Papua New Guinea and Pacific Nius

Sustainable management of oil palm
Increasing inland fish farming
Rebuilding the Pacific taro industry
From the ACIAR Offices...

Welcome to the 1st edition of ACIAR’s PNG and the Pacific Niús for 2011. The newsletter now covers PNG and the Pacific, with articles and information from throughout the region.

It has been a while since the last newsletter and a lot has happened. New programs and projects have been developed, John Allwright Fellows have returned from studies in Australia and others are just beginning, and there has also been quite a bit of change within ACIAR (more on page 3 and 4).

There are two offices in the region, one in PNG and one in Fiji, and we aim to deliver support and services to this region. We strive to maintain and increase synergies across the Pacific program and in our work with other donors, including AusAID. We look forward to working with all of you.

Thank you to everyone who contributed to this edition of the newsletter, your input is appreciated. We look forward to your continued support with the newsletter in the future. Please don’t hesitate to contact us if you have comments or would like to contribute.

Lukim you behain!

Contents
2 From the ACIAR Offices
3 New ACIAR Chief Executive Officer
3 International Women’s Day 2011
4 ACIAR structural and operational changes
5 Increasing inland fish farming
6 Sustainable management of oil palm production systems
10 Rebuilding the Pacific taro industry
12 Training
13 Life after the John Allwright Fellowship
13 Benefits of the John Allwright Fellowship
14 New in ACIAR

Cover photo: Preparing taro for export at Navua, Fiji: it is vital that standards are established and understood by all stakeholders.
Back cover photo: Sweetpotato gardens near Goroka, Eastern Highlands Province.

Locally produced fish feed for inland aquaculture—pg5

Pacific taro—Pg12

Nick Austin looking at eucalypt variety trials in Central Province as part of the fuelwood project (FST/2006/088) Promoting diverse fuelwood production systems in Papua New Guinea (more information on the ACIAR website [www.aciar.gov.au/project/FST2006/088]).

http://www.aciar.gov.au
New ACIAR Chief Executive Officer

In July 2009 Dr Nick Austin began as the Chief Executive Officer (CEO) of ACIAR.

Prior to joining ACIAR Dr Austin held a range of senior positions in both the NSW and Victorian public service in the agricultural area. Educated at the University of Melbourne and University of Sydney, Dr Austin holds a Doctor of Philosophy, a Master of Sustainable Management and a Bachelor of Engineering (Agriculture) degree with Honours.

Dr Austin’s background in agricultural and natural resource research and policy and his significant experience in scientific program management complements ACIAR’s international development program.

Dr Austin undertook his first visit to the region in March 2010, travelling to Fiji and the Solomon Islands. Then in November 2010 he visited PNG, travelling to Morobe, West New Britain, and Central Provinces, as well as Port Moresby.

Both of these were primarily introductory and orientation visits, to meet with key partners in-country and to visit a cross section of projects.

Thank you to everyone involved in Dr Austin’s trips, they were very successful and your time and efforts were greatly appreciated. Dr Austin is aiming to visit other areas of the region in the near future.

International Women’s Day

International Women’s Day, the 8th of March, recognises and celebrates the economic, political and social achievements of women, as well as raising awareness about the issues facing women.

To acknowledge this day, the Australian High Commission in PNG ran an essay competition for High School students, supported by ACIAR, DFAT and AusAID. The essay was open to Secondary Schools around Port Moresby and the topic was ‘How will you use your education to help PNG achieve the millennium development goals?’.

Awards were presented at the 100th International Women’s Day Breakfast, organised by the PNG Business and Professional Women Association.

The three winners were Maryanne Ambane (1st prize, Marianville Secondary School), Michelle Lai (2nd prize, Marianville Secondary School) and Peter Aisa (3rd prize, Port Moresby National High School).

First and second place won school fees paid for the year, and third place received text books and school supplies.
ACIAR structural and operational changes

ACIAR has had quite a few staff and internal structural changes over the past 18 months.

Mr Peter Core retired after 36 years in the Australian Public Service and seven years as CEO of ACIAR. Mr Core led ACIAR through a period of building research partnerships, delivering a high rate of return on investment and building capacity in developing partner countries. His strong leadership and commitment to ACIAR was greatly appreciated and admired.

The Deputy CEO (R&D), Dr John Skerritt, also left ACIAR to take up the position of Deputy Secretary, Agriculture & Fisheries Services, Department of Primary Industries, Victoria. John left after 10 years of distinguished service, contribution and commitment to ACIAR, and the R&D program in particular.

This lead to a revision of the structural and operational arrangements, to reflect the strengths of the current staff. The position of Deputy CEO, R&D was not filled, instead four Principal Regional Coordinators (PRCs) and a Principal Adviser, Strategy and Policy have been appointed. The role of the PRC is to identify strategic directions and provide high-level oversight for ACIAR’s program in a region, together with managing stakeholder relations both in Australia and the region. The roles were appointed to current Research Program Managers (RPM).

Mr Les Baxter is the PRC for Papua New Guinea and the Pacific region. Les has worked in the Pacific in his role as RPM, Horticulture, however this is his first involvement with PNG.

There have also been changes to the structure of the Corporate section of ACIAR, with the creation of a Director Corporate position.

ACIAR Organisational Structure
Inland fish farming has enormous potential in Papua New Guinea but the industry’s scope for growth is currently limited by a supply of affordable fish feeds, availability of feed ingredients, performance of broodstock, supply of quality fingerlings, inefficient farming practices and environmental constraints. A new ACIAR Project was launched in August 2010 to tackle these issues and build on past programs.

PNG Project Leader, Jacob Wani from the National Fisheries Authority (NFA), sees fish farming as a solution to protein deficiencies in local communities, particularly in remote areas.

‘For many PNG people, fish farming can provide a supply of fresh, locally-produced protein and also a source of income. But before the industry can develop, research is needed to address some of the production issues and environmental constraints.’

Australian project leader Jes Sammut stresses the importance of a good team and partnerships. ‘The project team cuts across a range of disciplines and areas of expertise. We have researchers and technicians working on the scientific components of the study, and a dedicated group of people from government agencies and NGOs who have first-hand experience working with farmers. The needs of the farmers rather than research interests are driving the direction of the project.’

The project study sites include various locations in Western, Eastern Highlands and Morobe Provinces. The project activities include mapping of soils, development of site selection criteria, identification of feed sources and suitable feeds, and trials on broodstock performance, producing quality fingerlings and various farm management practices.

‘Our main focus is on the production of Tilapia, but we are also investigating trout and carp production for some locations. If fish production problems can be resolved, rural communities will be able to produce fish alongside their vegetable patches. Dependency on canned fish, processed meat, and low quality lamb flaps will be significantly reduced. Fish is a healthier source of protein for PNG people and it potentially more affordable if we can resolve the farming issues,’ said Jacob.

Jes also emphasised the need to create strong research, technical and extension backbone for the project. ‘A key aspect of the project is capacity building and education. We will be training researchers, technicians and extension officers, and working closely with lead farmers to ensure the information is delivered in formats that are useful to farmers. The project will use regular farmer feedback to refine the research and ensure that the outputs can be adopted by the community.’

The project will run for 4 years with project outputs delivered progressively and eventually compiled in farming packages.

For more information contact Jacob Wani, NFA, (jwani@fisheries) or Jes Sammut (details below).
Palm oil is the most produced vegetable oil in the world. It has a wide variety of uses, including in soap, detergent, toiletries, cosmetics, as a feedstock, for biodiesel, in food products such as cooking oil and margarine, and as a milk fat and cocoa butter substitute.

Oil palm is a popular crop as it produces six to ten times more oil per unit area than other vegetable oils, like soybean or sunflower. Oil palm produces more than 34% of the world’s eight major vegetable oils on less than 5% of the total area under oil crops. This means that oil palm requires a lot less land to produce the same volume of oil.

Because of its high yield per unit area oil palm has become a major agricultural crop in the many tropical countries and has helped to alleviate rural poverty in many countries where it is being cultivated.

In PNG, the oil palm industry is small by international standards (134,000 ha and approximately 1% of global palm oil production) but palm oil is the largest agricultural export earner for PNG (over PGK 900 million in 2009). Oil palm is grown in plantations owned by two companies and on over 18,000 smallholder blocks. The smallholder blocks support an estimated 200,000 people and the industry underpins the cash economies of the five provinces in which it is grown; West New Britain, Oro, Milne Bay, Morobe and New Ireland.

Although oil palm is a more sustainable producer of vegetable oil than other oil crops there has been growing concern that there should be proper regulation of the
The Roundtable on Sustainable Palm Oil (RSPO) was formed in 2004 to promote the growth and use of sustainable oil palm products (more on page 9).

The oil palm industry in PNG has been pro-active in the establishment of RSPO and is unique in that all oil palm growers in the country (plantations and smallholders) are participants in the RSPO. The RSPO focuses on safe, legal, economically viable, environmentally responsible, socially beneficial and transparent management practices and operations.

Many of the principles of the RSPO can be directly applied by smallholders, whereas others will require new information, novel approaches to extension, a very good knowledge of social behaviour in PNG rural societies and excellent planning. While the RSPO has principles and criteria for sustainability, there is a need to develop measurable indicators that can underpin certification. The challenges are to produce meaningful, scientifically-based and practical indicators of sustainability that are applicable and beneficial to smallholders and plantation estates, and can be audited in a quantifiable manner.

The ACIAR Project, Sustainable management of soil and water resources for oil palm production systems in Papua New Guinea (SMCN/2009/013), is addressing a number of the challenges of producing indicators by creating a greater understanding of environmental sustainability through soil and water resources management. The results of the project will also be relevant to cocoa and coffee production in PNG as coffee and cocoa markets are increasingly demanding environmental certification.

The aim of the project is to improve the environmental sustainability and long-term viability of the PNG oil palm industry by establishing the use of practical and scientifically valid environmental sustainability indicators that will help guide continuous improvements in management practices. The indicators are intended for use under the auditing procedures of RSPO.

Mr John Siwisika, Mill Manager, showing Dr Nick Austin, ACIAR CEO, and Mr Les Baxter, PNG Regional Coordinator, PNG and the Pacific, round the Numundo Oil Palm Mill, West New Britain.
PNG Oil Palm—working together

There are many oil palm growers and related organizations in PNG and relationships between them are important for the success of the industry.

Two companies, New Britain Palm Oil Ltd. (NBPOL) and Hargy Oil Palms Ltd., own and operate all the plantations and mills that process fresh fruit bunches into palm oil in PNG. NBPOL also has a highly successful breeding and seed sales operation and operates palm oil refineries in PNG and the United Kingdom.

In addition to processing fruit from their own plantations, the companies pick up and buy fruit from the smallholders and provide smallholders with support such as credit for tools and fertiliser.

Smallholders, of which there are over 18,000, produce about 32% of PNG’s oil palm fruit on blocks of 2-6 ha. Those blocks are in land settlement schemes, on the smallholders’ own customary land (‘village oil palm’), or are operated under customary rights purchase agreements. Smallholders are represented by grower associations in each of the main growing or ‘project’ areas.

Three industry organisations operate at the national level. PNG Oil Palm Research Association (PNGOPRA) is a non-government organisation responsible for providing research and development and scientific technical services to all oil palm growers (smallholders and companies) in PNG. It is funded through a production levy so all growers have a stake in the research. Company and smallholder representatives are on the OPRA Board and, through a scientific advisory committee, they govern the research undertaken.

Secondly, the Oil Palm Industry Corporation (OPIC) is a statutory organisation charged with providing extension services to the country’s smallholders. The OPIC board is comprised of representatives from the smallholder grower associations, milling companies, PNGOPRA and the national government. It has a manager and extension officers in all growing areas.

Thirdly, the Palm Oil Producers Association (POPA) represents the interests of the milling companies.

At a local or ‘project’ scale, overall coordination of the industry occurs through local planning committees. Each Local Planning Committee is comprised of senior representatives from the local growers association (representing the smallholders), the local milling company, OPIC and PNGOPRA. In this way, problems such as local disputes, pest outbreaks, transport and logistical issues can be discussed and resolved.

The open communication and cooperation between industry organisations, smallholders and private companies is one of the key factors of commitment to working together is one of the key factors of success in the industry.

The project has 6 objectives:

- develop indicators of soil health
- develop indicators of nutrient balances
- develop indicators of C sequestration
- develop indicators of aquatic ecosystem health
- develop a crop system model that enables prediction of management effects on soil health, carbon sequestration, greenhouse gas emissions and nutrient balances
- test and implement an integrated package, and build institutional capability to maintain it.

Project methodology comprises of: a) choice of potential indicators based on current knowledge, b) process modelling and evaluation of indicators in the field, c) trial of indicators, and d) implementation of an integrated indicator package. Field work targets the main growing areas and environments in West New Britain, Oro and Milne Bay Provinces.

http://www.aciar.gov.au
RSPO - Roundtable on Sustainable Palm Oil

In response to the urgent and pressing global call for sustainably produced palm oil, the Roundtable on Sustainable Palm Oil (RSPO) was formed in 2004 with the objective of promoting the growth and use of sustainable oil palm products through credible global standards and engagement of stakeholders. The first RSPO certified palm oil entered the market in September 2008.

RSPO is a not-for-profit association that unites stakeholders from seven sectors of the palm oil industry – oil palm producers, palm oil processors or traders, consumer goods manufacturers, retailers, banks and investors, environmental or nature conservation NGOs and social or developmental NGOs – to develop and implement global standards for sustainable palm oil. Such multi-stakeholder representation is mirrored in the governance structure of RSPO such that seats in the Executive Board and project level Working Groups are fairly allocated to each sector. In this way, RSPO lives out the philosophy of the “roundtable” by giving equal rights to each stakeholder group to bring group-specific agendas to the roundtable, facilitating traditionally adversarial stakeholders and business competitors to work together towards a common objective and making decisions by consensus.

Why Sustainable Palm Oil?

Although oil palm is a more sustainable source of vegetable oil than other oil crops, there is concern that the growing demand of palm oil for food and biofuel could lead to rapid and ill-managed expansion of palm oil production and result in serious environmental and social consequences. The expansion of oil palm can also threaten biodiversity and have a drastic effect on endangered animal species such as the orang-utan, rhinoceros, elephant and tiger in Borneo and Sumatra. New oil palm plantations have also given rise to social conflicts with local communities who were displaced from their land without agreement nor compensation.

What is Sustainable Palm Oil?

RSPO has developed a set of standards called the Principles & Criteria that define the practices for sustainable palm oil production. These standards address the legal, economic, environmental and social requirements of producing sustainable palm oil, and are based on these principles:

1. Commitment to transparency
2. Compliance with applicable laws and regulations
3. Commitment to long-term economic and financial viability
4. Use of appropriate best practices by growers and millers
5. Environmental responsibility and conservation of natural resources and biodiversity
6. Responsible consideration for employees and for individuals and communities affected by growers and mills
7. Responsible development of new plantings
8. Commitment to continuous improvement in key areas of activity

Interpretation of these principles is done in congruence with the country’s laws, norms and values.

For more information see the RSPO website [www.rspo.org].
Taro is one of the trade-mark crops of the Pacific islands and surely every farmer in the region, supported by generations of traditional knowledge, knows how to grow it to perfection? Probably for the numerous smallholders still growing taro for their own families and communities, this is largely true.

Customary land tenure systems traditionally allow farmers to move to new land when soil fertility begins to fall and then provide a long fallow period for natural processes to replenish the richness of the soil, before the land is returned to cultivation. However, the situation has changed rapidly as economic pressures and market opportunities have encouraged farmers to produce more taro for growing urban markets and for export - without providing them with the technologies and incentives to take adequate care of the soil on which their livelihoods depend. And in the main taro-growing areas of Fiji and Samoa, the situation is reaching crisis point.

Fortunes have ebbed and flowed in the Pacific taro industry over many years. Fiji started exports of taro to New Zealand in the 1950s but severe floods in 1963 gave Samoa an opportunity to take over the market. Samoa’s exports reached a peak of almost 8,000 tons in 1989 but were already beginning to decline when, in 1993, disaster struck, in the form of a devastating epidemic of taro leaf blight, caused by the fungus *Phytophthora colocasiae*. In that year, Samoa exported taro worth over WST9.5 million, contributing more than half of its total exports. Yet only a year later, exports had fallen to negligible levels and even on the local market the supply of taro was estimated at less than 1% of what it had been.

Over the next several years, breeders struggled to find varieties of taro that were resistant to the blight. All of Samoa’s varieties proved susceptible to the disease but resistance was eventually found in varieties from Asia, after dozens of varieties had been exchanged and screened under TaroGen, the Taro Genetic Resources Project. These had rather different taste and texture from the varieties preferred by Samoans and it took several cycles of crosses and selection to come up with an acceptable combination of tuber type and disease tolerance. However, Samoa’s innovative Taro Improvement Program has delivered the goods (for more details see ACIAR’s *Partners* magazine) and the Ministry of Agriculture and Fisheries has recently approved five new varieties, two of which are particularly suitable for export.

Samoa is poised to re-enter the taro export market and the Ministry has been working closely with exporters to make sure that trial shipments meet quality and biosecurity standards. However, the situation in the packhouse reveals a more insidious problem that the leaf blight problem perhaps served to hide. While the new varieties are quite capable of producing fine corms, weighing in at over 1.5kg per plant, most of those arriving at the pack-house tip the scales at under a kilo each. So many are under-size or mis-shapen that as many as 40% fail to meet the exacting standards required for export. A scoping study funded by ACIAR has helped to reveal the cause: high levels of damage from soil-borne pests, especially nematodes.

The researchers, however, will not be reaching out for pesticides to tackle this problem. ‘High levels of soil-borne pests and disease like this are usually not the real cause of the problem’ explains Dr Mike Smith, from Queensland’s Department of Employment, Economic Development and Innovation, and leader of the ‘soil health’ scoping study (PC/2010/038); ‘they are the result of low soil fertility and symptoms of poor soil health’. He goes on to explain that when the level of organic matter in soils falls over several cycles of cultivation, there is a cascade of damaging effects: less water infiltrates into the soil and less is retained to support the crop during periods of drought; nutrients are not retained by the soil and made available to the crop; and the diversity of micro-organisms falls. In a healthy soil, these microorganisms control pests and
diseases; as the soil is degraded, all that are left are the pest and disease organisms that feed directly on the crop. The results are falling crop yields and falling quality of produce.

Fiji’s ‘garden island’ of Taveuni illustrates this syndrome all too clearly. When the leaf blight hit Samoa, Fiji stepped in to recapture the international taro trade and rapidly increased its exports to some 10,000 tonnes per year, currently worth about Fj$20 million. Of this amount, some 70% comes from the small island of Taveuni, previously known for its fertile farmland and lush, diversity-rich rainforests. But farmers there are now struggling with the same quality issues and pest problems as their counterparts in Samoa. Moreover, interceptions of nematodes and other pests in consignments entering New Zealand have led to frequent fumigations (costing extra money and reducing shelf life), while interceptions of rotten corms at entry to Australia have led to many shipments being ‘re-exported’ - in both cases threatening the profitability of the entire industry. Meanwhile, Taveuni has the highest rate of deforestation in the entire of Fiji, as farmers, desperate for fertile, pest-free ground, clear the trees.

Trees, however, may hold the key to redeeming the situation. A progressive farmers’ association, Tei Tei Taveuni, is already urging their fellow growers to pay more attention to the health of the island’s soils and to plant more trees. A full-scale ACIAR soil health project (PC/2009/003) about to be launched, based on the scoping study, will focus its efforts on trying to restore the organic matter in island soils. The project researchers, led by the Secretariat of the Pacific Community (SPC), in full participation with the Taveuni farmers and with support from the Fiji Department of Agriculture, and the Queensland soil health team, will seek out sources of sufficient quantities of organic matter. The leguminous ‘velvet bean’, *Mucuna pruriens*, grown as a ‘green manure’ is one possibility that is already being trialled. The project is going to add in new options, including residues from agroforestry trees and from coconut wood (available as a by-product from coconut replanting operations) and the project team, with the farmers as co-researchers, will compare the impacts on soil fertility and soil health. ‘We are confident that this organic matter, in one form or another, can restore the biological health of these soils - and with it the productivity of the taro’ asserts Mike Smith.

To be sure of a complete solution, however, ACIAR is launching another project, that will ensure that the taro travels a cleaner ‘pathway’ all the way from the farm gate, through the packing shed and docks, and on through shipping to the consumer. This second project (PC/2007/118), also led by SPC, will work with many of the same partners, in Fiji and Samoa, and will directly tackle the postharvest quality issues and biosecurity interceptions that are threatening the viability of the export industry.

‘We shall start by making sure that everyone understands the expectations of the importing countries and the responsibility of everyone along the chain in meeting those expectations’ explains Roy Masamdu of SPC, leader of the ‘cleaner pathways’ project. The pathway starts with healthier crops in the field and lower pest loads at harvest - an objective that the two projects will share. Then the partners will look for innovative ways of handling and disinfecting the produce, to reduce dependence on toxic, ozone-depleting fumigants, in particular the methyl bromide that is currently routinely used.

If these two projects, working in concert, can help deliver better quality taro, at a competitive price into Pacific markets, then there should be plenty of room for both Samoans and Fijians to make a good living from the industry - and without depleting the islands’ precious natural resource base.
Training

One of ACIAR’s key priorities is building capacity of agricultural research institutes in partner countries. This is done through formal and informal training. Formal training, through the training program, aims to enhance the research capacity of partner country institutions, by providing training to individuals involved in ACIAR projects.

The training program includes postgraduate and research management fellowships, and a small number of short courses that target specific cross-program issues.

Informal training is done through project-related, on-the-job training, including partner country scientists visiting Australia and Australian scientists visiting partner countries to present a training program on a specific technical subject as part of an ACIAR project.

More information on formal training is below.

John Dillon Fellowship

The John Dillon Memorial Fellowship provides career development opportunities for outstanding young agricultural scientists or economists from ACIAR partner countries, who are involved in a current or recently completed ACIAR project. Four to six Fellowships are offered annually.

The Fellowship aims to develop leadership skills in the areas of agricultural research management, agricultural policy and extension technologies. This is achieved by providing exposure to best-practice Australian agricultural organisations involved in research, extension and/or policy making.

The visit programs are tailored to meet the needs of individual Fellows and their employing organisation. Arrangements for the Fellowships are flexible, and the following points are intended to indicate features of the program:

- a 5-6 week period in Australia.
- hosting by 1-2 Australian organisations (such as a Federal Government Department, a University, a Cooperative Research Centre or State Department of Agriculture) where they spend at least 50% of their Fellowship period.
- participation in a formal research management training course in Australia.
- a structured program of visits to various institutes, including the presentation of relevant lectures.

John Allwright Fellowship

John Allwright Fellowships are awarded to scientists involved in ACIAR-funded projects to undertake postgraduate training, usually at the Masters or Doctoral level, at an Australian university. The primary aim of the Fellowship is to enhance research capacity in ACIAR’s partner country institutions.

Applications are welcome from scientists in most partner countries, including PNG and the Pacific.

JAF funding includes return airfares to undertake fieldwork in their home country, and fellows spend up to 50% of their project period on fieldwork in their home country.

Applications are accepted annually and the closing date is 31 July.

Further information, guidelines and the application form is available from the ACIAR website [www.aciar.gov.au/training/jaf], or by contacting the PNG country office (details back page) or Ms Sharon Harvey (details below).

Applicants are encouraged to ensure that completed applications including certified true copies of academic transcripts, degree certificates and referee reports from the Australian and partner country project leaders are received by the due date.

Project partners and collaborators are encouraged to inform the country office of changes in forwarding address’s as it occurs.

Returnee Small Project Awards Scheme

ACIAR has a small grants scheme for John Allwright Fellows who, after completion of their postgraduate studies, have returned to relevant employment in their home country. It provides grants of up to $10,000 for an activity that continues, or is related to, their postgraduate research. The funding grants are primarily aimed at developing small-scale research projects in the returnee’s institution, which may catalyse longer-term support.

Education and training contact

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http://www.aciar.gov.au
Life after the John Allwright Fellowship

Dr Jane Ravusiro, Head, Cocoa Quality, CCI

Dr Jane Ravusiro received a JAF scholarship in 2003. At the time, Jane was the acting Head of Cocoa Quality at the PNG Cocoa and Coconut Research Institute (CCRI). Jane’s PhD was on improving smallholder cocoa quality management practices and the issues with adoption of previous technologies.

‘I am reflecting on life after JAF with a smile, not just because of having completed my studies, but because no exit-briefing would have prepared me for the reverse-culture shock that was in store for me upon my return.

‘After 4 years, and a 6 months extension due to the Cocoa Pod Borer (CPB) outbreak in my research area, I returned to PNG armed with a load of confidence, experiences and new ideas to share with my colleagues back at my institute. However, “expect the unexpected” as the saying goes in PNG, became a reality for me. The atmosphere was that of uncertainty and insecurity in both the cocoa industry, through CPB, and the institute, through leadership instability.

‘The lessons I learnt personally and professionally during my PhD built up a level of resilience to withstand challenges.

‘I resumed work in my former position as acting Head of the Cocoa Quality Section. My first job was to restore order and security to my staff. I have been particularly strong on the importance of maintaining a sense of professionalism and certainty in the workplace.

‘The opportunities that JAF provided through my PhD studies have been twofold. I have improved my research and analytical skills which will enhance my career, and most importantly I developed the mental strength that will be with me as I continue my journey in PNG knowing that more challenges await me.

‘Finally, I would like to thank my supervisors Christine King and Smilja Lambert for their assistance throughout my studies as well as Greg Johnson, Kenny Francis and my family who enjoyed life in Australia while I studied.

Benefits of the John Allwright Fellowship

Dr Mark Ero, Entomologist, NARI

I successfully completed a PhD program at the Queensland University of Technology (QUT), Brisbane under the John Allwright Fellowship. The fellowship was awarded under the Oribius Impact and Management project (CS2/2001/032). The study lasted approximately three and a half years, starting in July 2005 and finishing in October 2008.

During this period, I investigated the host searching and utilisation behaviour of Diachasmimorpha kraussii, a wasp parasitoid of pest fruit flies.

The wasp is native to Australia, PNG and the Solomon Islands. Some of my major findings from the study were that eggs of the wasp were encapsulated in the larvae of some the fruit fly species; wasps showed preference different among infested fruits, and only cued to chemicals released by fruits during fruit fly attacks.

The implications to biological control programs of these findings are that egg-encapsulation sets limits for non-target effects and promotes host specificity (something which is a key element for biological control programs) fruit preference behaviour by the wasp is important for crop target release of the wasp, and the consistent use of cues released by the wasp during fruit fly attack shows that the wasps locate themselves to areas of high host abundance therefore minimizing unnecessary wastage of search time.

The skills learnt and developed during the study will become useful in any future research.

I am indebted to ACIAR for the award and I look forward to utilising the skills learnt and developed during the study to contribute towards the agricultural development of the country and the common goal of alleviating poverty.

NOTE: Dr Ero has since left NARI, he is now working at the University of Natural Resources and Environment (UNRE).
New in ACIAR

New publications

Relevant to PNG and the Pacific.

PARTNERS MAGAZINE

Partners Magazine November 2010—February 2011 PMg Nov10-Feb11, 31pp

CORPORATE PUBLICATIONS


ACIAR Annual Report 2009-10, AR 2009-10, 211pp

Adoption of ACIAR project outputs: studies of projects completed in 2005-06 D. Pearce and D. Templeton (eds), CP 43, 68pp. $43 (plus postage and handling)

ACIAR Corporate brochure, CP 42 8pp.

ACIAR Publications catalogue 2010, CP41, 123pp

ACIAR Annual Operational Plan 2010-11, AOP 2010-11, 152pp. (Online versions available in Bahasa Indonesia and Vietnamese)

FINAL REPORTS (AVAILABLE ONLINE ONLY)


IMPACT ASSESSMENT SERIES

Lessons learned from past ACIAR impact assessments, adoption studies and experience, D. Pearce, IAS 69, 35pp, $20 (plus postage and handling)

Benefit-cost meta-analysis of investment in the international agricultural research centres, A. McClintock and G. Griffith, IAS 68, 46pp., $35 (plus postage and handling)

The biology, socioeconomics and management of the barramundi fishery in Papua New Guinea’s Western Province, H. Fisher, IAS 67, 51pp., $37 (plus postage and handling)

MONOGRAPHS


TECHNICAL REPORTS


Balsa: biology, production and economics in Papua New Guinea, S. Midgley, M. Blyth, N. Howcroft, D. Midgley and A. Brown, TR73, 100pp. $25 (plus postage and handling)

ACIAR’s distribution policy

ACIAR provides complimentary copies of its publications to developing-country libraries, institutions, researchers and to scientists involved in ACIAR projects. For enquiries about complimentary copies, please contact ACIAR’s

For other customers, please use our online ordering facility at www.aciar.gov.au, or direct enquiries to our distributors, National Mailing & Marketing, PO Box 7077, Canberra BC ACT 2610, Australia, Ph: +61 2 6269 1055, Fax: +61 2 6260 2770, aciar@nationalmailing.com.au.

Copies of most publications are available as free downloads from the ACIAR website www.aciar.gov.au.
New projects

Relevant to PNG and the Pacific, activated since June 2010.
Accelerating economic development through engagement and development of local industry institutions in Pacific island countries [ADP/2010/024]
Increasing production from inland aquaculture in Papua New Guinea for food and income security [FIS/2008/023]
Impact, management and utilisation of invasive and exotic fish species in Papua New Guinea [FIS/2009/015]
Building mariculture capacity in Papua New Guinea [FIS/2010/017]
Asia-Pacific tropical sea cucumber aquaculture research symposium [FIS/2010/035]
Strategies for using floriculture to improve livelihoods in indigenous Australian and Pacific island communities [HORT/2008/011]
Testing and development of a tool for measuring capability-building among the field scientists [IAP/2010/086]
Developing cleaner export pathways for Pacific agriculture commodities [PC/2007/118]
Rehabilitating cocoa for improving livelihoods in the South Pacific [PC/2008/046]
Identifying pilot sites and research methods for soil health research in the Pacific [PC/2010/038]

For more information on these, or any other ACIAR projects or publications, please see the ACIAR website [www.aciar.gov.au].
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