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**PARDI**

# Report Details

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prepared by	Assoc Prof Steven Underhill

## co-authors/contributors/collaborators

Prof Randy Stringer (University of Adelaide)  
Mr Craig Johns (University of Adelaide)  
Dr Richard Beyer (PARDI Advisory Group)  
Mr Tim Martyn (Secretariat of the Pacific Community)  
Prof Biman Chand Prasad (University of the South Pacific)  
Dr Anand Chand (University of the South Pacific)  
Prof Robin South (University of the South Pacific)  
Prof Paul Southgate (James Cook University)  
Prof Helen Wallace (University of the Sunshine Coast)  
Mr Shane Dullahide (The University of Queensland)

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# 1 Progress Summary

Operationally, PARDI has now transitioned from its initial focus on supply chain reviews to a large portfolio of research-based projects. Currently there are ten active projects, one proposal currently under review and six projects completed. An outline of our project portfolio is now available on the PARDI web portal, hosted on the SPC-LRD website:

[http://www.spc.int/lrd/index.php?option=com\\_content&view=article&id=941&Itemid=617](http://www.spc.int/lrd/index.php?option=com_content&view=article&id=941&Itemid=617)

In support of PARDI operations, the PARDI Advisory Group (PAG) has continued to play an active role in the review and assessment of project proposals. Currently 68% of submitted PARDI proposals were progressed to funding support.

In August 2011, at the request of the project leader, PARDI was externally reviewed. One of the key imperatives for this was the fact that PARDI's highly adaptive and value-chain-driven project design was proving incompatible with the effective management of the resultant portfolio of research projects. As a result of the review, we have made changes to the project team, increased funding for new research projects, updated our objectives and milestones to now reflect commissioned projects, and better integrated our capacity building initiatives.

## **Key project achievements to date include:**

- Completion of value chain reports for Tamarind, Cocoa, Canarium and Coconut.
- Market reports for Pearl, Tilapia, Caulerpa and Sea Cucumber post PARDI Fisheries meeting in late May 2012.
- PARDI assisted in the development of a new national body, the Fiji Pearls Association, in Oct 2011.
- Fifteen Pacific Islander pearl farmers received training on half-pearl (mabé) seeding at Vava'u, Tonga, in November 2011.
- Value-added fisheries research is trialling shelf-life enhancement techniques for fresh Caulerpa (sea grapes) and value-added consumer products made from farmed Tilapia in Fiji and Samoa.
- Completion of an assessment of export pathways for exported sea cucumber from Fiji and Tonga to Hong Kong and Yidelu markets in Guangzhou province in mainland China.
- PARDI is collaborating with PHAMA to improve cocoa farmers' access to niche and value-added markets by establishing local quality testing capacity.
- Nine postgraduate Pacific-based students are now involved in PARDI projects: Ms Karishma Devi and Ms Kritika Devi (consumer analysis), Pranesh Kishore (pearls), Emanuel Ram (pearls), Monal Lal. (pearls), Ms Janice Natasha (value-added fisheries), Mrs Laisene Tuioti-Mariner (vegetables), Mr Salesh Kumar (vegetables), Ravinesh Ram (sea cucumber), and an Australian Youth Ambassadors for Development Ms Jess Lee who began an appointment in October on the pearl project.

- The Vanuatu Government-led tamarind supply-chain review, headed by Jimmy Rantes, has proven to be a particularly successful PARDI project highlighting the benefit of participatory-based supply-chain reviews.
- PARDI held a series of workshops in the Pacific in the second half of the reporting period on taro (Samoa), vegetable (Fiji and Solomon Islands), pearls (Fiji and Tonga), tamarind (Vanuatu), canarium nut (Vanuatu) and breadfruit (Samoa), Agribusiness (Adelaide), as well as the fisheries component meetings (Fiji).
- Research on the role of vendors serving Suva municipal markets in Fiji was undertaken under the 'Partners Improving Markets' program with UN Women. This led to the development of vendor training programs and the development of market management resources to promote the operation of new markets in Vanuatu.

#### Fiji Floods

- The recent flooding in Fiji has had an adverse impact on the PARDI breadfruit and vegetable projects. The breadfruit production nursery suffered significant damage and around 50% of the planting material was lost. Commercial vegetable production is being re-established.



A supermarket in Fiji: PARDI is conducting householder surveys in the area to help smallholders plan for the future.

## 2 Achievements against activities and outputs/milestones

### Ongoing projects

- **PRA 2010.01** This James Cook University (JCU)-led project is working to increase cultured pearl production capacity and improve quality in the Fiji and Tongan cultured pearl industries (Paul Southgate, JCU).
- **PRA 2010.02** This University of the South Pacific (USP)-led project aims to evaluate and develop new value adding products and technologies for Tilapia and Caulerpa for commercial application in Fiji, Samoa and Tonga (Robin South, USP).
- **PRA 2010.03** A joint PARDI (Solomon Islands and Vanuatu) and ACIAR funded (PNG) project that aims to develop consumer-driven value-adding strategies and process techniques to support an emerging Canarium nut industry (Helen Wallace, USC).
- **PRA 2010.005** Developing commercial breadfruit production systems for the Pacific Islands (Andrew McGregor, Kokosiga Fiji).
- **PRA 2010.001b** Support development of cultured pearl industries in Fiji and Tonga (Anand Chand, USP).
- **PRA 2011.01** Facilitating Improved livelihoods for Pacific Cocoa producer networks through premium market access (Tim Martyn, SPC).
- **PRA 2011.03** Developing an integrated participatory guarantee scheme in the Pacific Islands in support of sustainable production of high-value vegetable crops (Jen Carter, USC).
- **PRA 2011.04** Developing a clean seed system for market-ready taro cultivars in Samoa (Mary Taylor, SPC).
- **PRA 2011.06** Development of a market mechanism for Teak and other high-value timber in the Western Province of the Solomon Islands (Dr Tim Blumfield, Griffith University).
- **SRA 2011.04** Taro improvement programme sensory evaluation of Samoan taro varieties (Richard Beyer, Consultant).
- **PRA 2012. 02** Fiji retail market transformation study (Prof Gurmeet Singh, USP).

### Completed projects

- **PRA 2010.04** This Southern Cross University (SCU)-led project undertook a scoping study associated with the development of village-based training programmes and information sources for better postharvest handling of sea cucumber in Fiji, Tonga and Kiribati (Steve Purcell, SCU).
- **SRA 2010.01** Taro sensory testing has been completed in Fiji and Auckland markets and a final report completed (Anand Chand, USP).
- **SRA 2010.02** Virgin coconut oil value chain assessment: opportunities for adding value to the coconut sector (Tevita Kete, SPC).
- **SRA 2011.02** Integrated value chain analysis for primary industries sector (Jimmy Rantes, Vanuatu Government).
- **SRA 2011.07** Designing a strategy for assessing and transferring capabilities (Damian Hine, UQ).
- **SRA 2011.01** Does a Whole of Supply Chain (WoSC) approach deliver market-driven opportunities to generate a sustainable cash economy to local communities in the Pacific (Kim Bryceson, UQ).

## Performance against milestones

Objective 1: Develop value chain analysis as a means to prioritise R&D interventions in agribusiness development (led by University of Adelaide)

No.	Activity	Outputs/milestones	Comments	
1.1	Identify markets and supply chains that have the potential to deliver substantial livelihood benefits to Pacific Island people.			
1.1.1	Undertake a desk study highlighting past experiences with similar commodity- focused projects in the PICs and reasons for their success or failure.	Report produced.	March 2010	University of Adelaide's (UoA) involvement in projects is ongoing. Rather than just providing initial direction for PARDI and a rapid analysis of best bets, UoA has dedicated resources and funding to play an ongoing role in a majority of the projects being undertaken by PARDI.
		Updated Report covering additional lessons learnt, including an inventory of on-going efforts and more rigorous value chain assessments on 3 key chains.	March 2013	It is anticipated that this imbedded approach will result in a much more whole-of-chain and market-led understanding of the opportunities, researchable issues and lessons learnt. This will help direct existing projects as well as future ACIAR work in the Pacific.
1.1.2	Perform rapid market and chain appraisal on the 'best bet' basis, selecting the most appropriate method to assess the sector or product.	Inception workshop and stakeholder engagement to choose best bet sectors.	August 2010	Inception workshop was used to agree on selection criteria to identify best bet commodities and sectors.
		Rapid sector analysis of best bets.	December 2011	Rapid sector analysis and industry mapping of 'best bets' has contributed to the development and ongoing activities of nine PRA's and three of the completed SRA's.
1.1.3	Build on sector and market analysis carried out in the selection process, focusing on specific chains relevant to that market and identifying potential domestic and export markets.	Selection of specific chains and target markets.	Ongoing	Value chain and market analysis activities are included in PRA milestones for projects on Pearls, Marine Value Adding, Sea Cucumber, Canarium, Teak, Tamarind, Cocoa and PGS vegetable projects. More details are available in PRA tables below.  This analysis builds on the initial rapid appraisal and mapping activity to identify private sector partners, target markets and consumer and market research to drive interventions along the whole chain.
1.1.4	Rank, assess and choose supply chains and associated priority interventions (i), review relevant project documents (ii) external expert input (iii) reach a consensus ( the project team and relevant partners).	PRA proposal development and approval	Ongoing	This activity is at different stages for different projects. The Tamarind PRA 2012.03 and 'The Implications of Evolving Food Retail Markets on Small Producers Livelihoods' PRA 2012.02 have only just been developed and are awaiting project approval by the PARDI Advisory Group (PAG), whereas the other 7 PRA's we have been involved with have already been approved by PAG and are already underway.  Supply chain selection and interventions are discussed and agreed upon by the wider project team and described within each PRA.

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Objective 1: Develop value chain analysis as a means to prioritise R&D interventions in agribusiness development (led by University of Adelaide)

No.	Activity	Outputs/milestones		Comments
1.1.5	Conduct more detailed consumer research to understand consumer drivers and market requirements for both domestic and export markets.	Consumer, household and producer surveys in PIC.	Conducted by December 2012 Analysed by June 2013	<p>A number of surveys including consumers, households, producers, retailers, food service providers, processors and traders have either been undertaken or are planned for the near future. The insights gained from these studies will feed directly into PRA-based interventions and identify trends in buying patterns which will highlight future opportunities. Examples of research include:</p> <ul style="list-style-type: none"> <li>• Consumer research undertaken in the Suva Municipal market in April/May 2011;</li> <li>• Tourist &amp; local consumer research in Solomon Islands for Canarium October 2011;</li> <li>• Tourist and local consumer research undertaken in Vanuatu for cocoa and Canarium in Aug 2011;</li> <li>• Presentation of consumer research was given to Canarium nut processors in Vanuatu in April 2012;</li> <li>• Household consumer research planned for Fiji in June 2012;</li> <li>• Tourist and locals consumer research planned in Vanuatu for cocoa and canarium in July 2012;</li> <li>• Producer surveys planned in Vanuatu for cocoa in July 2012.</li> </ul>
		Research across retailers, food service and processors in PIC.	Conducted by December 2012 Analysed by June 2013	<ul style="list-style-type: none"> <li>• Restaurants and hotels interviews completed in Solomon Islands for Canarium in October 2011;</li> <li>• Processor and retailer interviews completed in Vanuatu for Tamarind in October 2011;</li> <li>• Key-chain interview undertaken in Solomon's for Teak in February 2012;</li> <li>• Vendor research &amp; training in Vanuatu municipal and roadside markets in March 2012;</li> <li>• Retailer, food service and processor interviews in Fiji planned for July 2012.</li> </ul>
		Consumer research in key target export markets.	Conducted by June 2013 Analysed by December 2013	<b>Milestone pending</b>
		PRA-specific consumer and market research.	Ongoing	Included above
1.1.6	Produce value chain mapping and analysis integrating market analysis and consumer studies	Reports within PRA milestones.	Ongoing	<p>Regular PRA project meetings are conducted and reports are generated as required within those PRA's.</p> <ul style="list-style-type: none"> <li>• Forestry team met in Adelaide in May 2012 to review analysis of market segments and discuss next steps.</li> <li>• Marine team is meeting in Fiji in June 2012 to do likewise.</li> </ul>



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Objective 1: Develop value chain analysis as a means to prioritise R&D interventions in agribusiness development (led by University of Adelaide)

No.	Activity	Outputs/milestones		Comments
		Separate reports for PIC consumer research, export markets and broad chain research.	June 2014	<b>Milestone pending</b>
1.1.7	Review international market access requirement and consider bio-security challenges likely to be encountered by PICs, providing relevant information to PHAMA.	Review any market access issues in target markets for sector based PRA's.	Ongoing	<p>Potential market access and bio-security issues within PRA's will be identified and passed onto PHAMA.</p> <p>A number of PRA's with UoA involvement will have an initial focus on the domestic market, but cocoa is one that has sought collaboration with PHAMA to the extent they now share project staff.</p> <p>Teak is another project that may require PHAMA involvement as it develops.</p> <p>Pending milestone.</p>
		Review any market access issues for the two export markets where broad consumer research is being conducted.	December 2013	<b>Milestone pending</b>
1.1.8	In collaboration with all project partners, evaluate the results and evidence from the market analysis and value chain study, ranking the potential researchable to scope intervention projects.	Reports within PRA milestones.	Ongoing	UoA has now completed supply chain reports for Canarium, Cocoa, Tamarind and Coconut.
		Separate reports for PIC consumer research, export markets and broad chain research.	June 2014	Additional reports have been provided for specific PRA-based activities and cross- sector research projects.
1.2	Enhance supply chain management expertise in the Pacific in ways that assist PARDI project goals and long-term success of agricultural value chains.			
1.2.1	Provide capacity building support at the individual, group and organisational levels through participation in PARDI project activities.	Incorporate capacity building support activities into PRA's and SRA's.	Ongoing	<p>An excellent example of capacity building support is our relationship with UN Women where we are working with them and PIM (Partners for Improving Markets) to improve central and roadside markets across Fiji, Vanuatu and the Solomon Islands.</p> <p>A joint workshop was held with UN Women in Shefa Province in February 2012 with vendors and local government representatives in Vanuatu. This will lead to further in- market activities, including a design for market training, capacity building and governance support of fresh food markets in Vanuatu.</p>

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Objective 1: Develop value chain analysis as a means to prioritise R&D interventions in agribusiness development (led by University of Adelaide)

No.	Activity	Outputs/milestones		Comments
1.2.2	Undertake mentoring and training activities for research, extension and policy groups using a value chain framework to improve institutional knowledge and expertise in supply chain methodology and analysis.	Use SRA's to mentor and train PIC staff on value chain methodology and analysis.	Ongoing	Capacity building is taking a number of different forms. For many value chain analyses, UoA has been proactive in ensuring relevant local personnel are involved in interviews and surveys within PRA's. <ul style="list-style-type: none"> <li>• In the case of Tamarind in Vanuatu, the process was formalised into an SRA where staff at the Department of Industry were trained and then mentored on value chain techniques. Staff are now working on their own project in the cattle industry.</li> <li>• The new PRA 2012.02 on retail transformation in Fiji will also allow PhD students to 'shadow' analysts while they are collecting information from key members along the chain.</li> </ul>
1.2.3	Coordinate, facilitate or provide target skill development of Pacific supply chain participants associated with PARDI project activities, including promoting supply chain champions, enhancing retail linkages, engaging with certification programs, networking with industry associations.	Involve chain members in value chain intervention activities to help develop their skills.	Ongoing	This activity is built into the way we approach these types of projects. Chain champions are identified during the initial analysis and then PARDI works with the chain champions and the rest of the chain to identify opportunities and researchable issues. <p>The PARDI team collaborates in this work, but ultimately it is the chain members who will drive the intervention activities for their own benefit and that of the wider industry.</p> <p>Votausi at Lapita Cafe is a great example of a chain champion for the canarium industry. She has worked with us to identify researchable issues, opportunities and target markets for the whole industry.</p>



Steven Underhill and Tolo at a University of South Pacific taro breeding trial, Samoa – 2012.

Objective 2: Strengthen value chains for selected high-value fisheries products through the effective development and delivery of the commissioned projects (led by James Cook University)

No.	Activity	Outputs/milestones	Due date of output/ milestone	Comments
2.1	Identify, prioritise and develop interventions to strengthen fisheries value chains in the Pacific based on regional commodity priorities and ACIAR identified 'best bets.'	Chain reviews completed.	December 2011	Chain reviews have been completed and reports for fisheries projects will be finalised as scheduled by July 2012.
		Chain reports for pearls, sea cucumbers, Tilapia and Caulerpa.	July 2012	Milestone pending
2.2a	PRA 2010.001 Support development of cultured pearl industries in Fiji and Tonga (Southgate, JCU).	Draft pearl industry development plans for Fiji and Tonga.	July 2012	Draft report completed for development plans for Fiji. Consultation is taking place with stakeholders (farmers, etc).
		Expansion of village spat collection program (Fiji).	June 2012	Materials for spat collection program have arrived in Fiji. Villages have been identified and Fiji Fisheries officers will be engaged with project staff for spat collection. Materials to be distributed soon.
		Upgrade capacity of hatchery facility in Tonga.	June 2012	A new filter system has been installed and the seawater system upgraded.
		Extension materials.	December 2012	Milestone pending
		Business planning workshop in Fiji.	December 2012	Milestone pending
		Business planning workshops in Tonga.	Jun 2012	Milestone pending
		Improved product quality, product diversity and value adding*.	December 2013	Milestone pending
		Final pearl industry development plans for Fiji and Tonga.	December 2013	Milestone pending
2.2b	PRA 2010.001b Support development of cultured pearl industries in Fiji and Tonga (A.Chand, USP).	Complete industry 'snapshot' review for Fiji.	May 2011	Research and snapshot of Fiji pearl industry completed in May 2011. Report submitted to project leader.
		Complete industry 'snapshot' review for Tonga.	Aug 2011	Research and snapshot of Tonga Pearl Industry completed in June 2011. Report submitted.
		Overview of the mother of pearl handicraft sector in Fiji.	December 2011	Research on MOP (Fiji) completed. Report submitted to project leader. A paper has been presented at the Australasian Aquaculture Conference Melbourne, Australia (1-4 May 2012). Draft publication written and will be finalised and submitted to international journal.
		Industry* development strategy for Fiji mother of pearl handicraft sector.	December 2012	Work has started on the preparation of Industry development strategy - on track for the Dec 2012 deadline.
		Revised industry 'snapshot' review for Fiji.	December 2013	Milestone pending

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Objective 2: Strengthen value chains for selected high-value fisheries products through the effective development and delivery of the commissioned projects (led by James Cook University)

No.	Activity	Outputs/milestones	Due date of output/ milestone	Comments
		Revised industry 'snapshot' review for Tonga	December 2013	Planning has started and work will be done in January 2013- on track for the Dec 2013 deadline.
2.3	PRA 2010.02 Value-adding and supply chain development for fisheries products in Fiji, Samoa and Tonga (South, USP)	Scoping studies on all commodities in the three target countries.	May 2010	Scoping studies for Caulerpa and Tilapia completed; reports to be placed on IMR, Alafua and SPC web pages.
		Supply chain and market chain analysis for two commodities in three target countries.	December 2011	Successful public taste evaluation of tilapia value-added products held in Apia, Samoa in July 2011. A report on the evaluation has been completed and will be published as a School of Marine Studies Technical Report.
		New value-added products are identified and tested and subjected to cost-benefit analysis.	December 2012	<p>The market supply chain analyses for Caulerpa and Tilapia in Fiji and Samoa were completed and the results are still being finalised. The results for Caulerpa in Fiji and Samoa have been prepared for publication in the journal <i>BOTANICA MARINA</i>.</p> <p>Successful public taste evaluation of value-added Tilapia and Caulerpa products held in Suva, Fiji in April 2012. The market supply chain for Caulerpa in Tonga will be investigated in mid-2012.</p> <p>Work on Tilapia value-added products is on-going, following on from public taste evaluation exercises (J. Lako; J. Natasha).</p> <p>Preservation methods for Caulerpa have been developed, and were tested along with Tilapia during the Fiji public taste evaluation (J. Lako).</p> <p>Work in partnership with Pacific Seaweeds Ltd. (Fiji) is on-going, and trial exports from Fiji to Auckland are being carried out.</p> <p>Milestone pending</p>
		Marketing strategy, supply and market chains developed and tested.	May 2013	Milestone pending
2.4	PRA 2010.04 Improving income of Pacific island fishers through better post-harvest processing of sea cucumber: scoping study (Purcell, SCU).	Report on current information sources on processing methods in the Pacific.	February 2011	A report has been completed. Of note is the fact that postharvest handling quality is commonly poor. A large number of fishers and even some processors in both Kiribati and Tonga commented they wanted information and training on processing methods.

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Objective 2: Strengthen value chains for selected high-value fisheries products through the effective development and delivery of the commissioned projects (led by James Cook University)

No.	Activity	Outputs/milestones	Due date of output/ milestone	Comments
		Report including separate assessments for each of the 3 target countries on the current use of value-adding.	October 2011	Report completed. Based on the number of sea cucumber fishers in villages visited and the number of fishing villages in countries, we estimate that there are 3000-5000 sea cucumber fishers in Kiribati, around 1500 in Tonga, and about 3000-5000 in Fiji.
		Report of supply chain structures existing in trade from Fiji, Tonga and Kiribati to Asian markets.	July 2011	Report completed. The project team have conducted questionnaire-based interviews with 84 sea cucumber fishers and 21 processors in Kiribati, 134 sea cucumber fishers and 13 processors in Tonga, and 4 processors in Fiji. The surveys were spread among 5 atolls in Kiribati and 4 island groups in Tonga.
		Desk study of emerging market opportunities for value-adding of sea cucumbers and assessment of the practicality of promoting these in the Pacific.	October 2011	Desk-top study completed. A large amount of data on prices vs length and weight of a range of species was taken from various retail and wholesale shops in Hong Kong and Guangzhou. Concomitantly, the cut (made to gut the animal), colour and odour of each specimen was recorded.
		Best-practice methods identified for processing various sea cucumber species.	Aug 2011	Completed and outlined in final report.
		Report on cost-benefit analysis.	October 2011	All associated reports and studies have been completed.
		Final report.	May 2012	Final report has been received (7/5/2012).
2.5	Development and delivery of additional targeted small research projects that address key knowledge or skill gaps, or provide supplement support	SRA applications where appropriate.	On-going	Paralleling Steven Purcell's project a UoA-led SRA - Refinement of the sea cucumber china marketing study was undertaken. This project is due to report later this year.  A new associated concept proposal is under consideration: The development of economic decision support tools.
2.6	Ensure effective coordination and knowledge sharing between commissioned PARDI fisheries projects. Synthesize lessons relating to strengthening fisheries value chains.	Annual Fisheries Component meetings.	May 2011 May 2012 May 2013 May 2014	(May 2012) Fisheries component workshop was held in Suva to review project progress and undertake forward planning.

Objective 3: Strengthen value chains for selected high-value forestry products through the effective development and delivery of the commissioned projects (led by University of the Sunshine Coast)

No.	Activity	Outputs/ milestones	Due date of out- put/ milestone	Risks / assumptions	Applications of outputs
3.1	PRA 2010.003 Developing markets and products for the Pacific Island and PNG Canarium nut industry (Helen Wallace USC).	Analysis of markets and market segments.	December 2014	Preliminary consumer surveys have been conducted in Vanuatu, UoA staff have travelled to Honiara to commence consumer surveys with an initial focus on hotel and restaurant surveys.	
		Processing techniques tailored to each country's circum- stances.	December 2014	Project staff recently met in Adelaide to co- ordinate market and consumer research with processing research. Plans are for consumer surveys to run in Vanuatu in July 2012 with input into the surveys from the processing researchers and market experts.	
		Analysis of drivers and barriers to stakeholder industry partici- pation and capacity.	December 2014	USC and Ministry of Forests staff in the Solomon Islands have assessed canarium nut production on a Facilitating Agricultural Commodity Trade (FACT — EU funded) trial on Kolumbangara Island.  Stakeholder analysis in the Solomon Islands commenced during the reporting period.. USC staff and students spent three weeks in Western Province, Solomon Islands with Canarium nut producers to examine barriers and opportunities for stakeholders in the Canarium industry.  The researchers have interviewed village residents, smallholder farmers and members of community organisations in Baniata and Locuru villages on Rendova Island. Allen Teppet-Burro, who is the program coordina- tor of the Tetepare Descendants Association (TDA), facilitated the visit to the Island.  One of the early findings from the stakeholder analysis is the need for more basic equipment and improved transport.	
3.2	PRA 2011.06 Develop- ment of a market mechanism for Teak and other high- value timber in the Western Province of the Solomon Islands. (Tim Blumfield Griffith University).	Strategies for grower coopera- tives for harvesting and timber marketing (FSC).	December 2013	This project was approved on the 29/2/2012. As 25/5/2012 the University of Queensland was yet to finalise the sub-contracting of this project to Griffith University and the project has yet to commence.	
		Resource inventory.	June 2014	Milestone pending	
		Report on market drivers for adding value to teak thinning.	December 2013	Milestone pending	
		Pilot programme for the collection and purchase of community-grown timber within the Western Province.	June 2014	Milestone pending	

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Objective 3: Strengthen value chains for selected high-value forestry products through the effective development and delivery of the commissioned projects (led by University of the Sunshine Coast)

No.	Activity	Outputs/ milestones	Due date of out- put/ milestone	Risks / assumptions	Applications of outputs
		A report on the social response to cooperative action and the impact market access for thinnings.	June 2014	Milestone pending	
3.3	PRA 2012.03 Improving processing and marketing to improve the Tamarind value chain in Vanuatu (Helen Wallace USC).	Conduct consumer and customer research to understand the markets and potential products for tamarind in Vanuatu.  Examine processing methods for tamarind.	June 2013	This project is yet to receive formal approval.	
		Provide training, awareness raising, planting material and capacity building for tamarind production and processing.	June 2013	Milestone pending	
3.4		Key knowledge gaps identified and assist with the development of SRA-related activities to provide remedial action	ongoing	Two small research activities were undertaken during reporting period.  (i) SRA 2011.02 - Integrated value chain analysis for primary industries sector (Jimmy Rantes Vanuatu Government).  (ii) SRA Value chain analysis of forestry activities in the Pacific (Wallace).  SRA 2011.02 focussed on an analysis of current Tamarind production, identifying a pre-existing production capacity and an under-supplied domestic market. The participatory nature of this review also created capacity building outcomes.  SRA Value chain analysis identified post value-add activities to support ongoing ACIAR teak work in Solomon Islands.	
3.5	Ensure the effective coordination and knowledge sharing between commissioned PARDI forestry projects.	Coordination and undertake meetings, workshops with project stakeholders.	Ongoing	At present with only PARDI forestry project activity being our Canarium activities – the Teak, Tamarind projects are still pending - we have decided to post-pone the proposed forestry workshop until late 2012 or early 2013.	
		Undertake or support annual PIC government communications.	Ongoing	A Canarium workshop was held in Vanuatu in April 2012.	

Objective 4: Strengthen value chains for selected high-value horticulture and agriculture products through the effective development and delivery of the commissioned projects (led by DAFF formerly – Queensland Department of Employment, Economic Development and Innovation, DEEDI).

No.	Activity	Outputs/ milestones	Due date of out- put/ milestone	Comments
4.1	Identify, prioritise and develop interventions to strengthen horticulture value chains in the Pacific.	Hort chain reviews completed.	December 2011	All the chain reviews have been completed.
		Four hort chain reports.	July 2012	At present DAFF (DEEDI) is endeavouring to get as many as practical finalised.
4.2	PRA 2010.005 Developing commercial breadfruit production systems for the Pacific islands (Andrew McGregor - Kokosiga Fiji).	Identify varieties for year-round production and develop propagation systems.	December 2013	MPI and SPC have begun working on the mapping and characterisation of breadfruit collections at MPI research stations in Sigatoka and Nadi. Breadfruit accessions held at both stations have been selected because of their promise for commercialisation. Further work is required to improve selection of elite material.
		Develop orchard management systems.	December 2012	<i>Uto Dina</i> and <i>Bale Kana</i> are being targeted for mass propagation. The survival rate for marcotted breadfruit in Fiji is quite low (10-20%) which impacts on the commercial viability of propagation.
		Establish post-harvest systems for export.	December 2013	Milestone pending
4.3	PRA 2011.01 Facilitating Improved livelihoods for Pacific Cocoa Producer Networks through Premium Market Access (Tim Martyn, SPC).	Niche-market opportunities identified and private-sector partnerships developed.	December 2012	The project team had several face-to-face meetings with four cocoa companies. These local cocoa companies were provided with product-for-quality testing. Results have been communicated to producer networks in the Solomon Islands and Vanuatu. This has resulted in a wealth of information on the cocoa quality and the steps required meet international standards. Chocolate manufacturers have also expressed interest in visiting The Solomon Islands (Dale Farm, Zokoko) and Vanuatu (Dale farm and Haighs) to meet producer networks and develop partnerships aimed at improving product quality and assisting with training for quality control including track and trace systems.
		Quality control and product traceability guidelines established,	December 2013	A survey is currently being developed (July 2012), with follow-up 'panel research' of consumers in export markets in Nov/Dec 2012.
		Opportunities for local manufacturing, branding and retail outlets identified.	July 2014	In addition, the project team has assisted ACTIV with their successful application to AusAID for funds and equipment for the establishment of a chocolate factory in Port Vila. The consumer research and product development research being carried out under this objective will contribute towards the sustainability of this facility.



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Objective 4: Strengthen value chains for selected high-value horticulture and agriculture products through the effective development and delivery of the commissioned projects (led by DAFF formerly – Queensland Department of Employment, Economic Development and Innovation, DEEDI).

No.	Activity	Outputs/ milestones	Due date of out- put/ milestone	Comments
4.4	PRA 2011.03 Developing an integrated participatory guarantee scheme in the Pacific Islands in support of sustainable production of high-value vegetable crops (Jen Carter USC).	Identify local consumer trends by market and consumer analyses.	January 2013	The project held its inception workshop (jointly with the ACIAR ICM Project) in Fiji - Feb 2012.
		Develop pilot schemes for high-value vegetable crops in Fiji, Samoa and Solomon Islands.	January 2014	Grower group selection is currently being undertaken and base-line survey design is almost completed.
		Develop a support network for producers.	July 2015	Milestone pending
4.5	PRA 2011.04 Developing a clean seed system for market-ready taro cultivars in Samoa (M.Taylor, SPC).	Screen taro varieties for defined market opportunities.	December 2012	The taro project held its first planning meeting in February 2012 and a research technician is now engaged to work on the project. The technician, Ulamila Lutu, is based at the SPC CePaCT at Narere, Suva, Fiji.  A collection of taro varieties considered as good candidates for niche market opportunities is being established in Samoa at the University of the South Pacific, Alafua Campus. Selections are based on farmer and researcher/breeder knowledge and observations. The finalised group for screening was approved in February by the project team and farmers from the local 'Taro Improvement Programme'.
		Improved multiplication of disease- and pest-free planting material.	July 2013	Current work has focused on improving multiplication protocols. SPC CePaCT is also investigating the use of a temporary immersion system that allows taro explants to be cultured on liquid medium (temporary immersion). This technique has been shown to increase propagation rates in other crops.
		Improved information flow along the taro supply chain.	July 2014	Milestone pending
4.6	2012.01 Developing protective production systems for Fiji vegetable growers (Elio Jovicich, DAFF).	Identify market opportunity for high- value vegetables.	July 2013	A preliminary stakeholder consultation meeting associated with project scoping was undertaken in Nov 2011, but the project proposal is still being prepared by Qld DAFF and has not been submitted to PARDI for consideration.
		Screen vegetables in protective cropping systems.	July 2014	Milestone pending
		Improved supply chain for high-value vegetables.	January 2015	Milestone pending

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Objective 4: Strengthen value chains for selected high-value horticulture and agriculture products through the effective development and delivery of the commissioned projects (led by DAFF formerly – Queensland Department of Employment, Economic Development and Innovation, DEEDI).

No.	Activity	Outputs/ milestones	Due date of out- put/ milestone	Comments
4.7	PRA 2012.02 'The Implications of Evolving Food Retail Markets on Small Producers Livelihoods (Biman Prasad, USP).	Chain review of retail markets.	July 2013	The project team met in Adelaide (April 2012) to develop the project proposal. PRA was formally submitted to PAG in early May 2012, and has recently been approved with an amended project leadership and title: PRA 2012. 02 Fiji retail market transformation study (Prof Gurmeet Singh, University of the South Pacific).
		Facilitation of information flows to small producers.	July 2014	Milestone pending
		Improved supply chain for small producers.	January 2015	Milestone pending
4.8	Development and delivery of additional targeted small research projects that address key knowledge or skill gaps, or provide supplement support for ongoing projects.	Identify supply-chain interventions by value chain analysis.	July 2013	To improve regional linkages a Breadfruit workshop was held in Samoa April 2012.
		Project opportunity for intervention identified.	December 2013	To improve knowledge of consumer preferences in support of ongoing taro breeding work and the SPC-led Taro clean material project, a new SRA (PARDI project) was recently commissioned - 'SRA 2011.04 Sensory evaluation of Samoan taro varieties'.
		Crops value chain improvement.	January 2015	DAFF (DEEDI) protective cropping expertise undertook preliminary project discussions in Fiji (November 2011 & February 2012). Pending milestone.
4.9	Ensure the effective coordination and knowledge sharing between commissioned PARDI horticultural projects and synthesize lessons relating to strengthening horticulture value chains.	Identify networks of appropriate skills to conduct value-chain-identified interventions and capacity building	December 2012	In November 2011, the UQ leadership of the PARDI horticulture component was ceased. Concurrently Mr Shane Dullahide (formerly DEEDI) was appointed. During the previous 12 months, PARDI horticulture coordination planning involved:  Nov 2011 – Project development assistance for proposed QLD DAFF-led protective cropping R & D;  and April 2012- PARDI+SROS hosted Breadfruit planning and review workshop.
		Organise annual meeting of crops and horticulture project leaders.	December 2012 ongoing	A PARDI horticulture coordination meeting is being planned for late 2012.
		Provide project reports to PARDI component leaders annual meeting and ACIAR RPMs.	December 2012 ongoing	Milestone pending

Objective 5: Develop and apply appropriate methodologies to evaluate how PARDI activities and interventions: (i) contribute to sustainable and efficient supply chains, (ii) improve livelihoods and (iii) increase our understanding of the factors underpinning competitiveness in Pacific Island supply chains. (led by UQ-QAAFI)

No.	Activity	Outputs/ milestones	Due date of out- put/ milestone	Comments
5.1	Establish and apply a framework for monitoring, comparison and evaluation project progress & guide project management.	PARDI advisory group (PAG) established.	June 2010	PAG and its associated terms-of-reference were established in June 2010, under the chairmanship of Dr Richard Beyer. To date, PAG has assisted in the review of 16 submitted PRA proposals, and a series of SRAs with a project currently under external review. The operations of PAG are an excellent contribution to PARDI.
		Documented protocol for project review.	September 2010	To date 68% of the projects tabled to PAG have been subsequently approved for implementation. The most common reason for rejection was that the proposal failed to demonstrate a case for investment, included industries outside of PARDI remit or were infrastructure in nature.
		Reviews of commissioned project performance.	December 2012, 2013 and 2014	Since Jan 2012, the PAG role has moved towards more project support-function with assistance provided to a series of PARDI PRAs. In late 2012, it is anticipated that the role of PAG will include M&E support.
5.2	Identify opportunities for new partnerships to strengthen or grow chains.	Joint stakeholder meetings and workshops with PHAMA and other Pacific Island Community (PIC) initiatives.	Ongoing	<p><u>PARDI+PHAMA</u></p> <p>PARDI has continued to develop collaborative links with PHAMA through linked cocoa efforts and invited joint attendance at meetings (Samoa breadfruit workshop).</p> <p><u>PARDI+ other PIC initiatives</u></p> <ul style="list-style-type: none"> <li>• Presentation about PARDI to AACP meeting in Nadi (24-25 Nov 2011).</li> <li>• PARDI-SROS (Samoa breadfruit planning workshop (26-27 April 2012)).</li> </ul>
5.3	Develop effective communication tools and products to disseminate PARDI outputs and ensure long- term information accessibility.	Communication strategy developed.	December 2010	PARDI produces a technical newsletter every six months, which is now circulated widely throughout the Pacific, New Zealand and Australia. The last newsletter was released in March 2012.
		Six-monthly project newsletter.	February and September 2010, 2011, 2012, 2013, 2014	<p>PARDI has also prepared a series of project factsheets on its major projects for external stakeholders.</p> <p>An activity map outlining PARDI project activities was released in March 2012 and a PARDI folder to present the sheets was printed.</p>

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Objective 5: Develop and apply appropriate methodologies to evaluate how PARDI activities and interventions: (i) contribute to sustainable and efficient supply chains, (ii) improve livelihoods and (iii) increase our understanding of the factors underpinning competitiveness in Pacific Island supply chains. (led by UQ-QAAFI)

No.	Activity	Outputs/ milestones	Due date of out- put/ milestone	Comments
		PARDI reports, documents and associated written outputs posted on the SPC website portal.	Ongoing	PARDI is currently finalising a webportal on the SPC-LRD website. The SPC site will be used to store PARDI publications, reports, newsletters, news stories and a proposed activity calendar. SPC communication staff have been very proactive in supporting this activity. By using SPC's website, which also hosts other donor-funded projects, our intent is to support a more coordinated approach to project information management. <a href="http://www.spc.int/lrd/index.php?option=com_content&amp;view=article&amp;id=942&amp;Itemid=611">http://www.spc.int/lrd/index.php?option=com_content&amp;view=article&amp;id=942&amp;Itemid=611</a>
		PARDI component leader meetings.	Six- monthly throughout	The PARDI component leaders now meet every six months. Meetings have occurred 11 Aug 2011, and 8 December 2011, and a PARDI-ACIAR RPM annual meeting 10 February 2012
5.4	Document and analysis the key learnings from PARDI inclusive of effective supply chain and agribusiness development strategies, stakeholder engagement, enduring impact.	Supply chain reviews documents.	Ongoing	In the last 12 months there has been significant effort to finalise and document the PARDI value chain reviews. To date, reviews have been completed for tamarind, Canarium, coconuts and cocoa. These have been posted on the SPC-LRD (PARDI) web pages.  Qld DAFF (formerly DEEDI) are currently finalising a series of horticulture reports.
		Report on the overall impact of PARDI inclusive of case studies.	December 2014	Milestone pending



A smallholder from Suva is pictured surrounded by some of the region's quality produce. PARDI strives to help South Pacific Island communities to benefit from sustainable agricultural development and value- adding ventures.

# 3 Impacts

## 3.1 Scientific impacts

Scientific impacts are represented below according to PRA or SRA activities.

### **PRA 2010.02 Value-adding and supply-chain development for fisheries and aquaculture products in Fiji, Samoa and Tonga.**

*(Robin South, USP)*

Major findings:

- A Fiji-based seaweed company has started working with the project; their main aim is to ship *Caulerpa* to New Zealand, mostly likely using the brine preservation method developed by our project. The possibility of taking out a patent on the preservation methodology is under consideration.
- Only 9% of the participants of a recent consumer preference assessment had experienced eating tilapia, 46% either strongly agreed or agreed that fresh-farmed Nile Tilapia is equally acceptable to marine fish, while 20% either disagreed or strongly disagreed.
- Contributing factors to purchasing tilapia for consumption showed higher variations in sensory attributes. The preference for the most important attributes showed that 19% chose taste, 16% chose texture, 15% chose appearance, 14% chose flavour, 13% chose odour, 11% chose size (large) and 12% chose whole fish as their most important attributes.

### **SRA 2011.01 - Does a Whole-of-Supply-Chain (WoSC) approach deliver market-driven opportunities to generate a sustainable cash economy to local communities in the Pacific.**

*(Assoc Prof Kim Bryceson and Dr Annie Ross UQ)*

Major findings:

- Food production and market behaviour is largely based in social, cultural and religious obligations and in both countries (The Solomon Islands and Tonga) there are inconsistencies in supply and quality of agri-food products.
- Market sellers in both countries are driven to sell surplus and do not fully understand the requirements of a demand-driven supply-chain nor the concept of “premium pricing”.
- Advanced supply-chain elements, particularly consumer demand for information and cold-chain infrastructure, are absent or extremely poorly developed in both countries. This inhibits local and overseas market development.

### **SRA 2011.02 - Integrated value-chain analysis for primary industries sector**

*(Jimmy Rantes Vanuatu Government)*

Major findings:

- Most of the Tamarind trees were found in residential areas and are used for their shade (64%), 29% grow as a wild population and only 7% as small-scale immature production crops.

- The most common factors impeding the potential Tamarind industry were a lack of market information, lack of awareness by relevant government institutions about the potential of the tamarind, and lack of recommended silvicultural practices.
- A lack of proper processing skills to meet the required standards was found to be the biggest problem facing the industry.

### **PRA 2010.03 Developing markets and products for the Pacific Island Canarium nut industry**

(Helen Wallace USC)

- Following the Canarium Workshop, World Vision expressed an interest in Canarium processing. The workshop highlighted the need for farmer training in the use of solar driers and options for value-adding at the community level. World Vision is currently working in Santo and has the ability to provide valuable networking with farmers on Santo.

## 3.2 Capacity impacts

### **Technical capacity**

- There are now nine postgraduate Pacific-based students involved in PARDI projects: Ms Karishma Devi and Ms Kritika Devi (consumer analysis), Pranesh Kishore (Pearls), Emanuel Ram (pearls), Monal Lal. (pearls), Ms Janice Natasha (value-added fisheries), Mrs Laisene Tuioti-Mariner (vegetables), Mr Satesh Kumar (vegetables), Ravinesh Ram (Sea cucumber), and an Australian Youth Ambassadors for Development Ms Jess Lee who began an appointment in October on the pearl project.
- Four staff from the Vanuatu (Department of Industry and Ministry of Agriculture) received hands-on training in supply-chain assessment techniques through their participation in SRA 2011.02.
- Two technical officers from SROS Samoa (Tulia Molimau and Wanda Epa) have been included in the taro New Zealand consumer preference project.
- Five Pacific Islanders (Kiribati, Fiji X 3, Tonga) attended and presented papers at the APHC/ AuSHS/NZIAHS Horticulture for Future Conference, Lorne September 2012.
- Fifteen Pacific Islander pearl farmers received training on half-pearl (mabé) seeding at Vava'u, Tonga, in November 2011. A follow-up workshop is planned for later this year to further build capacity within the industry for pearl harvesting, value-adding, grading and pearl valuation.
- The cocoa project team, in partnership the Vanuatu Department of Industry, has improved industry coordination and planning by hosting a 'Vanuatu Cocoa Industry Forum' on Malekula in April 2012. The Forum will bring together stakeholders from the cocoa industry to discuss the Cocoa Sector Development Plan 2010-2014 for Vanuatu, identify cocoa sector project activities and identify gaps in the current implementation plan.

- The cocoa project team, through joint project work with the Vanuatu Government Statistics Department, has improved staff expertise in undertaking tourist and household surveys.
- Staff from Ministry of Forests in Western Province, Solomon Islands who are associated with the PARDI canarium project have been trained to use a Haglot electronic clinometer to measure tree heights. This clinometer and a tape measure were left with John, Poteitei Village, to increase the locals' capacity to measure trees. The Village was also supplied with a camera to photograph tree growth and flowers.

### 3.3 Community impacts

- Collaboration with UN Women and the Partners Improving Markets with women market stallholders and road-side stalls is leading to improved communication and networking activities between stall owners, market managers and municipal government officials.
- Through public tastings and research activities, public awareness has been raised in Samoa of the various value-added products that can be produced from farm-raised tilapia. Resort owners, hoteliers restaurants and retail markets in Samoa and Fiji are also more aware of the potential of tilapia.
- The need for sustainable harvesting of sea grapes has been recognised by harvesters. Awareness among tilapia farmers of the potential of value-adding, and the importance of producing larger fish has been increased.
- Processors commitment in Vanuatu to support the canarium project has been obtained. Three new processors have expressed a strong interest in processing and selling to the local and tourist market – the canarium project team will assist with processing methods.
- Recognition of the benefits of collaboration and industry-wide development has been achieved through the formation of the Fiji Pearls Association in Oct 2011.
- Based on feedback from chocolate manufacturers and cocoa traders, local growers in Vanuatu and the Solomon Islands are now more aware of key cocoa quality attributes and the factors that impact on them.

### 3.4 Communication and dissemination activities

#### Information access

To support information distribution, a PARDI web portal has been established on the SPC-LRD website. Final pages are being constructed and will include key publications and reports. PARDI research updates will also be regularly posted on web space. This site hosts a range of Pacific donor-funded initiatives, and as such reduces information fragmentation.

[http://www.spc.int/lrd/index.php?option=com\\_content&view=article&id=942&Itemid=611](http://www.spc.int/lrd/index.php?option=com_content&view=article&id=942&Itemid=611)

## Regional collaboration

One of the key mandates for PARDI has been to explore and develop a strong collaborative project delivery in the region. To date, we have focussed on establishing links with other ongoing ACIAR projects and concurrent initiatives, such as PHAMA and IACT. The Secretariat of the Pacific Community has played a critical role in helping foster and promote these links. Activities undertaken include the following.

- PARDI attendance and presentation at the AAACP workshop in Nadi, Fiji 24-25 Oct 2011 with the objective of building further collaboration and promoting PARDI activities.
- Meeting and briefing with PHAMA staff throughout 2011.
- PARDI – Pacific budget and review update 24-25 Nov 2011.
- PARDI – forestry canarium workshop in Vanuatu April 2012
- PARDI-SROS breadfruit workshop in Samoa April 2012.
- PARDI- Fisheries workshop in Fiji May 2012.
- Collaboration with Partners Improving Markets (UN Women, UNDP and AusAID).

## PARDI Publications and conference papers

- Chand, A. (2011) Consumer perception and acceptance of new taro varieties in Auckland and Fiji, paper presented at the APHC/AuSHS/NZIAHS Horticulture for Future Conference, Lorne, Australia, September 2011).
- Chand, A. (2012) Value Adding of Mother of Pearl (MOP) Shell Jewellery and Wooden Handicrafts in Fiji, paper presented at the Australasian Aquaculture Conference Melbourne, Australia, 1-4 May 2012).
- Naidu, S. (2011) Analysis of vegetable markets in Fiji, paper presented at the APHC/AuSHS/NZIAHS Horticulture for Future Conference, Lorne, Australia, September 2011).
- Natasha, J., Lako, J. and South G.R. (2011) Consumer preference tasting of *Oreochromis niloticus* value-added products: cold smoked fish, surimi and fish paste. Abstract *International Conference on chemistry, Environment and Climate Change – focus on the Pacific*. September 17th, 2011.
- Purcell, S. (2011) Processing cultured tropical sea cucumber into export product: issues and opportunities. Asia-Pacific Tropical Sea Cucumber Aquaculture Symposium. 15-17 February 2011, Nouméa, New Caledonia
- Purcell, S.W., Samyn, Y. (2012) Commercially important sea cucumbers of the world. FAO, Rome. (*in press*)



- Purcell, S.W., Hair, C., Mills, D. (2012) Sea cucumber culture, farming and sea ranching in the tropics: progress, problems and opportunities. In review in *Aquaculture*
- Simos, T (2011) Understanding the beche de mer Value Chain (Fiji and Tonga) In: Asia-Pacific Tropical Sea Cucumber Aquaculture Symposium. 15-17 February, Nouméa, New Caledonia (in press)
- South, G.R., Morris, C., Bala, S., Lober, M. & Simos, T. (2012) Supply chain and marketing of sea grapes, *Caulerpa racemosa* (Forsskål) J. Agardh (Chlorophyta: Caulerpaceae) in Fiji and Samoa. [manuscript completed, to be submitted to the international journal *Botanica Marina*]
- Underhill, S.J.R., Stringer, R., Bryceson, K., Prasad, B.C. and Shearer, D. (2011) The Pacific Agribusiness Research for Development Initiative (PARDI): a Novel Approach to Horticultural Development in the Pacific. *Acta Horticulturae*. 921:17-24.
- Underhill S.J.R. and Vinning, G. (2011) Postharvest horticultural practices in the Sigatoka Valley, Fiji. (In) Horticulture for the Future, The Australasian Postharvest Horticulture Conference, 18-22 September, Lorne, Victoria. (abstract only)
- Underhill S.J.R. (2012) Developing Horticultural Quality Management Systems in Fiji. *Acta Horticulturae* (in press).

### **PARDI Newsletters and associated project reports**

- PARDI August 2011 Project Newsletter (19pp.)
- PARDI February 2012 Project Newsletter (24pp.)
- Canarium nut value chain review
- Coconut value chain review
- Tamarind value chain review
- Cocoa value chain review
- Anon (2012) INFORMATION SHEETS on *Caulerpa* and tilapia in Fiji and Samoa (in collaboration with the Fiji Fisheries Division and Samoa Fisheries).
- Beyer, R. (2012) Pacific agribusiness research for development initiative facilitation visit to Tonga. PARDI project report.
- Beyer, R. (2012) PARDI PRA 2011.04 taro improvement programme sensory evaluation of Samoan taro varieties Report on the visit to samoa between 22n and 29t April (PARDI project report).
- Chand, A. (2011) Main Research Finding: Comparative Analysis of Fiji and Auckland Taro Sensory Research (PARDI project report) (2pp.)

Chand, A. (2012), Value-adding of Mother of Pearl (MOP) Shell Jewellery and Wooden Handicrafts in Fiji, Draft Report.

Chand, A. and Naidu, S (2012) The potential for import replacement and opportunities for local handicraft manufacture in Fiji supporting livelihoods, Draft Report.

Chand, A. and Naidu, S (2011), Pearl Industry Report: Fiji and Tonga, Draft Report.

Lako, J. (2011) *Samoa Sensory Products Evaluation Report*. University of the South Pacific. 62 pp.

Lako, J. (2012) Progress Report: Sea grapes post-harvest and value addition in Fiji. Report, School of Biological, Chemical and Environmental Sciences, University of the South Pacific, Suva. 20 pp.

Lober, M. (2011) Tilapia in Samoa. Manuscript report, University of the South Pacific, Alafua, Samoa. 6 pp.

Lober, M. (2011) Limu fuafua (sea grapes) in Samoa. Manuscript report, University of the South Pacific, Alafua, Samoa. 20 pp.

Morris, C. (2011). *Caulerpa* sp. scoping exercise in Tonga. Manuscript Report, Institute of Marine Resources, University of the South Pacific, Suva. 2 pp

Morris, C. & Bala, S. (2011) Supply chain of sea grapes (*Caulerpa racemosa*) in Fiji. Manuscript report, Institute of Marine Resources, University of the South Pacific, Suva. 21 pp.

South, G.R., Morris, C., Bala, S., & Lober, M. (2011) Scoping Study for Sea Grapes in Fiji. Samoa and Tonga. PARDI project 2010/002 report. 37 pp.

South, G.R., Morris, C., Bala, S. & Lober, M. (2011) Scoping Study for tilapia in Fiji. Samoa and Tonga. PARDI project 2010/002 report. 39 pp.

South, G.R., Morris, C. & Bala, S. (2012). Annotated bibliographies on the current status and product development of *Caulerpa* and tilapia in Fiji, Samoa and Tonga. USP School of Marine Studies Technical Report [submitted].

## 4 IP Issues

USP is considering taking out a patent on a new *Gaulerpa* preservation methodology developed as a consequence of the project. Presently the technique is being trialled by a seaweed company based in Fiji through a trial shipment for New Zealand.

No other IP have been raised.

## 5 New Project Staff

- Dr Tim Blumfield – Griffith University will lead the new PARDI teak project.
- Mr Shane Dullahide has been appointed to be the new horticulture component leader.
- Ms Jess Lee has begun a one-year Australian Youth Ambassador for Development appointment in October to assist the Ministry of Agriculture, Fisheries and Forests (MAFFF) in Tonga with development of the pearling industry through this PARDI Project.
- Dr Elio Jovicich – Qld DAFF, is about to join the team pending the submission of a new protective cropping system project.
- Mr Salesh Kumar (FNU) has been awarded an ACIAR- USP PhD scholarship and is working with the PARDI PGS vegetable project.
- Tevita Taumaipeau has been appointed to help formulate draft development plans for the pearl industries in Fiji and Tonga.
- Ulamila Lutu, research technician based at the SPC CePaCT at Narere, Suva, has been appointed to assist the Taro clean material project.
- Ms Laisene Tuioti has been awarded an USC PhD scholarship and is working on the PARDI PGS vegetable project.
- Pranesh Kishore is a USP Master's graduate (and ex ACIAR/USP Scholarship holder) who is now a John Allright Fellowship holder studying for a PhD at JCU. He is working with J. Hunter Pearls in Savusavu, Fiji, investigating factors that influence pearl quality.
- Emanuel Ram is a current ACIAR/USP Scholarship holder and is studying for a Master's at USP. He is investigating spat husbandry in collaboration with another Project partner, Vailili Pearls of Savusavu.
- Monal Lal a USP Master's graduate (and ex ACIAR/USP Scholarship holder) and John Allright Fellowship awardee began a PhD project through JCU on genetic mapping of the Fijian pearl resource and its application in developing a sustainable spat collection program in Fiji.
- Ravinesh Ram (USP) collaborated on PARDI/2010/004 project *"Improving income of Pacific island fishers through better post-harvest processing of sea cucumber: scoping study"* and has been awarded a JAF to begin his PhD at JCU in July 2012 on work on sea cucumber processing following the completion of the PARDI sea cucumber project.
- Kritika Devi and Karishma Devi are USP PhD students who will be working on PARDI 2012.02 'The Implications of Evolving Food Retail Markets on Small Producers' Livelihoods.