met in Melbourne for the first of a proposed bi-annual Steering Committee meeting. This meeting was as a direct result of the TADEP Mid-term Review and sought to provide increased strategic oversight of the program, and to maximise the collective insights and resources of the projects.

Project leaders gave in-depth updates on progress and opportunities for the year ahead. Throughout this discussion, there was emphasis on the importance of the richness of inter-disciplinarity within the program leading to capacity building of members in each project involved. There was strong support for greater strategic engagement across the program, with other TADEP projects and with key stakeholders, including project partners and co-funders in DFAT and ACIAR. Mechanisms to facilitate this were discussed and broadly agreed to, especially noting the next months will be sensitive for Bougainville.

Ideas for building capacity in individuals and institutions arose whilst projects shared approaches that had been successful, especially in relation to gender equity and private sector engagement, consequentially two key elements of TADEP. Various models and types of capacity building activities were discussed, reflecting the diversity of need and ability to tailor approaches accordingly.

Key program strategies and plans were also tabled and discussed including a draft Risk Management Framework, a draft Annual Operational Plan and the program Performance Framework. Ideas on how to best utilise the TADEP+ Annual Meeting and relevant topics or presenters were also discussed.

All project leaders thoroughly appreciated the opportunity to come together to speak openly about the opportunities and challenges they're having at a micro and macro scale. Each project leader added valuable insights and experiences, with helped crystallise potential solutions and opportunities for TADEP to support more collaborative activities.

Key dates

Mark these dates in your diary and calendar:

- TADEP+ Annual Meeting: Tuesday 18 and Wednesday 19 June
- Optional field tour: Thursday 20 June
- ACIAR Project Reports due: Monday 15 July
- TADEP+ Annual Report due: Thursday 15 August
- Pacific Week of Agriculture: Monday 30 September to Friday 4 October

'A sweet tale of survival'

MDF is Australia's flagship private sector development programme. It stimulates investment, business innovation and regulatory reform to create additional jobs and increase income for poor women and men in rural and urban areas in the Indo-Pacific region.

To see how MDF works on the ground, **click here** to read this case study: 'A sweet tale of survival: How social enterprise markets are bringing Fiji's cocoa industry back to life'.

Key project activities

Bougainville Cocoa

Efforts to diversify farmer incomes are progressing well. Vegetable and goat production provide nutrition for cocoa growing families and



Planning for the 'Taste and Tell' event, which will be held in March in Melbourne. After logistical and regulatory challenges in exporting the beans the chocolate makers have now received the beans in preparation for the event.

A successful strategic meeting was held on 15 February with Project members from Sydney, Grant Vinning and James Butubu from DPIMR to discuss project activities and priorities for the coming year.

[Click here](#) for the full Bougainville Cocoa project update

PNG Cocoa

John Konam continued to organise support for the cocoa work in the Highlands in anticipation of the arrival of funds promised by the Minister for National Planning and Development.

The PNG Cocoa project methodology is being utilised to develop an expanded cocoa project for the MPs for Kavieng (Ian Ling-Stuckey) and Namatanai (Walter Schnaubelt) Districts.

Cluster groups have formed around the large cocoa budwood garden and nursery in Poro (just north of Aitape, West Sepik), which is an area with no other alternative cash crops. Collaboration with PHAMA has led to the construction of a solar drier, and with Outspan to facilitate shipment of 50 bags of cocoa to the Queen Emma Chocolate Factory in Port Moresby.

[Click here](#) for the full PNG Cocoa project update



Sweetpotato

The Sweetpotato team met with ACIAR RPM Irene Kernot to undertake a mid-term review reflecting upon progress to date, collaboration opportunities with other ACIAR projects (pests and diseases, and soil fertility) and presentations from growers on the impact of the project - detailed in the Update.

A Community Development Worker training program was delivered for project and FPDA extension staff, as well as some representatives from CIC, CARE, Wildlife Conservation Society and Ok Tedi.

Five farmer groups involved in clean kaukau production have been engaged in capacity building, led by the project extension staff. This is a process for working with community organisations that mirrors the PNG Governments revised process for Ward Development Planning.

The Transformative Agriculture and Enterprise Development Program (TADEP) is a multidisciplinary research program that aims to improve the livelihoods of rural men and women in Papua New Guinea. The program initially had five component projects, of which two have concluded. The program now comprises of the following:

- **Bougainville Cocoa** - HORT/2014/094 Developing the Cocoa value chain in Bougainville
- **PNG Cocoa** - HORT/2014/096 Enterprise-driven transformation of family Cocoa production in East Sepik, Madang, New Ireland and Chimbu Provinces of Papua New Guinea
- **Sweetpotato** - HORT/2014/097 Supporting commercial Sweetpotato production and marketing in the Papua New Guinea highlands

TADEP is co-funded by the Australian Centre for International Agricultural Research (ACIAR) and the Department of Foreign Affairs and Trade (DFAT).



Whilst two of the initial five TADEP projects have concluded, they have evolved into an ACIAR Small Research Activity (SRA) and another ACIAR project, respectively, and both have keenly agreed to continue to contribute to TADEP. The following updates demonstrate this continued collaboration across research disciplines, sharing useful and relevant insights.

Family Farm Teams SRA

The Small Research Activity (SRA) is currently being developed and details will be circulated once finalised.

The Family Farm Teams project team collaborated with CARE PNG to produce 'Opening our family's eyes': The PNG 'Family Farm Teams' research report. The author, Gloria Nema, is now working with CARE as an M&E Officer.

[Click here](#) to read the 'Opening our family's eyes' report.



Galip Nut

Four Private sector processors have commenced producing galip nuts in PNG in the last few months.

A workshop on value adding was delivered in New Ireland to 100

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participants, after increased interest in galip following an expo in late 2018.

[Translate ▼](#)

Godfrey Hannet (NARI), four UNRE students and two facilitators (Kairak) collected traditional galip stories, changes in technologies and recipes as part of a documentary and social media workshop.

[Click here](#) for the full Galip Nut project update

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Strategic Project Meeting

- A full-day strategic meeting was held on 15 February with the interdisciplinary project team to discuss progress of activities and priorities for the year ahead.
- In attendance were Prof David Guest, Prof Merrilyn Walton, James Butubu, Grant Vinning, Assoc Prof Kirsten Black, Dr Justin Beardsley, Dr Floris Van Ogtrop and Ms Jessica Hall (PhD student).



Figure 1: (L > R) Assoc Prof Kirsten Black, Prof Merrilyn Walton, Ms Jessica Hall (standing), Grant Vinning, James Butubu and Dr Justin Beardsley

Key Project Priorities for 2019

- Continue establishing Hubs and Village Resource Centres (VRCs).
- Continue setting up budwood gardens and nurseries.
- Linking Department of Health programs with the VRCs. Work with Department of Health to develop strategy document for how the VRCs will work with Health and set up Village Health volunteer program.
- Preparation and planning for 2019 Chocolate Festival.
- Implementing TADEP Collaborative Research Grant, the aim of which is to provide education and skills in nutrition and vegetable growing and assess the impact of this intervention on diet.
- Succession planning for project activities post-TADEP.

Vegetables

- Vegetable production in the northern region has gained much interest from local women who came to our nursery in Kubu to buy vegetable seedlings to grow. Radish, lettuce, cabbage and Chinese cabbage grow well and are in high demand at local markets in Buka. Both the DPI Fresh Produce Officers and ACIAR team are working together in vegetable training in the North.
- Two University of Natural Resource and Environment (UNRE) students were attached to our North Bougainville Hub for practical experience purpose and also to do a small project on vegetables.

Goats

- Three pairs of Goats (Kiddy) were distributed, two pairs for Village Extension Workers (VEWs) (Baniu and Sigh1) and one pair for Kubu (North) region hub. Goat houses were also constructed.
- We've engaged a local youth (Posara John Bosco) as a casual goat stockman in Konga. He takes care of the goats and collects data on the growth performance (weight) on a monthly basis.
- Konga DPI/ACIAR officers have started to use the goat manure for their compost production to be used for vegetable production. This will be distributed to VEWs or put on sale for interested farmers.

Cocoa processing and marketing

- One solar combination cocoa dryer in Malasang 1 (North) is now completed and one in Sigh1 is nearing completion.
- Our team participated in showcasing local Didiman chocolate in the Sasalan Hikuma Festival in Hamatan Primary School, Buka.
- We received frequent visits to our chocolate lab by interested farmers. They also bring in their cocoa samples for quality assessment and for processing to chocolate to bring back to their communities to share with family members.

- A series of presentations were made in the central and northern Bougainville on the issue of downstream processing – whether it is better to export whole beans or beans processed into any cocoa liquor/mass, butter, powder or the catch-all of “1806”.
- Two cocoa marketing newsletters were compiled.
- Informal meetings with PHAMA Plus and Bougainville Partners in Port Moresby and Buka.
- To give meaning to the casual phrase “presentations in central Bougainville”, provided are three photos of the crossing of a river near Steven Saveke’s farm near Siwai: follow the submerging of the Toyota logo on the bonnet of the vehicle. We only crossed the river because it was down because of no rain and therefore safe to cross.



Figures 2, 3 and 4: River crossing near Siwai

Taste and Tell

- The Taste and Tell event planned in Melbourne for early February was postponed at the last minute. Arranging the event required a massive amount of work. Some of the activities included the getting of the passports and visas for Steven and Elizabeth Saveke; assembling and despatching of the beans to six destinations in Australia representing eight chocolate makers; airfare and accommodation; the construction of photobook; organising meetings with the Australian High Commissioner in Port Moresby; organising through Liz Brennan media interviews.
- Whilst the postponement was hugely disappointing, the event has not been cancelled, and most of the activities were able to be rescheduled.
- In the lead-up to the decision to postpone the event, a number of underlying weaknesses were revealed. These relate to basically logistics and regulations. Until these issues are squarely addressed, efforts to export cocoa beans from Bougainville will be handicapped.
- The postponement also highlighted a lack of coordination between and similar issues for other projects and organisations also seeking to develop the Bougainville cocoa industry.

Training

- Training sessions continue for cocoa production, Family Farm Teams, goat husbandry and vegetable production. Two trainings on Family Farm Team were conducted, one in Haku-Buka (North) and one in Buin (South). Promotion of upcoming training sessions was also undertaken in all locations.
- Training on grafting of cocoa clones was conducted in Ratzua (North), Baniu (North) and Hahon (North). There was also logistical assistance with 3,000 poly bags to Arabia and Teopasino (both North) farmers, with accompanying training on nursery establishment.

Research and Development Hubs

- Negotiation for former Duncan Research Station re-opening went well. ABG Finance have released funding of PGK200,000 for negotiations to initiate set-up work. From this, materials were procured for a large nursery of 30,000 seedling capacity for research purposes, pending the signing of a MOA.

Farmer health

- The results of the health survey conducted under the ACIAR project was presented to the ABG Parliament by the Minister for Health on 20 December. He reported that the Health Department is using the study to guide their work in relation to the health of farmers and their families.
- A Health Summit is planned for 2020 to support this initiative.

Collaborative Research Grant

- The collaborative research pilot to educate villagers about improved nutrition and vegetable gardening is scheduled for May this year. The study will be implemented in the 10 villages with the poorest nutrition outcomes from the livelihood survey. The purpose of this study is to gain a deeper understanding of the food and nutrition security situation of cocoa farming households and assess the impact of a nutrition and vegetable garden education model on the diets of cocoa farming families.

Highlands

- John Konam continued to organise support for the cocoa work in the Highlands in anticipation of the arrival of funds promised by the Minister for National Planning and Development.
- Through late January he organised a symposium on cocoa in the Highlands to be held from 11 to 15 February 2019. Currently about all 23 out of 27 wards in Karimui are planting cocoa, with over 650,000 open pollinated seedlings being planted since March 2017 with many being budded with selected clones. Cocoa dry beans freighted into Goroka to be sold at PGK5/kg - PGK8/kg at Agmark, with an airfreight charge of PGK3/kg.
- John's proposed meeting in Karimui was cancelled due to lack of flights, but Trevor visited John in Goroka with David Yinil, Peter Epaina, and Peter Bapawai. They had a successful trip to the Jimi Valley by helicopter paid by Wake Goi, the local MP, to highlight the successful planting of cocoa there. This visit received good publicity in the National newspaper, which highlighted the great potential for cocoa planting in the lower Jimi Valley. Then they visited the head of DAL in Western Highlands Province and visited the Baiyer River seedling nursery. They also visited Pangia in Southern Highlands Province, where Peter Epaina is commencing trials on cocoa, and Banzin the Waghi Valley where cocoa planted by Peter Bapiwai is growing well. Later they met the senior staff of DAL in Eastern Highlands Province and visited Benabena to see their established cocoa and nursery. All highland provinces are very supportive of our program.

New Ireland

- From 5 to 13 December, Trevor, Phil and John Joseph visited 10 Cocoa Model Farmer Trainer (CMFT) sites (described in the previous TADEP Update) and saw mostly complete, mature budwood gardens averaging about 2 metres high and able to provide ample budwood.
- Through late December 2018 and January 2019, John Joseph and the Provincial Government DAL have distributed thousands of SG2 seedlings to the Village Extension Workers (VEWs) and farmers in the New Ireland Provincial Government (NIPG) Cocoa Project (payment to our CMFT sites of approximately PGK1/seedling). This provides a strong link between the ACIAR and NIPG projects. John continues to conduct budding training, which we have concluded is the most important element of our project, enabling farmers to establish their own nurseries as well as field and chupon budding.
- Following a half-day meeting on 11 Dec 2018 between Trevor, Phil and John and consultants Matt Kanua and Ben Mullen, who are developing a cocoa project for the MPs for Kavieng (Ian Ling-Stuckey) and Namatanai Districts (Walter Schnaubelt), and a follow-up field visit with Ben to our CMFT site at Panamecho on 12 February, Ben and Phil had a long phone conversation about the strategy of their proposed project in New Ireland aimed at helping over 600 farmers using our basic ACIAR strategy. This was followed by a long conversation on 14 February with Mike Bourke who is liaising with Matt and Ben on the design of the project. Phil forwarded a brief description of our project and notes on lessons learned to Ben and Mike for use in their deliberations.

Madang

- On 2 January, the first staff meeting was held where arrangements were made for farmer training in financial and business literacy through Microenterprise.
- A new site at Ato, Raikos District was secured for a central project nursery and model block, following the loss of facilities at Murnass.
- The old open back landcruiser (RAM158) was repaired and is back on the road.
- Eleven CMFT sites over 6 LLGs and 4 districts were visited in January and 69 farmers (20 women) contacted and advised on cocoa growing technology.
- Altogether, 23 nurseries of 3,000 to 5,000 capacity each are being maintained at CMFT sites. 1,000 clones are ready for field planting.

- Budding training was conducted at one site led by four experience budders; 10 farmers (4 women) were trained - 500 bud sticks were supplied and 1,600 rootstocks were budded.
- In the Madang project, 5 budwood gardens have been completed and maintained - 2 are mature and have started harvesting bud sticks, while 3 need some infilling.
- At the extension site in Dumpu (Usino/Bundi District) 5,000 rootstocks have been raised and 1,600 budded by CMFT and farmers using budsticks from Mabenob, while the site for a budwood garden is being prepared.
- At Bom, a nursery with 4,000 rootstocks has been prepared; the site for a budwood garden has been cleared and pegged.
- At Korona where goats are being studied for integration with cocoa farming, there are now 4 goats after a nanny gave birth to twins.

East Sepik

- John Meth and Chris Toli have continued distribution of clones to complete budwood gardens at CMFT sites.

West Sepik

- Wilson Miroi supported by Grace Klembasa continues to work with the large budwood garden and nursery at Poro, just north of Aitape, supporting many cluster groups. There is no alternative cash crop in the area and the only way for people to earn money will be by cocoa production. Alsima Cluster Group is very well led and motivated and has been registered with IPA. They aim to construct nurseries in or near their blocks for each of the 33 members of the cluster group so that they can all produce clones, initially 300 each. PHAMA built a solar dryer for Grace's cluster group. The other cluster groups organised are Charis, Sarim, LasLo, Timothy, Arowe, Wauroyn, and Lalep. They are continuing to dry all their dry beans in the Combination Dryer dryer modelled on the Panamecho dryer (new Ireland).
- Wilson has been working to ship 50 bags of cocoa to the Queen Emma Chocolate Factory in Port Moresby, supported by the Operations Manager for Outspan PNG, who he has donated the chemical desiccant and Kraft paper to protect the cocoa and has also agreed for his staff to show how to pack the container in the Wewak Cocoa Board yard ready for shipment.

East New Britain headquarters

- Trevor is organising the purchase and distribution of more motor bikes for extension officers to service the project.

Collaboration

- Olivia Reynolds, an entomologist now working with CESAR, Melbourne, accompanied by Rodney Minana (Cocoa Board) and Deane Woruba, arrived in Wewak on 12 Feb to work with John Meth to sample infested cocoa and other fruits for Cocoa Pod Borer and to put out some pheromone traps.

Sweetpotato

HORT/2014/097

- Most of the project team met in Aiyura on 11/12 February for the project mid-term review conducted by ACIAR RPM Irene Kernot. Project participants reported on work undertaken to date, along with ideas for greater alignment with the ACIAR sweetpotato pest and disease project (led by Prof Geoff Gurr) and ACIAR sweetpotato soil fertility project led by Dr Gunnar Kirchhof. A highlight was presentations by 5 growers who explained some of the positive impacts that the project has had on their commercial farming businesses as well as raising some issues for the project team to consider.
- ACIAR RPM Irene Kernot toured the project field production sites with FPDA staff and project leader Phil Brown, and heard some inspiring stories of commercial activities that farmers have initiated after gaining access to clean planting material:
 - Several farmers reported that they were already selling clean planting material to other farmers, and were hoping to establish clean vine sales as a commercial business. This is a significant development as previously vines were simply cut from crops, so sales of vines were rare.
 - Two farmers in the Mt Hagen area had commenced supplying the Tininga supermarket chain, linking up with an IFC/MFAT funded project where Tininga has developed a supply chain with improved temperature management and packaging to deliver vegetables from the Highlands to higher value markets in Port Moresby and other urban centres.

- One farmer in Asaro had continued to supply kaukau to CPL supermarkets in Port Moresby, building on the connections made by the project in the 2018 supermarket trial.
- Two farmers had success in using clean kaukau vines and roots as stock feed, reporting that pigs and cattle showed a preference for the clean material and that growth rates were high when it was included in their diet.
- Many farmers reported that the taste of the clean kaukau was superior to the roots they were used to eating, and that their families were now happy to eat more kaukau. One farmer told of cooking a large pot of kaukau, and when he reached in to get a piece to eat it was nearly empty because his children had eaten so much of it.
- All farmers expressed enthusiasm for using clean kaukau and reported that initial scepticism from other growers in their communities had largely been overcome.
- A Community Development Worker (CDW) training program was delivered from 4-8 February for project and FPDA extension staff, as well as some representatives from CIC, CARE, Wildlife Conservation Society and Ok Tedi. NATTB conducted workplace assessor training for the same participants 11-13 February, with the process aimed at achieving formal accreditation under the PNG National Standard for CDWs. This is a significant milestone for the project, with a core group of extension staff now accredited and well equipped to conduct the participatory training needed to support farmers and their communities as they adopt commercial kaukau business activities.
- Five farmer groups involved in clean kaukau production have been engaged in capacity building, led by the project extension staff. The groups are South Waghi Organic Food Farmers Association (umbrella organisation for 10 farmer groups), Weira Farmer Group, Hagereto Farmer Group, Kasena Farmer Group, Kuka Fresh Produce Farmer Group). A sixth farmer group (Cecilia Paraka family business) will be engaged this year. This is a process for working with community organisations that mirrors the PNG Governments (DPLGA) revised process for Ward Development Planning. It is a good process for an outside organisation (in this project, FPDA) to use to work with community organisations because it promotes self-reliance and is community-driven and participatory. Links with the Family Farm Teams project are being developed in the project.

Family Farm Teams

Small Research Activity

- The Small Research Activity (SRA) is currently being developed and details will be circulated once finalised.
- The Family Farm Teams project team collaborated with CARE PNG to produce *Opening our family's eyes: The PNG 'Family Farm Teams' research report*. The author, Gloria Nema, is now working with CARE as an M&E Officer. To read the full report, navigate to the Family Farm Teams section in the TADEP+ Update.

Galip Nut

Private Sector Engagement

- Another four private sector processors have started operating in Papua New Guinea, along with the ACIAR and NARI pilot factory. These processors are sourcing their own nuts and establishing their own markets. All these operators have been in contact with the project team and have received technical support and advice from the project. The processors are:
 - Divine Management Services (Dorothy Luana) is processing in ENB and has several outlets through POM, they have a strong network of farmers engaged in capacity building opportunities including nurseries and value adding training (the Galip club).
 - BISI Trading is a large wholesale/retail business operating out of Kavieng in New Ireland and has included canarium on their list of agricultural pursuits, purchasing and processing themselves to be marketed in their retail outlets initially.
 - Niugini Organics is a successful virgin coconut oil producer and exporter has also begun processing canarium with their signature glass jars.
 - Equanut is a new PNG company and is currently renting the pilot factory for several days a week and is focused on an export market, they have demonstrated commitment to ensuring a sustainable and equitable industry that improves the livelihoods of smallholder farmers.



Figures 5, 6 and 7: DMS products (top left), Nuigini Organics product (top right) and BISI products (bottom left).

Capacity building activities

- A workshop on value adding was delivered in New Ireland by project team including: Shahla Hosseini-Bai (Central Queensland University), Emma Kill, and Brett Hodges (University of the Sunshine Coast) and Lucy Siki Aiyia. The objectives of the workshop were:
 - Capacity building in galip business, food safety, food processing and value adding.
 - Increasing knowledge in galip nutrition.
 - Capacity building in knowing soil leading to improve soil fertility using compost.
- There were around 100 participants who attended the workshop. The Lapai community alone has over 200 Galip trees. There are 2 LLG wards on the island. There has been some positive feedback already from the galip expo held at the end of 2018 in New Ireland. Reports back have suggested that there has been an uptake of the technologies around food preservation and making cordials and jams.
- A cookbook containing 30 Galip recipes were collated for a recipe book. Burnett Institute will work in collaboration to include a section for healthy eating for mothers and babies.



Figure 8: (top left) The Galip Club
Photo: Sam Hagen

Figure 9: (top right) Galip Club biscuits
Photo: Sam Hagen



Figure 10: (bottom left) Galip cooking and recipe Sharing
Photo: Sam Hagen



Figure 11: A hands-on workshop to increase capacity of villagers in galip value adding by baking galip biscuits and muffins

Photo: Sam Hagen

Documentary and social media training development

- Godfrey Hannet (NARI) and 4 UNRE students and 2 facilitators from Kairak worked on collecting traditional galip stories, changes in technologies and recipes. Used drones to collect film on harvesting and promotional videos to assist in producing training material and a short galip documentary.

Upcoming events

- Prof Helen Wallace and Dr. Shahla Hosseini-Bai will be presenting at the World Agroforestry conference, in Montpellier, France in May:
 - Transdisciplinary approaches to commercialising indigenous agroforestry trees: *Canarium indicum* in the Pacific – (Keynote address)
 - Root studies in agroforestry systems – a case study of coffee and cocoa trees- accepted as an oral presentation.
 - Nutritional quality of *Canarium* nuts and cocoa beans in an agroforestry system in Pacific –accepted as a poster.

Recently published paper

- Bai SH, Brooks P, Gama R, Nevenimo T, Hannet G, Hannet D, Randall B, Walton D, Grant E, Wallace HM (December 2018) *Nutritional quality of almond, canarium, cashew and pistachio and their oil photooxidative stability*. Journal of Food Science and Technology: 1-7.