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Land Resources Division

ANNUAL REPORT
2007

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SPC Land Resources Division

OVERVIEW



SPC LRD Director, Aleki Sisifa

The Land Resources Division (LRD) continued to focus its activities on the outputs of its Integrated Strategic Plan 2005–2008. In developing work plans, special attention was given to aligning activities to national priorities elaborated in national and sectoral strategies. The management structure, which encourages integration and sharing of resources, has, among other benefits, added much value to the division's human and financial resources.

Increased attention was given to LRD's facilitation role in helping PICTs develop policy, legislation and plans. For the Pacific Islands' voice to be heard and listened to active engagement at the international level is important. LRD has engaged in a number of important forums and conventions during the year, such as the United Nations Forum on Forests (UNFF), UN Convention to Combat Desertification (UNCCD), International Tropical Timber Council and International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRA).

The Regional Germplasm Centre (RGC) has been renamed Centre for Pacific Crops and Trees (CePaCT) and the depth and scope of its work and that of the Pacific Agricultural Plant Genetic Resources Network (PAPGREN) and the Forests and Trees thematic area group have increased, particularly with the additional support provided by the transfer of the South Pacific Regional Initiative on Forest Genetic Resources (SPRIG) project to LRD. Similarly, with additional support from the Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP) and, more recently, from Australia, FAO and the World Organisation for Animal Health (OIE) for work on transboundary diseases and animal genetic resources, substantial progress is being achieved in the area of animal health and production. The Paravet Training Programme made good progress.

Plant health and biosecurity and trade facilitation continue to be two of the hallmarks of the division's functions. Its assistance to PICTs through pest and disease surveys, biological control (including of invasive species), integrated pest management (IPM), research and development on quarantine treatments of fresh produce, harmonisation of national legislation to comply with sanitary and phytosanitary (SPS) requirements, and capacity building in a broad range of technical areas (including through the IMPEXTEK facility) has been substantial.

The Development of Sustainable Agriculture in the Pacific (DSAP) project has left an indelible positive impression on the lives of rural farmers and communities, including women and youth, throughout PICTs. The project ends in December 2008, but LRD plans to apply its national structures and mechanisms to strengthen the division's interface with PICTs. The LRD thematic area and support teams, through joint interventions, continued to help progress the natural resources management work undertaken in the Drawa model area.

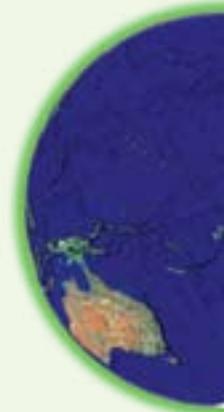
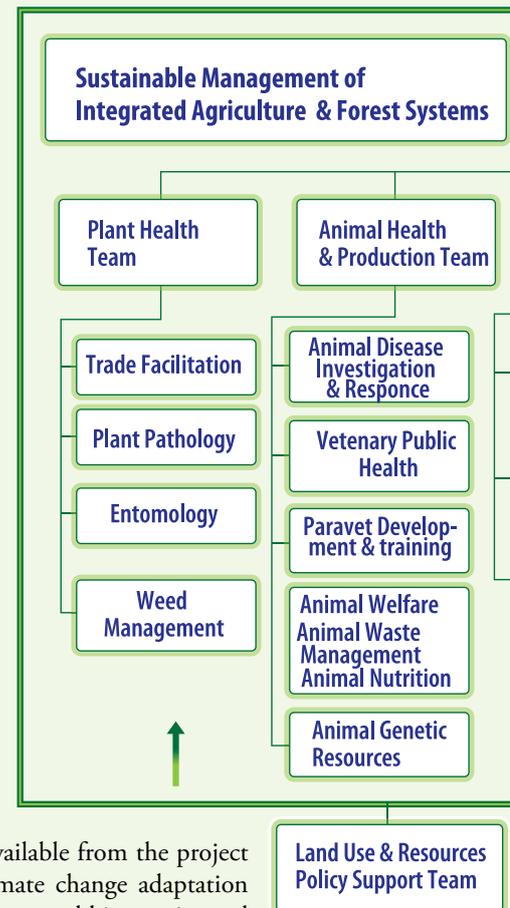


OVERVIEW (CONT.)

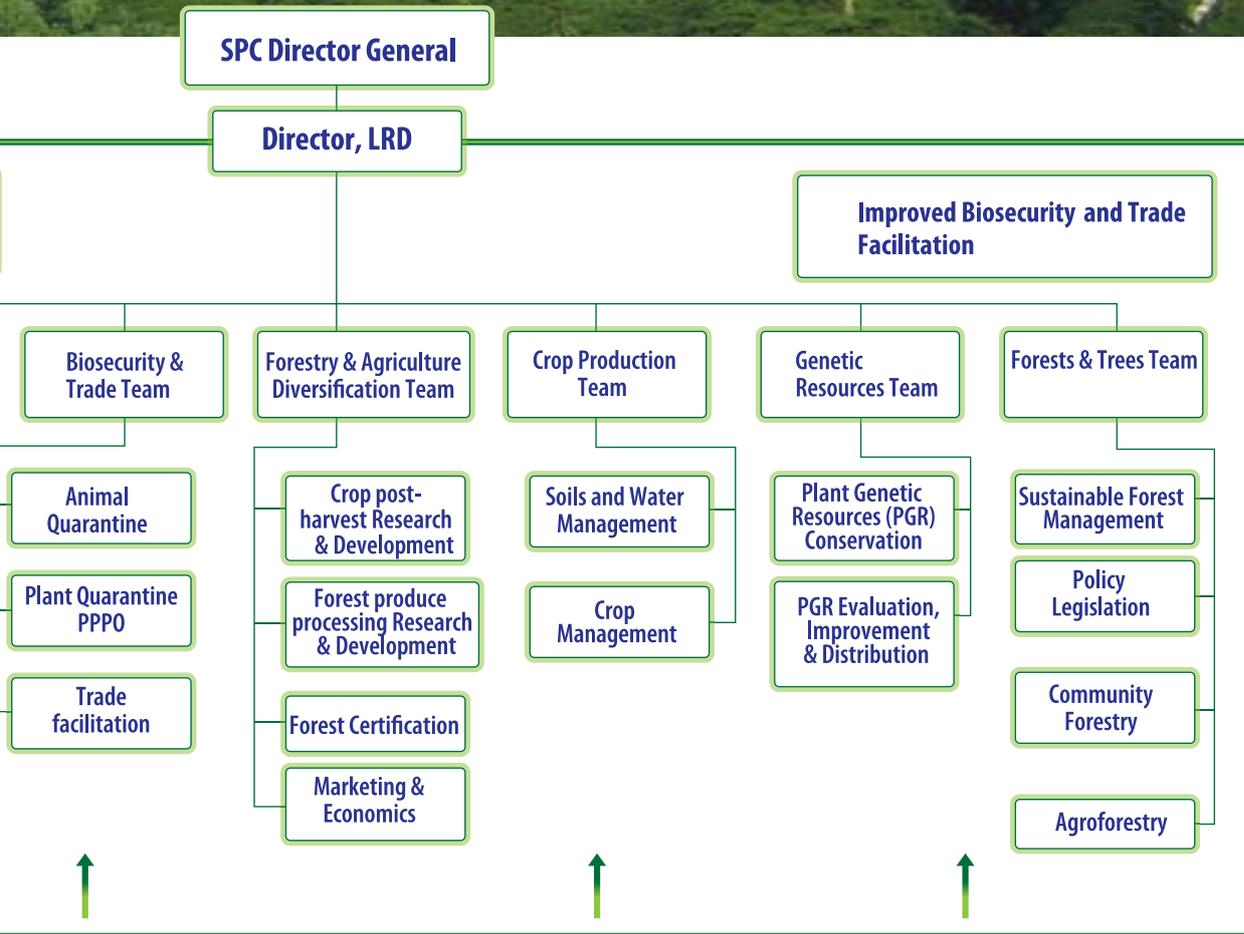
The information, communication and extension (ICE) function is firmly established and contributed effectively to outcomes of work across most thematic area teams—for example, in the application of the modified Farmer Field School (FFS) approach to work on plant health, sustainable natural resource management, and forestry and agriculture diversification – and particularly in successfully engaging youth in development work and helping turn subsistence producers into potential commercial farmers.

The level of human and financial resources available to the division was maintained. New partnerships bringing in resources for joint activities were established with the International Fund for Agricultural Development (IFAD), FAO and OIE. The director led a team of three in undertaking consultations throughout the region and designing and formulating the USD 72 million FAO Expansion Phase of the Regional Programme for Food Security (RPFS) in the Pacific. Substantial additional resources may be available from the project to LRD for regional interventions in climate change adaptation and mitigation, sustainable land management and biosecurity and trade facilitation.

LRD is three-quarters of the way through the implementation period of its integrated strategic plan. While consolidating achievement of plan outputs and new initiatives, the division has been putting out feelers for likely changes in stakeholders' perspectives on priority issues – changes that will need to be reflected in the next integrated strategic plan (2009–2012). Conferences and meetings at the policy level, such as the 2nd Regional Conference of Heads of Agriculture and Forestry Services (HOAFS) in 2006, and the Pacific Heads of Veterinary and Animal Production Services (PHOVAPS) Forum and the Heads of Forestry Meeting in 2007, have provided guidance. Over the past one and half years, the division has embarked on planning and laying the foundation for initiatives that reflect such changes, e.g. adaptation to and mitigation of climate change, increasing PICTs' participation in export trade and in regional and international integration, sustainable land management, and preparedness against the increasing threat of pandemics arising from possible entry into the region of new zoonotic diseases.

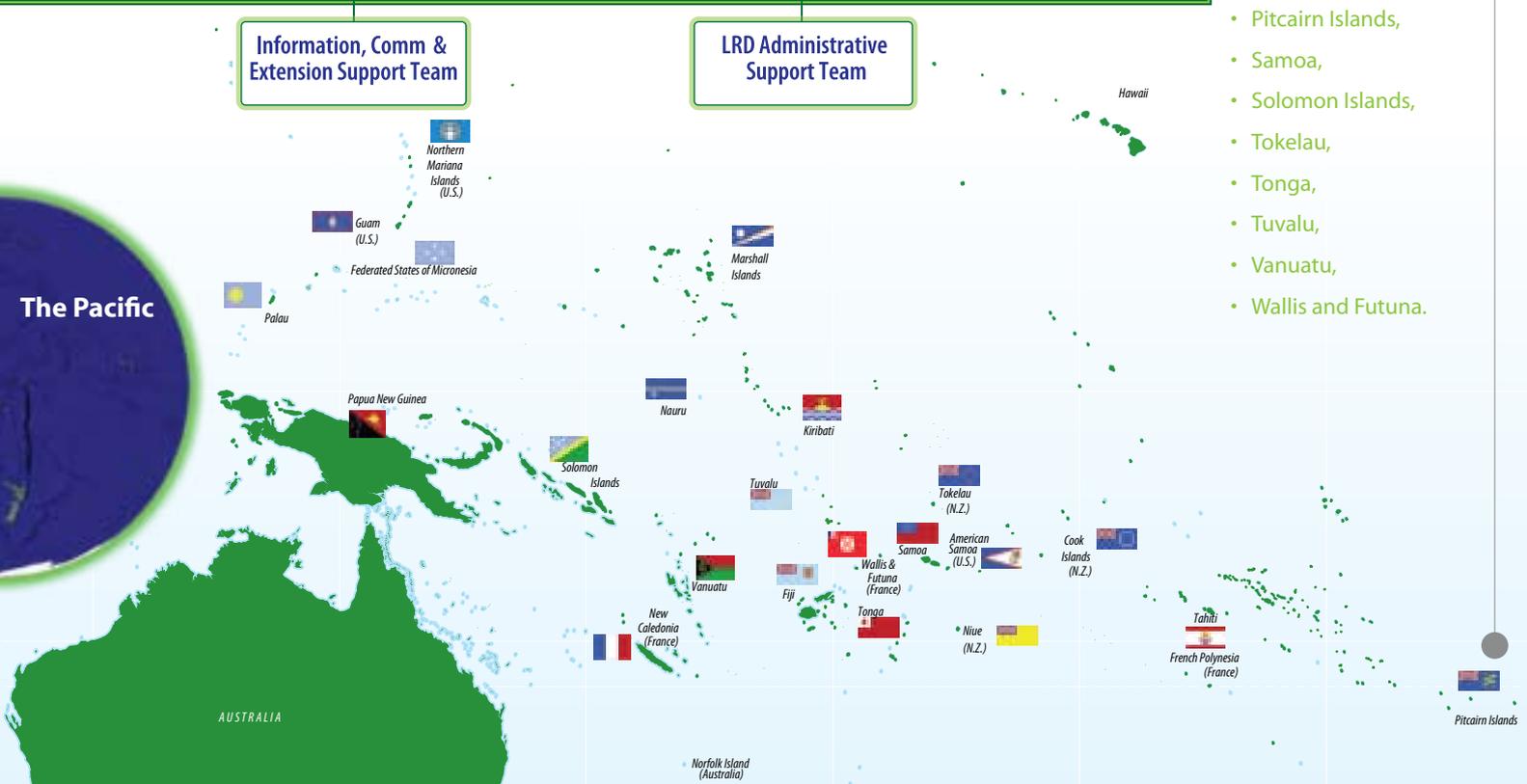


DIVISIONAL STRUCTURE



SPC Pacific Island countries:

- American Samoa,
- Cook Islands,
- Federated States of Micronesia (FSM),
- Fiji Islands,
- French Polynesia,
- Guam,
- Kiribati,
- Marshall Islands,
- Nauru,
- New Caledonia,
- Niue,
- Northern Mariana Islands (CNMI),
- Palau,
- Papua New Guinea (PNG),
- Pitcairn Islands,
- Samoa,
- Solomon Islands,
- Tokelau,
- Tonga,
- Tuvalu,
- Vanuatu,
- Wallis and Futuna.





A. ACHIEVEMENT OF LRD'S STRATEGIC OBJECTIVES

LRD's current Integrated Strategic Plan has two objectives: (1) Sustainable management of integrated agriculture and forestry systems; and (2) biosecurity and trade facilitation. Five outputs are to be achieved under objective 1 and four under objective 2. The following provides highlights of LRD achievements under its two strategic objectives.

A.1 Sustainable Management of Integrated Agriculture and Forestry Systems

Despite the growth of other sectors of our island communities (such as tourism and manufacturing) and the continuing importance of the sea, we continue to depend on the land. In fact, the success of many, if not all, of these expanding sectors depends very much on the land and a balanced ecosystem. Beyond this, land provides Pacific Islanders with much of their food, shelter, medicine, employment and income, and helps to define cultural identities and bind communities together.

Many of the challenges facing the agriculture and forestry sectors in PICTs are intricately woven together, and it is with this in mind that LRD has taken a holistic approach to land

management issues, in contrast to the narrow, sectoral agriculture and forestry approaches, which can be antagonistic. LRD has a multidisciplinary extension service that works closely with national staff to target communities and other stakeholders in the development of innovative and holistic approaches to improving agricultural and forest productivity and sustainability. LRD's vision is also a long-term one, in that what we do now has to continue, endure and stand us in good stead into the future – hence the focus on sustainability. Crucial to the attainment of this objective is the widest possible buy-in by all stakeholders, from farmers to policy-makers.

LRD's first strategic objective is organised into five output areas:

Output 1.1 Sustainable forest and agricultural policies, legislation and plans developed

Output 1.2 Sustainable forestry and agriculture management and production practices developed and promoted

Output 1.3 Biodiversity and genetic resources conserved, developed and promoted

Output 1.4 Natural disaster response and support structures in place

Output 1.5 National and regional capacity to manage invasive species, pests and diseases strengthened.

► SPC AND THE GLOBAL CROP DIVERSITY TRUST



The Trust has informed SPC that it wishes to enter into a partnership agreement to develop an efficient, effective and sustainable global system to ensure the conservation and availability of genetic resources of yams and edible aroids. The Trust's endowment will provide long-term sustainable funding to help meet costs for maintaining key taro and yam collections.

At the CRGA meeting in Apia, Samoa, CRGA agreed to recommend to the Fifth Conference of the Pacific Community that SPC work towards concluding agreements with:

- *The Governing Body of the International Treaty whereby CePaCT places its Annex 1 collection within the purview of the Treaty*
- *Global Crop Diversity Trust to source funds for the conservation of samples of Annex 1 crops held in the CePaCT collection*
- *Relevant regional and international organizations with a view to establishing a centre within CePaCT for the exchange of crop and forestry genetic resources*

Output 1.1: Sustainable forest and agricultural policies, legislation and plans developed

LRD addresses this output in three ways: assisting countries to develop appropriate national policies and legislation, working towards a harmonised regional approach, and engaging with international initiatives.

LRD continued to collaborate with the Technical Centre for Agricultural and Rural Cooperation (CTA) in strengthening the Pacific Agricultural and Forestry Policy Network (PAFPNet). A PAFPNet membership study covering Solomon Islands, Fiji, Tonga, Samoa, Cook Islands, FSM and Kiribati (to represent Polynesia, Micronesia and Melanesia) will begin in October 2007. Two policy briefs relating to pertinent issues affecting sustainable development of the agriculture and forestry sectors are also to be developed before the end of the year.

LRD was represented in each of the five SPC Joint Country Strategy (JCS) missions undertaken so far. These included Kiribati (2) and Tokelau (1) in 2006 and Nauru (2), Marshall Islands (4) and Cook Islands (3) in 2007. Activities outlined in the JCSs are incorporated into the work plans of the thematic area and support teams.

LRD, in collaboration with other relevant CROP and international agencies, has re-established the Land Resources Working Group (LRWG) with the main objective of promoting and strengthening collaboration and coordination among CROP agencies to achieve effective and efficient support for members in relation to the sustainable use and management of land resources. The LRD director is the current chair of LRWG.

For the Pacific's voice to be heard – and listened to – active engagement at the international level is important. LRD was represented at the 7th UN Forum on Forests (UNFF7) in New York, under the PNG flag where an SPC statement was delivered. SPC was accredited with UNFF in 2006, which enabled our representative to actively participate in the discussions. At UNFF7, a New Legally Binding Instrument (NLBI) on forests was endorsed and a new Multi-Year Programme of Work (MYPOW) for UNFF was agreed to. A UNFF meeting will now be held every two years and implementation of relevant activities will be undertaken through existing regional mechanisms and instruments. LRD is actively communicating with UNFF as to how it can more effectively assist member countries in implementing Intergovernmental Forum on Forests (IFF)/ Intergovernmental Panel on Forests (IPF) proposals for action under the NLBI and MYPOW.

LRD has been providing technical support to the 14 Pacific Country Parties (PCPs) to the United Nations Convention to Combat Desertification (UNCCD) and was accredited to UNCCD in August 2007. The main objective of this partnership is to provide technical support where national capacity is



Linda Petersen, SPC Human Development Programme Manager; Ermenegilde Simete, CRGA Chairman and President of the Assembly of Wallis and Futuna; and Aleki Sisifa, LRD Director, accepting the award on behalf of LRD.

► LRD RECIPIENT OF GENDER AWARD

For the first time at an SPC governing body meeting, the Secretariat has rewarded one of its programmes for its gender-inclusive approach to activities developed in countries throughout the region.

The SPC Land Resources Division is the recipient of the 2007 award, which has been created to recognise the critical importance of gender issues and concerns in development, both in the corporate management of regional organisations such as SPC and in the delivery of technical assistance and programmes.

'Our region continues to struggle to meet its gender-equality commitments at national, regional and international level,' stressed Linda Petersen, SPC Human Development Programme Manager, to delegates from SPC member Pacific Island countries and territories during the presentation of the award in Apia.

'The award is aimed at promoting increased integration of gender into all aspects of our organisation's work. The SPC Land Resources Division has made significant efforts through its DSAP programme – Developing Sustainable Agriculture in the Pacific – to integrate women as well as youth in its activities in many different ways, including its recruitment process and its capacity-building activities using gender indicators as a means of measuring women's participation.'

The award is in line with the Council of Regional Organisations in the Pacific (CROP) gender policy and demonstrates SPC's commitment to fulfilling the policy's requirements.

lacking in the development and implementation of countries' medium-sized projects for capacity building and mainstreaming of sustainable land management (SLM), development of their UNCCD National Action Programmes, implementation of the Pacific Venezuela funding, and other related projects. LRD attended the UNCCD Eighth Conference of Parties (COP 8) from 3 to 14 September 2007 to provide technical advice and to support the PCPs. The conference also provided an opportunity to present a statement on behalf of the PCPs in the high-level segment of COP 8 regarding the implementation of the convention in the Pacific.

LRD continues to collaborate with the Australian Government and FAO to raise awareness of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). A meeting was held in August 2007 and of the 14 countries represented, three had ratified the treaty and the remaining countries expressed a willingness to do so. In addition, the countries requested that the Centre for Pacific Crops and Trees (previously the Regional Germplasm Centre) be the focal point for countries on the treaty.

A Plant Genetic Resources (PGR) Toolkit for the Pacific has been produced that includes a CD-ROM containing all essential publications, documents, etc. relating to PGR, and a DVD; the toolkit was launched at the August PGR policy meeting. The DVD not only highlights the importance of access to PGR for sustainable development but also promotes the utilisation of traditional food crops.

LRD continues to work with CTA in promoting science and technology and has participated in Training of Trainers courses in the Agricultural Science Technology and Innovation (ASTI) methodology for analysis of agricultural systems. Collaboration continues with the UNEP/GEF project in the development of its second phase (a biosafety and biotechnology initiative), which will focus on ensuring there is capacity in the region to conduct the scientific assessments associated with the implementation of national biosafety frameworks.

The 3rd Pacific Heads of Veterinary and Animal Production Services (PHOVAPS) Forum was held in Nadi, from 30 July to 4 August. The theme of the meeting, 'Surveillance, Early Warning and Rapid Containment', highlighted the growing concerns in the region about transboundary, re-emerging and new animal diseases. Technical presentations provided in-depth knowledge and appreciation of the immense challenges facing the Pacific Community as PICTs attempt to put in place plans to manage the possible introduction of transboundary animal diseases. The threat of avian influenza was used as an example of a possible transboundary animal disease. Members of the forum took the opportunity to engage in fruitful discussions with technical resource people from FAO, OIE, the Australian Department of Agriculture, Fisheries and Forestry (DAFF) and the NZ Ministry of Agriculture and Forestry (MAF), representatives of private commercial companies and SPC specialists. Participants also provided guidance to the LRD Animal Health and Production 2008 annual work plan and the new LRD strategic plan (2009–2012).



▶ ADDRESSING THE ISSUE OF FOREST GENETIC RESOURCES

The significant loss of biodiversity due to destructive human activities associated with mining, agricultural clearing and commercial logging, particularly in the larger Melanesian countries, has featured in international forums focused on extreme poverty, climate change and environmental degradation. There are major economic and environmental concerns about whether these countries can justify the present rate of exploitation of their forest resources. Several commercial timber species have become rare due to indiscriminate logging, while many culturally valuable species are threatened by heavy harvesting for traditional uses such as wood carving, firewood and medicine. Conservation and management of forest genetic resources are now critical issues in the Pacific region.

Governments in the Pacific, regional and international organisations, donors and NGOs have been involved in several important initiatives to develop local capacity to conserve, manage and sustainably utilise the region's forest genetic resources. These initiatives include the South Pacific Regional Initiative on Forest Genetic Resources (SPRIG), SPC's Forests and Trees Programme, the South Pacific Biodiversity Conservation Programme under SPREP and the Pacific-German Regional Forestry Project under GTZ.

SPC in collaboration with partners is looking at practical actions that could be taken at international, regional, national and local levels to address the loss of forest and tree genetic resources in the Pacific. It was to address the issue of forest genetic resources conservation and management in the Pacific that 47 delegates from 14 Pacific island countries and territories attended a regional consultation organized by SPC and funded by the Australian Pacific Governance Support Programme (PGSP) in Nadi in June. Collaborating partners included the Secretariat of the Pacific Regional Environment Programme (SPREP), Bioversity International, the University of the South Pacific (USP), SPC/GTZ Pacific-German Regional Forestry Project (PGRFP) and ENSIS.

At the end of the consultation, participants endorsed an action plan entitled, A Strategy and Action Plan for the Conservation, Management and Sustainable Use of Forest and Tree Genetic Resources in the Pacific Islands. The plan identified the following areas that will be developed into project proposals and presented to potential donors and investors.

1. Regional exchange of tree germplasm between PICTs
2. Regional sandalwood research, development and awareness programme
3. Rehabilitation of degraded and unproductive forests
4. Use of forests and tree genetic resources to mitigate and cope with climate change
5. Development and promotion of agroforestry systems
6. Endangered species

The project proposals will include capacity building, institutional strengthening, raising public awareness, improved governance and effective monitoring and evaluation.



Support continued to be provided to Fiji for the drafting of its new forest policy, which was formulated after extensive stakeholder consultations in 2005 and 2006. It went through a round of expert consultations and a two-day workshop before it was finalised for submission through the necessary government channels and at the end of the year it was endorsed by Fiji's Cabinet. LRD ran a short course on Pacific Forest Policy in 2007 in response to the need to build capacity amongst PICTs forest agencies in forest policy analysis and formulation. Twenty one participants from nine countries representatives of government, non-government and private sector attended the course.

In May, LRD participated in an FAO-organised training course held in Bangkok, Thailand focusing on responses to constraints to sustainable forestry management stemming from poor policy issue identification, poor policy formulation and inadequate support for implementation. For LRD, participation also provided opportunities to see how the course was organised and to link up with people and agencies that can assist in the organisation of a separate Pacific Forest Policy Short Course for our region. The course is scheduled to be held in Nadi in November with up to 20 participants.

LRD continues to work on the harmonisation of biosecurity laws in the Pacific ACP (PACP) states. The regionally harmonised version of the biosecurity bill was finalised and discussed in June at a regional workshop on adaptation and implementation of the bill in Port Moresby, PNG. The workshop was attended by state lawyers and technical experts from the biosecurity services of all PACP countries. Participants evaluated the legislative and implementation status of their individual country drafts of the bill. Locally adapted versions of the regionally harmonised version have been completed for Cook Islands, FSM, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, PNG, Solomon Islands, Tonga, Tuvalu and Vanuatu. Explanatory notes on the clauses were produced for the individual bills. Samoa has already enacted its biosecurity law under a national initiative with bilateral assistance from Australia. An LRD-commissioned legal consultant continues to work with the participating jurisdictions on their individual biosecurity bills and associated legal documentation.

LRD is developing a Biosecurity Information Facility (BIF) to assist with the practical implementation of the biosecurity law once it is enacted. It includes an operational manual component that gives step-by-step instructions on how to undertake various biosecurity operations and an interactive facility (interlinked databases) that will help automate some of the generic biosecurity

procedures, such as import permitting and export certification. The manual is available in Microsoft Word and Microsoft FrontPage formats. The FrontPage version is being migrated to an online content management system. In PICTs where officers are unable to use the online portal, a CD version and hard copies will be available. Demonstrations of the operations manual have been done at various workshops, with constructive feedback received from participants regarding improvements.

LRD continues in its role as secretariat of the Pacific Plant Protection Organisation (PPPO), a subsidiary organisation of the Conference. PPPO has direct links to the International Plant Protection Convention (IPPC) and thus the regional and individual phytosanitary interests of PPPO members are articulated in international forums. The PPPO Secretariat continues to participate actively in the international phytosanitary standard setting process and assisting PICTs in implementing relevant international standards in order to access markets for their exported products. The PPPO executive committee held its annual meeting in Sydney, Australia in August and among the agenda items was a business plan to be developed to complement the new amended constitution of the organisation, which was approved by CRGA last year.

FSM, Palau, Tuvalu and Vanuatu have become Contracting Parties to IPPC since the previous update at the PPPO technical board meeting in June 2006, when Australia, Cook Islands, Fiji, NZ, Niue, PNG, Samoa, Solomon Islands and Tonga were Contracting Parties. RMI has submitted its instrument of adherence to the FAO Director-General. PPPO and FAO are continuing to encourage the remaining countries, Kiribati and Nauru, to submit their instrument of adherence.



Output 1.2 Sustainable forestry and agriculture management and production practices developed and promoted

In achieving output 1.2, LRD tries to strike a balance between traditional and modern land management ideas, applying the very best science to solve many of the problems affecting forestry and agriculture production. At all times, the delivery of any services or technology is carried out using participatory approaches to ensure an impact at the community level.

LRD has adopted the modified Farmer Field School (FFS) training approach in the promotion of new technologies. The FFS approach promotes the 'adult learning by doing' principle. Farmers receive practical training on-farm over the duration of a whole cropping cycle. In using the FFS approach to promote proper management practices for the control of taro beetle at various demonstration plots in Fiji, PNG and Vanuatu, many farmers have adopted the control recommendations and are successfully growing taro in beetle-infested areas.

LRD used the 2007 South Pacific Games as a vehicle for improving the quality, quantity and variety of locally available fruit and vegetables on a sustainable basis in Samoa. In collaboration with Forestry and Agriculture Diversification, Crop Production, Plant Health and other SPC thematic area teams, the Information, Communication and Extension (ICE) team worked closely with the Samoa Farmers Association (SFA), MAFF, FAO, the University of the South Pacific (USP) and the FAO South-South Cooperation project to organise and train farmers to grow enough high-quality produce to cater for the Games.

- A multi-agency technical taskforce visited participating farmers to ensure that sustainable practices, such as integrated pest management, proper crop husbandry and new varieties, were used.
- An economic cost-benefit analysis of the initiative is being conducted. When one farmer was given his returns by SFA, he wept with joy as he recounted the benefits accruing to his family from the initiative. This farmer has been invited to share his experiences at a dinner hosted by SFA and the Samoa Organics Association at this 37th CRGA.
- Participating farmers gained skills that enhanced their ability to supply quality produce by adoption of best practices, thus preparing them for possible production of selected export commodities, creating income-generation opportunities, increasing food security and reducing poverty. An SFA member has begun exporting 250 kg eggplants per week to NZ. Six hotels have confirmed for SFA to supply them with produce twice a week.
- This is a model that LRD may use in other PICTs hosting major events, such as American Samoa hosting the Pacific Festival of Arts in 2008 and Cook Islands hosting the Mini South Pacific Games in 2009. The methodologies could be promoted as a way to organise growers and build capacity.



In the PGR area, capacity building is carried out through in-country training and attachments. Postgraduate training is also supported through teaching at USP, supervision of Masters and PhD research, and the provision of two Masters scholarships (to Kiribati and Fiji) by NZAID through the Pacific Agricultural Plant Genetic Resources Network (PAPGREN). CePaCT carries out significant training through attachments to the laboratory (2007 has seen an attachment from Wallis) and collaboration with other programmes within LRD, such as Biosecurity and Trade Facilitation, so that training in tissue culture and handling tissue culture plants can be provided to a wider audience. Training of staff in the national laboratory in Samoa was carried out by the CePaCT curator, and training in the handling and cultivation of tissue culture plants has been provided directly to farmers in Fiji and Nauru.

An ACIAR-funded project operating in Fiji and Samoa is exploring the added benefits of virus-free planting material by comparing the yield from different taro varieties, both virus-free and virus-infected, over a number of years in both countries. The project aims to show that there are significant yield benefits to be gained through using virus-free planting material.

The Paravet Training Programme continued in 2007. Since its commencement, training has been completed in 11 countries, 217 trainees have participated, 146 have completed the course and sat the examinations, and 112, including 16 women, have passed. The second module, Food Safety and Meat Hygiene, is undergoing final editing and should be launched in late 2007 or early 2008.

To fast-track the implementation of the Paravet Training Programme, a Train the Trainers workshop was held in April in Suva, Fiji. Fifteen identified trainers from the region were taken through the paravet manual and curriculum, and participated in the launching and orientation programme for the first group of paravet trainees for Fiji. The trainers were from PNG (2), Solomon Islands, Vanuatu, Samoa (2), American Samoa, Wallis and Futuna, Fiji (2), Niue, Tonga and SPC (3).

Other specialised training sessions on animal disease investigations, post-mortem techniques for poultry, specimen collection, blood sampling, the use of avian influenza rapid test kits, the correct use of personal protective equipment and the development of standard operating procedures (SOPs) have been undertaken across the region.

LRD continued work on the ACIAR-funded Animal Waste Management Project, which was unfinished when that project officially ended in 2006. The unfinished work includes water-quality monitoring at selected Fiji sites and the production of awareness and educational materials. Model piggeries are still being constructed in Kiribati and Fiji. Community awareness workshops on developing sustainable livelihoods were held in collaboration with NGOs such as Live and Learn (Fiji) in two selected villages in Fiji. Composting piggeries were constructed in various locations in Fiji and a demonstration unit is being constructed with SPC technical assistance at Sawakasa village, Tailevu for a USP research project.



▶ DSAP TONGA

In 2003, the DSAP (Development of Sustainable Agriculture in the Pacific) project began training its national staff – the REAs and GREAs. A central tenet of the training was to ensure that participatory processes were used to identify the priority needs of marginal groups, including women. A separate session on gender issues urged staff to draw on their knowledge of their own culture and people in adapting participatory tools and techniques, and to explore strategies to overcome barriers that hindered women from engaging freely and actively with men in decision-making processes relating to agricultural development.

When DSAP began working with the Hunga community in Tonga's Vava'u Island Group in 2004, it became clear that two key elements were critical in a successful strategy to engage women – personal goals and aspirations at the individual or household-level, and decision-making, transparency and accountability at the community level.

Participatory and constructive discussions, and recognition of the benefits of gender equity, led to the establishment of a functional women's agricultural decision-making body. This body targeted the establishment of a paper mulberry nursery for every household as a focus for DSAP assistance. Paper mulberry is an economically viable enterprise in Tonga and an excellent way of generating income.

As a result of DSAP's engagement strategies, the participation of women soared from 40 per cent in 2004 to more than 95 per cent at the end of 2006. The target group and the entire community became involved in all processes of the project management cycle.

A beneficial spin-off of the women's group initiative is the involvement of youth groups in planting paper mulberry nurseries at their own cost.

Other DSAP activities now under community management include production of medicinal and traditional plants, use of sustainable technologies to produce vegetables, contour planting of vetiver grass, traditional ornamental plants, and mucuna to counter soil erosion. DSAP has also helped the community to obtain paper-mulberry processing tools for tapa making. The community aims to start producing the tapa towards the end of 2008, and should soon begin to see economic benefits.



Learning-tool posters, including 'Build your own wash-free and smell-free piggery', were developed, produced and translated into 10 languages: Pidgin, Tuvaluan, Tongan, Samoan, Kiribati, French, CNMI (Chamorro and Carolinian), Pohnpeian and Fijian. Continuing consultations took place with Fiji's Ministry of Education on the possible inclusion of animal waste management subjects in the school curriculum.

The Development of Sustainable Agriculture in the Pacific (DSAP) project continued to provide training in participatory approaches and in upgrading the technical skills of stakeholder staff and farmers. Participatory approach training sessions with stakeholder staff were conducted in RMI, FSM and Palau. In collaboration with ACIAR, DSAP conducted two sub-regional training sessions (in Palau and Fiji) and two national training sessions (in Vanuatu and the Cook Islands) on participatory needs assessment of agricultural extension delivery in the Pacific region. It also provided technical training ranging from diagnosis of pests and diseases and soil nutritional disorders to farm management and pig husbandry, and in communication and production of extension materials. Formal capacity building continued at USP for the DipAgr, BAg and MAg, and for the MA in participation at the University of Sussex in the UK.

With NZ Landcare, DSAP continued to coordinate the South Pacific Agricultural Chemistry Laboratory Network (SPACNET), which helped quality-assurance-accredited laboratories in the region. Together with partners, DSAP has developed and scaled up and out technologies such as hydroponics, organic production techniques, use of cover crops and alley cropping to improve soil fertility, use of Vetiver grass to control soil erosion, use of compost and charcoal as soil amendments to improve the poor condition of the soils of atolls, and a bucket irrigation system that has been widely adopted in some countries.

In the area of forests and trees, a report on progress of implementation of codes of logging practice in Fiji, PNG, Solomon Islands and Vanuatu was published and distributed. LRD participated in an FAO-supported Asia-Pacific regional workshop on logging codes held in Malaysia and presented the outcomes of the Pacific assessment. A workshop was organised as a step towards finalisation of the Fiji revised code. The main output of this workshop was an agreed set of actions by the main stakeholders for improvement of code implementation in Fiji. Similar activities will be organised in PNG, Solomon Islands and Vanuatu.

Work continued in Drawa, Fiji, on increasing options for landowners to effectively utilise their agricultural land. This included training in agroforestry and the development of an agroforestry demonstration site on degraded land. Other notable activities included the conduct of district awareness activities in Naitasiri and Kadavu in collaboration with Fiji Government agencies, CETC and the ICE thematic group.

An agroforestry workshop for the northern Pacific was held in November in Pohnpei to look at traditional agroforestry systems, and in particular the use of new technologies and species to enhance the productivity of these systems. Countries who attended the workshop included American Samoa, CNMI, FSM, Guam, Kiribati, Nauru, Palau, RMI and Tuvalu. The workshop programme included 'hands-on' training sessions in plant propagation techniques for various tree species with potential for agroforestry systems.

In addition to the above, a segment about the Drawa SLM and sustainable forest management (SFM) activities was shown on a local Fiji TV programme, *Dateline*, and attracted a lot of interest from landowners, with a number making inquiries as to how the model could be replicated in their area. Two cartoon videos on SLM were produced that were viewed around the region via Fiji TV One. A documentary on sandalwood production was produced in collaboration with Vanuatu Department of Forestry. It was widely distributed in Vanuatu, and also shown on the Pacific Way TV programme. A collection of awareness cartoons and a documentary have been compiled and are available to all countries and counterparts upon request.

In the area of plant health, a number of activities were implemented. Under the Brassica pest control project, field and laboratory experiments were conducted in Fiji and Samoa. Train-the-trainer workshops were conducted using the modified FFS approach, and pest exclusion experiments and insecticide evaluation trials were undertaken. The project results are being extended in French Polynesia and Vanuatu. Other PICTs will be included in the 2008 work plan.

Biological control work continued to be an important component of plant health work. Biocontrol agents for coconut scale insect and mealy bugs were introduced to Tuvalu, and support continued for the biocontrol of glassy-winged sharpshooter in French Polynesia and coconut flat moth in Cook Islands – two very successful programmes. Recent outbreaks of whitefly in

The Pacific region is characterised by many small isolated islands inhabited by peoples of diverse cultures. The islands are also diverse in terms of geography and environment. Many local animal breeds found in the islands are the result of thousands of years of domestication using various traditional systems of livestock husbandry. However, the more recent introduction of new breeds of pigs and poultry has resulted in the loss of indigenous breeds in many PICTs. Little is known about the region's animal genetic diversity, but current efforts by SPC and its collaborating partner, FAO, will help address this situation.

The South West Pacific Region is one of seven global regions set up by the FAO/AnGR world body to hold technical consultations on the animal genetic resources available for food and agriculture. The other regions are Europe, Africa, North America, Latin America and the Caribbean and Asia. The countries of the SW Pacific have contributed by submitting country reports to the first-ever global report assessing animal biodiversity: *'The state of the world's animal genetic resources for food and agriculture'*.

In 2006 and 2007, SPC and FAO collaborated to conduct technical consultations around the Pacific region to collect information for the report. Australia provided assistance for this process.

Delegates from the region attended a global AnGR intergovernmental meeting in Rome in December 2006 and a similar meeting, also in Rome, in June 2007. In addition, five delegates from the Pacific attended the International Technical Conference on Animal Genetic Resources in Interlaken, Switzerland, in September, 2007. The meetings were aimed at developing a Global Plan of Action for the Conservation, Development and Sustainable Use of Animal Genetic Resources for Food and Agriculture.

PICTs have requested immediate work on inventory, characterisation, and conservation of the resources available, and identification of endangered breeds and species facing extinction.

LRD's Animal Health and Production team is coordinating and facilitating the Animal Genetic Resources Inventory pilot project with Australian funding assistance through FAO. This particular project is conducting an inventory of pigs and poultry breeds only and is confined to Fiji, Niue, Samoa and Tonga due to funding constraints. Donors will be approached to extend the project to other islands as well.

The inventory is already underway in Fiji and will later be extended to Tonga, Samoa and Niue.



Vanuatu, oriental scale insect in the southern atolls of Kiribati, and coconut leaf miner in Solomon Islands and Vanuatu need re-introduction of bio-agents; this will be included in the 2008 work plan. Biocontrol agents for coconut scale insect were collected in Pohnpei and sent to an outer island. PCR tests were conducted on the Oryctes virus in Samoa and a workshop on biocontrol and PCR training is being planned for Lincoln, Christchurch in November. Trainees from PNG, Samoa, Vanuatu and SPC will attend this workshop. A homemade control (soap and oil) for the whitefly species *Aleurotrachelus trachoides* is being tested in FSM; the insect causes severe damage to many crops, including kava. Host-specificity testing of mikania rust fungus as a bio-agent for *Mikania micrantha* in Fiji and PNG was completed in the UK, and results show it is safe for release in the Pacific. Biocontrol work on water lettuce, water hyacinth and broom weeds is progressing well. A four-year biocontrol programme with two biocontrol agents for the control of Siam weed, *Chromolaena odorata*, was successfully completed in FSM.

Support was provided for parthenium weed eradication in Lae, PNG, with 99.9 per cent success, while technical advice was given for parthenium weed eradication in Tubuai, French Polynesia. Support was provided for the eradication of *Acacia concinna* (Jerusalem thorn) in Fiji and 80 per cent containment was achieved. Support continued to be provided for efforts to eradicate several alien invasive weeds in Pohnpei, Chuuk, Kosrae and Yap (FSM), RMI and Palau. Some of the species have been successfully eradicated in Pohnpei and Palau.

After more than 70 years, a chemical-free agroforestry solution to the worst kava production problem was made available to kava growers across the Pacific. This was achieved in Fiji from a programme of laboratory, glasshouse and field research involving over 2000 biotechnology virus tests between 2002 and 2005. A series of low-key workshops were conducted at six sites as the strategy developed through 2005/6. Finally, two official launches took place in Fiji in late 2006, one on Viti Levu and one on Vanua Levu. These were big-budget events, attracting hundreds of growers each time. In October 2007 the formal launch of the integrated disease management (IDM) programme took place in Vanuatu.

A new virus disease of vanilla (*Wisteria vein mosaic virus*, or WVMV) was identified in Samoa during a national virus disease survey in 2004. A series of simple non-chemical interventions were devised after 440 virus tests were conducted to determine the host status of support trees and weeds.



Output 1.3 Biodiversity and genetic resources conserved, developed and promoted

Sustainable management and production practices include management of biodiversity, and the crucial importance of crop, animal and tree genetic resources is recognised by LRD. LRD's work in this field is based around CePaCT, formerly the Regional Germplasm Centre (RGC), and PAPGREN.

RGC expanded its mandate to include tree genetic resources, and was consequently renamed the Centre for Pacific Crops and Trees (CePaCT). This change in mandate recognises the significant contribution tree genetic resources make to food and nutritional security and income generation. In addition, LRD felt that it was necessary for the centre to position itself internationally as a facility with the mandate to conserve Pacific genetic resources to ensure conservation, research and improvement of the region's genetic resources are carried out within the region. This is an important consideration in light of some current international mechanisms of funding. There are plans to relocate the centre to new premises in 2008, which will provide CePaCT with the space it requires to fully engage in tree genetic resources work as well as developing its work programme in the area of climate change.

CePaCT continues to maintain important regional collections of the genetic resources of Pacific staples, such as taro, yams, cassava, sweet potato and banana. The taro collection of 758 accessions consists of traditional varieties from the Pacific and Southeast Asia, and improved lines from Hawaii, PNG and Samoa. Where possible, CePaCT provides a conservation service for national collections, and it currently maintains a collection of culturally very important yams from Pohnpei whose existence was under threat from yam anthracnose disease, and a unique Pacific plantain collection from New Caledonia.

Virus indexing work continues and over 5000 plants have been distributed to date in 2007. Two consignments of tissue culture plants (a total of 451 plants – banana, taro and sweet potato) have been sent to CNMI, the first since 1992. Significant progress has been made in distributing tissue culture plantlets directly to farmers in Fiji in collaboration with the Ministry of Agriculture. In two villages in Fiji, farmers have had some of their traditional varieties – which they thought had been lost – repatriated to them. The work in these two villages is just one activity within a programme of LRD activities that demonstrates true integration of all LRD teams. The DSAP and ICE teams assisted local communities in most PICTs in evaluating local varieties.

As part of the Improving Plant Protection in the Solomon Islands project (IPPSI), farmers are evaluating sweet potato varieties from CePaCT. New root crop varieties were introduced in tissue culture to a number of countries and good results have been obtained for sweet potato, taro and cassava in Kiribati, Marshall Islands, Tuvalu and Nauru. New introduced varieties of taro are also doing well under rain-fed conditions in Wallis and Futuna.

As part of the FAO Food Security Project, thousands of plantlets of recommended banana cultivars obtained from the Department of Primary Industries, Australia and the International Network for the Improvement of Banana and Plantain (INIBAP) are being provided to Kiribati (4500 plants) and Chuuk (7000 plants). The latter was achieved through close collaboration with the Micronesia Plant Propagation Research Center (MPPRC) in Kosrae. A similar agreement has been established for supplying banana plants to Nauru; a technician from CePaCT accompanied the first consignment to Nauru and carried out training in the use of tissue culture plants.

A method for breadfruit tissue culture has been established in response to the region's request for LRD to facilitate access to the breadfruit collection in Hawaii. The culture method was presented at the First International Breadfruit Symposium, held in Nadi and organised by CePaCT. Collaborative work is ongoing with the University of British Columbia, Canada to further develop a micropropagation system for breadfruit that utilises a bioreactor and would significantly increase multiplication rates. Such a system could be used in CePaCT not only for breadfruit, but also for other crops. Research continues with black pepper and microcorm development of taro. A new research area is tissue culture of sandalwood (in line with the new mandate to work on tree genetic resources) and this is the topic of a Masters degree.

Good feedback has been received from the Global Crop Diversity Trust on the regional strategy for conservation and utilisation of plant genetic resources for food and agriculture. LRD was asked by the Trust to take the lead in developing global strategies for taro and breadfruit. The taro strategy has been completed and the breadfruit strategy is at first draft stage.

A PGR Officer was engaged in May to continue the activities of PAPGREN. Activities have included the awarding of two Masters scholarships to national staff from Kiribati and Fiji. A national PGR consultation has been carried out in Kiribati and there have been preliminary discussions for similar consultations in New Caledonia and Tonga. Significant progress has been made in developing a flexible learning system for PGR in collaboration with USP; initially this will be modular based and suited to continuous learning.

Support continues for the participatory taro programme at the School of Agriculture, USP. The coordinator of the Taro Improvement Programme has been engaged as a lecturer at the university, which is useful for a region where breeding expertise and capacity are limited. Excellent feedback has been received on the Pacific/Asian taro crosses released from the breeding programme and more and more farmers in Samoa are keen to access these lines. They have recently been transferred to CePaCT and will therefore be available to all countries in the region.

Support has been provided in various ways for the activities of the Island Food Community of Pohnpei (IFCP) in promoting local food crops for health and nutrition. LRD has collaborated with IFCP in the production of a number of posters.

► COMMUNITY GENE BANK TO CONSERVE BIODIVERSITY

The establishment of taro genebanks in three rural farming communities in northern Viti Levu, Fiji, will give farmers access to clean planting materials. This is especially critical in areas officially declared as pest-free for exports, such as Taveuni in northern Viti Levu where the taro beetle pest is not found. Taveuni is the main island growing the export taro variety *tausala* on a commercial scale. Farmers there expressed keen interest in planting other taro varieties, especially traditional varieties, and maintaining them for food security, but were unable to bring in taro tops from other parts of Fiji where the taro beetle is found.

In response to this need, three LRD teams – ICE, Centre for Pacific Crops and Trees (CePaCT) and GTZ – helped Taveuni farmers establish a taro genebank at the Coconut Research Centre in Mua district. Tissue cultures of 43 taro cultivars were taken from CePaCT and transferred to pots in the nursery at the Coconut Centre. A total of 265 plants were potted from tissue culture. The taro cultivars were later transferred to a field genebank, which is used to supply the farmers with planting material. Once the cultivars are growing in their plantations, farmers will have the chance to assess their quality and yield and, more importantly, identify them. SPC will continue to monitor the distribution of the cultivars and document the data collected.

Similar field genebanks have been established at two other locations – Keka and Drawa, which are neighboring communities on Vanua Levu. Very dry weather at these locations had resulted in a lack of taro planting material. SPC assisted in setting up the field genebanks to remedy the situation and also helped bring in 1000 taro tops from Taveuni. In addition, SPC's ICE team carried out a campaign to raise awareness of taro beetle and distributed extension materials.

All the community genebanks have a local coordinator tasked with looking after the nursery and field genebank, and monitoring the distribution of planting materials to farmers. The coordinator also works with farmers to identify the local names of the cultivars. It was impressed on the farmers that the genebanks belong to them thus creating a sense of community ownership.

In Samoa, SPC is assisting with cataloguing yam varieties in a field genebank. Five traditional species of yams are now in a collection at Bill Cable's farm. He is using the IBPGR descriptors to document the characteristics of the different species and thus identify their diversity.

SPC's work on taro and yam conservation is in response to the CBD objective of conserving the genetic diversity of domesticated and wild island species, and documenting the knowledge of indigenous and local communities about these species.

Activities have commenced in response to the region's need to have a Pacific banana collection, with the establishment in tissue culture of some of the Pacific plantains from New Caledonia and some of the bananas from Pohnpei (in collaboration with MPPRC). Nutritional analysis of bananas collected from New Caledonia, Pohnpei and Solomon Islands will be an important component of this activity, and will contribute to one of LRD's new initiatives: Biodiversity, Health and Nutrition.

A new project in collaboration with the International Potato Center (CIP), funded by ACIAR, will benefit the region through access to elite varieties of sweet potato (megaclones) from CIP, and also a number of orange-fleshed sweet potatoes desirable for their nutritional status. These new varieties will be made available to the region for evaluation.

In the area of forest genetic resources, financial support was provided to the Vanuatu Department of Forests to collect seeds of sandalwood from different sources/provenances in Vanuatu. The seeds will be used to expand the present gene pool collection established during SPRIG 2 by the department as part of their gene pool conservation stand in Santo.

Support was provided to Samoan farmers through the NGO Women in Business in the organisation of a training workshop on the propagation of *Canarium* and sandalwood as part of their integrated organic farming system. This was done in collaboration with the Vanuatu and Samoa Departments of Forests. *Canarium* is seen as a potentially valuable multipurpose tree for Samoan farmers, while sandalwood is well known for its essential oil, which is in high demand in both local and international markets.

A re-survey of the vegetation and flora of Nauru, undertaken by a team from USP, was supported. The first survey was done in 1981. The report of the re-survey, which will be an important base document for the planned rehabilitation of mined areas in Nauru, is presently being finalised.

In the area of animal genetic resources, extensive electronic consultations were held early in the year on the status of their conservation and development in the Pacific region. As follow-up on resolutions of the 2006 PHOVAPS and Heads of Agriculture and Forestry Services (HOAFS) meetings, an Animal Genetic Resources Pilot Project for the region commenced, resourced from Australian funds held in trust by FAO. The project will also gain technical assistance and resources from the International Livestock Research Institute (ILRI) and the Australian DAFF.

Through this project, LRD has established the Animal Genetic Resources Network (AnGR) and is developing a network website and mailing list. A regional workshop was held in Nadi, Fiji in August. As an outcome of this, representatives from the region (Fiji, Samoa, Kiribati and Tuvalu), with LRD, participated in an international conference on animal genetic resources held in Switzerland. A pilot survey of animal genetics, involving blood sampling and characterisation for DNA, will start in October in Fiji, Samoa, Tonga, Cook Islands and Niue.

A quarantine-compliant regional plant virus/virus-like pathogen diagnostic service has been established for the region. This was achieved by setting up new laboratories in Fiji to use serology and the tools of molecular biology and accessing a network of collaborating laboratories overseas. Expenses and turnaround time in the Pacific's first-ever dedicated biotechnology diagnostics laboratory are a small fraction of equivalent outsourced alternatives. So far, the service has been used to undertake over 4500 serological and 700 molecular tests on quarantine-secure leaf samples from 17 PICTs and over 400 molecular tests on CePaCT tissue culture accessions.

INVASIVE ANTS – A THREAT TO ISLAND BIODIVERSITY



Invasive insects are a threat to fragile Pacific island ecosystems and can have severe impacts on island economies, culture and human health. Two invasive ant species in this category are the little fire ant, *Wasmannia auropunctata* and the red imported fire ant, *Solenopsis invicta*.

The red imported fire ant (RIFA) can affect human health, inflicting a painful sting and causing a severe allergic reaction in some people. It builds nests in open fields, which creates a problem for people tending crops, gardening or enjoying other outdoor activities. The ant is widespread in the southern United States. It has not yet been recorded from the Pacific region, although a recent interception in New Zealand raised alarm.

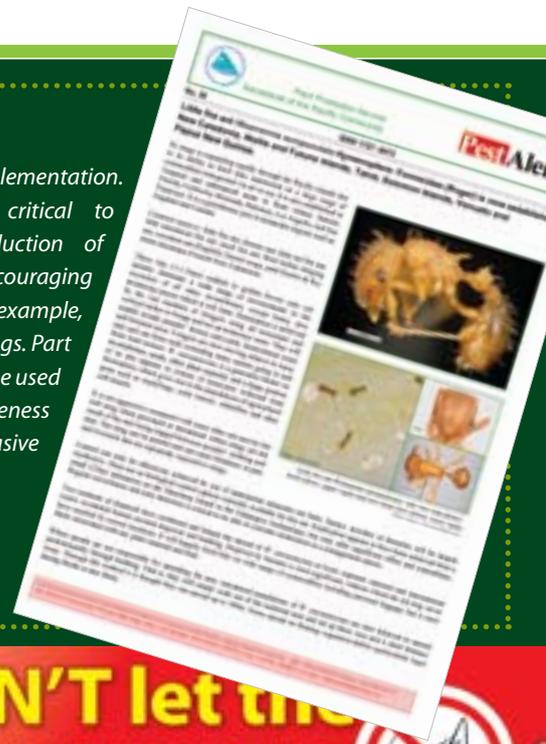
As early as 2002, PICTs recognised the threat posed by invasive ants and raised the issue in a workshop held in Hawaii organised by the Global Invasive Species Program. In 2003, PICTs asked SPC to implement the Pacific Ant Prevention Programme (PAPP), which was developed by SPC in collaboration with other regional and international agencies and civil society groups including the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Invasive Species Specialist Group (ISSG).

In 2005, SPC and ISSG secured funding from the Critical Ecosystems Partnership Fund to start PAPP. The US Fish and Wildlife Service also came on board and provided funds to maintain the programme. Biosecurity NZ supported PAPP by funding baseline Pacific Invasive Ant Surveillance (PIAS) at high-risk ports and airports in American Samoa, Cook Islands, Guam, French Polynesia, Fiji, New Caledonia, Papua New Guinea (PNG), Samoa, Niue, Tonga and Vanuatu. The risk levels were determined by the amount of international trade and air traffic between these PICTs and RIFA-affected countries as these are the main pathways by which the ants are likely to arrive. Potentially high-risk PICTs Marshall Islands, Palau, Solomon Islands, and Federated States of Micronesia have now been covered in the ant surveys, except for the Commonwealth of the Northern Marianas. Quarantine staff members from three of the Micronesian PICTs were invited to Guam for training when surveillance was carried out there.

Recent incursions of the little fire ant in Wewak, PNG, and in Vanuatu, initially in Espiritu Santo and later in Port Vila, have raised fears that invasive ants could become established in the region. The United States government through the US State Department and USDA is funding PAPP work targeting the outbreak sites in Vanuatu and PNG.

The US assistance will contribute to the development of an emergency response plan (ERP) for invasive ants for the Pacific islands. This ERP, which will be based on general ERPs developed for pests and disease incursions by SPC, will concentrate on developing response plans to counter any RIFA or invasive ant incursions in SPC's 22 member countries. It will be presented to individual countries when funding

is secured for PAPP implementation. Public awareness is critical to preventing the introduction of invasive ants and to encouraging people to take action, for example, by reporting any sightings. Part of the new funding will be used to increase media awareness of RIFA and other invasive ants.



Output 1.4 Natural disaster response and support structures in place

Under the Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP), multi-sectoral national avian and pandemic influenza taskforces have been set up in all PICTs to be responsible for developing each country's avian and pandemic influenza preparedness plan. The SPC PRIPPP team developed and circulated a Preparedness Plan Checklist to assist countries in developing and crosschecking their respective preparedness status, and assist the PRIPPP team in identifying shortfalls and gaps in the plans. These gaps will also assist the project in identifying areas where PICTs need assistance.

The Pacific Avian and Pandemic Influenza Taskforce, consisting of more than 90 human health and animal health experts from Pacific governments and international and regional organisations, gathered in Noumea for its first meeting in March 2007. The taskforce will provide a consultative forum on avian and pandemic influenza and related issues, and will allow Pacific Island professionals working in avian and pandemic influenza to share their experiences and knowledge. Relevant technical resource materials for avian influenza and pandemic influenza have been disseminated.

In August, based on a presentation made by LRD, the 2nd Regional Steering Committee for Global Frontiers – Transboundary Animal Diseases (GF-TADs) approved SPC as the regional support organisation under an OIE/FAO initiative aimed at helping countries manage the control of transboundary animal diseases on a regional and international basis rather than on an individual country basis. LRD will now work to develop mid- and long-term proposals in collaboration with the regional secretariats of both FAO (Bangkok) and OIE (Tokyo) for funding support under this initiative.

Specialists in the areas of communications, procurement, training and legislation have been recruited under PRIPPP. In addition, an Animal Health Specialist has been recruited for the Melanesian sub-region, based in PNG, and an Animal Health Laboratory Scientist is expected to commence with the Animal Health PRIPPP team in early October 2007.

In the area of plant health, the Pacific Ant Prevention Programme (PAPP) work plan was approved by the 2nd HOAFS Conference in 2006; a revised version was completed in March 2007. PAPP is in need of funding to the tune of FJD 1.2 million over six years. Small amounts have been contributed by the Critical Ecosystem Partnership Fund (a six-month Coordinator position and public awareness; USD 87,000 in December 2005), the US Fish and Wildlife Service via the Nature Conservancy (USD 10,000), the US State Department (USD 35,000 in September 2007), the US Department of Agriculture (USD 32,000 in July 2007) and SPC (USD 30,000, including in-kind contribution).

SPC and NZ MAF are collaborating, with support from the Pacific Security Fund under the umbrella of PAPP, to conduct training and baseline surveillance at high- and medium-risk seaports and airports in PICTs. Seventeen seaports and airports were covered in 2006/07 and an additional 35 will be covered in 2007/2008. SPC is coordinating this work, which is mainly being contracted to specialists from NZ. In 2007, surveys were conducted for two seaports in Solomon Islands and Pitcairn Islands in collaboration with the LRD Biosecurity and Trade team.

A total of 32 participants from PICTs, plus seven USP students, were trained in ant taxonomy funded by the NZ Pacific Security Fund. Feedback has been received from most participants, and there is some national and regional capacity available for invasive ant identification. The University of California Davis is developing LUCID Key software, which will be available within a year for ant identification in the Pacific. Awareness of PAPP is being raised using Radio New Zealand International (two interviews), PACNEWS, *Islands Business* monthly magazine, DVD production and distribution, and newspapers in PNG, Fiji and NZ.

The Plant Health group has been collaborating with seven regional and international agencies and civil society groups to promote a participatory learning network (PLN) on invasive species. Since May 2006, 14 PLN teams have been established in Guam, Palau, FSM, Marshall Islands, Kiribati, Samoa, American Samoa, French Polynesia, New Caledonia and Hawaii. LRD financially supports the coordination of these PLNs.

LRD is a founding partner in the Pacific Invasives Initiative (PII), which is the Pacific part of the Cooperative Island Initiative, a global programme implemented by the International Union for the Conservation of Nature. The PII coordinating team is based at the University of Auckland. PII's main goals are to foster the development of specific targeted invasive species management projects in SPC and SPREP member countries that can be used as demonstration models to be adopted elsewhere.



Output 1.5 National and regional capacity to manage invasive species, pests and diseases strengthened

School gardens in Fiji's central and western divisions have been developed to demonstrate integrated approaches without the use of pesticides for management of pests. Use of aromatic plant-derived pesticides; companion planting, etc. are emphasised. For soil fertility, compost and liquid fertilisers using locally available materials are encouraged. The school garden project has been extended to Samoa. The use of plant-derived pesticides continued to be promoted as part of the DSAP/community jointly developed technologies. In Solomon Islands a DSAP farmer discovered that *Bixa mosca*, a local plant, is being promoted as a trap crop for insect pests of beans.

The insect identification service was maintained, with increased demand due to new pest outbreaks. The insect survey collection in Solomon Islands received identification assistance and is being updated.

Cook Islands received assistance for an eradication programme after a giant African snail (GAS) incursion, PNG received assistance with a cocoa pod borer outbreak, and Solomon Islands received assistance with a recent GAS incursion. Assistance was also given for survey and eradication programmes after *Wasmania* spp. (little fire ant) and GAS incursions in Fiji as well as little fire ant incursions in PNG and



Vanuatu. Assistance was in the form of funding for delimiting surveys, production of awareness materials and technical advice. The respective countries undertook the survey and eradication work themselves.

Weed awareness materials were jointly developed for American Samoa; roadside weed management training was undertaken for Palau; a *Mimosa pigra* management project was developed for Madang, PNG; weed taxonomy training on the plant family *Asteraceae* was carried out at USP; and with the assistance of Plant Protection Micronesia a second calendar on invasive species is being produced for 2008 (the first one was produced in 2006).

Fruit fly work has been a mainstay of LRD's plant health work in the past, and assistance has continued on request. LRD continued to support fruit fly surveillance in PICTs and maintains a stockpile of baits, traps and other materials for fruit fly incursion response and management.



QUARANTINE AWARENESS FOR PACIFIC GAMES

Thousands of people travelled to Samoa in August for the South Pacific Games, and items carried in their luggage can pose a real threat to Samoa's national biodiversity. The biggest risk is in the transport of food items, but plant products, cultural items and unclean sports equipment could also be dangerous.

Certain pests and diseases are found in some islands but not in others – for example, the taro beetle is found in Fiji but not in Samoa. Sound plant protection practices, including reliable national quarantine services backed by appropriate legislation, can help reduce the threat posed by invasive pests.



To help educate travellers to the South Pacific Games – and indeed the general travelling public – on quarantine matters, Land Resources Division collaborated with national quarantine services in the launch of a regional quarantine media campaign. The aim of this initiative is to prevent incursions of pests and diseases into Samoa. In Samoa itself, the quarantine service conducted its own local media campaign targeting the general public with the message to be on the lookout at Games venues for possible new pests.

Aimed at getting travellers to declare items to quarantine, the awareness exercise included a TV spot, a radio spot, brochures and strategic placement of quarantine messages in regional online services and magazines. National quarantine services conducted training of athletes on quarantine risk items prior to the departure of athletes. Recent incursions of new pests and diseases into some Pacific Islands have been the result of undeclared quarantine items at national borders, but X-ray machines are becoming common in major Pacific airports – and Samoa is one of them. The technology can detect quarantine risk items, and if the items have not been declared, passengers might find themselves on the wrong side of the law.

The campaign was at its most visible in the few days prior to national contingents leaving for the Games. With an air of festivity swirling about at this time governments, businesses, sponsors and the general public put up send-off celebrations for their teams. Quarantine services can get their serious message across at this time when there is much hype and plenty of national emotions.

To help with the clearance of arriving athletes, SPC helped Samoa Quarantine bring in quarantine officers from the different regions of the Pacific on technical attachment. One officer from French Polynesia and three from Micronesia – Palau, Marshall Islands and FSM – carried out 'hands-on' quarantine clearance of arriving athletes. They also accompanied Samoa Quarantine officials to conduct pest surveillance and monitoring at Games venues. The technical attachment provided host-country much-needed help at this peak travelling period as well as serve as an exercise for the regional officers to learn proper quarantine operations at major Pacific events. This is an initiative of the Pacific Plant Protection Organisation to foster closer relations with national biosecurity (quarantine) services of the Pacific Community and to help each other out in technical capacity building.

LAUNCH OF CONTROL MEASURES FOR KAVA DIEBACK DISEASE

The launch of integrated pest management (IPM) practices for the control of kava dieback disease was carried out for Vanuatu on two islands, Tanna and Santo, in October. The two field-days, both attracting over 100 farmers at each site, were organised to show farmers that their kava plants weren't dying because of an act of God, like some farmers believed, but a disease that was slowly but surely settling in to destroy their plantations.

Kava dieback is a disease caused by the cucumber mosaic virus, and it cannot be treated with pesticides. During the field day, farmers went to field and shown symptoms of the disease: it first shows up in young leaves, which turn yellowish and curl at the tip, and the stem starts to die back.

Because of its high value, kava is now commercialised and monocropped in the countries where it is a major crop. New markets are opening up and increasing the demand for kava, especially in Pacific Island countries where kava cannot grow, such as the atolls. And there is a huge international market as well

After many years of collaborative research a package of control measures, environment friendly IPM practices, is now available to farmers. SPC Land Resources Division took the lead in the collaborative research with the Australian Centre for International Agricultural Research (ACIAR), and countries where kava is a major crop - Vanuatu, Fiji and Tonga. The control measures recommend simply that kava be grown in its natural state, in an agroforestry system in tropical rainforest.

Farmers are now aware never to take planting materials from infected kava plantations – the dreaded kava dieback inoculum must be quarantined and prevented from spreading.

Vanuatu extension and technical staff, at the completion of the field days now have the necessary skills to conduct farmer training. There is also a greater appreciation of the wealth of local knowledge and skills of farmers that can contribute to their own development.





A.2 Improved Biosecurity and Trade Facilitation

Given the limited land mass of most PICTs, our long-term survival will very much depend on our capacity to apply integrated agriculture and forestry sustainable management practices in the utilisation of our agricultural and forest lands.

To be able to respond effectively to the above, agricultural and forestry products from our sustainable systems need to be traded competitively in the marketplace to be able to receive a fair return for the investment made. Without this, it will be difficult for Pacific peoples to sustain the continued implementation of the systems.

It was with this in mind that LRD identified biosecurity and trade facilitation as the second objective of its current strategic plan. This objective recognises the need for our countries and territories to be better supported in how they protect their agriculture and forestry systems from harmful pests and diseases and how they develop their capacity in production, post-harvest processes, quality assurance, and improving market access for their produce and products. The five output areas are:

Output 2.1 Strengthened national capacity to comply with international and regional standards related to trade

Output 2.2 Strengthened national capacity to undertake economic and financial analyses of opportunities for increased domestic and export trade

Output 2.3 Sustainable and efficient post-harvest technologies developed and promoted

Output 2.4 Improved information on plant and animal health status in PICTs.

► STRENGTHENING BIOSECURITY SERVICES FOR PITCAIRN ISLANDS

Pitcairn Islands lie to the east of the 22 Pacific island countries and territories of SPC. There has been little SPC contact with Pitcairn, which has a population of around 50 people – descendants of the mutinous Bounty crew.

In 2002, LRD established a fruit fly surveillance system, farmer training on fruit fly control measures, as well as training on vanilla production. Then after the Pitcairn Islands Office in Auckland contacted LRD, an LRD mission visited the islands in January, 2007. The mission included the LRD biosecurity technician who assessed fruit fly management, reviewed Pitcairn's current biosecurity system, and carried out surveys of weeds, ants and insects.

PICTs have established baseline fruit fly data and maintain effective monitoring and surveillance of the pest. This was not the case for Pitcairn, however, and SPC was able to provide assistance to bring their surveillance system into line with that of other Pacific islands. The biosecurity technician set up 16 new trap sites, collected 56 fruit samples for a fruit fly host survey, and re-assessed field control measures. Because it is very important to maintain fruit fly management and carry out regular auditing of the system, biosecurity personnel need to constantly undergo capacity and refresher training. The biosecurity technician was able to carry out training in emergency response and a fruit fly simulation exercise.

*Pitcairn's biosecurity operations were reviewed and enhanced with the development of a vessel clearance report and importation system, and advice was given on fresh produce export as Pitcairn are planning to export to the Gambier Islands in French Polynesia. The opportunity was also taken to carry out invasive ant surveillance and monitoring, as had been done for other PICTs. The survey found Pitcairn free of the two invasive ant species, *Solenopsis invicta* and *Wasmannia auropunctata*.*

Following the mission, a two-person Pitcairn delegation was invited to observe LRD programmes in Suva. Mr Jay Warren, Mayor and Director of Biosecurity, and Mr Leslie Jacques, Commissioner of Pitcairn, visited LRD in August. They were officially welcomed and had meetings with several technical staff. They also met with key people from the Fiji Ministry of Agriculture, visited agro-forestry operations and export produce stakeholders, and observed Fiji's border biosecurity services in action.

*Now that the LRD has re-established contact with Pitcairn Islands, there are plans to maintain links between relevant technical programmes and Pitcairn counterparts. Among the first of these activities, LRD will assist Pitcairn in obtaining biosecurity equipment and inspection kits for its biosecurity officers, send vetiver grass (*Vetiveria zizanioides* L.) from Fiji for planting on eroded sites, and introduce fruit fly parasitoid, *Fopius arisanus* from French Polynesia for their fruit fly area wide program planned for implementation in 2008.*



Pitcairn Island
Photo source: Google Earth

Output 2.1 Strengthened national capacity to comply with international and regional standards related to trade

The second batch of IMPEXTEK (Import-Export Biosecurity Technology Centre) trainees – from Tonga, Tuvalu and Vanuatu – successfully completed their training, while the third batch of trainees, from Cook Islands, PNG and Solomon Islands, commenced their training in May.

Other training activities include: five trainees – two from Solomon Islands and one each from Tonga, Tuvalu and Vanuatu – completed a one-week training course in Fiji in April on fresh produce commodity pathways for export (a review of the fresh produce export systems manual for Fiji is ongoing, with consultations with Fiji MAFF); a one-week regional workshop on trade statistics was held in Suva in March, with assistance from FAO, to encourage the collection, analysis and dissemination of agricultural trade statistics; and training of Fiji quarantine, research and extension officers in the use of the training manual on fresh produce export systems.

Market access and sources for new products were explored: satoimo (taro) and matsutake mushrooms to Japan, ginger from Fiji to Tonga, potatoes from PNG to Vanuatu, bele from Vanuatu and Tonga to Australia. Research to identify a suitable hot-water dip treatment regime for Fiji taro exports to NZ continued, and commodity pathway work for coconut export from Tuvalu to NZ was explored.

The Biosecurity Technician visited Pitcairn Islands on official mission for three weeks in February to undertake various capacity-building activities related to biosecurity and trade facilitation. While there, he set up fruit fly traps and serviced the traps, set up ant traps and conducted surveillance for ants, trained Pitcairn biosecurity officers on general biosecurity operations such as inspections and clearance, and discussed trade-related matters. Since this was the first visit by an SPC staff member and the only one that has been undertaken under the auspices of SPC, the technician undertook other tasks on behalf of other SPC programmes.

Virus indexing of taro and yam continues, as does screening of other crops imported from institutes outside the region where this is considered necessary. Four yam varieties (*Dioscorea rotundata*) from the International Institute of Tropical Agriculture (IITA), Nigeria, that are resistant to yam anthracnose disease have been made available as a result of the region's capacity to carry out virus testing.

Continued assistance was provided to PICTs in capacity development in import risk assessment (IRA) and importation protocols for transfer of genetic material and trade in live animals and animal products. These include facilitating importation of breeding pigs and pig feed and construction of piggeries for Tuvalu, and advice on conditions for importation of poultry and milk products from USA and Korea respectively into Palau, and cattle and goats from Guam into Palau.



LRD, in collaboration with Fiji MAFF, hosted a visit of a delegation from Tuvalu's Ministry of Agriculture and representatives of the Tongan National Livestock Association to observe and discuss technical pig production and marketing issues with their Fijian counterparts and the Commissioner and Mayor of Pitcairn Islands. The Mayor of Pitcairn Islands, who is also the Director of Biosecurity there, stayed on to familiarise himself with the services provided by LRD, including in biosecurity.

Support was provided for field testing of Fiji's draft forest certification standards; the testing was undertaken by Smartwood, a Forest Stewardship Council-accredited forest certification auditor. Support was provided to the Solomon Islands Government in organising the first stages of the stakeholder consultations that are the initial steps towards formulation of draft national standards on forest certification. This was done in collaboration with Fiji, using the lessons learnt and experiences gained in formulating their own draft standards.

LRD partnered with the International Fund for Agricultural Development (IFAD) and the International Federation of Organic Agriculture Movements (IFOAM) in developing Pacific organic certification standards. This work is to be launched at CRGA 37 and the standards are scheduled to be launched at the 2008 2nd Regional Conference of Ministers of Agriculture and Forestry.

The Pacific Islands network for taxonomy (PACINET) is the Pacific LOOP (locally organised and operated partnership) of BioNET International. BioNET International's objective is to promote and develop taxonomic capacity. PACINET is a collaborative programme between USP, SPC and SPREP, hosted by USP. Improving capacity in taxonomy is crucial to identifying pests, diseases and weeds that may threaten PICT economies, livelihoods and environments and crucial for improving the quarantine services of PICTs.

ECONOMIC RETURNS ON SPC ASSISTANCE TO IMPROVE EXPORT COMMODITIES



The Pacific Agreement on Closer Economic Relations (PACER) recognises that trade can play a crucial role in promoting economic growth. The Regional Trade Facilitation Programme (RTFP) comprises several components designed to promote trade and address some of the constraints to increased trade in the region.

SPC is responsible for implementing the biosecurity-quarantine component of the RTFP. In Fiji SPC has operated in partnership with the Fiji Ministry of Agriculture to develop export commodity pathway systems to facilitate the trade of fresh commodity exports. Support provided has included the development of training materials, such as a manual and posters, and the training of farmers, exporters, and extension and quarantine officers.

Fiji exports fruit fly host commodities (eggplant, pawpaw, mangoes and breadfruit) to New Zealand under a 1996 Bilateral Quarantine Agreement (BQA). The export produce are subject to High Temperature Forced Air (HTFA) quarantine treatment prior to export.

Market access to Australia was granted in 2004 covering the exports of pawpaw. Dedicated bio-security officers in these countries were instrumental in processing market access requests from the Pacific region.

Since 1997 the volume and value of commodity exports covered by the quarantine agreements has increased significantly. The doubling of pawpaw exports between 2005 and 2006 is as a direct result of gaining access to the lucrative Australian market, capitalising on cyclone damage to their domestic market, and serves as an illustration of the potential of this larger market and the capacity of Fijian growers and exporters to respond to meet this demand.

SPC worked closely with the Fiji Ministry of Agriculture to promote improvements in crop production including pest and disease management and post-harvest handling with the aim to increase the proportion of produce suitable for the export market and reduce rejection rates. This leads to economic gains to exporters and growers as a result of the higher prices that can be obtained in overseas markets. The main objective of the training provided as part of the commodity pathway approach is to increase the proportion of export produce. The most direct indicator for this is the observed decline in rejection rates over time.

An economic evaluation of the benefits of the SPC assistance in this area since work began in 2002/2003 assumed that the change in reject rates observed can be attributed to the SPC assistance provided.

It is not possible to determine what proportion of the increase in exports is attributable to SPC assistance. A conservative estimate of 5 percent of the historic and projected increase in exports was used in the evaluation. To date it is estimated the overall training activities conducted by SPC in partnership with the Fiji Ministry of Agriculture have delivered around \$203,000 worth of benefits to exporters and are expected to deliver a further \$212,000 over the next five years. This is compared to total costs of around \$118,500.

The development of export commodity pathway systems has led to demonstrable gains to Fiji exporters as highlighted above. This approach has led to improved awareness amongst farmers, exporters and government officers about the importance of crop management and post-harvest handling when producing for the export market and their obligations under quarantine agreements. This has resulted in economic gains from reduced rejections and increased volumes of exportable produce.



Output 2.2 Strengthened national capacity to undertake economic and financial analyses of opportunities for increased domestic and export trade

The ASTI methodology for analysing innovation systems in agriculture has been used in Tuvalu and Samoa to evaluate the noni production/innovation system in both countries. The report was presented at the 2006 PAPGREN meeting and at the recent CTA/USP regional workshop 'Innovations and Foresight for Boosting Agriculture'.

A workshop was held in February to present the results of the commodity chain studies implemented under a project funded by FAO and Italy (FAO-INEA) called 'Support to the Regional Programme for Food Security [RPFS] in the Pacific'. The studies were coordinated by LRD. The workshop aimed to provide PICTs and regional institutions with a theoretical tool (methodology) for implementing chain studies in the agriculture/food domain. The target commodities studied were breadfruit, tomato, carrot, mango, papaya and nangai nuts, in Kiribati, Fiji and Vanuatu.

A feasibility study on the potential of floriculture was implemented in Fiji and PNG. A workshop was held in Fiji to report on and discuss the results, which indicate there is significant scope for improvement in supplying the domestic market as well as potential for working with local plants and through breeding programmes developing ornamentals that are unique to the Pacific. A similar workshop is planned for PNG, where there is significant potential to exploit the highlands environment for the production of flower crops for temperate markets such as Europe and also, as with Fiji, to develop unique ornamentals.

As part of DSAP, the LRD Economist visited Samoa in February to conduct training on the collection and analysis of baseline economic data to assist in the monitoring of DSAP projects and in the analysis of agricultural productivity. A group of extension officers were trained and were able to practise conducting household surveys to collect relevant economic data. The training enables them to calculate and compare the gross margins of different farms and calculate the impact of their extension activities on the cash incomes of households.

Discussions are currently under way on whether it would be possible to develop a basic minimum dataset requirement that could be used within LRD to improve the monitoring of socio-economic impacts of projects.

Assistance has been provided to DraFCo (the cooperative society that operates the business aspects of the community in the Drawa model area) to analyse their financial position and evaluate the benefits of investing in their own machinery. The analysis produced a number of recommendations that DraFCo can use to improve their operations. The report will also be used to approach external financing institutions for loans. The importance of good record-keeping was demonstrated and systems have subsequently improved.

Practical commercial demonstrations and training projects were planned and implemented in Fiji and Samoa to train rural communities in producing quality export commodities. Groups of youths in Drawa and Ba in Fiji were trained in the production of high-quality taro and vegetables for export using the modified FFS approach. Links with commercial lending institutions and exporters were established to provide capital and marketing advice for the groups. Taro, eggplants and chillies have been exported, and the Drawa youths now have enough capital to continue their venture.

An economic analysis conducted within LRD estimated benefits of around FJD 300,000 in net present value terms as a result of the biosecurity and trade facilitation activities conducted to assist Fiji in implementing their export commodity pathway systems. The systems are designed to ensure a consistent supply of export-quality horticultural produce and have contributed to reducing the rejection rates of exported produce.



Output 2.3 Sustainable and efficient post-harvest technologies developed and promoted

In collaboration with the International Tropical Timber Organisation (ITTO), a pre-project study was undertaken on wood efficiency. Results were presented at the 42nd International Tropical Timber Council (ITTC) meeting held in Port Moresby in May, where SPC was also accredited observer status at ITTC. The full project proposal based on the initial pre-project was submitted at the meeting for consideration by ITTO.

The proposal has been through the first round of the ITTO expert panel's assessment and their comments/suggestions have been received. The required changes to the proposal will be made in consultation with the countries and the proposal will be re-submitted in time for it to be considered by the expert panel before the next ITTC meeting, in early December 2007.

Support was provided to the Tonga Agroforestry Multipurpose Society (a community NGO for woodlot owners) by the SPC/GTZ German Regional Forestry Project with regard to the proper processing and utilisation of their trees. The support included training and the provision of equipment, including a 4WD vehicle. Training in the correct way of tree felling and logmaking, and peeling and drying of posts/poles, was recently completed.

LRD is evaluating hot water as a quarantine treatment option for taro and cut flowers. Two sets of experiments have been completed. The first was to identify the correct temperature and exposure time for taro treatment; the test concluded that 50°C was appropriate as it has been successfully demonstrated in previous studies conducted in NZ and USA to treat taro and other aroids. Trials have confirmed that taro is disinfested from all invertebrates (taro mites, nematodes, wireworms and weevil larvae) when immersed in hot water at 50 degrees C for 12 minutes. The taro maintained good quality and still edible when stored for more than 3 weeks at 8 degrees after treatment. Taro stored at 8°C will remain in good condition. Further trials are being undertaken to refine the treatment regimes.

FARMER FIELD SCHOOLS – AN EFFECTIVE TRAINING MODEL FOR THE PACIFIC

ICE has adopted the Farmer Field School (FFS) extension training approach to promote new technologies and provide training for farmers.

The FFS approach is based on adult learning principles that emphasise learning by doing. Farmers receive training on-farm over the duration of a cropping cycle, thus gaining valuable practical knowledge on a particular crop from land preparation to harvesting and marketing.

In Fiji, the approach has been used to extend management practices for the control of taro beetle. At various demonstration plots, farmers carried out taro planting themselves rather than merely visiting the sites and learned about effective disease management practices as the crop grew.

Preliminary data collected indicate that there has been high uptake of recommended technologies by farmers who took part in the FFS training, which was backed up by a media and information campaign. Raising public awareness is an integral part of the FFS extension method.

The FFS approach was also successfully used to train young people from Drawa to produce taro for export. All aspects of commercial taro production were taught over a seven-month period, using a demonstration plot. The youths learnt how to make planting holes, apply fertiliser, control weeds, collect production data, and harvest, wash, weigh and market the crop.

As a result, 25 youths gained skills in commercial taro production and have themselves extended this knowledge to others. Some have established their own commercial plots.

The LRD is now confident that the FFS method, with its emphasis on real-life learning, has been an excellent way of preparing members of the Drawa community to go into commercial taro production on their own.



Output 2.4 Improved information on plant and animal health status in PICTs

The final version of TaroPest, the information portal on pests of taro, was launched in April during a Regional Pest List Database workshop in Nadi, Fiji. Country delegates at the workshop, who were mainly quarantine and technical officers, were guided through TaroPest on line. Waterproof hard copies (for field use) and electronic versions (for office use) were distributed. The Pest List Database has been maintained and kept up to date.

Plant pest and disease surveys were conducted in April in Solomon Islands with FAO support. Virus surveys were undertaken in Tonga, including for squash virus diseases. Nematode surveys were undertaken at Rennell Island in Solomon Islands and in Kiribati, and plant virus surveys were completed for FSM, RMI, Palau and Guam. A fruit fly survey was undertaken in Pitcairn Islands in February. General weed surveys were completed for Nauru, Solomon Islands (Malaita, Guadalcanal and Santa Cruz Islands) and PNG (West New Britain).

In collaboration with OIE, the Pacific Animal Health Information System (PAHIS) was kept up to date and a new interface compatible with the new OIE WAHIS/WAHID system was installed. The Pacific Veterinary Network (PACVET) mailing list was maintained with regular updating. Regular updates on avian influenza and other animal health issues were facilitated by PRIPPP and the PHOVAPS forum.



CSI WORK IN TUVALU

Coconut scale insect, *Aspidiotus destructor*, has become an important pest in Tuvalu since the first outbreak in 1994 on Nanumaga Island in the northern group.

A biological agent in the form of a beetle called *Chilocorus nigritus* was found to occur naturally in Funafuti. Collections of the beetles were made and sent to Nanumaga.

A major outbreak of CSI was reported from Vaitupu in 2004. Heavily infested trees were cut down followed by immediate release of the two biological control agents, *Telsimia nitida* and *Chilocorus nigritus*. Over the 2004–2005 period, over 800 adults of *T. nitida* were released with more in the following year.

LRD plant health has been providing technical assistance for the management of coconut scale insect including rearing the biocontrol agents at SPC and field releases of the adults in Vaitupu. Adult beetles of *C. nigritus* biocontrol were released in Muli settlement in northern Vaitupu, Kaliapapa to the south, and Elisefou near the research station.

Director of Agriculture, Mr Itaia Lausaveve together with Chief of Quarantine, Mr Sam Panapa facilitated the field work with LRD plant health technical staff who visited Tuvalu.

At Asau, there was an abundance of *Telsimia nitida* throughout much of the vegetation, including breadfruit, pawpaw, and coconut trees. This area will now be the new source of *T. nitida* for release in affected areas.

It is advisable to continue with the CSI work on Vaitupu and Nanumaga, especially now that the biocontrol agent can be collected in Asau for release in affected areas.



PARTICIPATORY AND INTEGRATED APPROACHES TO DEVELOPMENT AND MANAGEMENT



Summary

The Land Resources Division's country interventions are increasingly adopting and mainstreaming participatory approaches as best practice for programme delivery. LRD recognises and strengthens the critical link of empowering stakeholders to be directly involved in identifying and solving their technical problems, paying particular attention to gender issues and involving youth where relevant. Empowering stakeholders is an investment to ensure sustainability of the good outcomes of research and development work.

The EU-funded Development of Sustainable Agriculture in the Pacific (DSAP) project and the German Government-/GTZ-funded Drawa model area for natural resources management are two key LRD initiatives directly impacting the grassroots level on the strength of active participation by stakeholders. The DSAP project aims to empower farmers and communities through their participation in project identification, implementation, monitoring and evaluation. It has created opportunities for the participation of women and youth in technology development and income generation. This approach of putting rural communities in the driver's seat of agricultural research and extension is new thinking that is readily adopted; the innovations that result from the process are gains for the innovators, who are the communities themselves.

The Fiji-based Drawa model for community-based sustainable natural resource management has been described by partners as 'a successful example of community-based natural resource management', with most stakeholders considering it 'worthy of replication'. The Drawa model promotes a participatory approach to community-based management, where landowners are capacitated to develop and implement a sustainable management regime for their forest resources. LRD facilitates activities in the Drawa area in collaboration with government counterparts.

The two projects define a clear direction for LRD in maximising the impact of its research and development activities at the grassroots level. Through these initiatives, LRD is championing the empowerment of stakeholders to determine their own destinies as key to successful implementation of country programmes, and for institutionalising community-based sustainable natural resource management. Community-based interventions give due recognition to social structures as the entry point for developing efforts at the village level.

Two Case Studies: Development of Sustainable Agriculture in the Pacific (DSAP): Developing Partnerships with Stakeholders

Background

The active participation of farmers and communities, including women and youth, in technology development and income generation, and addressing the wider role they play in community development, have become central tenets of the EU-funded Development of Sustainable Agriculture in the Pacific (DSAP) programme. The traditional top-down strategy targeting male farmers used by ministries of agriculture to develop the field has had mixed results over the years. It is now being challenged, with DSAP promoting participatory approaches in the identification, adaptation and adoption of technologies to solve agricultural problems. DSAP has therefore become the first SPC programme to use the participatory strategy in a mainstream project. This approach of putting rural communities in the driver's seat of agricultural research and extension is an innovation in itself and a new way of thinking.

The EU-funded Pacific Regional Agricultural Programme (PRAP), implemented on and off between 1989 and 1998, introduced participatory research and extension to the agriculture and agroforestry sectors of the then eight Pacific ACP states in the Southwest Pacific. DSAP was deemed necessary to firmly install the approaches in these countries and introduce them to the new states that became ACP members with the Cotonou Agreement.

The family production unit is central to the survival of rural communities, and DSAP is promoting technologies that augur well for it. Similarly, DSAP has created opportunities for the participation of women and youth in technology development and income generation. The DSAP initiative is therefore directly linking food production with healthy communities.

DSAP aims to increase the sustainable agricultural production of targeted farm families in 16 participating countries in Melanesia, Polynesia and Micronesia. A range of country activities is well under way – especially targeting youth – in Niue, PNG, Tonga, Samoa, Kiribati, and Wallis and Futuna.

Some of the technologies that are being tested on farms, based on country priorities, are the evaluation of the legume *Mucuna* as a cover crop in Niue, Samoa, PNG, Vanuatu, Solomon Islands and Tonga; use of the bucket irrigation system in Nauru, Republic of Marshall Islands, Niue, Tuvalu, Kiribati and Tonga; and promotion of vegetable production in villages and schools in Kiribati, Fiji, French Polynesia, PNG, Tuvalu, and Wallis and Futuna. Other technologies are the introduction of new varieties and germplasm, improved smallholder livestock production, simple composting methods, the establishment of seed banks, soil fertility improvement, promotion of soil conservation methods for hilly areas, use of plant-derived pesticides, improved taro production, and the introduction of wild varieties of traditional crops.



Capacity building of national staff

Capacity building is a major component of DSAP and significant impacts have been made. There is now established in the region a very capable cadre of Graduate Research and Extension Assistants (GREAs) and other relevant national staff, who have received extensive formal and non-formal education and training since the programme commenced. This has included training in participatory and community development approaches, technical training in the adoption of new technologies, and extension and communications training to promote the new technologies. The training has used different delivery formats, including one-on-one, group work, annual regional GREA training workshops, and formal training through tertiary institutions.

Some DSAP staff are enrolled in undergraduate studies at USP Alafua, UNITECH in PNG and the University of Sussex in England. Twelve GREAs have either completed degree studies or are currently studying.

Training under the programme is also directed at farmer groups, including women's and youth groups, church groups and NGOs, as well as national agricultural research and extension systems (NARES) staff. Through DSAP, more than 50 technical training courses have been conducted, ranging from developing logframes and extension training to diagnosis of pests, diseases and soil nutrition disorders.

Strengthening Partnerships

DSAP has continued to strengthen linkages and partnerships with national stakeholders in participating countries and to provide them with a greater role in decision-making, with the objective of providing more effective support to rural communities. Strong partnerships have resulted in more effective consultation with rural communities, better definition of perceived agricultural problems, and adoption of appropriate agricultural technologies.

National steering committees (NSCs), which are now established in all countries, have provided the mechanism to help facilitate the process. The devolving to NSCs of duties and responsibilities including general and financial management, administrative and reporting procedures, participatory planning and community rural appraisals, as well as the training of counterparts, is in line with the decentralisation of NARES management that is taking place or has been completed in several of the participating countries. Fiji and Kiribati have also taken the initiative in decentralising DSAP management at national level by forming local technical committees and island committees respectively, which are closer to the action and more aware of local issues that need to be taken into consideration. These national mechanisms have helped establish a range of useful NGO collaborations to facilitate project implementation.

In addition to national initiatives to strengthen country-level partnerships, DSAP has made efforts to strengthen partnerships with NGOs (PIANGO, MFFN, MORDI, etc.), regional organisations (FAO, USP, etc.) and international organisations (e.g. CTA).

Programme progress

Four independent reviews of the programme (DSAP Mid-Term Review 2005, EC Monitoring Missions 2005 and 2006, and Thematic Gender Evaluation 2006) have highlighted notable DSAP achievements and positive impacts made by the programme. All stress that DSAP scores highly in terms of:

- introducing appropriate technologies and initiating other interventions in direct response to farmer and community problems;
- capacity building of national staff in areas related to participatory extension and agricultural information and communication;
- establishing a strong sense of shared Pacific experience and community through the DSAP participatory approach and processes; and
- establishing good, mutually beneficial relationships between the programme and local NGOs.

The Future of DSAP

SPC's LRD and national governments are working towards finding the best ways of absorbing the current programme structure. Some countries, such as Kiribati, have incorporated DSAP into the Department of Agriculture. Solomon Islands' Ministry of Agriculture and Livestock is scaling the DSAP approach up and out in a Rural Development Programme. For EDF 10, LRD is also looking at expanding DSAP NSCs into LRD NSCs and maintaining the GREA system with in-country staff to implement LRD/country activities.





The Drawa Model for Community-based Natural Resources Management in Fiji

Background

The Drawa model for community-based sustainable natural resource management in Fiji has been described by partners as a 'successful example of community-based natural resource management' with most stakeholders considering it 'worthy of replication'. The Drawa experiences have been fed into the recently revised Fiji Forest Policy, and the Fiji National Code of Logging Practice, to strengthen community management components and sustainable forest management (SFM) applications, and promote participatory and integrated approaches in planning and decision-making. The participatory land-use planning approach applied in Drawa is being mainstreamed into government land-use planning procedures to enhance social and environmental interests in an otherwise technically focused plan. Other Pacific Island countries have also expressed interest in adapting and adopting the Drawa model in their local communities.

What has made the Drawa model so popular and what is the basis of all this kudos? This paper provides a synopsis of the underlying factors contributing towards the success of the model.

The Drawa model area is located in the centre of Vanua Levu, the second-largest island of Fiji. The mountainous area covers 6,345 hectares of largely indigenous primary forest and is under the customary ownership of 11 *mataqali* (landowning clans). The

Drawa model promotes a community-based management system where landowners are capacitated to develop and implement a sustainable management regime for their forest resources. The SPC Land Resources Division facilitates activities in the Drawa area, in collaboration with government counterparts. Major support and lead facilitation come from the SPC/GTZ Pacific-German Regional Forestry Project.

The Drawa land use plan follows a multifunctional forest use concept where the exploitation of a single resource is prevented to ensure a holistic development of the area. The endorsed plan reflects the Drawa *mataqali* commitment to control their land use activities (especially agriculture), protect production forest areas and ecologically sensitive sites, and adopt sustainable agricultural and sustainable land management (SLM) technologies in the areas defined for cultivation. The land use plan is supported by traditional organisational structures and identifies social safety nets and traditional processes for conflict mediation and resolution.

The Drawa forest management plan is the first of its kind developed in the Pacific. It promotes a community-based management system and defines a timber-harvesting regime that is socially and environmentally appropriate while at the same time economically viable. The plan is embedded in the overall land use plan.



Approach

Various sectors, both governmental and non-governmental, were involved from the initial stages, providing support and technical advice to the project. This multi-sectoral approach was taken at different operating levels, and multidisciplinary teams were formed at the technical, advisory and management levels. The multidisciplinary structure required officers to take a holistic perspective on natural resource management, rather than the common tunnel-vision attitude that focuses only on the interests of individual sectors. This approach was the foundation for balanced sector representation (especially between forestry and agriculture) and collaborative development in the ensuing stages. Landowner representatives were also part of the team and this contributed to a more profound consideration of social and cultural issues. The multidisciplinary support was bolstered with the reorganisation of LRD and the integration of the SPC agriculture and forestry programmes in 2003. The collaboration and coordination of the LRD thematic teams, together with their counterparts and partners and other SPC sections, strengthened and expanded the expertise and skills of the interdisciplinary team.

The identification and application of appropriate participatory tools and effective facilitation techniques encouraged active and constructive contribution from the community, and ensured that the information extracted was pertinent and verifiable. The participatory assessments of the social, cultural and economic status of the community (and the inventories and surveys of the forest environment) form the basis of management and action plans that are relevant and acceptable, and truly reflective of the local community's interests.

Effective capacity-building initiatives were developed not only to produce skilled practitioners but to educate landowners on the various aspects of sustainable management. The focus was on enhancing their knowledge and understanding of the subject to enable them to make informed decisions in the future. Capacity-building initiatives were largely participatory and hands-on and included the development of community technical support groups, such as village land use working groups.



Supporting delivery mechanisms

At national level, the National Sustainable Forest Management Working Committee is the multi-stakeholder body (including landowner representatives) providing a national supporting framework for the Drawa project. Institutional support is directed through the respective divisional and district offices of the members. The committee serves as a valuable feedback mechanism by drawing from on-the-ground experiences to make informed decisions on SFM and SLM matters in their sectors and by feeding this information into related national policies and legislation and vice versa. The LRD Forests and Trees thematic team serves as secretariat to this committee.

At community level, the Landowners Association of Drawa (LOAD), comprised of *mataqali* representatives nominated by their clan leaders, is mandated to safeguard the clans' interests and to monitor all activities in the area to ensure sustainable development. LOAD serves as a communication channel and mediator for both internal and external parties.

The Drawa Landowners Forest Management Co-operative Limited (DraFCo) is responsible for implementing the forest management plan. The community enterprise arrangement encourages communal participation, strengthens inter- and intra-*mataqali* cohesion, and promotes local micro-economic development. Currently, DraFCo is successfully harvesting, sawmilling and selling timber, bringing in income to members' households (wages) and the community (profits). Skilled and certified Drawa operators carry out the timber operations under the watchful eye of a trained landowner management team.

The members of the multidisciplinary technical team work in an integrated manner to respond to the various needs of the villagers, including capacity building, and to ensure that land use activities are sustainably implemented.



Lessons learned

The model area provides several key lessons but it especially highlights the importance of community participation, multi-stakeholder involvement, and strong leadership and support at political and institutional levels, through a 'whole-of-government' orientation.

The landowners' diligence and commitment in implementing the land use and forest management plans stem from their active involvement in the entire planning and decision-making process. This has created a sense of ownership and responsibility and the landowners readily recognise and accept the land use and forest management plan as 'theirs'. An evaluation of the SPC/GTZ Pacific-German Regional Forestry Project carried out by independent experts in late 2006 states (for Drawa) that '... participatory community and planning approaches stand out strongly ... modern participatory methods have been used successfully for the empowerment of local people. This systematic and transparent way of collecting information on the situation in communities has been appreciated both by villagers and other participants (interviews)'. It adds that 'the participatory work undertaken both at grass-roots and at the political level is outstanding'.

At the national level, the strong support through the National Working Committee on SFM is reported as one of the strengths

of the Drawa project. The various LRD thematic teams support their government counterparts in the interdisciplinary technical team with resources and capacity building.

At the local level, the community-based approach for sustainable natural resource management is seen as imperative in the Pacific, where the majority of the land is customary owned. Landowners have a strong affiliation to their land, but the ever-increasing need for money strains and eventually fractures this bond. Experiences from other developing countries reveal that resource owners can be convinced to manage their forest resources better if they see some financial gain from the efforts of applying sustainable management. The timber-harvesting operations and agricultural initiatives provide the people of Drawa with a means of generating income, while the forest management and land use plans provide the controlling mechanism to ensure sustainable utilisation.

At the institutional level, LRD is recognised as the organisation for institutionalising community-based sustainable natural resource management in the region. The multi-level approach followed in Drawa facilitates the integration of 'real' experience in the field into the policy advisory services of LRD and vice versa. The expertise within LRD ensures that other PICTs benefit from the Drawa experience and other similar project experiences through effective networking and delivery mechanisms.

Drawa Pictorial

B. NEW INITIATIVES

Centres of Excellence for Atoll Agriculture Research and Development

A recommendation for the establishment of two centres was approved by CRGA 36, and agreement has been reached with the Land Grant Institute in RMI and the Government Research Division in South Tarawa in Kiribati to establish the two centres. Negotiations are being finalised with IFAD and other partners for initial funding for this work. A research and development programme has been developed jointly by LRD and partners.

Climate change and food security

In response to a recommendation by the 2006 2nd HOAFS Meeting, CePaCT is establishing a climate-change-ready germplasm collection that can be utilised by PICT farmers to adapt to/mitigate climate change. CePaCT is working with countries to select crops and varieties with desirable traits such as drought tolerance and salt tolerance. CePaCT will also import selected crops and varieties from institutes outside the region.

Trade statistics

In collaboration with FAO, LRD has embarked upon a trade statistics project to assist in improving the comparability and accuracy of trade data across the region. While LRD and FAO's interest is predominantly in the trade of agricultural and forest products, it was decided recently at a workshop in Suva that the trade statistics database should cover all trade data. The administrative burden is no greater and a complete trade database would be of tremendous value to the region in making it possible to analyse the effects of trade liberalisation scenarios on PICTs and to monitor the effects of trade facilitation and promotion activities.

Economics

An economist, part-funded under the Overseas Development Institute (ODI) Fellowship scheme, has been working with LRD teams during the year to support their work with economic analysis where required. An assessment of the Biosecurity and Trade Facilitation team's activities in the area of development of export commodity pathways in Fiji was presented at the Trade Ministers Meeting in Vanuatu earlier this year. A financial assessment of DraFCo's activities has been conducted, and a

paper on community-based management of natural resources, using the Drawa model area as a case study, was presented at a recent conference on Pacific agriculture.

Over the next year, further attention will be given to putting in place systems designed to ensure that the data required for economic analysis are collected. This should enable LRD to better monitor the economic impacts of its activities. An agricultural economics library is also being developed.

Development of Regional Invasive Species Strategy (RISS)

Most invasive species – many of which are agricultural pests, diseases and weeds – also impact the environment and are known to be responsible for the loss of biological diversity at a scale only secondary to habitat destruction. Increased globalisation and international trade have exacerbated the problems associated with invasive species. To counter the existing and potential invasive species problems in the region, LRD is jointly working with SPREP to develop an integrated strategy. A draft will be presented to the Nature Conservation Regional Conference in Alotau, PNG in October 2007 and a final RISS to guide regional efforts against invasive species should be ready for approval at Council level by both SPREP and SPC in 2008.

Management of African tulip in the Pacific Islands

In response to a recommendation by the 2nd HOAFS Meeting in 2006, the Plant Health team is investigating the possibility of biological control for the management of the invasive forest tree African tulip (*Spathodea campanulata*). Discussions are ongoing with scientists in South Africa to explore potential biological control agents from that region. Funding for the crucial research work will be an issue: a fully developed biological control programme on this weed may take up to five years.

Pacific Agricultural and Forestry Policy Network (PAFPNet)

A new initiative, with support from CTA, has been the establishment of the Pacific Agriculture and Forestry Policy Network. A regional stakeholder meeting with participants representing governments, administrations, private sector, NGOs





and communities, met in Nadi, Fiji, in August 2006 to validate and progress the findings of a June 2006 meeting between representatives of SPC, SOPAC, SPREP, FSPI and CTA in the Netherlands. The Nadi meeting unanimously agreed to establish PAFPNet and requested SPC to arrange for the network to be launched at the 36th CRGA Conference. The main objective of the network is to share information and help in capacity building and thereby facilitate agricultural and forestry policy identification, formulation, implementation and monitoring / evaluation at both regional and national levels. Many of the issues at the global level impact on small island nations and formation of such a network could lend more weight to Pacific islands as a group.. The state, private sector and non-state actors should contribute to providing information and knowledge to develop policies for the advancement of the agricultural sector. PAFPNet coordinated a membership study covering Solomon Islands, Fiji, Tonga, Samoa, Cook Islands, FSM and Kiribati (to represent Polynesia, Micronesia and Melanesia) in October, 2007. The provision of two policy briefs namely - the Land Use Planning and Participatory Approach Policy - are being developed to assist PICTs make informed decisions on the sustainable development and management of their agriculture and forestry sectors.

A parallel development is the revival of the Land Resources Working Group (LRWG) a collaboration amongst CROP agencies (PIFS, SPREP, SOPAC and USP), international agencies (FAO, UNDP, ADB, others) and LRD. The main objective of LRWG is to promote and strengthen collaboration and coordination amongst CROP agencies towards achieving effective and efficient support for members in the sustainable use and management of land resources. The Director of Land Resources is the current Chair of the LRWG.

Soil portal

LRD and NZ Landcare are collaborating in the setting-up of a soil portal that will help member countries make better decisions for agricultural development. Initially the portal will focus on soils; it is expected to have information on over 200 soil pedons from all the sub-regions of the Pacific. In the medium to long term, the portal will provide information on other relevant thematic areas, e.g. plant and animal genetic resources.

Use of the Phytosanitary Capacity Evaluation Tool in the Pacific

The Biosecurity and Trade Support team will be implementing an initiative to empower PICTs to use the Phytosanitary Capacity Evaluation (PCE) Tool. This project is funded by the WTO Standards and Trade Development Facility and will be implemented in two phases. The first phase will be a regional training workshop on the PCE Tool. The second phase will be the application of the tool and will be delivered primarily by the national plant protection organisations in six countries (Cook Islands, Samoa, Kiribati, Palau, Solomon Islands and PNG) with technical/advisory assistance from the IPPC secretariat and LRD.



► LRD KNOWLEDGE MANAGEMENT

LRD has put in place an information and knowledge management (IKM) plan aimed at promoting information and knowledge sharing within LRD and amongst its stakeholders. The plan will consolidate the use of LRD's various information systems, including online databases, websites, blogspots, GIS, etc. The aim is to develop a one-stop-shop for information through the use of various Web2.0 tools.

Timely delivery of information to its varied and often remote stakeholders is a challenge for LRD. However, the task will be made easier by new developments aimed at providing affordable region-wide access to information technology under the digital strategy of the Pacific Plan.

SPC is helping to implement the digital strategy, which is designed to 'bridge the communication divide' and ensure access to information technology for all, especially people in rural and remote areas. The new systems being implemented with the help of CROP agencies and donor partners include the Pacific rural satellite interconnectivity system (Pacific RICS) and the SPIN submarine cable network. Another part of the strategy, the one-laptop-per-child (OLPC) initiative, is especially aimed at children who do not have access to formal education. Based on this infrastructure, there are exciting possibilities for advancing e-agriculture.

For more information on these initiatives, please contact our LRD helpdesk: Irdhelpdesk@spc.int.



C. HUMAN AND FINANCIAL RESOURCES



As of the end of August 2007, the total number of staff positions in LRD was 97, of which nine were vacant. Thirty-three were internationally recruited specialised positions, of which seven were field based, and 53 were semi-specialised technical staff, of which 30 were field based, in 16 countries. Eleven provided administrative support across the LRD thematic areas. A new EDF9-funded pilot project, Facilitation of Agricultural Commodity Trade (FACT), is scheduled to start in January 2008. Recruitment of staff for the project (two professional and nine technical staff) will commence before the end of 2007.

New collaborative partnerships were established during the year. Agreement was reached for collaborative partnerships with IFAD, FAO and OIE, with contributions from these agencies of both human and financial resources and LRD leading in

implementation of activities in important focal areas of its strategic plan. Maintaining LRD's science and technology capacity will be a challenge in the short term, given the likely delays in the planning of the European Union's EDF 10 assistance through the Regional Indicative Programme.

The total funding for LRD was CFP 7,555,000 in 2004; CFP 7,483,000 in 2005; CFP 8,520,000 in 2006; and CFP 9,386,100 in 2007. Percentage of programme funds increased from 18% in 2004 to 22% in 2007, while contribution of project funds remained at around 74% during this period. The increase in programme relative to project funding bodes well for the sustainability of the work of LRD. Core funding allocated to LRD has been steady at 5–7% during this period.

LRD funding in CFP for year 2004 to year 2007 by source of fund

Source of fund	Year 2004	% of total budget	Year 2005	% of total budget	Year 2006	% of total budget	Year 2007	% of total budget
Core funds								
Core funds	504,000	7%	570,000	8%	516,000	6%	528,000	5%
Programme funds								
AusAID	766,000	10%	845,000	11%	1,789,000	21%	1,500,000	16%
France	213,000	3%	219,000	3%	219,000	3%	215,000	2%
NZAID	392,000	5%	437,000	6%	398,000	5%	395,000	4%
Others	41,000	0%		0%		0%	–	0%
Total prog. Funds	1,411,000	18%	1,501,000	20%	2,406,000	28%	2,110,000	22%
Project funds								
ACIAR	460,000	6%	294,000	4%	445,000	5%	218,000	2%
AusAID							1,514,200	16%
BMZ/GTZ	975,000	13%	984,000	13%	987,000	12%	952,000	10%
European Community	3,698,000	49%	3,503,000	47%	3,923,000	46%	4,144,100	43%
NZAID	288,000	4%	443,000	6%	–	0%	–	0%
Taiwan	–	0%	–	0%	30,000	0%	–	0%
Korea	–	0%	75,000	1%	50,000	1%	0	1%
Others	219,000	3%	113,000	1%	163,000	2%	169,800	2%
Total proj. funds	5,640,000	75%	5,412,000	72%	5,598,000	66%	6,998,100	74%
Grand total	7,555,000	100%	7,483,000	100%	8,520,000	100%	9,386,100	100%

The LRD Director was the team leader in the FAO mission (one of three) that undertook consultations in the 14 Pacific FAO member countries and designed the USD 72 million FAO Expansion Phase of RPFs in the Pacific. Substantial additional resources may be available from the project for LRD for regional interventions in climate change adaptation and mitigation, SLM and biosecurity and trade facilitation.

D. DEVELOPMENT OF THE SECOND INTEGRATED STRATEGIC PLAN



The current LRD Integrated Strategic Plan ends in 2008. Development of the next integrated strategic plan (2009–2012) has begun, and inputs to this work have already been provided by regional meetings in the areas of crops, animals and trees (2nd HOAFS Meeting and Heads of Forestry Services Meeting in 2006 and PHOVAPS Forum in 2007).

LRD thematic area and support team coordinators are currently undertaking an internal assessment of the current plan. They agree that it has proven valuable in providing clear direction for LRD's work and has helped ensure that thematic area and support teams work in an integrated way. The document was widely distributed and was useful in providing member countries, donors and other partners and stakeholders with a concise explanation of LRD's priorities and activities. The current strategic plan has ensured that LRD's core activities remain focused and that LRD responds effectively to priority issues facing members and their communities – issues that, in reality, do not change quickly.

The new LRD Integrated Strategic Plan 2009–2012 is to be presented for discussion and, hopefully, endorsement at the 2008 Second Regional Conference of Ministers of Agriculture and Forestry.



ANNEX 1. LRD – MOST NOTABLE OUTPUTS BY THEMATIC TEAMS

• Animal Health and Production Team

- 3rd PHOVAPS forum meeting was successfully held in Nadi from 30 July to 4 August. The theme of the meeting, 'Surveillance, Early Warning and Rapid Containment', reflected the growing concerns in the region about transboundary animal diseases and re-emerging and new animal diseases.
- The Paravet programme continued in 2007. Vanuatu held its first paravet graduation ceremony in April, with 21 ministry officials successfully completing the first module of the programme.
- Community awareness workshops on developing sustainable livelihoods were held in collaboration with NGOs such as Live and Learn (Fiji), in two selected villages in Fiji: Vitawa village in Ra, and Naimasimasi village in Tailevu.
- Extensive electronic consultations were continued early in the year on the status, conservation and development of the animal genetic resources of the Pacific region. As a follow-up on resolutions of both the PHOVAPS and HOAFs meetings of 2006, an Animal Genetics Resources Pilot Project was developed for the region.
- Approval was obtained for the use of Australian donor funds held in trust by FAO for this project. The total funding available is US\$170,000.
- Under the PRIPP project, multi-sectoral national avian and pandemic influenza taskforces have been created in all 22 PICTs to be responsible for establishing the country's avian and pandemic influenza preparedness plans.

• Agriculture and Forestry Policy Team

- Continued to assist Fiji in implementing its National Rural Land Use Policy.
- Established the Pacific Agriculture and Forestry Policy Network (PAFPNet).
- Developed the PAFPNet website.
- SPC LRD accredited in August 2007 to the United Nations Convention to Combat Desertification.
- Assisted four PICTs (Fiji, Vanuatu, FSM and Tuvalu) in the development of their LDC-SIDS medium-sized project under the UNDP/GEF LDC-SIDS Portfolio Project for Sustainable Land Management.
- Assisted Tuvalu and Tonga in the co-financing of their UNDP/GEF medium-sized project for sustainable land management.
- In August 2007, submitted the Land Resources Working Group (LRWG) report to the CROP Heads for their support and endorsement of the re-establishment of LRWG.
- On 13 September 2007, presented the Pacific UNCCD Implementation Statement on behalf of the Pacific country parties, during the UNCCD Conference of Parties (COP 8) in Madrid, Spain.
- Assisted in organising the first Pacific Short Course on Forestry Policy, to be held in Nadi from 19 to 30 November 2007.
- Pursued the development of national rural land use policies for PICTs, using Fiji's NRLUP as a model.
- Collaborated with the Pacific Regional Rights Resource Team (RRRT) regarding the assessment of gender equity in land ownership in Tuvalu, RMI and Vanuatu for 2007.
- Continued to work with the Pacific Island Forum Secretariat regarding the Land Management and Conflict Project.
- Re-established the LRWG in November 2006.

• Biosecurity and Trade Facilitation Team

- Amended PPPO Constitution approved by 36th CRGA.
- PPPO Executive Committee met to review progress of Secretariat's work (SPC-LRD) and provide direction.
- Finalised regionally harmonised version of the biosecurity bill.
- Customised regionally harmonised biosecurity bill for individual PACP jurisdictions; regional workshop on the harmonised bill in June determined current status of the national bills and planned the way forward.
- Completed regional version of operational manual for biosecurity operations.
- Internal economic evaluation of the PACER-RTFP interventions in Fiji showed the project provided tangible benefits, including increased farm earnings to the recipients of the assistance.
- Biosecurity technician visited Pitcairn Islands, and the Commissioner of the Pitcairn Islands Administration and the Mayor/Biosecurity Director from Pitcairn Islands visited SPC Nabua and Noumea campuses.
- Biosecurity operations initiated in Pitcairn Islands after the visit of the biosecurity technician and training of officers involved in biosecurity operations.
- Six officers completed their three-month attachment training in import risk analysis and technical market access submission. Three officers are currently undertaking training.
- Held regional training workshops on pest risk analysis, ant taxonomy, trade statistics and facilitating PICT participation in the international standard setting process.
- Held one-week training course at the University of Guam for 20 newly recruited quarantine and customs officers from FSM, Palau, RMI, CNMI and Guam.
- Provided information on IRA to countries on request.
- Completed and published 10-module training manual on fresh produce export systems.
- Technical market access for fresh ginger from Fiji, pawpaw from Vanuatu and breadfruit from Samoa into Australia proceeding well.

• Crop Production Team

- The use of mucuna cover crop has transformed very unproductive soil in Busrata in Malaita, Solomon Islands into productive soil. The crop has been adopted by large squash farmers in Tonga as it reduces the cost of production in terms of land preparation, fertiliser inputs and weeding. It is now being used as the fallow crop for both research stations in Vanuatu.
- *Dolichos lablab*, in combination with lime and fertilisers, has made the toafa of Wallis (in Wallis and Futuna) productive. It provides an opportunity for farmers to work on this large patch of land.
- The discovery of *Bixa mosca*, a traditional plant, in Malaita as a trap crop for insects, especially on beans, provides huge potential for non-insecticidal control of pests.
- Scaling-up of bucket irrigation in French Polynesia and Tonga and scaling-out to other countries such as Marshall Islands, Fiji and Nauru are indications that the technology is sustainable.
- The commercialisation of the paper mulberry in Hunga, Vava'u (Tonga) is a manifestation of real empowerment and participation of the community in development.
- Capacity building: sub-regional training in diagnosis and control/correction of pests, diseases and soil nutritional disorders in Palau in March. There has also been national training in Niue and Wallis and Futuna.
- Sub-regional training on participatory technology development in Solomon Islands in July promoted involvement of the community right from diagnosis of problems to testing out potential solutions on-farm.
- A field day at Tagabe in East Efate on sustainable farming systems was attended by farmers from North Efate. The turn-out was good and was used as a participatory evaluation session of the project. The comments from farmers were very positive.
- The school garden project at Nasinu Secondary School is linked to Fiji School of Medicine's Nutrition Department's AusAID project, OPIC. The project is aimed at promoting fresh vegetables and fruit to secondary school students in urban areas. The DSAP project has established a farm there and is also promoting good land management practices for agricultural science students and other students.
- Charcoal and compost fieldwork with Cook Islands Organic Farmers Association.
- Establishment of demonstration farms: four individual site farms were established by Pohnpei municipalities, three for Yap, three for Chuuk and four for Kosrae. All DSAP project site farm municipalities have taken on sustainable agriculture approaches and implemented them in field community demonstrations, establishing more than 100 individual farms. Farmers are carrying out farm activity in different sites established in each municipality.

• Forests and Trees Team

- Supported, in collaboration with the Vanuatu Department of Forests and the SPC Regional Media Centre (RMC), production of a documentary DVD on Vanuatu, entitled *Sandalwood*. The documentary will be used as 'awareness material' for the department in promoting better management, conservation and utilisation of sandalwood in Vanuatu. The DVD has versions with English and Bislama subtitles.
- Provided funding support to a Tongan student to complete Masters thesis on sandalwood.
- Sponsored a Forestry Department staff member to attend a FGR training workshop in Malaysia.
- Assisted Fiji in the finalisation of its non-timber forest products strategic plan.
- Supported a consultancy to analyse data collected from the Nakavu Forest Research Area in Fiji. Analysis of these data will determine forest behaviour with regard to regeneration, increment and mortality in differently logged areas.
- Continued to provide support to Fiji for their coconut genetic variability survey.
- Continued to contribute to and support the amendment of the Fiji Land Conservation and Improvement Act (LCIA).

• Genetic Resources Team

- Developed a PGR Toolkit for the Pacific (includes a CD-ROM with all relevant publications and documents and a DVD promoting traditional crops and food, and highlights the need to be able to exchange genetic resources).
- Organised and implemented the First International Breadfruit Symposium, with participants from Africa, Asia, the Caribbean and the Pacific. The proceedings will be published by ISHS in the Acta Horticulturae series. The symposium also developed a framework for a global strategy for the conservation and utilisation of breadfruit.
- Conducted a feasibility study into the potential of floriculture in Fiji and Papua New Guinea, which could lead to interesting and economically beneficial developments in Pacific ornamentals, with a specific focus on women.
- Increased and improved gene bank to farmer linkages through involvement in the Drawa Model Area, Fiji, and also in Nauru and Solomon Islands.
- Received very good feedback from farmers in Samoa on the performance of the Cycle 5 taro breeding lines, which are the first crosses between Asian and Pacific taro, and the establishment of these lines in tissue culture so that they can be made available to the farmers of the region through CePaCT (not just to Samoa).
- Developed a somatic embryogenic system in taro as part of a PhD study – the first-ever report of somatic embryogenesis in Pacific taro, which means that one of the major staples of the Pacific can now be improved using modern transformation techniques.

• Forest and Agriculture Diversification Team

- Provided support to the Coconut Industry Authority of Fiji (CIDA) with the provision of an expert to review their current wood processing pilot operations. Recommendations of the review are now being implemented by CIDA.
- In addition to the above, a regional proposal on coconut wood processing, formulated jointly with Queensland DPI and the Forestry Departments of Fiji and Samoa, has been approved by ACIAR. Work on this has started, and will include looking at wood property variability between sites and also between different varieties as identified by the genetic variability survey. The main focus will be to develop processing options in producing high-quality flooring to replace hardwood timbers. Options for the low-density portions of coconut stems will also be looked at.
- Continued to support the small bamboo enterprise in Fiji through advice and provision of technical assistance. After the injection of expert technical training and advice, the enterprise is now producing a variety of woven products from local bamboo, but needs to improve both quality and productivity to be able to compete with, and substitute, some imported products. Two workers from the operation are presently on a 12-month training attachment in Indonesia to try to shift the operation of the enterprise to the next level. This is being jointly supported by the Governments of Fiji and Indonesia.
- Provided support to the community in Santo, Vanuatu, to set up a rural community-run joinery shop, with the main objective of providing income-generating opportunities utilising waste wood from local portable sawmill operations. The project is being assisted by various government departments, including the Department of Forests, which is providing overall supervision and monitoring.
- Provided support to Vanuatu and Solomon Islands to participate in the 42nd ITTO Council Meeting held in May in Port Moresby, PNG. Solomon Islands participated as an observer, which is seen as a necessary step towards full membership.
- Organised a number of training courses for the Drawa landowners; these included training in Lucas portable mill operation, native timber species identification, payroll systems, sales and marketing, and financial management and leadership.
- Supported four women and one man from Fiji (3), Samoa (1) and Tonga (1) to participate in a papermaking training course organised by CETC. This training was to strengthen income-generating opportunities for rural communities, especially for women.

• Plant Health Team

- Launched kava dieback disease management package in Fiji and Vanuatu.
- Launched TaroPest diagnostic package (website, CD and handbook) in collaboration with ACIAR, Queensland University of Technology and LRD BAT.
- Conducted ant taxonomy training with experts from University of California and New Zealand; 35 Pacific Islanders trained in ant ID.
- Imported the rust fungus *Puccinia spegazzinii* into Fiji for biological control of mikania in Fiji and Papua New Guinea.
- Successfully established water lettuce biological control agents in Vanuatu.
- Launched taro beetle integrated pest management package in Fiji, Papua New Guinea and Vanuatu.
- Surveyed plant pests, nematodes, diseases and weeds in Solomon Islands (Malaita, Guadalcanal, Rennell and Santa Cruz group).
- Surveyed weeds in West New Britain, Papua New Guinea.
- Surveyed weeds and plant viruses in Nauru.
- Facilitated red imported fire ant incursion response in Fiji, Cook Islands, French Polynesia and Tonga, in collaboration with LRD BAT Team.
- Funding secured for Pacific Ant Prevention Programme from USDA and US State Department for little fire ant containment, surveillance in PNG and Vanuatu, and emergency response planning.
- Responded to glassy-winged sharpshooter incursion in Cook Islands.
- Produced invasive species calendar for Micronesian PICTs.
- Responded to rhinoceros beetle incursion in Guam through supply of pheromones.

• Information, Communication and Extension (ICE) Team

- Organised and implemented an ICE retreat to better define the roles and activities of the support team so that the outreach arm of LRD is in a better position to communicate and extend assistance to PICTs, thereby making a real impact and difference in people's lives.
- Organised and implemented the initial meeting of the International Federation for Agriculture Development (IFAD) SPC Organic Standards Setting Project in the Pacific, looking at highlighting the Pacific's uniqueness.
- Initiated and organised a highly successful project for the South Pacific Games, 'Living and Feeding the Dream', which assisted growers to supply the vegetable and fruit requirements for the Games. Sales to the Games, hotels and other outlets neared 50,000 Samoan tala.
- Increased and improved gene bank to farmer linkages through involvement in the Drawa Model Area, Fiji, and also in Nauru and Solomon Islands.
- Evaluated and promoted the Farmer Field School training approach as the most effective way of training farmers in adopting technology.
- Funded and implemented, in collaboration with the Samoan Quarantine Section, a very successful public awareness campaign for the 2007 South Pacific Games in Samoa.
- Implemented the capacity needs assessment ACIAR project that looks at identifying gaps in the skills and experience of government and non-government extension services in selected PICTs.
- Successful in linking markets to ongoing projects and instrumental in assisting the Samoa Farmers Association in the export of eggplant to NZ, thereby ensuring income generation.

ANNEX 2. LRD – MOST NOTABLE PUBLICATIONS BY THEMATIC TEAMS

Forest and Trees Team	<ul style="list-style-type: none"> • Ministry of Fisheries and Forests. 2007. Fiji Forest Policy Statement. SPC-GTZ Pacific-German Regional Forestry Project. • Ministry of Fisheries and Forests. 2007. Fiji Forest Policy Statement Summary. SPC-GTZ Pacific-German Regional Forestry Project. • Thomas Enters. 2007. Independent Assessment of the Implementation of Codes of Logging Practice in Fiji, Papua New Guinea, Solomon Islands and Vanuatu. SPC Forests and Trees Programme.
Forest and Agriculture Diversification Team	<ul style="list-style-type: none"> • Sairusi Bulai. 2007. Wood Processing Efficiency, Waste Utilization and Encouraging Investment and Growth in the Timber Industries in Fiji, PNG and Vanuatu. SPC Forestry and Agricultural Diversification. • ITTO country reports. 2007. Fiji, PNG and Vanuatu. SPC Forestry and Agriculture Diversification.
Plant Health Team	<ul style="list-style-type: none"> • Pest Advisory Leaflet 47: Integrated management of kava dieback disease • Pest Alert 36 Little Fire Ant • Pest Alert 37 Red Imported Fire Ant • Pest Alert 38 Incursion of GWSS into Cook Islands • SPC Technical Paper 228 Surveys for plant diseases caused by virus pathogens in FSM, Palau, and Rotuma. • Ol infomeisen about sik ia kava dieback mo ol rod blong manejem • IPM of kava dieback disease poster • Clerodendrum/fireworks poster – English, French • Invasive species in northern Pacific poster
Biosecurity and Trade Support	<ul style="list-style-type: none"> • PACER-RTFP Annual Report. 2007. SPC Biosecurity and Trade. • Giant African Snail poster. Solomon Islands. • Cane toad poster. • Coffee berry borer poster. PNG.
Animal Health and Production Team	<ul style="list-style-type: none"> • 3rd PHOVAPS Meeting Report. 2007. SPC Animal Health and Production. • Constructing a smell free pig pen poster. • Bird flu poster
Genetic Resources Team	<ul style="list-style-type: none"> • International Symposium on Breadfruit Research and Development. 2007. SPC Plant Genetic Resources. • Report of the Plant Genetic Resources for Food and Agriculture Pacific Regional Workshop, August 2007. SPC Plant Genetic Resources. • PGR News from the Pacific email alerts • Centre for Pacific Crops and Trees (CePaCT) information brochure • PAPGREN poster and leaflet • Coconut poster

<p>Agriculture and Forestry Policy</p>	<ul style="list-style-type: none"> • Pacific Agricultural and Forestry Policy Network workshop report. 2007. SPC-GTZ-CTA. • Manley, M (2007). Do community based approaches to natural resource management work? Pacific Economic Bulletin, Volume 22(3) • Pacific Agriculture and Forestry Network information brochure
<p>Information, Communication and Extension Team</p>	<ul style="list-style-type: none"> • A participatory evaluation of linking farmers to crop protection networks, report. 2007. SPC Land Resources Division, Suva, Fiji. • Pacific Extension Summit - bringing about change, promoting participatory agricultural extension in the Pacific. 2007. Proceedings of the Summit. SPC Land Resources Division, Suva, Fiji. • LRD Newsletter – Volume 3 numbers 1,2 and 3 • LRD 2007 Calendar • Plant Protection Leaflets, local language Tonga • Gummy Stem Blight leaflet • Yam nematode • Red Imported Fire Ant poster • Quarantine leaflet for South Pacific Games • Invasive Ants DVD

ANNEX 3 RESPONSES TO RECOMMENDATIONS OF THE 2004 HOAFS MEETING ON STRATEGIC OBJECTIVE 1:

Sustainable Management of Integrated Forest and Agricultural systems

1. Forest and Agriculture Systems

What were we asked to do?	How are we doing?
1.1 That SPC LRD and partners, including GTZ, give high priority to assisting PICTs to develop and implement comprehensive strategies for sustainable use and management of their natural resources with the active participation of all stakeholders.	The recruitment of a Land Use and Resources Policy Adviser within SPC. Two national workshops held – LandCare in Fiji, and the formation of a National LandCare Working Committee.
1.2 That SPC LRD and partners, including GTZ, assist PICTs in the formulation of integrated national land use policies as frameworks for the implementation of sustainable natural resources management strategies.	Endorsement and launching by the Government of Fiji in 2005 of the National Rural Land Use Policy, jointly developed with SPC and GTZ, as a common framework for all land-based resource policies and legislations.
1.3 That SPC LRD and partners, including GTZ, assist PICTs in the capacity building of forestry authorities and resource owners in community forestry.	Implemented as part of the development and implementation of the National Model areas, such as Drawa in Fiji and Butmas in Vanuatu.
1.4 That SPC LRD support education and awareness activities targeted on the importance of sustainable land use practices in securing the future of Pacific Island communities.	Important component of GTZ and DSAP activities.
1.5 That SPC LRD assist the efforts of PICTs to improve linkages among landowners, farmers, extensionists and researchers to facilitate problem solving.	This is at the heart of the DSAP approach, for example the farmer organized training in Tilivalevu in Fiji, and of the work in the model areas, e.g. Drawa..
1.6 That SPC LRD ensure continued close collaboration between DSAP and the FAO RPFS both at national and regional level.	LRD is a member of the steering committee for the project.

2. Food security

2.1 That SPC LRD, in collaboration with other relevant agencies, promote traditional foods, satisfying cultural demands and nutritional needs, through research into, and development of appropriate production systems, locally-based processing and value-adding.	Collaboration with the Island Food Community of Pohnpei and Kastom Gaden, Solomon Islands in promoting traditional foods and their nutritional benefits. Similar work planned for the Marshall Islands.
2.2 That SPC LRD, in collaboration with other SPC divisions and other agencies, strengthen its activities in education and public awareness promoting traditional crops and livestock, foods and knowledge.	This is an important part of LRD's work in genetic resources conservation and use. Collaboration with USP in teaching on graduate and postgraduate courses. LRD hosts school visits. Regular publication of LRD Newsletter

<p>2.3 That SPC LRD facilitate access to plant and animal genetic resources and support efforts to use these resources for genetic improvement and diversification, which are crucial for responding to rapid change. Atoll agriculture will require special consideration because of its very limited genetic base, poor soil conditions, vulnerable ecosystems and the significant impact of global warming.</p>	
<p>2.4 That SPC LRD liaise with FAO to assist PICTs in the administration of Codex programmes, the development of food safety legislation and the strengthening of analytical laboratory capacity.</p>	<p>FAO-SAPA and PIFS are planning to evaluate Food Safety legislation in the region and LRD has been asked to contribute, because of its experience in biosecurity law harmonization.</p>
<p>2.5 That SPC LRD and PICTs incorporate traditional food production and processing systems into national and regional disaster management plans.</p>	<p>LRD has encouraged the establishment of genebanks for traditional crops, such as breadfruit, taro and yams – a first step in the process. LRD has supported the production of posters promoting traditional food products</p>

3. Crop and forest genetic resources

<p>3.1 That SPC LRD develop a two page briefing paper on the ITPGRFA.</p>	<p>Two page briefing paper has been prepared and to date three countries have ratified the ITPGRFA.</p>
<p>3.2 That SPC LRD, in collaboration with PICTs through PAPGREN, develop a regional strategy for sustainable conservation and use of PGR for submission to the Global Crop Diversity Trust.</p>	<p>A regional strategy has been completed requesting support for conservation of the main staple crops of the region, and is being considered by the Trust.</p>
<p>3.3 That SPC LRD ensure that the RGC is provided adequate funding to deliver an effective supply of pathogen-tested germplasm to the PICTs.</p>	<p>The RGC is set for expansion in 2007. It will be relocated to CETC Narere, and given a new mandate – Centre for Pacific Crops and Trees.</p>
<p>3.4 That SPC LRD, to ensure continuity of services, should manage forest genetic resources activities on completion of SPRIG 2, but noting that this will require additional human and financial resources.</p>	<p>A forest genetic resources specialist has been recruited, and once the RGC has been relocated to its new site, it will take on some forest genetic resources work.</p>
<p>3.5 That SPC LRD and SPRIG map out a transitional plan for SPRIG to phase out when it concludes and SPC to phase in, ensuring continuation of training (including tertiary level) to fill identified gaps in forest genetic resources management, and extension of services, dissemination of information and sharing of forest tree germplasm to atolls, Micronesia and other PICTs which have not participated in SPRIG thus far, using the capacity developed in the participating PICTs.</p>	<p>SPRIG activities were transferred to LRD after the project ended in June 2006. Additional funding as recommended by HOAFs 2004 meeting has been allocated by AusAID for the implementation of activities, beyond the original SPRIG partners.</p>
<p>3.6 That SPC LRD, with the support of SPRIG, update the Pacific Islands Sub-Region Action Plan of Conservation and Sustainable Management of Forest and Tree Genetic Resources, fine-tune it with further inputs from PICTs and publish it.</p>	<p>This has not yet been implemented. The plan now is to have this discussed and endorsed in next year's proposed regional meeting in forest genetic resources, before it is published.</p>

4. Information and communication technologies

<p>4.1 That the national Pest List Databases of all PICTs, taking into consideration territorial affiliations, be made available through a web-based regional framework.</p>	<p>The Pacific Islands On-line Pest List Database was officially launched in 2005. The system is continually audited to ensure that data is of international standard.</p>
<p>4.2 That SPC LRD information products be translated into French and disseminated to technical staff in Francophone Pacific PICTs, and similarly French language information products to English.</p>	<p>All LRD publications are translated into French and made available to OCTs. The PRAP Agroforestry Kit is being translated into French by DSAP. However, there has been limited translation of French materials into English</p>
<p>4.3 That SPC LRD should also produce extension materials in local Pacific languages whenever possible, although PICTs do also have some responsibility for adapting the materials produced by SPC for local use.</p>	<p>There are many examples of this being done and it is the approach LRD has adopted. The tendency is that countries translate into the local language what has been produced at the regional level – this way the material can be adapted for local use and translated into the local language.</p>
<p>4.4 That DSAP can be used as an additional vehicle for the dissemination of information to farmers.</p>	<p>This is a crucial part of DSAP's work. It is anticipated that most future LRD extension and communication activities will be channelled through the in-country DSAP teams. Farmer to farmer training is being supported. A recent example is in Tilivalevu where DSAP farmers organised training for surrounding villages, and are also organizing their own farmer field days for farmer to farmer extension.</p>
<p>4.5 That SPC LRD should explore and negotiate on behalf of the region, opportunities for widening the access of PICTs to information resources of relevance to sustainable land resources management.</p>	<p>LRD has established the Pacific Islands Extension Network (PIEN). The network explores ways in which extension workers in the state and non-state sectors can be improved. LRD is collaborating with CTA in evaluating the possible use of radio satellite receivers.</p>

ANNEX 4. RESPONSES TO RECOMMENDATIONS OF THE 2004 HOAFS MEETING ON STRATEGIC OBJECTIVE 2:

Improved Biosecurity and Trade Facilitation

RECOMMENDATIONS	RESPONSES
<p>1. SPC LRD continue with the development of commodity pathways for products with export potential from the PICTs, creating local, regional and international market opportunities for Pacific island economies. This includes development of post-harvesting technologies and appropriate quarantine treatment technologies for the region.</p>	<p>A training manual on commodity pathways for fruit fly host commodities currently traded by Fiji under its bilateral quarantine arrangement (BQA) with New Zealand has been developed. Training of stakeholders has commenced. Also advice was provided to relevant PICTs regarding the appropriate conditions for the importation of animal and animal products.</p> <p>Trainees from other PICTs on 3 month attachment training at the IMPEXTEK Centre now undergo the same training as part of the Market Access Development training.</p> <p>The IMPEXTEK R&D unit and partners are currently developing a commodity pathway for taro exports from the Pacific Islands</p> <p>We are investigating the efficacy of hot water immersion as a potential treatment for surface organisms on taro corms.</p>
<p>2. SPC LRD ensure adequate funds and resources be committed to the import-export biosecurity technology (IMPEXTEK) centre.</p>	<p>Second tranche of the PACER-RTFP funds have been released to the SPC-LRD in August 2006. The centre is serviced by the core Biosecurity and Trade Facilitation Team of an Adviser, Biosecurity Officer, 2 technicians and 1 Information Assistant and is further assistance by the integrated Land Resources Division.</p> <p>All three (Advisory, Pre-export R&D and Training) units of the Centre are operating.</p>
<p>3. All PICTs consider becoming Contracting Parties to the IPPC, OIE, CITES, CODEX and CBD, as appropriate to their status, and existing members participate actively in the international standard setting process.</p>	<p>Cook Islands, Fiji, Niue, Palau, Federated States of Micronesia, Samoa and Tonga have deposited their Instrument of Adherence to the International Plant Protection Convention (IPPC) with the Director-General of the FAO. This brings the number of IPPC Contracting Parties in the region to Eleven (11) including Australia and New Zealand.</p> <p>Only Vanuatu and New Caledonia are current OIE members. PNG proposed application for membership being considered by Cabinet.</p>
<p>4. SPC LRD ensure that current services in biosecurity and plant protection are maintained.</p>	<p>Biosecurity, trade facilitation and plant protection services of the SPC are currently delivered through the Biosecurity and Trade Support, Plant Health and Animal Health and Production Thematic Groups of the integrated Land Resources Division.</p>
<p>5. SPC LRD secure resources to strengthen the regional animal health and production capacity of SPC, with particular attention to the provision of animal health and veterinary services to atolls and smaller PICTs.</p>	<p>Currently recruiting new staff to fill vacant positions. Developed new areas like quarantine and food safety to be included in the PARAVET training programme. Also developed a sheep husbandry training booklet.</p>
<p>6. SPC LRD with collaborators seek resources for the development and sustainable delivery of regional PARAVET training including recognition of the qualification.</p>	<p>Continuing with PARAVET training programme with 120 people trained to date. Consulting with PICTs Ministry of Agriculture to recognize the training.</p>
<p>7. SPC collaborate with other agencies and investigate how to provide support for organic certification.</p>	<p>SPC-LRD is currently working with IFOM, IFAD and other international and regional partners in the development of organic agriculture in the region.</p>

<p>8. SPC LRD assists PICTs to build their capacity in import risk analysis.</p>	<p>One-on-one mentoring of quarantine officials involved in undertaking import risk analysis in the PICTs continues. 3 month attachment training on import risk analysis and market access development is being done in October 2006.</p> <p>Movement of bulk soil, aggregates and building material remains a concern in the region particularly to the small atoll islands.</p> <p>SPC-LRD will work with the countries through PPPO to undertake a regional import risk analysis and develop a regional protocol (standard) for safe movement of these materials in the region.</p> <p>A draft regional protocol is also being developed for safe movement of germplasm in tissue culture in the region.</p>
<p>9. SPC LRD and SPREP support PICTs in addressing the problem of invasive species and their association with conveyances, cargo and passengers.</p>	<p>SPC, SPREP and their collaborators have been working on the following:</p> <p>Pacific Ants Prevention Plan achievements thus far include scheduled funding to a coordinator position; undertake baseline study for invasive ants in selected high risk ports and development of a longer term funding proposal to address the invasive ant problem in the region.</p> <p>Baseline studies were undertaken at air and sea ports in Fiji, Cook Islands, Tonga, Samoa, New Caledonia, PNG, Guam, French Polynesia and American Samoa</p> <p>Pacific Islands Learning Network (PILN) SPC signed an MOU to be involved as a major partner in a new regional initiative called the Pacific Invasives Learning Network (PILN).</p> <p>The objectives of the PILN is aimed at developing participant-driven learning networks against invasive plants in the Pacific Islands</p> <p>The Pacific Invasives Initiative (PII) of the IUCN's Cooperative Islands Initiative The Cooperative Initiative on Invasive Alien Species on Islands ("The Cooperative Islands Initiative", or CII) was initiated by the New Zealand Government and the Invasive Species Specialist Group of the World Conservation Union (IUCN), under the umbrella of the Global Invasive Species Programme (GISP)</p> <p>Training for Weed and other Invasive Species Detection and Prevention A joint training module was developed by the Secretariat of the Pacific Regional Environmental Programme (SPREP) in consultation with SPC following the strong recommendations made by PICTs at the 2004 RBPPAH Meeting for SPC and SPREP to work together on areas of common interest, a training module was developed jointly by SPC and SPREP and other partners and 2 joint SPC-SPREP trainings were run in PNG in August 2004. SPREP also carried out a number of PICTs including French Polynesia, Vanuatu, Niue, Samoa, etc using jointly developed training materials.</p>
<p>10. SPC LRD assists PICTs to expand activities to counteract the public health threats posed by zoonotic diseases.</p>	<p>Also developed the PRIIP programme to assist PICTs develop ERPs, undertake capacity building in surveillance and diagnostic services within the region and set up regional coordination mechanisms to address these incursions.</p>
<p>11. SPC LRD assists PICTs in the development of national contingency plans to combat the incursion of exotic and emerging animal diseases.</p>	<p>General emergency response for agricultural pest incursions and outbreaks has been developed for Guam, CNMI, FSM, Palau and RMI. For animals, it is being addressed under the PRIIP programme mentioned above.</p>

ANNEX 5: MAIN SECTORAL MEETINGS AND WORKSHOPS

▶ **Asia-Pacific Forest Sector Outlook Study 2020: Future of Asia-Pacific Forests Meeting of Focal Points, 21–23 February 2007, Nadi, Fiji**

A workshop to brief the Outlook Study Focal Points was organised in collaboration with FAO. The main objective was to brief the focal points on the process involved and how they would facilitate the compilation of country papers to contribute to the outcome of the study.

SPC is a partner in the organisation of the Asia-Pacific Forest Outlook Study 2020 and is also involved in the Scientific Committee that is providing technical direction and advice. Participating countries were Fiji, PNG, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

▶ **FAO commodity chain studies, February 2007**

SPC was responsible for implementing commodity chain studies in Fiji, Kiribati and Vanuatu as a component of FAO's support to the Regional Programme for Food Security (RPFS) in Pacific Island countries. The target commodities were papaya, mango, tomato and carrot. A final workshop, 'Commodity Chain Studies and Food Regulatory Model Template', was held in Suva from 5 to 7 February 2007. There were some 40 participants from the public (government and non-governmental organisations) and private sectors. The three country studies were presented by the national coordinators, except in the case of the Vanuatu study, where the presentation was made by the FAO/INEA consultant. In addition, there were open sessions and working group discussions that focused on the methodology and tools used and their adequacy for the Pacific region, and on the recommendations proposed with the three chain studies. The workshop participants endorsed all the recommendations from the three studies and, as a result of their discussions, further recommendations were added.

▶ **Farmer Field Schools**

IPM for brassicas, Samoa and Fiji.

▶ **Pacific Invasives Initiative Steering Group Meeting, Auckland**

LRD's Plant Health Coordinator attended and was elected as new Chair of the initiative.

▶ **Sub-regional training on diagnosis and control/correction of pests, diseases and soil nutritional disorders, Palau, March 2007**

A week-long workshop was conducted with the aim of up-skilling field staff in diagnosis of pests, diseases and soil nutritional disorders and how to control or correct problems. It was attended by participants from RMI, Kiribati, FSM, Nauru and Palau.

▶ **Sub-regional workshops on participatory needs assessment of extension delivery in the region**

Two sub-regional workshops were conducted in Palau and in Fiji with the aim of training the people who will conduct the national assessment in the methodologies to be used.

▶ **Pacific Islands Training Workshop on Methodology, Collection, Processing, Analysis and Dissemination of Agricultural Trade Statistics, March 2007, Suva, Fiji**

SPC, in conjunction with FAO, held a workshop that aimed to improve understanding among national professionals in participating countries of the importance of enhanced trade statistics in the region; assess the national trade statistics system in each participating country; and promote better understanding of trade data concepts, methodology, classifications, etc. harmonised for the trade statisticians of participating countries and electronic reporting of trade and other data.

The workshop discussed the proposal that SPC host a regional trade statistics database with the objective of improving access to and accuracy of regional trade data in the Pacific and reducing the burden on member countries of responding to multiple requests for trade data from international bodies. An MOU between SPC and the participating countries for data collection and sharing was suggested as the operative mechanism.

The workshop was attended by statistical officers from 14 PICs, Australia, New Zealand, FAO, SPC's Statistics Programme and other regional organisations.

▶ **First International Breadfruit Symposium on Research and Development, April 2007, Nadi, Fiji**

There were over 45 participants from Africa, the Caribbean, Asia and the Pacific. The symposium covered a wide range of themes, from breadfruit in society to product development and marketing.

The keynote address was given by Dr Diane Ragone, Director of the Breadfruit Institute, National Tropical Botanic Garden (NTBG), Hawaii. Her efforts have ensured that more than 120 varieties from the Pacific are conserved in the world's largest collection of breadfruit (over 200 accessions) at the NTBG. One of the sessions focused on developing a global strategy for the conservation and utilisation of breadfruit, and discussing the sharing of breadfruit germplasm using the multilateral system on which the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) is based.

The symposium was the result of collaboration between international organisations including the Technical Centre for Rural and Agricultural Cooperation (CTA), the Breadfruit Institute, German Technical Cooperation (GTZ), the International Centre for Underutilised Crops, the Global Facilitation Unit for Under-Utilized species, the Global Crop Diversity Trust and SPC's Land Resources Division. The proceedings of the symposium will be published by the International Society for Horticultural Sciences as part of the standing series Acta Horticulturae.

► **Pest Risk Analysis (PRA) Training, May 2007, Port Vila, Vanuatu**

LRD, in collaboration with the Australian Department of Agriculture, Forestry and Fisheries (DAFF), conducted a one-week introductory training course on plant PRA. The training programme was funded by AusAID under the auspices of the Pacific Governance Support Program (PGSP) and was delivered by DAFF in collaboration with SPC. The training brought together participants from Cook Islands, Fiji, French Polynesia, FSM, Kiribati, Nauru, New Caledonia, Niue, Palau, PNG, RMI, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu and Wallis and Futuna.

The training workshop covered aspects of the global trading environment and international plant health standards, PRA progress and procedure as practised by Australia and the region, and technical market access submissions. Regional plant health professionals from the Pacific expressed great interest in and strong support for the activity, as indicated by their active participation during the full five days of the workshop.

► **Harmonisation of Biosecurity Laws in the Pacific – Regional Workshop on the Adaptation and Implementation of the Regionally Harmonised Biosecurity Bill, June 2007, Port Moresby, PNG**

The regional workshop was attended by heads of agriculture and quarantine services, state lawyers and heads of animal health and production services. It adopted the finalised draft of the regionally harmonised biosecurity bill, reviewed the legislative and implementation status of national biosecurity bills and discussed ways forward for the individual jurisdictions. It also took the opportunity to hear from Samoa about their experiences with implementing their new biosecurity law since it was enacted in late 2005. The BATS group demonstrated the biosecurity information facility at the workshop.

► **Regional Workshop on Forest Genetic Resources (FGR) Conservation and Management in the Pacific, June 2007, Nadi, Fiji**

In collaboration with AusAID-PGSP, Ensis and GTZ, LRD organised this workshop, which revised the 1999 Sub-Regional Action Plan on FGR Conservation and Management. With the completion of SPRIG in June 2006 and the integration of FGR into SPC, the workshop also provided the opportunity to agree on a framework for the planning and implementation of SPC LRD FGR activities. In addition, a number of research and

development themes as well as priority project ideas that would need to be developed into project concepts and proposals were endorsed by the workshop participants.

Countries that participated in the workshop were American Samoa, Cook Islands, Fiji, FSM, Kiribati, Nauru, Niue, PNG, RMI, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

► **Regional Training on Ant Taxonomy, June 2007, Suva, Fiji**

LRD, in collaboration with USP and New Zealand Ministry of Agriculture and Forestry (MAF), organised a three-day training course on ant taxonomy under the auspices of the Pacific Ant Prevention Plan (PAPP). The training was funded under the Pacific Invasive Ants Surveillance project (PIAS), which is funded out of NZAID's Pacific Security Fund.

The training was specifically targeted at entomologists and was attended by 24 entomologists from PICTs. It was conducted by three experienced ant taxonomists, Eli Sarnat (USA), Disna Gunawardana (NZ MAF) and Cas Vanderwoude (Anti Ants, NZ). The participants were trained to be confident in the identification of high-impact invasive ants as identified in PAPP, received training materials to take back to the lab to facilitate continued learning and further training of colleagues, and were trained to be capable of carrying out the screening and identification of samples that are generated from ant surveillance activities by their local quarantine service.

Contingent on attending the training, each entomologist and his/her employer agreed to undertake identification of ant samples generated through surveillance in their own country, in addition to identification for neighbouring PICTs that do not have entomological capability.

► **Invasive Ant Taxonomy Training Workshop, USP, Suva, 25–28 June 2007**

Twenty-seven entomologists and seven students were trained in invasive ant taxonomy.

► **Sub-regional training on participatory technology development (PTD), Solomon Islands, July 2007**

The main objective of the workshop was to strengthen support for institutionalising PTD with emphasis on on-farm experimentation in Solomon Islands and PNG. The objectives were to:

- review the status of PTD in PICTs and elsewhere; and
- develop a checklist for supporting the institutionalisation of PTD in the countries by the countries and SPC.

The training promoted involvement of the community from diagnosis of problems to testing out potential solutions on-farm. It was attended by 37 participants from Solomon Islands and PNG.

► **Plant Genetic Resources for Food and Agriculture, Pacific Regional Workshop, August 2007**

The workshop was organised by SPC in collaboration with the Australian Department of Agriculture, Fisheries and Forestry (DAFF) as part of the southwest Pacific regional consultations on the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). Australia is the chair of the southwest Pacific regional group. Funding for the workshop was provided by FAO. As well as presentations from DAFF and SPC, there were presentations from the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO), and the Australian Centre for Intellectual Property in Agriculture (ACIPA), University of Queensland. The objective of the workshop was to analyse the ITPGRFA in greater detail, providing a forum for disseminating information and for regional consultations among Pacific country and territory representatives regarding developments in the ITPGRFA, the FAO Commission on Genetic Resources and related developments in the Convention on Biological Diversity (CBD).

In addition, at the 1st Meeting of the Governing Body of the Treaty, there was agreement to the terms of the Standard Material Transfer Agreement (SMTA). The workshop was therefore very important in ensuring that there was good understanding of the SMTA among Pacific Island countries, both parties and non-parties. Countries and territories participating in the workshop were American Samoa, Cook Islands, Fiji Islands, French Polynesia, FSM, Guam, Kiribati, Niue, PNG, RMI, Samoa, Tonga and Vanuatu. At the time of the workshop only three countries (Cook Islands, Kiribati and Samoa) were parties to the treaty. Non-party countries made recommendations as to how SPC and DAFF could support their process of ratification. Parties to the treaty highlighted certain issues they want raised at the 2nd Meeting of the Governing Body in October. The workshop participants also recommended that CePaCT should be the focal point for the treaty.

► **Regional workshop for the review of draft International Standards for Phytosanitary Measures (ISPMs), August 2007, Nadi, Fiji**

The PPPO Secretariat (LRD), in collaboration with FAO-SAPA, conducted a regional workshop to discuss the draft ISPMs. The regional workshops to review the draft ISPMs are part of a technical assistance programme of FAO (IPPC Secretariat), delivered jointly in our region by SPC-LRD as the PPPO Secretariat, and FAO-SAPA.

The representatives from the IPPC Contracting Parties and other PICTs reviewed the following draft ISPMs and forwarded their comments for changes to the draft ISPM text, etc. to the IPPC Secretariat at FAO-Rome. The draft ISPM topics were:

- amendments to the Glossary of Phytosanitary Terms;
- debarked and bark-free wood (suppl. to ISPM no. 5);
- establishment of areas of low pest prevalence for fruit flies;
- classification of commodities;
- sampling of consignments; and
- developing a strategy to reduce or replace the use of methyl bromide.

► **Eleventh Executive Committee Meeting of the Pacific Plant Protection Organisation (11th PPPO Exco), August 2007, Sydney, Australia**

The meeting deliberated on several matters of importance to the organisation, including the new amended constitution of PPPO, the business plan of the organisation, participation in the standard-setting process and importance of regional workshops, development of regional standards/guidelines, technical capacity building and PCE training.

The PPPO Exco is made up of official representatives from Fiji and Vanuatu representing Melanesia, Samoa and French Polynesia representing Polynesia, and Palau and RMI representing Micronesia. Australia and New Zealand representatives make up the PPPO Exco of eight members. PNG is the current chair and Australia is the vice-chair; the Biosecurity and Trade Facilitation Adviser performs the ex-officio role of Executive Secretary.

► **Pacific animal genetic resources (AnGR) for food and agriculture, and 3rd Meeting of the Pacific Heads of Veterinary and Animal Production Services (PHOVAPS), August 2007, Nadi, Fiji.**

Livestock is an important agricultural focus for the Pacific. Knowledge of local domestic livestock for food and agriculture is not well documented in the Pacific. Many local breeds in the south-west Pacific region have not yet been sufficiently identified or characterised, and this lack of information prevents the limited available funds from being applied to appropriate conservation, sustainable use and development projects. Understanding the unique nature of the region's AnGR will assist in ensuring the fair and equitable sharing of benefits deriving from them, and aid the development of policies to manage them. The workshop was co-organised by the Secretariat of the Pacific Community (SPC), the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) and the United Nations Food and Agriculture Organization (FAO).

Concurrent with the workshop on improving local knowledge on domestic AnGR is the 3rd PHOVAPS Regional Meeting. Priority areas identified during this meeting will form the basis of a work plan for the next three years for the Animal Health and Production thematic group of SPC, which acts as the secretariat of PHOVAPS. The Pacific Regional Influenza Pandemic Preparedness Plan (PRIPPP) and the setting-up of a regional task force to combat pandemic influenza were among the successful outcomes of last year's PHOVAPS meeting.

► **SPC/IFAD Pacific Organic Agriculture Project Stakeholder Consultation Meeting, August 2007**

A regional stakeholder consultation meeting was attended by participants from Fiji, Tonga, Samoa, Niue and Cook Islands. Representatives from IFAD, IFOAM, USP and key private sector organisations also attended. The objectives of the workshop were to review the progress of other organic projects being implemented in the region, develop structure, criteria and terms of reference for the operation of the steering and technical committees in the SPC/IFAD Organic Agriculture Project, and bring together

key stakeholders to develop project work plan and partnership agreements between various institutions to start Phase 1 of the project.

► **Pacific Invasives Learning Network Annual Meeting, September 2007, Moorea, French Polynesia**

SPC LRD was represented by the Plant Health Coordinator and the Coordinator Plant Protection Micronesia.

► **Phytosanitary capacity evaluation (PCE) regional training, October 2007, Nukualofa, Tonga.**

The workshop introduced the PCE tool to assist PICT National Plant Protection Organisations to evaluate their capacity to implement international phytosanitary requirements, facilitate trade, and better deliver official and commercial phytosanitary services to their clients and meet their international obligations. SPC Land Resources Division in collaboration with the FAO-based International Plant Protection Convention (IPPC) Secretariat is implementing the project to build regional capacity in using an internationally accepted tool to evaluate national phytosanitary systems.

► **Annual PAPGREN Meeting, November 2007**

The members of the PAPGREN network meet annually to report on activities relating to plant genetic resources for food and agriculture and to discuss regional activities. The 2007 PAPGREN meeting established a steering committee to streamline decision-making. The meeting agreed that at each annual PAPGREN meeting, a new steering committee would be elected. The steering committee consists of a representative from each of Melanesia, Polynesia, Micronesia, atoll countries and French territories. There will also be a representative from SPC and one from Bioversity International (formerly IPGRI).

► **Executive Education – Forest Policy Short Course, November 2007, Nadi, Fiji.**

Constraints in forestry often stem from poor identification of policy issues, weak policy formulation and inadequate support for implementation. Technical solutions are rarely lacking. Yet, the environmental, social and economic contributions of forestry are deficient in many Pacific island countries. An analysis of the situation indicates that the capacities of the countries' forestry agencies and other key stakeholders in effective policy analysis and formulation remain weak, hampering national forest programme processes.

This short course focused on the policy process and the skills and knowledge necessary to formulate effective policy. The 2-week course brought together about 20 participants from 10 Pacific island countries representing government, NGOs and private sector. The course was originally initiated by FAO in association with the Asia-Pacific Forestry Commission as early as 2004. Some of the areas covered include forest policy in the Pacific region,

policy formulation and implementation, policy instruments, monitoring and evaluation of policy implementation, and communication.

► **Sub-Regional Workshop on Agroforestry and Plant Propagation in the Northern Pacific, November, 2007**

Agroforestry has been practised for thousand of years in almost every corner of the world. It is a method of farming that combines crops, trees, shrubs and perennials in food gardens and farm plots. Agroforestry systems are dynamic, always changing and adjusting to the local environment with the end result being the development of systems that suit different cultures and landscapes

In most Pacific islands, particularly atolls with limited land area, the use of land for agriculture is given high priority. Traditional agricultural systems have included planting trees that provide a variety of products and functions.

To promote agroforestry in the northern Pacific, a subregional workshop was held in Pohnpei, Federated States of Micronesia, from 25 to 30 November 2007. The workshop was organised by the SPC-LRD Forests and Trees Programme, with co-funding support from the GTZ Regional Forestry Programme.

The focus was on assessing and evaluating existing agroforestry activities in the northern Pacific region and formulating research and development of agroforestry systems appropriate to the islands there. Other activities included training on plant propagation, tree nursery management including seed treatment and germination, potting and maintenance of seedlings, and propagation techniques. Around 20 participants from Palau, the Northern Marianas, Guam, Yap, Chuuk, Pohnpei and Kosrae attended.

► **Fiji Pandemic Influenza Preparedness Plan Testing Exercise, December 2007, Pacific Harbour, Fiji.**

This table top testing exercise involves detailed scrutiny of preparedness on the ground, based on specific scenarios and the current stage of planning. The feedback from the participants will pave the way for the Fiji Influenza taskforce, with assistance from agencies and experts to address the gaps in current planning and documentation. This will then enable planning for further testing (simulation or real time) and evaluation of preparedness.

ANNEX 6: NOTABLE COUNTRY ACTIVITIES

Country	Activity
 American Samoa	<ul style="list-style-type: none"> • Production of weed awareness material • Participatory development of an agriculture & forestry strategic plan.
 CNMI	<ul style="list-style-type: none"> • PPM supports plant health related work in CNMI • Recently recruited quarantine officers trained at UOG
 Cook Islands	<ul style="list-style-type: none"> • SPC Joint Country Study Team members • Develop the National Rural Land Use Policy for the Cook Island - October, 2007 • PAFPN membership study • Responded to request to deal with incursion of Glassy-winged sharp-shooter on Rarotonga. Funding and technical assistance to conduct delimiting surveys were provided. The Entomologist visited CI to assess the GWSS status • Successful Giant African snail eradication • Financial assistance for bio-security bill consultations on the outer islands • Bio-security bill finalised • 1 officer undertook the 3-month attachment training with the IMPEXTEK centre • 1 officer attended PRA training in Vanuatu and entomologist the training on Ant taxonomy • Regional consultation on the draft ISPMs and regional trade statistics workshop • 1 lawyer and the head of quarantine attended the bio-security law workshop in PNG
 French Polynesia	<ul style="list-style-type: none"> • ICE through the DSAP project is continuing the Cooperation with CFPPA on Moorea • Through this cooperation between DSAP French Polynesia and CFPPA • Training conducted at Huahine on use of fertilizers, use of pesticides, economic farm analysis, and on drip irrigation • Glassy-wing sharp-shooter biological control • Eradication of Parthenium weed on Tubuai • Mimosa invisa weed bio-control discussed • Contribution of development of Fr. Polynesia national invasive Strategic Action Planning meeting • 1 officer attended 3 weeks attachment training with the Samoa Quarantine service linked the SPG 2007 operations • Participation at the various workshops and trainings organised by BATS • Polynesia national Invasive species Strategic Action Planning meeting



Fiji Islands

- Support to national tissue culture laboratory; implementation of floriculture study; awarding of Masters scholarship to one of the Ministry staff (NZ AID-funded through PAPGREN) – focus of research will be duruka (Saccharum edule)
- Supported Extension and marketing workshop
- Supported youth group agriculture activities such as the Ba Youth Alternative to Sugarcane Project looking at income generating and poverty alleviation.
- Promoted the use of Farmers field schools for the adoption of Dalo beetle control and the training of youth in commercial dalo production.
- Supported the launching of the Fiji Organic association and elected as a trustee on the board of the association made up of very successful business managers• Adviser had several discussions with Counterparts regarding the implementation of the National Rural Land Use Policy
- Worked with counterparts to develop the International Waters Project for Fiji
- Continue to have quarterly meeting with the Fiji National Landcare Steering Committee for the implementation of the Fiji NRLUP.
- Coordinate PAFPN membership study for Fiji.
- Assisted Fiji in the development of LDC/SIDS/GEF Medium Sized Project for Sustainable Land Management mainstreaming and Capacity building.
- The PHT is working very closely with MOA and DPI to progress several pest and weed management projects. Major projects include the ACIAR funded projects Biological Control of Mile-a-minute weed in Papua New Guinea and Fiji, Integrated management of brassicas pests, and the Taro Beetle Management Project, Containment of Jerusalem thorn, Management of coconut pests in collaboration with the Coconut industry,
- Assisted with giant African snail and little fire ant eradication exercise
- Continued assistance with the training of farmers, purchasers, packers and exporters involved in the export trade of commodities under the BQA with Australia and New Zealand
- Continued assistance to Ministry of Agriculture officers particularly quarantine and extension officers on the use of the training manual of exports systems
- 1 officer currently undertaking 3-months attachment at the IMPEXTEK centre
- Economic evaluation of PACER-RTFP interventions in Fiji
- Continued assistance to the quarantine service restructuring initiative.
- Assistance with the national adaptation of the bio-security bill and assistance with drafting
- Assisted national consultation on the bio-security bill
- Assisted with technical market access for fresh ginger to Australia
- Participation at the various workshops and trainings organised by BATS



Federated States of Micronesia

- Support to the Island Food Community of Pohnpei in producing their publications; duplication of some of the unique giant swamp taro and fe'i bananas in tissue culture in collaboration with the Micronesia Plant Propagation and Research Centre (MPPRC); provision of over 2,000 bananas to MPPRC for further multiplication and distribution to Chuuk
- Under the DSAP project
- Established nurseries on (Fefan, Etten and Moen)
- Continued with training on home generated seeds
- Home made pesticides and home made compost making.
- Distributed more seeds to gene banks for planting materials
- Facilitated Chuuk Women Council conference on (Convention / Discrimination Against Women and Gender in the FSM)
- Facilitated Co-partner work on Food safety and food security training workshop at Abdul village with Department of Health and Nutrition, Agriculture team

 <p>Federated States of Micronesia (cont.)</p>	<ul style="list-style-type: none"> • Facilitated FSM team training workshop on Land Degradation and Management to present objectives of DSAP program • Continued the collaborative efforts with the College of Micronesia (FSM) through its Corporative Research and Extension (CRE) service. Work were carried out in the areas of Distribution of planting materials, rehabilitation of coconuts in the outer islands, local soil amendments, publications, atoll food production, swamp taro salt injury. • Extension material development, school projects • Collaboration was also initiated with the USDA NRCS on establishing nurseries, seeds and seedlings • Coordinate PAFPNet membership study for FSM • Assisted in the development of Medium Sized Project for SLM • Joint program SPC and FSM on watershed management, planned for early November,2007 • The Coordinator PPM continued to provide financial and technical support for the eradication of several invasive weeds in Pohnpei, Kosrae and Yap States. • Recently recruited officers trained at UOG • 1 officer is currently undertaking 3-month attachment training at the IMPEXTEK centre • 1 officer attended 3 weeks training on quarantine operations in Samoa linked the SPG 2007 operations • Participation at the regional consultation of draft ISPMs, bio-security law meeting in PNG, trade statistics workshop, PRA training and ant taxonomy training • Became contracting party to the IPPC
 <p>Guam</p>	<ul style="list-style-type: none"> • Recently recruited officers attend 1 week training at the UOG
 <p>Kiribati</p>	<ul style="list-style-type: none"> • Provision of over 2700 bananas; plant genetic resources national consultation; awarding of Masters scholarship to one of the Ministry staff (NZAID-funded through PAPGREN) – focus of research will be giant swamp taro • Animal Waste Management – Kiribati – May 2007 • ICE is taking the lead in linking with the SPC Health program to develop a pilot project in Kiribati linking Agriculture and Health. Project is in the development phase and will be implemented later in 2007 • ICE continue to support the efforts of the Ministry in managing the Breadfruit fungus diseases • Nematode surveys; • Plans for weed surveys in 2008 discussed • Drafting assistance with the bio-security bill • Participation at the various workshops and training organised by BATS • Work has began on the adaptation of the regional operations manual for Kiribati • 1 officer attend the 3-month attachment training at the IMPEXTEK centre
 <p>Marshall Islands</p>	<ul style="list-style-type: none"> • 135 plants (bananas, taro, yams and cassava) are under going evaluation in Marshall Islands – this work is in collaboration with DSAP • Plant virus disease surveys; Chromolaena eradication work (PPM activity) • 1 officer currently attending 3-month attachment training with the IMPEXTEK centre • Participation at the various workshops and training organised by the BATS group • Drafting assistance with the bio-security bill • Contribution to development of joint SPC/Country strategies

 <p>Niue</p>	<ul style="list-style-type: none"> • In initial discussion with Niue Ministry of Agriculture in preparation for the Pacific youth Ministers meeting in 2008 – where the Pacific Youth Agriculture strategy will be presented • As part of the TaroGen project – a collecting mission took place in Niue (Niue had no field gene bank) and a small collection of Niue taro was established and has been maintained at the CePaCT. Niue requested the repatriation of these taro (12 varieties – 64 plants) so they could be made available to their farmers • Continued assistance with the national adaptation and implementation of the regionally harmonised bill to Niue • Participation at the various regional workshops and training organised by BATS • 1 officer undertook the 3-months attachment training at the IMPEXTEK centre • Assistance with the ants surveillance exercise in Niue • Weed eradication and bio-control support; ant taxonomy training, ant surveillance support
 <p>New Caledonia</p>	<ul style="list-style-type: none"> • Promoted the activities of LRD during the SPC/Noumea Open Day highlighting “Yam: culture and agriculture”. Organisation of the yam ceremony with SPC Culture Bureau and the Customary Senate. • PLD database updates • Participation at the various regional workshops and training organised by BATS • Digital cameras supplied
 <p>Nauru</p>	<ul style="list-style-type: none"> • Weed and plant virus surveys • Drafting assistance on the bio-security bill for Nauru • Provision of equipments including internet subscription • Participation at the various workshops and regional training organised by BATS
 <p>Papua New Guinea</p>	<ul style="list-style-type: none"> • Implementation of floriculture study; revision of Pacific Agricultural Crop Improvement Programme (PARCIP) with NARI • Conducted participatory rural appraisal at the DANIP Vocational institute in preparation for developing and conduction Plant Protection curriculum • Conducted Desktop publishing training workshop for the NAQIA Information staff. • Continued support for Extension Activity for the promotion of Dalo beetle control technologies • Continued support for the Plant Derived promotion project • Biological Control of Mile-a-minute weed Project; Eradication of Parthenium weed and Mimosa pigra; Taro beetle integrated management launching; weed surveys in West New Britain; Little Fire Ant Eradication Project in Wewak • Jointly funded Bio-security Information Technician is based with NAQIA • Provision of equipments including computers for the BIF technician • Assistance towards the ‘selling’ of the bio-security bill to important stakeholders in the country • Assistance with the eradication of little fire in one of the provinces • Assistance towards the development of contingency plan for coffee berry borer • Participation at the various regional workshops and training organised by BATS
 <p>Pitcairn Is</p>	<ul style="list-style-type: none"> • Weed survey from photographs taken by LRD Bio-security technician • Bio-security technician visited Pitcairn islands and conducted fruit fly surveillance, trained the local bio-security officers and help establish a basic bio-security operation procedures of Pitcairn. • Pitcairn Island Commissioner (based in Auckland) and Bio-security Director from Pitcairn visited SPC-Suva and SPC-Noumea. • Pitcairn bio-security director was exposed to the various bio-security operations undertaken by Fiji whilst on attachment with us. • Both the Commissioner and Bio-security Director visited other SPC programmes during their visit here.

 <p>Palau</p>	<ul style="list-style-type: none"> • Under the DSAP project facilitated the implementation of the ACIAR Participatory Needs Assessment of Extensionists training held in Palau • Conducted 3 agro-forestry workshop with participating farmers and stakeholders • Conducted 3 post harvest handling and storage training • Conducted 5 sloping land agriculture technology (contour farming) trainings and charcoal demonstration trials • Weed control support along new roads; plant virus survey support • Recently recruited officers attended 1 week training at the UOG • Participation at the various regional workshops and training organised by the BATS group
 <p>Samoa</p>	<ul style="list-style-type: none"> • Training of new staff at the Ministry tissue culture laboratory • Initiated and funded the Pacific Games “Live and Feed the Dream project that prepared farmers to supply crops for the games. Sales up to the \$50,000 tala mark. • Conducted Desk Top Publishing training for Women in Business and government representatives • Supported and funded the Games Quarantine Public Awareness campaigns • Coordinate PAFPNet membership study for Samoa • Cane toad awareness support; • Assisted with the regional media awareness on the bio-security risks associated with the influx on people for SPG 2007 • Provide personnel in terms of attachment trainees for the SPG 2007 bio-security operations • Participated in the various workshops and training organised by BATS • Provide financial and material support for the SPG 2007 • 1 officer undertook 3-month attachment training at the IMPEXTEK centre • Assistance with technical market access for breadfruit exports to Australia • Purchased and supplied computers and accessories for the quarantine service • Technical backstopping for the Samoa quarantine database (SQUID)
 <p>Solomon Islands</p>	<ul style="list-style-type: none"> • Continue to lead the ACIAR funded Improved Plant Protection in the Solomon Islands Projects looking at re-establishing plant protection capacity and service for Solomon Islands • Coordinate PAFPNet membership study for the Solomon Island • Discussions with the Solomon counterparts on the development of the Solomon Island National Land Use Policy • Plant virus, nematodes, insect pests and weed surveys on Malaita, Guadalcanal, and Temotu Province; Pacific Invasive Ant Surveys and training for 70 people at Noro and Honiara ports in ant detection and surveillance; plant nematode surveys on Weather coast, Guadalcanal; Ant Taxonomy training for SI Entomologist • Assisted with the incursion response for giant African snail • 1 officer attended 3-months attachment training programme with the IMPEXTEK centre • 2 officers attended 1 training on the systems approach to pest risk management for exports of fruit fly host commodities • Ants surveillance conducted in the outer provinces • Technical advice of dealing with relief supplies following the tsunami disaster • Participated in the various regional workshops and training conducted by BATS. • Continued advice on the construction of the PEQ facility

 <p>Tuvalu</p>	<ul style="list-style-type: none"> • Assisted Tuvalu with the development of Medium Sized Project for SLM • Assisted Tuvalu with Co-financing support for MSP for SLM • Assistance with coconut scale and flat moth control; advice on soil shipment from Fiji • SPC engaged lawyer to work adaptation of the regionally harmonised bio-security bill. • 1 officer attended the 3-month attachment training at the IMPEXTEK centre • Participation in the various regional workshops and training organised by BATS
 <p>Tonga</p>	<ul style="list-style-type: none"> • Supported the implementation by Tongan Ministry of Agriculture Officials of the Plant Protection Training for Farmers and Extension Staff. Plant Protection Training curriculum will be conducted by the Tongans counterparts in Solomon Islands and Samoa in 2007 • Funded and supported a Women's vegetable Project on Vava'u promoting income generation, poverty elevation and integration pest management practices. • Conducted Desktop training workshop for the Tonga Trust NGO • Assisted Tonga with Co-financing support for Medium Size Project for LDC/SIDS/GEF Sustainable Land Management. • Coordinate PAFNet Membership study • Collaboration on ACIAR funded Squash Pest, Disease and Weed Management project • Drafting assistance on the national bio-security • Adaptation of other bio-security information facility for Tonga • 1 officer attended the 3-month attachment training at the IMPEXTEK centre • Purchased and supplied computers and other accessories • Assistance with trade facilitation issues regarding export of Japanese taro to Australia • Participation in the various regional workshops and training organised by BATS
 <p>Tokelau</p>	<ul style="list-style-type: none"> • PH Coordinators discussions with SPREP on invasive species issues and their management on Tokelau. • Participated at the various regional workshops and training organised by BATS • SPC JC Strategy Mission member
 <p>Vanuatu</p>	<ul style="list-style-type: none"> • Assisted Vanuatu with development of MSP for SLM • Biological Control of Water hyacinth programme • Biological Control of Water lettuce programme • Biological control of broomweeds programme • Management of Taro beetle Project • Little Fire Ant Incursion Response on Santo and Port Vila including ant awareness campaign. • Support for weed awareness campaigns • Kava dieback disease management packages • Drafting assistance on the national bio-security • 1 officer attended the 3-month attachment training at the IMPEXTEK centre • Assisted with the eradication of little fire ant in Pt Vila • Assisted with the technical market access for pawpaw exports to Australia • Participation in the various regional workshops and training organised by BATS
 <p>Wallis and Futuna</p>	<ul style="list-style-type: none"> • Genetic Resources Coordinator visited and made suggestions as to future strategies for the tissue culture lab. Follow-up: tissue culture technician was attached for one week to CePaCT for training and discussions are ongoing as to what plants should be distributed to Wallis • Recruited and facilitated attachments of 2 students from Agricultural University, Montpellier, for an attachment with DSAP comprising an analysis of farmers and farmer's choices in the light of the historical/social/economic/political/physical environment. This should yield interesting rural development data. • Assistance on insect pest management • Planning for pacific Invasive Ant surveillance work • Participated at the various regional workshops and training organised by BATS

ANNEX 7: ACRONYMS & ABBREVIATIONS

ACIAR	Australian Centre for International Agricultural Research
APHIS	Animal and Plant Health Inspection Service, US
CBD	Convention on Biological Diversity
CIRAD	French Agricultural Research Centre for International Development
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CNMI	Commonwealth of the Northern Mariana Islands
CODEX	Codex Alimentarius Commission
CRGA	Committee of Representatives of Governments and Administrations of the Pacific Community
CROP	Council of Regional Organisations of the Pacific
CVA	Commonwealth Veterinary Association
DSAP	Development of Sustainable Agriculture in the Pacific project funded by the EU
ECA	Extension Communications Assistant
EDF	European Development Fund
EU RDA	EU Rural Development Adviser
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FGR	Forest genetic resources
FSIS	Food Safety and Inspection Service, US
FSM	Federated States of Micronesia
GDP	Gross Domestic Product
GIS	Geographic Information System
GREA	Graduate Research Extension Assistant
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH (German Technical Cooperation)
HTFA	High Temperature Forced Air
IAC	New Caledonia Institute of Agronomy
IMPEXTEK	Import-Export Biosecurity Technology
IPGRI	International Plant Genetic Resources Institute
IPPC	International Plant Protection Convention
IRETA	The University of the South Pacific School of Agriculture, Institute of Research, Extension and Training in Agriculture
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
ITTO	International Tropical Timber Organization
LMOs	Living Modified Organisms
LRWG	Land Resources Working Group
MFFN	Melanesian Farmers' First Network
MTA	ITPGRFA Material Transfer Agreement
MTR	Mid-Term Review
NARI	National Agricultural Research Institute, Papua New Guinea
NTBG	National Tropical Botanic Garden
NZAID	New Zealand Agency for International Development
OCT	EU Overseas Countries and Territories

OIE	World Organization for Animal Health
PACREIP	Pacific Regional Economic Integration Project
PAPGREN	Pacific Agricultural Genetic Resources Network
PARAVET	Pacific Region Training for Paraveterinary Workers
PGRFA	Plant Genetic Resources for Food and Agriculture
PHALPS	Permanent Heads of Agriculture and Livestock Production Services
PICTs	Pacific Island member countries and territories of the Pacific Community
PIFS	Pacific Islands Forum Secretariat
PITIC	Pacific Islands Trade and Investment Commission
PLD	Pest List Database
PPP	Plant Protection in the Pacific project funded by the EU
REA	Research Extension Assistant
RPFS	FAO Regional Special Programme for Food Security
SFM	Sustainable Forest Management
SPC	Secretariat of the Pacific Community
SPRIG	South Pacific Regional Initiative on Forest Genetic Resources
SPS	Sanitary and Phytosanitary Standards of the World Trade Organization
UNEP	United Nations Environment Programme
USDA	US Department of Agriculture
USP	The University of the South Pacific
WTO	World Trade Organization