



**SPC**  
Secretariat  
of the Pacific  
Community



**Pacific Islands Rural Advisory Services Network (PIRAS); Pacific Agricultural Plant Genetic Resources Network (PAPGREN); Pacific Agriculture and Forestry Policy Network (PAFPNet); POETCom; Reforestation Network (RFRNet); Pacific Animal Health Laboratory Network (PAHLNet)**

**REGIONAL RESEARCH - EXTENSION FORUM**

*Theme: Strengthening Agriculture and Forestry Research and Extension Linkages for Sustainable Food Security and Trade*

**24 – 28 August 2015  
Apia, Samoa**

**FORUM REPORT**



**Pacific Islands Rural Advisory Services Network (PIRAS); Pacific Agricultural Plant Genetic Resources Network (PAPGREN); Pacific Agriculture and Forestry Policy Network (PAFPNet); POETCom; Reforestation Network (RFRNet); Pacific Animal Health Laboratory Network (PAHLNet)**

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## ACRONYMS

ACIAR	<b>Australian Centre for International Agricultural Research</b>
APEAN	Asia Pacific Associations of Educators in Agriculture and Environment
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
GFRAS	Global Forum for Rural Advisory Services
HOAFS	Heads of Agriculture and Forestry Services
IACT	Increasing Agricultural Commodity Trade
ICT	Information and Communication Technology
IFPRI	International Food and Policy Research Institute
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
MAF	Ministry of Agriculture and Forestry
MOA	Ministry of Agriculture
MOAF	Ministers of Agriculture and Forestry
NARI	National Agriculture Research Institute
NGO	Non-government organisation
PAFPNet	Pacific Agriculture and Forestry Policy Network
PAPP	Intra-ACP EU Pacific Agricultural Policy Project
PICT	Pacific Island Countries and Territories
PIFON	Pacific Islands Farmers Organisations Network
PIURN	Pacific Island Universities Research Network
REAS	Research, Extension and Advisory Services
R&D	Research and Development
SME	Small to Medium Term Enterprises
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
SROS	Scientific Research Organisation of Samoa
USAID	United States Agency for International Development
USP	University of the South Pacific
WIBDI	Women in Business Development Inc.

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## SUMMARY

### **Overview**

The Forum was held in Apia, Samoa on 24-28 August 2015 on the theme of *Strengthening Agriculture and Forestry Research and Extension Linkages for Sustainable Food Security and Trade*. The Forum was organised by the Secretariat of the Pacific Community (SPC) in collaboration with the Government of Samoa and the Scientific Research Organisation of Samoa (SROS). Funding support was provided by the Intra-ACP EU Pacific Agricultural Policy Project (EU-PAPP) and the International Food and Policy Research Institute (IFPRI) through the Global Forum for Rural Advisory Services (GFRAS). Additional funding was also provided by FAO, Asia Pacific Associations in Agriculture and Environment Inc. (APEAEN) and USAID. The Meeting was attended by Government Heads of Research & Extension Services and a wide range of stakeholders including, tertiary institutions, farmer organisations, private sector, NGOs, research institutions and key development partners (Annex 3).

The Forum was organized around key thematic priority areas related to strengthening Research, Extension and Advisory Services (REAS) at both the national and regional levels. The programme containing these thematic priority areas are enclosed as Annex 2. The REAS priorities discussed throughout the sessions were distilled and further prioritized to form regional priority areas to strengthen research and extension in the Pacific.

### **Official Opening**

Agriculture is critical in achieving sustained growth, trade development and poverty alleviation in the region, said Samoa's Minister of Agriculture and Fisheries, Hon. Le Mamea Ropati, in opening the Forum. Le Mamea acknowledged the support of the European Union, and the Global Forum on Rural Advisory Services (GFRAS), for the assistance to Samoa to host the forum. He also acknowledged the Secretariat of the Pacific Community (SPC), Scientific Research Organisation of Samoa (SROS), the University of the South Pacific (USP) and the Ministry of Agriculture for coordinating the event. Agriculture is the biggest sector worldwide, yet ensuring sustainable agriculture remains a great task, said Ms Natalie Ernst, Deputy Executive Secretary, GFRAS, in the keynote address.

### **Forum Proceedings**

The opening was followed by plenary sessions outlining the context and challenges facing agriculture research and extension in the Pacific islands region. Regional highlights and country presentations highlighted key challenges and priorities facing research and extension at both country and regional levels. Thematic parallel sessions were held on day 2 further highlighted key challenges, priorities and partnership opportunities to strengthen research and extension in the region. Outcomes of day 2 parallel sessions were distilled and parallel priority setting exercises were held on day 3 with one session parallel session focused on priority setting for extension and development of a framework for regional extension strategy and the concurrent session focused on research priority setting for crops, livestock, agroforestry and private sector partnership support areas. A final plenary on the fifth day concluded the Forum, adopting the Forum recommendations and outcomes (Chapter 6 & Annex 1).

### **Field Trip**

The Forum also involved field trips to selected sites to observe Samoa's experience and efforts in strengthening research, extension and private sector linkages to promote food and income security in Samoa. Field trips were made to a food security and climate change project; poultry and vegetable farms; crop research; virgin coconut oil (VCO) and dried banana projects; a commercial VCO operation, and SROS (Annex 2).

### **Side Events**

**International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) Update:** In 2012 the 3<sup>rd</sup> Meeting of Ministers of Agriculture and Forestry (MOAF) called on Pacific Island countries and territories that have not yet ratified the ITPGRFA, to do so. This will improve access to more diverse resilient germplasm via the Treaty's Multilateral System. A number of Pacific Island states have yet to join the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). A side event

was held on the evening of 25<sup>th</sup> of August which included countries who have not ratified the Treaty provided update on their progress towards ratification. Highlights of benefits of being members were highlighted by selected countries who have ratified and benefited from the Treaty.

***The Pacific Islands Rural Advisory Services network (PIRAS)*** formerly known as the Pacific Islands Extension Network (PIEN) was revived and launched on the evening of 26 August 2015. A Board representing the three Pacific Subregions (Micronesia, Melanesia, Polynesia), Private Sector, Farmers Organisations, Universities and SPC, was appointed to provide direction for PIRAS future activities (Refer to Ch. 4&6 and Annex 1).

### ***Outcomes***

The Forum adopted the Apia Communiqué calling on a number of actions to be undertaken regionally to strengthen research and extension linkages (Annex 1). The forum also agreed to a regional priority areas and a draft framework to guide the development of a Regional Extension Strategy, and opened for further consultation.

### ***Closing***

The Forum was officially closed by the Hon. Fa’amoetaulua Lealaiauloto Taito Nanai Dr Fa’ale Tumaali’i, who welcomed the strengthening of links to support farmers and contribute to national development efforts. The Secretariat of the Pacific Community, on behalf of the co-organisers, sincerely thanked the donors for their assistance with the Forum, and also thanked the participants for their valuable contributions.

## 1. OVERVIEW

The Regional Forum was held in Apia, Samoa on 24-28 August 2015 with the theme of *Strengthening Agriculture and Forestry Research and Extension Linkages for Sustainable Food Security and Trade*. The Forum was organised by the Secretariat of the Pacific Community (SPC) in collaboration with the Government of Samoa and Scientific Research Organisation of Samoa (SROS). Funding support was provided by the Intra-ACP EU Pacific Agricultural Policy Project (EU-PAPP) and the International Food and Policy Research Institute (IFPRI), through the Global Forum for Rural Advisory Services (GFRAS). Additional funding was also provided by FAO, Asia Pacific Associations in Agriculture and Environment Inc. (APEAEN) and USAID. The Meeting was attended by Heads of Research, Extension and a wide range of regional stakeholders including, tertiary institutions, farmers, farmer organisations, private sector, NGOs, and development partners (Annex 3). The Forum discussed priority challenges and opportunities related to Research, Extension and Advisory Services (REAS) at both national and regional levels, and listed priority research areas. The Forum adopted the Apia Communiqué. A draft framework for a Pacific Regional Extensions Strategy was developed and circulated for further consultation, ahead of a final document later this year.

## 2. DAY 1: PLENARY SESSIONS

### 2.1 Session 1: Official Opening

Agriculture is critical in achieving sustained growth, trade development and poverty alleviation in the region, said Samoa's Minister of Agriculture and Fisheries, Hon. Le Mamea Ropati, in opening the Forum. A strong and diverse agriculture sector is our best defence against the impacts of climate change, while meeting food security needs, and contributing to GDP. Shrinking national budgets to national extension has meant new actors have emerged to fill the gap in this service for farmers. Most are private advisory services which tend to be market-driven and export-focused. Le Mamea acknowledged the support of the European Union, and the Global Forum on Rural Advisory Services (GFRAS) for the assistance to Samoa to host the Forum. He also acknowledged the Secretary of the Pacific Community (SPC), Scientific Research Organisation of Samoa (SROS), the University of the South Pacific (USP) and the Ministry of Agriculture for coordinating the event.

Agriculture is the biggest sector worldwide, yet ensuring sustainable agriculture remains a great task, said Ms Natalie Ernst, Deputy Executive Secretary (GFRAS), in the keynote address. Rural advisory services are fundamental in supporting people to deal with existing and new challenges, to improve the livelihoods of rural people worldwide, and to address hunger and under-nutrition. Extension services today face new technical challenges, but are also requested to advice on topics that are not in the traditional field of agronomics. This might include health and nutrition issues, gender aspects, managing employees and incomes, and helping with ICT.

The Forum is an opportunity to forge a workable vision and practical future for Research and Extension advisory services in the Pacific region, said Dr. Ken Cokanasiga, SPC, in his welcoming remarks.

### 2.2 Session 2: Introductions

The participants introduced themselves before the main sessions began. SPC said the Forum brought together Pacific REAS and key stakeholders to explore ways of strengthening REAS linkages in order to effectively respond to the farming community. Some concepts around the theme were outlined by USP including to embrace challenges and understanding anticipated risk and linkages amongst systems components to address them through solution focus approach and effective strategies partnerships for efficient implementation. All presentations and documents can be accessed from [www.spc.int/pafpnet/](http://www.spc.int/pafpnet/) except for those delivered without notes. Below are some key highlights from the presentations and discussions.

### 2.3 Session 3: Status of Extension and Advisory Services in the Region

The session focused on setting the scene for the week with highlights of key issues and challenges for research and extension at the regional (including some global highlights) and national levels.

#### *Presentation 1: Highlights of past Extension Reviews in the Region (Extension Summits, 2005 and 2009) – by Seumanutafa Dr Malcolm Hazelman.*

The presentation highlighted the common socio-economic challenges that have direct bearing on REAS across the Pacific including geographical, population growth, changing lifestyles and climatic issues. The highlights then focused on extension situation and challenges which are not only common across the region but have been the reality over the past years. Advisory services have evolved over the years and are mainly focused on government needs such as food security, pests and diseases, globalisation, environment and quality concerns. Recent changes include pressure from government budget cuts, environmental and social concerns, emerging ICTs, and the growing role of the private sector and other partners in service delivery which calls for a new paradigm shifts and new solutions to collaboratively address these and emerging challenges. The presentation further highlighted history of regional efforts and decisions on recognising the need to strengthening effective agricultural extension approaches and methods to effectively support economic growth.

#### *Presentation 2: Overview of a Pacific Extension Strategy by Dr. Salend Kumar, Dr. Christine King, Dr. Chris Jacobson, Consultants, PAPP, SPC).*

The presentation highlighted that issues facing extension services in the Pacific have been identified and most of these challenges remain unchanged. Extension services face structural changes and there is an increasing role by the private sector and other providers. The presentation also highlighted an SPC-led review of capacity constraints for extension services in the region which identified a range of capacity issues ranging from technical, facilitation and management issues. Other issues are less clear, including the need for a better understanding of the public-private sector opportunities, and the overarching strategies and methodologies. The presentation also highlighted some approaches and models and the pros and cons that being promoted in other regions or globally including, PRA, farmer driven process, public private partnership funding schemes, fee based systems and input suppliers and innovation systems approach.

#### *Presentation 3: Research priorities for Agriculture by Sub-Sectors (Crops, Livestock and Agroforestry): Agricultural production in the Pacific in Crisis - Siosua Halavatu, SPC.*

Achieving food and income security will become harder with a range of issues the region faces. These issues include, declining per capita crop production in nearly all Pacific countries over the past decade, soil health issues, pests and diseases remain a concern, agro-biodiversity lost, and climate change poses further challenges.

#### *Presentation 4: Australian Centre for International Agricultural Research in the Pacific by Dr Richard Markham, Dr Peter Horne, ACIAR.*

Australia's aid programme is based on promoting prosperity, reducing poverty and enhancing stability. ACIAR's Mission is to achieve more productive and sustainable agricultural systems for developing countries and Australia through international agricultural research partnerships. The aim is to generate new technologies, new knowledge, greater capability and better decision-making; and more-productive and sustainable agriculture for the benefit of farmers and consumers in developing countries and Australia. The focus areas include crops; livestock and fisheries; natural resources and forestry; socioeconomics and policy; developing market opportunities for smallholder farmers; cross-disciplinary and interdisciplinary research approaches; work through others to achieve up-scaling and broader development.

### 2.4 Session 4 & 5: Global and Pacific Good Practices

The session involved first, highlight of global initiative good practice notes to set the context followed by



presentations on research and extension programs from selected countries from the three sub regions (Micronesia, Melanesia and Polynesia).

*Presentation 5: Overview of GFRAS Global Good Practice Initiative by Natalie Ernst, GFRAS*

The presentation highlighted that sharing lessons and practices helps farmers to make informed decisions and avoids repeating mistakes. This has a positive impact on effectiveness, sustainability and profitability. Best practices depend on the context of social, cultural, economic and political factors. Information is available but is often difficult to access or understand. Advice should be user-friendly. GFRAS' Initiative on Global Good Practices aims at documenting best practices which countries can modify to the different local contexts. Over twenty notes have been published on GFRAS page.

*Presentation 6: Research and Extension Programmes in Papua New Guinea by Dr Ramakrishna Akkinapally, Deputy Director General, National Agricultural Research Institute, PNG*

NARI is focused on agricultural (applied and adapted) research for development. The agriculture sector is the biggest source for Small to Medium Enterprises (SME) development. NARI is responsible for providing technical, analytical, diagnostic and advisory services and up to date information to the agriculture sector in PNG and currently focusing on Food Crops and Livestock. The goal is for a world class sector that provides the best available income and job opportunities. The target is to transform 70% of subsistence farmers into SME. The programmes focus on technology development in agricultural systems, policy enabling programmes and information packaging and dissemination through partnership with government and non-government stakeholders including the farming community and other development partners. Each programme has a number of sub-programmes and have identified priority project and project portfolios through NARI's Results and Strategic Framework. Priority setting on research is determined through agriculture development domain which represent clusters of people that shows realisation in agriculture potential, market access and population density. Key challenges include funding, policy support and the coordination of transfer of technology through district centres.

*Presentation 7: Research and extension programmes in Samoa by Kuini Asora Finau, Scientific Research Organisation of Samoa; Misa Konelio, Ministry of Agriculture, Samoa.*

SROS, established in 2006, has 5 main objectives and 7 functions including (i) contribute to the economy through R&D and value adding; (ii) create partnerships with relevant stakeholders –public, private and development partners; (iii) contribute to development of our current and future research scientists; (iv) conduct outreach programmes to disseminate research information; (v) conducts scientific research and develops technologies. The focus is on value adding of selected commodities including, breadfruit flour and avocado oil, avocado margarine and coconut oil refinement, PARDI Taro screening taro lines, vegetables postharvest loss and quality assessments, frozen commodities for export, cocoa research, fruit spirits, and soil improvement technologies. The outcomes have great value in the development and sustainability of value-added goods and services for export and local markets. They also help to reduce fuel imports and greenhouse gas emissions.

MAF extension services in the 1980's in Samoa were district-based. The approached has changed to a crop-based system with advice for specific crops from husbandry to market. In 2010-2015 rural stations were renovated and used for training. MAF is promoting more partnerships with the private sector, NGOs, farmer groups, etc. with donor support. Current research focus on applied and adapted research approach on crop production, plant health and promotion of new technologies including on-farm trials to identify improved varieties of crops, pests and disease diagnosis and control and new production technologies such as tunnel & irrigation systems. Extension services are decentralized at rural stations and common approach for information dissemination is training and visit, on farm trials demonstration farms and farmer field schools. Most of the programmes are supported by donor partners such as EU, Global Forum on Rural Advisory Services, SPC, FAO, AusAID, ACIAR, Global Crop Diversity Trust, WB and Chinese Govt.

*Presentation 8: Research and extension programme in Fiji by Vinesh Kumar, Crops and Extension, Ministry of Agriculture, Fiji.*

The Ministry of Agriculture focuses on 7 divisional mandates with priorities guided by the government policies and through consultations with clients. Research is conducted mainly at either on farm trials or at research stations. Technology transfer is through several established platforms including, extension district offices, pilot farms, PRAs, demonstration stations, farmer field schools, farmer workshops, symposiums, seminars, social media and agricultural shows. There are several challenges including limited financial, physical and human resources; aging farmers, urban drift and labour shortages; competition for land, water, energy and labour; weather events; biosecurity threats; market access and economies of scale. There is room to increase budgets, design better policy, explore new markets, increase mechanisation, and work with other partners. About 86% of land is native land, which can be leased.

*Presentation 9: Cooperative Research and Extension Programs/Land Grant Programs – Walter Currie, Federated States of Micronesia.*

The Cooperative Research and Extension (CRE) is based at the College of Micronesia-FSM (COM-FSM) with a national campus in Palikir, Pohnpei, and a state campus in each state. The programmes include aquaculture; global food security and hunger; climate change; youth, family and communities; food safety and childhood obesity. Currently, research priorities are commodity based with linkage to extension programmes focusing on several thematic programmes including, food security, nutrition and climate change. The challenges include limited capacity with one researcher per state, aging agents and farmers, low salary, budget limits, geographic size and technology needs. Most funding is provided through USDA and other development partners.

*Presentation 10: New Caledonia Research and Extension Programs (Joint Presentation), Dr Valerie Kagy, IAC, Plant Pathologist/Team Leader, Applied Entomology, Dr Christian Mille, Entomologist/Team Leader, Applied Entomology.*

The focus is on food and nutritional security, sustainable agriculture, human impacts, climate change and social equilibrium. Research prioritization starts with a Strategic Orientation Committee (COS), which gathers all the demands from the provinces (political and technical people), Chamber of Agriculture, and the Government of New Caledonia. The four domains on which the IAC will work are: Genetic Resources, Valuation and Conservation, Functioning of Natural and Cultivated Ecosystems, Biologic Interactions (Hosts/parasites, pests/plants, mycorrhizae), New Ruralities, Social production and consumption forms. Significant meetings are currently organized to set up bipartite MOU to supervise some traineeships or for the transfer of technology from the research to the final users (farmers and extension services). A Scientific Council (CS) is formed with 6 elected IAC researchers and 6 external researchers who translate the several demands in research questions. The demands in the COS report are discussed to build the programming for the next five years. The process ends with an external evaluation by the Scientific Evaluation Council (CES). The challenges include training of staff, streamlining the use of research sites, exploring innovative genetic resources, developing bio-controls for crop pests and invasive species, raising awareness on specific issues, and increasing the participation of extension services and farmers at technical meetings and forums.

### 3. DAY 2: PARALLEL SESSIONS

The parallel sessions involve two thematic sessions on extension (Session A) and research (Session B) happening concurrently in two separate rooms. The key highlights from the sessions are discussed below.

#### 3.1 Session A: Extension Parallel Sessions

##### 3.1.1 Session 1A. Industry Focused REAS

It is increasingly recognised the need to articulate the needs and priorities of the private sector and the farming community in the area of research and advisory services and the emerging role and involvement of the private sector and NGOs in research and extension services. The plenary session involved selected private sectors experience to speak on the needs based in research and extension to meet the emerging challenges on market and food security needs.

##### *Presentation 1: Regional Perspective by SPC*

Half the Pacific Islands population is rural. Most of the island countries face urban drift for better opportunities, despite a small market for formal employment. Most farming is subsistence. Financial institutions tend to shy away from investing in agriculture, as many farming options can be affected by weather and climate events, along with other risks such as pests and diseases. Agriculture programmes are usually led by government, though there are growing partnerships with the private sector. Product development, packaging and marketing are specialist skills that are often beyond the normal farming advice. Some of the gaps in services are being met through partnerships, as neither the government nor private sector has all of the resources required for driving agriculture programmes.

##### *Presentation 2: Kaiming Agro Processing Ltd - Calvin Kaiming Qui*

The key highlights from the presentation include, constraints for small-medium business to access finance and equipment. KAP Ltd received a Fiji government grant to help with equity for finance and expanded from growing into processing. High standards and certification are important to get into export markets. Branding of Fiji ginger and other products is very important. Good market research is vital, and is mainly a job for the private sector.

##### *Presentation 3: Extension Division (Crop/Livestock), Ministry of Agriculture, Fiji.*

There is a thin line between handholding and a handout. The subsistence level relies on extension services. Semi-commercial operators are more active as partners. The commercial farmers are more market-driven and export-focused. It is becoming harder to provide advice due to a lack of resources while a multitude of challenges. More collaboration on research and extension is needed, along with a more integrated research database.

##### *Presentation 4: Food Safety and postharvest management systems in response to market driven demands - Fereti Atu, SPC.*

The presentation highlighted that the more use pesticides, the more resistance the pests become. Good farming practices are not always followed, and that more resistance is developing from high pesticide use. Currently the quantity of pesticides being used is unknown, nor how many health cases are linked to pesticide use. Food safety systems require analytical data on foods, and risk assessments can help to identify hazards.

##### *Presentation 5: Ministry of Agriculture, Samoa - Parate Matalavea.*

On-farm research is being promoted to support implement the ministry's research programme. A more market-oriented approach is needed for some of the crops, as planting patterns should link to the market. Local farmers compete with food imports, so there is an opportunity to supply more of the local market. Common problems include access to water, high cost of inputs, and oversupply of products on to the local market, seed quality and rocky terrain.

*Presentation 6: PIFON Chair, Samoa Farmers Association Chair by Toleafoa Afamasaga.*

The Pacific Islands Farmers Organisation Network advocates for farmer in areas such as training. PIFON works with partners on farmer to farmer exchanges, and other activities. A lot of research is being done in the region but results often not relevant or not reaching farmers more effectively. Collaboration helps to cover the lack of capacity. The media is a good tool but it can also be destructive, especially social media.

*Presentation 7: Women in Business Development Inc. by Faumuina Felolini, Samoa.*

A Samoan model of development must take into account Samoan values. The most vulnerable people need incomes to increase self-reliance and independence. WIBDI works with 1,200 rural families in projects such as microfinance, fine mats, handicrafts, organic farming. People should choose what they want to do. People need to own their own success and failure. In the private sector, this is a normal part of research and development. Learn from mistakes.

A panel session was held after the joint presentations and key issues highlighted revolved around food safety, including lack of information and studies on chemical residues in food. Paraquat takes six years to neutralise in the soil. Organic growers address this by avoiding chemicals. One problem is that some markets require chemical treatment for specific products, such as spraying for fruit fly. Another issue is food poisoning, which is more about better hygiene and food handling practices.

### 3.1.2 Session 2A. Livestock REAS Needs and Priorities

The main objectives of the session were:

- a. To share knowledge and experiences of resource people involved in livestock REAS;
- b. To identify gaps and challenges in the current REAS practices for livestock development;
- c. To identify opportunities on how best to link REAS to livestock sector development;
- d. Networking with conference participants and potential donor agencies and resource people.

*Presentation 1: Private sector and Livestock REAS - Simon Cole, Fiji Crop & Livestock Council*

Some research is too ethereal and its relevance to farmers is unclear. Ask farmers what they want researched. There is a huge disconnect between research, extension and practical farming. In the private sector, the questions are financial. Farmers need to know how research increases profits. More research should be done at the farm level. Results must be replicable and practical.

*Presentation 2: Animal genetic resources development in PICTs – Dr Ken Cokanasiga, SPC.*

The genetic diversity in the Pacific is largely unknown. One issue for promoting animal genetic resources is that exotic breeds are preferred over indigenous livestock and poultry breeds. Research could cover suitable local feeds, more climate resilient breeds, cost benefit analyses of native and commercial breeds, traditional knowledge, and an inventory of indigenous animal genetic resources.

*Presentation 3: Use of local feeds for poultry, pigs and inland fish in Papua New Guinea – Dr Pukah Kohun, National Agriculture Research Institute, PNG.*

Activities include promotion of local feeds, training and marketing advice, and feedback into research priorities. Local feeds have potential but their use is limited by variable nutrition, high fibre content, anti-nutrition properties and unreliable supply. The most popular meat is chicken but low cost imports mean many smallholder farmers are struggling. There is great interest in mini feed mills, to help with research on local feed for poultry, pigs and fish.

*Presentation 4: Livestock Waste Management - Regional Situation and Perspective - Andrew Tukana, SPC.*

The main waste management concerns are with pigs and dairy cattle. When wastes are not disposed of properly, this adds to air pollution, land and water, and may also spread disease. Waste management systems include soaking pits, composting and biogas digesters. These reduce the risk of disease and

pollution. The use of biogas fuel has low acceptance, due to a cultural reluctance in some countries to use manure by-products for cooking.

*Presentation 5: Animal Welfare and livestock husbandry practices – a regional perspective - Andrew Tukana, SPC.*

Better animal welfare is hindered by a lack of legislation or poor enforcement, a lack of awareness, public expectations that animals fend for themselves, and a view that the welfare of people comes before animals. However, good animal welfare has many benefits. These include better performance, higher productivity and quality, and less risk from hungry strays.

### 3.1.3 Parallel Session 3A. ICT, IKM Linkages to REAS.

Farmers want face to face contact, but extension services have been reduced or removed from agriculture ministries. New ways of engaging with farmers and passing on information are needed, including partnering with the private sector, NGOs and other providers. The communication tools should be affordable and easy to use. The session involved plenary presentations on strengthening the linkages between research and extension on technology diffusion and adoption to strengthen their impact on agricultural production and productivity.

*Presentation 1: Immersions in the Rural Villages – Tokintekai Bakineti, Kiribati.*

The Kiribati islands are small and scattered which makes communications difficult. Considering these challenges, Kiribati has adopted an immersion approach as the participatory tool that promotes empowerment, encourages the pooling of resources and helps with capacity building. Challenges include the lack of a clear roadmap, lack of focus of staff, unclear guidance of the process, and limited budgets.

*Presentation 2: Transforming Agricultural Knowledge - Tommy Tumaalii, MAF, Samoa.*

Advisory services help farmers to build up their skills and knowledge. Activities include visits, training and working with other partners. Challenges include the high cost of inputs, costly access to the Internet, limited transport and limited capacity to deliver.

*Presentation 3: Extension focus - Michael Ho’ota, Ministry of Agriculture and Livestock, Solomon Islands.*

Activities include farmer field schools, tours, farm shows and farmer-to-farmer training. Communication tools include e-newsletters, radio programmes and library. Challenges include limited resources, geography, land tenure, few roads. Getting the message out is everyone’s business, not just the extension officers.

*Presentation 4: Plant Health Clinics - Grahame Jackson, Australia.*

Plant health clinics are run at markets, training centres, farm shows, etc. Farmers bring samples of their plant pests and diseases, where advisors give management options. Photo summaries helped to build a database. A pilot scheme in Solomon Islands has 20 clinics on two islands. Staff are trained in pest identification and management. There are now over 200 factsheets.

*Presentation 5: Samoa Coconut Products - Tuilagi J Bartley, Samoa.*

SCP produces coconut oil mostly for export. A range of value-added products is being developed, such as coconut oil for cooking.

*Presentation 6: METI - Dr Vermuelen, Samoa.*

METI is a non-formal learning provider with a focus on promoting adult or ‘Second-Chance’ education. Activities include creating coral gardens on damaged reefs, bamboo crops, mushroom farming, a sleep clinic, and the promotion of healthier diets and lifestyles.

*Presentation 7: The use of mobile phone technology in animal health reporting in Papua New Guinea - Dr Nime Kapo, National Agriculture Quarantine & Inspection Authority.*

The use of mobile phones has helped with animal health reporting in PNG. Competition has expanded mobile coverage and lowered prices. A phone app has speed up the reporting. There are some weaknesses due to low literacy among older staff, IT support only at head office, dead spots in coverage, lack of power, and loss of phones or staff.

*Presentation 8: Samoa Livestock - Leota Pelesa, Livestock, MAF, Samoa.*

Almost all livestock and poultry meat is imported. Local cattle are mostly used for customary obligations. About 70% pork is local, but all poultry meat is imported except for 0.05% of local chicken. Local chicken farms cannot compete with cheap subsidized chicken imports from the US.

*Presentation 9: Tonga Extension - Emanuel Mo'ale, MAFF, Tonga.*

The information section aims to produce timely and accurate information for farmers on various topics. There is limited capacity to collect and evaluate data to determine priorities. Other challenges include a need to revive cooperation with other divisions, a lack of information materials, and the need for continued staff training.

*Presentation 10: The role of mainstream media in transforming agricultural knowledge: Samoa TV and Radio - Merita Huch, TV1, Samoa.*

The priority is local news, public awareness and sports. There are some programmes on farm-related items. TV1 will be going online soon to expand its audience and improve access. The TV station is open to partnerships to highlight farming issues.

*Presentation 11: Communications - Nanette Woonton, Makelesi Gonelevu, Secretariat of the Pacific Regional Environment Programme.*

Messages are tailored to a wide range of audiences. Challenges include a small team, budgets, limited monitoring and evaluation, getting technical information to a non-technical audience, and too much information. When transforming knowledge, think of it from the start and plan early. Project donors like to be acknowledged. Know how to use the media – news is free, if it is a story. Challenges include high cost of internet and low bandwidth, barriers to data sharing (ownership), gaps in technical capacity, sustainability. Lessons include strengthening data collection and information management, partnering with other organisations, and exploring social media for outreach.

*Presentation 12: FAO strengthens National and Regional partnerships – Richard Crichton, Food and Agriculture Organisation of the United Nations.*

Internal forums support research and extension. An online library acts as an institutional memory for the organisation. FAO has an active social media profile as well as smartphone apps for various topics. In the Pacific, Internet is costly.

Key recommendations from the session include:

1. Extension communications through personal (groups, individuals) and media and ICT.
2. Farmers prefer personal communications for knowledge transfer.
3. Identify farmer information needs.
4. Communications is about human interaction, and ICT just a tool to enhance communications.
5. Transforming knowledge is everyone's business – government, NGOs, farmer groups, commercial industry.
6. Develop policy guidelines on use of ICTS for extension and advisory.
7. Use multidisciplinary approach to information dissemination, and incorporate traditional forms of media (radio, TV, extension materials).
8. Subsistence farming need access to good advisory services to maintain its critical role as the safety net for family food security.

9. Note of shared on-line information database (PNG and Sols).
10. To reach the global audience, social media is the preferred platform connecting audiences in real time.
11. Extension should know how to use mainstream media - news is free, but link to your agriculture activities and look for a human interest angle (poverty alleviation).
12. Make better use of public private partnerships (NGOs, farmer groups, faith-based) to fill gaps in advisory services.
13. A lot of research is done, but much of it fails to reach farmers. Transform scientific knowledge to farmer level.
14. Research results must be practical, affordable and show value for farmers.
15. Product development and branding is key, as is the 'story' of the product.
16. Market research is the job of the private sector, not government.
17. Include R&D in planning and collaborate more with other partners.
18. People should own their successes and failures. Mistakes are just R&D.
19. Link the growing to markets, rather than just growing what can grow.

### 3.2 Session B: Research Parallel Sessions

#### 3.2.1 Session 1B. Role of Academia in Strengthening Agriculture Innovation Systems.

This session on the *'Role of Academia in Agriculture Research and Extension'*, Chaired by Mr. Viliamu Iese, Research Fellow, USP, brought focused on academic institutions, both regional and national, public and private, community and grassroots, and discussed the current context of the academic institution with respect to the roles it has in the delivery of appropriate training and research that supports the demand for effective and efficient extensionists and researchers, and how it might tackle the challenge of meeting the demand for qualified professionals in the Pacific to deliver such services.

#### *Presentation 1: Tertiary Agriculture Education, Research & Extension – Dr Sonny Lameta, USP School of Agriculture and Food Technology.*

USP is owned by Member Countries. The main aims are to build capacity for inter-disciplinary research, and get the results out effectively. Currently, The core agricultural issues are climate change, food security and income generation. Stronger links are needed between research and extension, which requires good partnerships.

#### *Presentation 2: Role of Academia in Agricultural Research and Extension – Prof. Alan Quartermain, University of Goroka, Papua New Guinea.*

Education is key, from primary to secondary level. Academia must be active in helping to formulate policies. Some care is needed to get the balance right. Capacity building is needed for extension officers, as some are not trained to communicate effectively to farmers.

#### *Presentation 3: Agricultural science in Samoa school curricula – Falana'ipupu Tanielu Aiafi – Ministry of Education, Sports and Culture, Samoa.*

This subject is optional in the last two years of secondary school. Challenges include not enough teachers for the subject, lack of awareness or interest in agriculture among parents and students, and limited funding. More schools are teaching the subject, requiring more trained teachers and funding.

#### *Presentation 4: Land Grant Colleges – Walter Currie, Federated States of Micronesia.*

The courses are mainly practical learning with summer internships and scholarships also available. These credited programmes can be accumulated to associate degrees in agriculture and natural resources and certificates in agriculture and food technology. Efforts to strengthen enrolment rates and motivation for students is job training and scholarships.

*Presentation 5: The role of academia in REAS – Dr Bukola Babatunde, Fiji National University.*

The research and extension link at FNU is weak as the first priority is education and training, followed by research, and then extension. Stronger linkages, and better communication, are needed between research and extension.

**Key Recommendations**

1. Establish and strengthen the linkages between Academic and training institutions and the National Agriculture Ministries to provide targeted capacity building and research to support REAs.
  2. Ensure Relevance of Academic and training institutions programs (Teaching and Research) to both national and regional REAs need (ongoing support for REAs staff through internships, short technical courses, attachments and exchanges).
  3. Review and create relevant pathways to disseminate agriculture research information to relevant stakeholders (No more dusty technologies).
  4. Academic and training institutions should work closely with the Education and Health Departments to support agriculture programs in pre-tertiary education focusing on decision making skills regarding agriculture and health.
  5. Academic and training institutions need to work closely with development partners on securing sustainable funding for agriculture scholarships and infrastructures to support REAs.
  6. Establish and sustain linkages and partnerships between the South and North Pacific Institutions to share information and resources to support REAs.
  7. Include Communication skills in Academic program and trainings for Research and Extension officers.
  8. Encourage and strengthen multi-stakeholders research (government-private-NGO-Education/Training Institutions) and trainings.
  9. Academic and training institutions should encourage the involvement of women in agriculture (through scholarships, internships and exchanges).
  10. Education and Training institutions to work closely with Agriculture Ministries and relevant stakeholders to change the mindset of youth and parents on agriculture – shift from last option to a sustainable profitable career.
  11. Research results published in Research journals and in any scientific publications from post graduate students and academics at Universities should be made available in simpler forms for transference to farmers and end users.
1. Food security should be the basis of research. Other priorities can follow.
  2. Ask the right researchable questions. Farmers are not interested in academic research, but in research that is practical and relevant for them.

**3.2.2 Session 2B. Promoting Agroforestry for Sustainable Food Security and Trade.**

Integrating agriculture and forestry is a good way of maximising land use, especially on small islands where land is limited, and there are competing uses. The roles and responsibilities between research and extension to promote agro-forestry are often unclear.

*Presentation 1: Overview by Jalesi Mateboto, SPC*

Agro forestry is one of the common grounds where forestry and agriculture are both involved. It is one of the oldest farming system that combined planting of trees with agricultural crops. , a system that was also practiced by our forefathers. The system has evolved in the past in attempts to adjust to the local environment which resulted in the development of a wide range of agroforestry systems. In most Pacific islands, particularly on atoll islands, where arable land is limited; the systems have evolved that include the planting of trees for a wide variety of products and functions. The Challenges highlighted include, limited land areas to adequately support their populations’ development aspirations, a significant portion of these lands have been degraded to the extent that they are no longer productive (due to unsustainable practices), countries are now relying on lesser areas of forests to maintain the services and products that make vital contributions to the well-being of their population increasing their vulnerability to the impacts of climate change, Furthermore, the demand by an increasing population for more infrastructure



development coupled with the absence of land use plans has resulted in significant areas of arable lands being converted to housing and commercial developments pushing agriculture towards the sloping forest land and degraded lands, and AF is the way forward but the lack of agro forestry research information, clear delineation of responsibilities between Research and Extension, limited collaboration and coordination, have been identified as challenges in promoting agro forestry with forestry and agriculture extension in the Pacific. Information sharing and collaboration within and between Agriculture and Forestry needs to be strengthened. The key objectives include:

1. To share information on agro forestry systems in the PICTs
2. To compare and consolidate the experiences of the various agroforestry projects in the field
3. To identify the strengths and weaknesses of Research and Extension for future action by policy makers
4. To establish and/or strengthen network

#### *Presentation 2: Agroforestry Practices in Vanuatu by Watson Lui, Vanuatu*

The National Forest Policy recognizes the need to promote agroforestry to tack the problems of deforestation and promote food security to reverse the increasing trends of NCDs in Vanuatu. The presentation highlighted some examples of agroforestry promotion to the different ecological zones, steep lands, rocky areas, dry lands and wetlands. These systems have proven to help diversify food production and ecosystem based management. The pros and cons for each of these systems have also been promoted.

#### *Presentation 3: Atoll Agroforestry by Dr. Nacanieli Tuivavalagi, Researcher, FSM*

The atoll environment face many challenge to meet agriculture needs. The soil is poor with poor water holding capacity, susceptible to drought, low biodiversity. the main staple crops such as swamp taro, breadfruits are already suffering from sea level rise and salt spray. These challenges makes it more difficult to diversifying these atoll agroforestry systems. Other social issues are contributing to atoll agriculture include: Weaknesses in research & extension, Harsh economic reality - 2 of 3 households in FSM struggle to make ends meet, End of compact Agreement with US (2023), Emigration, Very little economic activities on atolls, Poor services on atolls (education, etc), Population density and coordination amongst stakeholders is a challenge.

#### *Presentation 4: Agroforestry and Climate Change, Poasa Nauluvula, SPC*

Anticipated climate change together with population pressure and poor management practices in PICTS may result in the degradation of our natural resources as well as well as the negative impacts to our socioeconomic conditions. Better understanding of the contribution of traditional agroforestry systems and practices to adapt to and mitigate climate change is of paramount importance. In addition, more understanding of how climate change affects traditional agroforestry systems needs to be documented.

#### *Presentation 5: Agroforestry and Food Security by MNRE, Samoa*

The Forestry Division is dedicated to ensure sustainable development and management of forest resources across related sectors in Samoa. The main focus areas are being supported by a number of development partners. The research and extension arm of the forestry focuses on Researching on the relationship between Sandalwood (*Santalum* sp.) and other components of an Agroforestry system (traditional base crops), Studying the Phenology of selected varieties of species to assist in Conservation/propagation purposes, Community Forestry/ Woodlot programme and 1 million tree planting campaign (2009 – 2012). The key challenges include, commitment from communities and officers, Pests & Diseases, Natural Disasters, Resources, Fragmented approach, Documentation and Land tenure issues can cause unsustainability of projects.

#### *Presentation 6: Agroforestry and Trade by Tuulima Laiti, Private Sector, Samoa*

From a farmers perspective, agroforestry is critical for food security, income, and environment management. Agroforestry require little cultivation and labour but biggest contribution to trade in Samoa

and other small islands states. Yet, for far too long there is little attention given to agroforestry. There is high opportunity to boost agroforestry support economic trade. These can include, value addition of agroforestry products, furniture and food processing.

### 3.2.3 Session 3B. Strengthening Partnerships in REAS.

Currently, several ongoing research and extension programs in the region has been supported by several development partners including, EU, NZ AID, ACIAR, IFAD, FAO, GFRAS and many others in research. The plenary session involved selected development partners to speak on opportunities and linkages with other partners in the region and at the global supporting research and extension programs in the region.

*Presentation 1: Strengthening Partnerships in the Agricultural Innovation System – Natalie Ernst, Global Forum for Rural Advisory Services.*

Partnerships are critical for creating innovation in agriculture and extension. Partners need to see an advantage from sharing knowledge. This takes time as opportunities are explored, and trust is built. A good start is to find common ground and a shared interest. Collaboration should go both ways.

*Presentation 2: Pacific-Integrated Crop Management Programme – Mike Furlong, Australian Centre for International Agricultural Research.*

ACIAR aims to build capacity to develop integrated crop management strategies. This will help to support sustainable high-value crop production for export and domestic markets in the Pacific Islands. The approach is to collaborate at a regional level, build on previous projects, and work closely with other agencies.

*Presentation 3: Research and Extension – Richard Crichton, Food and Agriculture Organisation of the United Nations.*

The priority areas for FAO technical assistance include evidence-based policy and strategic planning; food and nutrition security resilient to the impacts of disaster and climate change; value and supply chain efficiency and market access, and environment management and resilience.

*Presentation 4: Empowering Advisory Support Services to Strengthen Public Private Partnership - the SACEP Experience – Lafaele Enoka.*

The Samoa Agriculture Competitiveness Enhancement Project is funded by the World Bank and implemented by the Ministry of Agriculture and Fisheries. It supports fruit and vegetable growers and livestock producers to improve their productivity. It also has an import substitution focus.

*Presentation 5: ACIAR presentation on REAS – Richard Markham, ACIAR.*

There is no single way to grow the impacts from research. Guiding principles for working with next-users are better than a fixed model. This includes a realistic assessment of actors, fitting into the cultural and policy contexts, adapting management to performance, and networking for greater resilience.

*Presentation 6: Research and Extension Partnerships in Palau – (Dr. Aurora G.D Rosario).*

In Palau, research priorities include aquaculture, climate change, global food security and hunger, childhood obesity, and food safety. The implementing partners include the Palau Community College, Bureau of Agriculture and the Taiwan Technical Mission, USDA and other development partners.

**Recommendations** – the Session recommended strengthening public private partnership amongst governments, regional and international development partners, NGOs, Farmer Organisations and relevant stakeholders such as ICTs, Media, all advisory services – health, etc. and Universities. In order to strengthen linkages between research and extension, it was recommended to strengthen sharing of research priorities at the national levels, and mechanisms (communication policies & platforms, database and web systems) to enhance information sharing and networking.

## 4. DAY 3: PARALLEL SESSIONS

Issues and priority needs highlighted on day 1 & 2 were distilled and parallel priority setting exercises were held on day 3 with one parallel session (Session A: Extension) focused on priority setting for extension and development of a framework for regional extension strategy while the other parallel session (Session B: Research) focused on research priority setting for crops, livestock, agroforestry and private sector partnership support areas.

### 4.1 PIRAS Revival and Priorities

The Parallel discussions agreed to the establishment of Pacific Islands Rural Advisory Services (PIRAS), formerly known as Pacific Islands Extension network (PIEN) with an interim board. The Forum nominated the following members:

1. Tokintekai Bakineti representing Micronesia
2. Michael Ho’ota representing Melanesia
3. Brian Tairea representing Polynesia
4. Seumanutafa Dr. Malcom Hazelman representing Farmers Organisations
5. Prof. Mohammed Umar representing USP and linkages to other learning institutions
6. Mulitalo Penaia Saena representing Private Sector
7. Dr. Christine King representing International Linkages
8. SPC representative

### 4.2 Session A: Extension Priority Setting

An exercises was also conducted to develop priority areas for PIRAS to focus on in order to sustain the relevance of the network. The activities are divided into short term, medium and long term activities:

#### **The Short Term**

1. Assess and learn from PIEN Experience
2. Establish PIRAS structure with national focal points to drive the network
3. Create a web page for PIRAS and a forum page for members for networking and information sharing
4. Seek funding to support PIRAS activities

#### **Medium term**

5. Develop regional extension strategies and implementation plans
6. Inter-link with other established networks
7. Work on thematic areas

#### **Long Term**

8. Strengthen coordination amongst advisory actors
9. Establish national and regional extension and advisory platforms
10. Support networking and information sharing through strong commitment and engagement of members
11. Provide incentives for members through capacity building within the region
12. Strengthen promotion, awareness and advocacy for extension and advisory services in the region
13. Need political will and support for extension and advisory services
14. Establish long term funding support for extension and advisory services in the region
15. Develop/strengthen networks that is continuously active and not restricted to workshops only
16. Make better use of partnerships to fill gaps in advisory services.
17. Improved infrastructure, ICT and transport
18. Promote best fit approaches and farmer exchange programmes

### 4.3 Session B: Research Priority Setting

The research priority setting was guided by four criteria including potential impact of the research (in terms of extent of economic and social impact, extent of environmental impact and enhancement of research capacity); adoption likelihood of technologies; scientific potential (availability of tools and techniques/ scientific advances, existence and availability of relevant disciplines/networks); and research capacity (technical skills, financial and physical capacities).

#### 4.3.1 Crops Research Priorities

The Priority crops and research needs are shown in the table below. Using the criteria above, the priorities were further prioritised into regional priority research areas.

CROP TYPE	SPECIFIC CROPS	RESEARCH NEED
Vegetables	1. Tomatoes & bele (50%) 2. Cabbage & duruka (17%)	<ul style="list-style-type: none"> <li>Vegetables – off-season (protective cropping), pests, PGR, organic (suitable production)</li> </ul>
Tree crop	1. Breadfruit (83%) 2. Coconut (67%) 3. Cocoa (33%)	<ul style="list-style-type: none"> <li>Breadfruit – value adding (market access), pests, PGR</li> <li>Coconut – value adding, pests</li> </ul>
Root crops	1. Taro, yam (67%) 2. Xanthosoma (33%) 3. Ginger & swamp taro (17%)	<ul style="list-style-type: none"> <li>Taro – post-harvest research, salinity, taro beetle (pest &amp; disease), genetic resources, nutrition of leaves, value-adding</li> <li>Sweet potato – pests, nutrition, value-adding (market access)</li> </ul>
Fruits/Nuts	1. Banana (50%) 2. Citrus (33%) 3. Papaya & sugarcane (17%)	<ul style="list-style-type: none"> <li>Banana – pests</li> <li>Citrus – pests, salinity</li> <li>Papaya – market access</li> </ul>
Prioritised Research Areas	<ol style="list-style-type: none"> <li>Value Adding – Very High</li> <li>Pests and Disease Control – Very High</li> <li>Plant Genetic Resources - High</li> <li>Off Season Crops - High</li> <li>Climate Resilient Crops - High</li> <li>Market Access and Utilisation – Medium to High</li> <li>Integrated farming systems (with livestock) – Medium</li> </ol>	

#### 4.3.2 Agroforestry Priorities

Agroforestry Priorities are as shown in the table below.

Thematic Area	Research Needs
Non Communicable Diseases & Food Security	<ol style="list-style-type: none"> <li>Study how agro forestry farming systems can contribute to reducing NCDs</li> <li>Support policies to promote healthy diet</li> <li>Identification of the right mix of trees and crops species including vegetables</li> <li>Researching the functional component of the trees in AF systems.</li> <li>Developing mechanisms for integrated development approach</li> </ol>
Climate Change	<ol style="list-style-type: none"> <li>Better understanding of the contribution of traditional agroforestry systems and practices to adapt to and mitigate climate change</li> <li>Better understanding and documentation of the contribution of traditional agroforestry systems and practices to adapt to and mitigate climate change and how these systems are affected by CC</li> <li>The adoption and adaptation of agroforestry practices by farmers</li> <li>Identification of local and introduced agroforestry tree species for different agro ecological zones and farming systems that meet both production and ecological objectives – suits our traditional systems</li> <li>Identification, domestication and promotion of native and introduced/ modern agroforestry tree species for different agro ecological zones and farming systems that meet both production and ecological objectives – suits our traditional systems</li> <li>Determine nutrient (&amp; other) limitations of each AF system &amp; design try out corrective measures to address the deficiency</li> <li>Conduct Cost Benefit Analysis between AF and mono cropping</li> </ol>

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	<ol style="list-style-type: none"> <li>13. The domestication and promotion of these tree species suitable for our agroforestry systems in different agro ecological zones</li> <li>14. Development of appropriate policies and institutional infrastructure and frameworks to catalyse adoption of agroforestry</li> <li>15. Consideration of climate projections with AF designs</li> <li>16. Incorporating underutilised trees in AF systems</li> <li>17. Consider the functions of each component in the system</li> <li>18. Contour/hill side AF to counter soil erosion</li> <li>19. Encourage used of renewable energy sources</li> <li>20. Promote semi processing agriculture products</li> <li>21. Encourage local methods of food preservations</li> </ol>
Trade	<ol style="list-style-type: none"> <li>22. Researching the additional yields and income as opposed to mono cropping systems</li> <li>23. Exploring opportunities for value adding of traditional seasonal crops (eg breadfruits)</li> <li>24. Researching on the relationship between Sandalwood (<i>Santalum sp.</i>) and other components of an Agroforestry system (traditional base crops)</li> <li>25. Studying the Phenology of selected varieties of species to assist in Conservation/propagation purposes</li> </ol>
Atolls	<ol style="list-style-type: none"> <li>26. Researching and documenting the Micronesians traditional agro forestry systems</li> <li>27. New system/varieties and methods of composting suited for Atoll soil conditions</li> <li>28. Tolerant/climate ready varieties from short to long term crops/plants</li> </ol>
<b>Prioritised Areas</b>	<ol style="list-style-type: none"> <li>1. How can agroforestry help to address healthier diets and lifestyles?</li> <li>2. Identify mechanisms for integrating agroforestry into farming practices</li> <li>3. Build understanding in applying agroforestry systems to climate change adaptation.</li> <li>4. Identify and promote native and introduced trees that meet production and ecological aims, as well as suiting our traditional systems.</li> <li>5. Determine the nutrient and other deficiencies of various agroforestry systems and work out corrective measures.</li> <li>6. Highlight the costs and benefits to farmers of agroforestry versus mono cropping.</li> <li>7. Share knowledge on value adding for seasonal crops e.g. breadfruit.</li> <li>8. Promote suitable species for conservation and tree planting schemes.</li> <li>9. Document the traditional Micronesian agroforestry systems (including atoll agroforestry)</li> </ol>

**4.3.3 Livestock Research Priorities:**

<b>Priority Research Needs</b>	<b>Prioritised Areas</b>
<ol style="list-style-type: none"> <li>1. Conservation and Promotion of local breeds</li> <li>2. Inventory of research conducted in each countries</li> <li>3. Animal welfare/health</li> <li>4. Promote food safety and quality for livestock products e.g. meat, eggs, milk.</li> <li>5. Explore better ways of managing livestock waste (mainly pigs and Cattle)</li> <li>6. Genetic Pool – compare local genetics versus exotic breeds</li> <li>7. Identify, trial and promotion of local feed sources</li> <li>8. Pasture Management</li> <li>9. Livestock Policy Review (effectiveness and evidence based</li> <li>10. Support more market research and cost-benefit analyses</li> <li>11. Promotion of appropriate livestock technologies</li> <li>12. Livestock Database</li> <li>13. Promote affordable housing and feeding systems for livestock</li> <li>14. Gap analysis on research skills</li> <li>15. Research into how Animal welfare, Sustainability, Intensive farming can complement each other.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inventory of livestock research in the region over the last 30 yrs</li> <li>2. Research greater use of local ingredients for livestock feed.</li> <li>3. Identification and multiplication of local breeds – breed improvement</li> <li>4. Research cereals for livestock feed and pasture improvement</li> <li>5. Design better record keeping skills for non-record keepers.</li> <li>6. Explore better ways of managing livestock waste (mainly pigs and Cattle)</li> <li>7. Promote food safety and quality for livestock products e.g. meat, eggs, milk.</li> <li>8. Support more market research and cost-benefit analyses.</li> <li>9. Animal welfare approach to livestock husbandry practices</li> <li>10. Inventory of local feed ingredient in PICTs</li> <li>11. Livestock housing designs adapted to climate change.</li> </ol>

16. Research cereals for livestock feed and pasture improvement Technology transfer approaches and methodologies	
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#### 4.3.4 Private sector Research Priorities

Needs/Priorities	Prioritised Areas
<ol style="list-style-type: none"> <li>1. Enterprise development assistance within the value chains – production to market (FACT and IACT models to assist enterprises and farmers based organisation)</li> <li>2. Infrastructure</li> <li>3. Standards and compliance for exports</li> <li>4. Livelihood opportunities and revenue generation to farmers</li> <li>5. Pest and disease, soil fertility &amp; crop field management techniques</li> <li>6. Pesticide use and residue values (MRL), testing kits need upgrading &amp; GAP</li> <li>7. Policy, enabling environment for agribusiness</li> <li>8. Farmer training and upskilling (commercial focus)</li> <li>9. Product diversification</li> <li>10. Training, off season planting, markets</li> <li>11. Strengthen farmers association, voice, training, representation</li> <li>12. In-depth knowledge of markets &amp; quality demanded by markets</li> <li>13. Analytical services and standards to promote food safety and water quality</li> <li>14. Need to study existing policy and put in place right ones (catalyst to growth)</li> </ol>	<ol style="list-style-type: none"> <li>1. Market Accessibility &amp; utilisation</li> <li>2. Farmer training and upskilling (commercial focus)</li> <li>3. Support for infrastructure</li> <li>4. Market access &amp; enterprise development - PPP</li> <li>5. Value chain analysis</li> <li>6. Policy Support to strengthen PPP</li> <li>7. Value adding</li> <li>8. Pest and disease, soil fertility &amp; degradation, crop field management techniques</li> <li>9. Pesticide use and residue values (MRL), testing kits need upgrading &amp; GAP</li> </ol>

## 5. DAY 4: FIELD TRIPS

Participants were taken for field on the Thursday to a number of sites to observe Samoa’s projects related to the areas discussed during the week. These sites include:

1. *SPC/USAID Project, Savaia Lefaga project* – Visited a MAFF/SPC Food Security and Climate Change Adaptation funded by USAID
2. *Ah Liki, Tanumapua* – Visited and observed poultry and vegetable farms
3. *Ministry of Agriculture, Nu’u Research Station* – visits were made to the crops research in partnership with SPC Taro Improvement Program
4. *Woman in Business* – visited and observed a food processing initiative on VCO and Dried Banana
5. *Pacific Oil Company* - highlighted Commercial VCO Production
6. *Scientific Research Organisation of Samoa* - Value added research programs and product development

## 6. DAY 5: OUTCOMES AND CLOSING

The Forum adopted the Apia Communiqué, and a number of recommendations distilled from the week long discussions. These are presented below.

### Extension

1. Agriculture plays a critical role in achieving sustained growth, trade development and poverty reduction. Pacific agriculture is challenged by falling productivity, declining soil health, loss of biodiversity, and the likely impacts of climate change. Agriculture is not attracting young people while farmers and advisors are aging.
2. Budgets are shrinking and new actors, including the private sector and NGOs, are filling the gap for advisory services. Better collaboration among these partners will help to maximise the benefits for farmers and others. Engaging more public-private partnerships are among the options.
3. There is limited sharing of knowledge between the North and South Pacific islands. This should be addressed.
4. Extension services face new technical challenges, and are being asked for advice on topics outside the traditional field of agronomics e.g. health and nutrition issues, gender aspects, management, and ICT.
5. Extension services are still valued but new solutions are needed. No one size fits all.
6. Farmers want to see advisors in the field, not only at workshops. How can we improve the way we get messages across to farmers?
7. ICT is changing the nature of farming, but face to face contact is still a preferred approach for most farmers. Communications is about people, and ICT is just another tool to engage and to supplement other activities.
8. Know how to use the media. News in some countries may be free, but only if it tells a story.
9. Make better use of partnerships to fill gaps in advisory services.
10. Improve the sharing of basic research that shows value for farmers.
11. Product development and branding is key, as is the 'story' of the product.
12. Market research is the job of the private sector, although the government might help.
13. Include research and development in planning and collaborate more with other partners.
14. People should own their successes and failures. Mistakes are just R&D.
15. Link the growing to markets, rather than just growing what can grow.
16. Sustainable agriculture is hard to achieve when imports are cheaper.
17. Advisory services should highlight the viability of farming for jobs and incomes, especially for youth. This includes clearer messages about what is needed to earn an income from farming.
18. Synchronize approaches, methodologies so that the message delivered is complimenting and not competing
19. Provisions of field guides ( simple and informative)
20. Literature review (desk study) for AF in the region for the last 30 years and develop strategies for the best way forward
21. Develop/strengthen networks that is continuously active and not restricted to workshops only (good example is the PAFPNet)
22. Education is the key, more awareness is needed from the health authority
23. Improved infrastructure, ICT and transport
24. Promote Farmer field schools and farmer exchange programmes

### Academia

1. Establish and strengthen the linkages between Academic and training institutions and the National Agriculture Ministries to provide targeted capacity building and research to support REAs.
2. Ensure Relevance of Academic and training institutions programs (Teaching and Research) to both national and regional REAs need (ongoing support for REAs staff through internships, short technical courses, attachments and exchanges).
3. Review and create relevant pathways to disseminate agriculture research information to relevant stakeholders (No more dusty technologies).

4. Academic and training institutions should work closely with the Education and Health Departments to support agriculture programs in pre-tertiary education focusing on decision making skills regarding agriculture and health.
5. Academic and training institutions need to work closely with development partners on securing sustainable funding for agriculture scholarships and infrastructures to support REAs.
6. Establish and sustain linkages and partnerships between the South and North Pacific Institutions to share information and resources to support REAs.
7. Include Communication skills in Academic program and trainings for Research and Extension officers.
8. Encourage and strengthen multi-stakeholders research (government-private-NGO-Education/Training Institutions) and trainings.
9. Academic and training institutions should encourage the involvement of women in agriculture (through scholarships, internships and exchanges).
10. Education and Training institutions to work closely with Agriculture Ministries and relevant stakeholders to change the mindset of youth and parents on agriculture – shift from last option to a sustainable profitable career.
11. Research results published in Research journals and in any scientific publications from post graduate students and academics at Universities should be made available in simpler forms for transference to farmers and end users.

### **Research**

1. Promote livelihood skills in schools as a viable career path.
2. The identification of topics for post-graduate research should be led by feedback from the grassroots level, and not just by donors.
3. Use training attachments to success stories for agriculture courses.
4. Academia and other partners, including women and youth, to work together on research and extension, and engage trust.
5. Convert technical information into Farmer-Friendly formats.
6. Link traditional knowledge with new ideas and technology.
7. Re-introduce the Advanced Certificate in Teaching Agriculture (ACTA) at the USP School of Agriculture.
8. Publications are expensive and donor partners can help here.
9. Integrate forestry into agriculture through agro-forestry concepts.
10. Academia to diversify the approach for research and extension to include business skills, economics, health, nutrition and climate change concepts.

### **Agroforestry**

1. Research how agroforestry can help to address healthier diets and lifestyles.
2. Identify mechanisms for integrating agroforestry into farming practices.
3. Build understanding in applying agroforestry systems to climate change adaptation.
4. Identify and promote native and introduced trees that meet production and ecological aims, as well as suiting our traditional systems.
5. Determine the nutrient and other deficiencies of various agroforestry systems and work out corrective measures.
6. Highlight the costs and benefits to farmers of agroforestry versus mono cropping.
7. Share knowledge on value adding for seasonal crops e.g. breadfruit.
8. Promote suitable species for conservation and tree planting schemes.
9. Document the traditional Micronesian agroforestry systems.

### **Livestock**

1. Do an inventory of livestock research in the region over the last 30 years.
2. Research greater use of local ingredients for livestock feed.
3. Identify and multiply local breeds to help improve them.
4. Research cereals for livestock feed and pasture improvement
5. Design better record keeping skills for non-record keepers.



6. Explore better ways of managing livestock waste.
7. Promote food safety and quality for livestock products e.g. meat, eggs, milk.
8. Support more market research and cost-benefit analyses.
9. Highlight the importance of good animal welfare in livestock practices.
10. Do an inventory of local feed ingredients in the PICTs.
11. Share knowledge on livestock housing designs adapted to climate change.

### ***Conclusions***

1. Food security should be the basis of research. Other priorities can follow.
2. Ask the right questions. Farmers are not interested in academic research, but in research that is practical and relevant for them.
3. When developing research priorities, factor in the national policies.
4. Researchers can be poor communicators, as they use technical language. Farmers need to understand the messages.
5. Use an integrated approach along the value chains, including farmers, producers, processors, researchers and others. Understand their inputs.
6. Make better use of the lessons learned from past research.
7. A lot of research information is not being shared. Make sure the research reports are published, and in the public domain for better access.
8. Improve the inventory of data. Share the information and make it easier to access. When staff leave, collect and share the information so that it is passed on.

In addition, the forum agreed to the draft framework of a Regional Extension Strategy, which is now open for consultation. The Forum was closed by the Hon. Fa'amoetauloa Lealaiauloto Taito Nanai Dr Fa'ale Tumaali'i, who welcomed the strengthening of links to support farmers and contribute to national development efforts. The Secretariat of the Pacific Community, on behalf of the co-organisers, sincerely thanked the donors for their assistance with the Forum, and also thanked the participants for their valuable contributions.

ANNEX 1: COMMUNIQUE

*Theme: Strengthening Agriculture and Forestry Research and Extension Linkages for Sustainable Food Security and Trade*

Pacific Islands Rural Advisory Services Network (PIRAS); Pacific Agricultural Plant Genetic Resources Network (PAPGREN); Pacific Agriculture and Forestry Policy Network (PAFPNet); POETCom; Reforestation Network (RFRNet); Pacific Animal Health Laboratory Network (PAHLNet); South West Pacific Regional Soil Partnership; Regional Integrated Crop Management (ICM) Programme, and the Asia-Pacific Association of Educators in Agriculture and Environment (APEAEN).

24-28 August 2015  
Apia, Samoa

**APIA COMMUNIQUE - (FINAL DRAFT)**

1. A regional Forum themed *Strengthening Agriculture and Forestry Research and Extension Linkages for Sustainable Food Security and Trade*, was held in Apia, Samoa on 24-28 August 2015. The key objectives of the Forum were to:
  - a. Discuss challenges, opportunities and key priority areas for Research, Extension and Advisory Services (REAS) in the region;
  - b. Provide feedback on national and regional needs to strengthen extension services and the link between research and extension that could be included in a proposed Regional Extension Services Policy Framework that is being supported by SPC, EU-PAPP and GFRAS;
  - c. Discuss the need to establish a new Pacific Island Research Advisory Services as a mechanism to strengthen REAS linkages, promote advocacy, and strengthen collaboration and support for REAS.
2. The Forum discussed a number of key themes and agreed to a number of actions to strengthen REAS in the region. These themes are regarded as cross-cutting for REAS and should be read in conjunction with specific thematic discussions and actions raised in the Forum. These are contained in Annex 1 and also on [www.spc.int/pafpnet/](http://www.spc.int/pafpnet/).
3. Forum Summary Notes is attached in Annex 2.
4. A list of Participants is attached in Annex 3.

## **KEY DISCUSSION THEMES**

### **Strengthen Linkages and Partnership in Research and Extension**

5. Recognised that REAS systems have in recent times faced many challenges mainly due to declining public funding allocations.. A growing number of private sector, non-government and other service providers are filling the gaps in advisory services. Strengthening collaboration among these partners can maximise benefits for farmers and others.

6. Noted the need to strengthen the linkages between research and extension services in the Pacific. Research and development is important for innovation, and to improve productivity and support agro-processing. Similarly, good extension practices should be promoted and communicated effectively to support adoption of new technologies. Key common issues include:

- Engaging more public-private partnerships is an option that needs to be strengthened.
- Extension services face new technical challenges, and are being asked for advice on topics outside the traditional field of agronomics e.g. health and nutrition issues, gender aspects, management, and ICT.
- Extension services are still valued but new solutions are needed. No one size fits all.
- Pacific agriculture is challenged by falling productivity, declining soil health, loss of biodiversity, and the likely impacts of climate change.
- Farmers want to see advisors in the field, not only at workshops.
- Agriculture is not attracting young people. Farmers and advisors are aging.
- There is limited sharing of knowledge between the North and South Pacific islands and this should be addressed.

7. Noted the new Regional Extension Strategy (RES) which articulates clearly a plan for promoting extension, linking to research and embedding good knowledge management and good practices to foster greater collaboration regionally and to inform practices at the national level. This work was supported through SPC and GFRAS. The RES will also serve as a guide for policy and a focus for funding from donors, governments and investors.

8. Recognised that the scope of the RES should extend to how research could be systematically linked to extension, and vice versa.

### **Knowledge Management/Communication**

9. Despite extensive agricultural research in the region, many of the results are not being communicated effectively to farmers. While ICT is changing the way some advisory services are delivered, face to face contact with farmers is still very important.

10. Agreed that greater communication is the key to sharing research priorities, good research, field practices and evidence as well as sourcing specialist personnel.

11. Acknowledged the need to improve the way messages are given to farmers.

12. Noted SPC's *Pacific Agriculture Forestry Policy Network (PAFPnet)* is a useful tool and that SPC/CTA/GFRAS will be conducting a knowledge management needs analysis in the Pacific region.

### **Linkages to Formal Education/Training**

13. Recognising the role of the education and training institutions in supporting and strengthening REAS in the region. There is a need to align education programmes at all levels to cater for specific REAS needs and to promote agriculture priorities.

14. Agreed to forge links with the Pacific Island Universities Research Network (PIURN) through the secretariat at the USP research office in Suva, Fiji.

### **Research and Extension Priorities**

15. Noted the research and extension priority issues to strengthen REAS in the region contained in Annex 1.

16. Noted that the priority for research should be food and income security, with other priorities aligned to national sector policies. The research agenda can also be determined by those with the highest impact for food security and farmer livelihoods.

17. Agreed that greater collaboration on priority sectoral research is needed by regional and national research institutions, Ministries of Agriculture and Forestry, Academia and other stakeholders. This will lead to better sharing of research priorities, reduce duplication, lead to more effective use of resources, and promote common interests.

### **New Pacific Islands Rural Advisory Services**

18. Recognised the need to revive a Pacific Extension Network and agreed to the formation of a new Pacific Islands Rural Advisory Services (PIRAS) and a new Board.

19. Agreed that the scope of PIRAS should include research networks. It was noted that a TOR for PIRAS will be developed to provide a remit for the network.

### **ACTIONS**

20. **Agreed** to the establishment of PIRAS with an interim board. The Forum nominated the following members:

- a. Tokintekai Bakineti representing Micronesia
- b. Michael Ho’ota representing Melanesia
- c. Brian Tairea representing Polynesia
- d. Seumanutafa Dr. Malcom Hazelman representing Farmers Organisations
- e. Prof. Mohammed Umar representing USP and linkages to other learning institutions
- f. Mulitalo Penaia Saena representing Private Sector
- g. Dr. Christine King representing International Linkages
- h. SPC representative

21. **Agreed** that SPC acts as the initial secretariat until the first meeting of PIRAS. SPC will work with the board to:

- Design a structure for PIRAS that integrates research, promotes coordination and knowledge management. The Forum noted that sub-networks might also be a useful vehicle for enhancing links.
  - Develop a TOR for PIRAS Board members.
  - Revisit the membership of PIRAS as there could be benefits from alliances with other regions, such as the Caribbean.
  - Improve links between research and extension.
- 
- Promote sharing of research and extension agendas.
  - Promote learning from the region and internationally.
  - Develop opportunities for research and extension officers to incentivise staff development and youth enrolment in Extension Studies.
  - A follow up of the key issues from the Apia Forum.
  - Call a first meeting by March 2016

22. **Agreed** that a regional forum like the Apia Forum is highly beneficial should be held biennially.

23. **Agreed** to establish an e-platform of key contacts and institutions, including research priorities from this Forum. This will be led by SPC via the PAFPNNet portal.

24. **Agreed** that evidence-based research needs to be easily communicated to farmers in a user-friendly formats.

25. **Agreed** to establish an inventory of current and past research projects and agendas undertaken by research institutions/MAFs within the region. The same platform could be used to develop a contact list of researchers/specialists to be shared.

26. **Agreed** to promote the formation of a horticultural forum for the publication of research articles, papers and other evidence-based outcomes through existing networks and publication services.

27. **Noted** that SPC and CTA is undertaking an Information and Knowledge Management (IKM) needs analysis for the region and countries and it might be useful to link results of the needs analysis to the research and extension needs mentioned in the Forum;

28. **Agreed** to develop research policies to guide national research work;

29. Noted the recommendation by Ministers of Agriculture in 2012 acknowledging the importance of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) for sustaining food and livelihood security, and for the non-contracting parties who haven't acceded yet to do so. The benefits of joining the Treaty include improved access to new climate and disaster resilient crops available under the multilateral system of the Treaty.

30. **Noted** the presentations, documents and outcomes are on [www.spc.int/pafpnet](http://www.spc.int/pafpnet).

31. **Noted** the outputs of the Research and Extension group discussions (Appendix 1), and will progress these through PIRAS and other partners.

32. The Forum was organised by the Secretariat of the Pacific Community (SPC), the Government of Samoa through the Ministry of Agriculture and Fisheries, the Scientific Research Organisation of Samoa (SROS) and the University of the South Pacific. Funding support was provided by the Intra-ACP EU Pacific Agricultural Policy Project (EU-PAPP), Asia Pacific Association of Educators on Agriculture and Environment Inc. (APEAEN), and the International Food and Policy Research Institute (IFPRI) through the Global Forum for Rural Advisory Services (GFRAS).

## Signatures

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Honorable Le Mamea Ropati Mualia  
Minister  
Ministry of Agriculture and Fisheries  
Government of Samoa

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Honorable Fa’amoetaulua Lealailauloto Taito Nanai Dr. Fa’ale Tumaali’i  
Minister  
Ministry of Natural Resources and Environment & Scientific Research of Samoa (SROS)  
Government of Samoa

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Dr. Ken Cokanasiga  
Acting Deputy Director  
Land Resources Division  
Secretariat of the Pacific Community

ANNEX 2: PROGRAMME

DAY 1 MONDAY, 24 AUGUST, 2015 TATTE CONFERENCE HALL, APIA		
SESSION/TIME	TOPICS	MODERATOR
8:30 – 9:00	Registration	SPC Team
<b>Session 1</b> <b>9:00 – 9:30</b>	<b>OPENING CEREMONY</b> <b>1. Opening Prayer</b> <ul style="list-style-type: none"> <li>• <i>Rev Utufua Naseri</i></li> </ul> <b>2. Official Opening Remarks</b> <ul style="list-style-type: none"> <li>• <i>Hon. Le Mamea Ropati Mualia, Minister of Agriculture and Fisheries, Samoa</i></li> </ul> <b>3. Welcoming Remarks</b> <ul style="list-style-type: none"> <li>• <i>Dr. Ken Cokanasiga, Deputy Director, Land Resource Division (LRD), Secretariat of the Pacific Community (SPC)</i></li> </ul> <b>4. Guest Speaker</b> <ul style="list-style-type: none"> <li>• <i>Ms. Natalie Ernst, Deputy Executive Secretary, Global Forum for Rural Advisory Services (GFRAS)</i></li> </ul>	<ul style="list-style-type: none"> <li>• <b>FONOIAVA SESEGA, CEO, Samoa MAF</b></li> </ul>
<b>9:30 – 10:00</b>	<b>PHOTO SESSION AND MORNING TEA</b>	
<b>Session 2</b> <b>10:00 – 10:30</b>	<b>INTRODUCTIONS</b> <b>1. Forum overview</b> <ul style="list-style-type: none"> <li>• <i>Gibson Susumu, LRD, SPC</i></li> </ul> <b>2. Concepts/Ideologies</b> <ul style="list-style-type: none"> <li>• <i>Mr. Viliamu Iese, USP</i></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Tilafono David Hunter, CEO, Scientific Research Organisation of Samoa (SROS)</b></li> </ul>
<b>Session 3</b> <b>10:30 – 11:30</b>	<b>STATUS OF RESEARCH ADVISORY SERVICES IN THE PACIFIC:</b> <b>1. Review of Extension and Advisory Services in the Pacific</b> <ol style="list-style-type: none"> <li>• Study Introductions (SPC)</li> <li>• Highlights of Past Extension Reviews in the Region (Extension Summits, 2005 and 2009) - Seumanutafa Dr. Malcolm Hazelman, President, APEAN</li> <li>• Development of a Pacific Extension Strategy - Overview (Dr. Salend Kumar/Dr. Christine King/Dr. Chris Jacobson, Consultants, PAPP, SPC)</li> </ol> <b>2. Research priorities for Agriculture by Sub-Sectors (Crops, Livestock and Agroforestry)</b> <ol style="list-style-type: none"> <li>• <i>Dr. Siosua Halavatau, Deputy Director, LRD, SPC</i></li> <li>• <i>Dr. Richard Markham/Dr. Peter Horne, Overview of ACIAR Research in the Pacific</i></li> </ol>	<ul style="list-style-type: none"> <li>• <b>Tilafono David Hunter, CEO, SROS</b></li> </ul>
<b>Session 4</b> <b>11:30 – 12:30</b>	<b>GOOD PRACTICES AND LESSONS FROM THE PACIFIC</b> <b>1. Global Good Practices</b> <ul style="list-style-type: none"> <li>• <i>Ms Natalie Ernst, Deputy Executive Secretary, GFRAS</i></li> </ul> <b>2. Research and Extension Programs in Papua New Guinea</b> <ul style="list-style-type: none"> <li>• <i>Mr Frank Daink, Extension and Information Division, DAL, PNG</i></li> <li>• <i>Dr Ramakrishna Akkinapally, Deputy DG, NARI, PNG</i></li> </ul> <b>3. Research and Extension Programs in Samoa</b> <ul style="list-style-type: none"> <li>• <i>Mr Misa Konelio, ACEO, Research and Extension Division, MAF, Samoa</i></li> <li>• <i>Ms Kuini Asora Finau, Manager, SROS, Samoa</i></li> </ul> <b>DISCUSSIONS</b>	<ul style="list-style-type: none"> <li>• <b>Tilafono David Hunter, CEO, SROS</b></li> </ul>

**RESEARCH EXTENSION FORUM – APIA – SAMOA – 24-28 AUGUST**

<b>12:30 – 1:30</b>	<b>LUNCH</b>	
<b>Session 5 1:30 – 3:00</b>	<p><b>4. Research and Extension Programs in Fiji</b></p> <ul style="list-style-type: none"> <li>Mr Vinesh Kumar, PAO, Crops and Extension, MOA, Fiji</li> <li>Mr Tomasi Tunabuna, Acting Director, KRS, Fiji</li> </ul> <p><b>5. US FAS/Territories – Cooperative Research and Extension Programs/Land Grant Programs (Joint Presentation)</b></p> <ul style="list-style-type: none"> <li>Mr Walter James Currie, Vice President, CRE, FSM</li> </ul> <p><b>PLENARY DISCUSSION</b></p>	<ul style="list-style-type: none"> <li><b>Mr William Wigmore, Director, Research, Ministry of Agriculture, Cook Islands</b></li> </ul>
<b>3:00 – 3:30</b>	<b>NETWORKING TEA BREAK</b>	
<b>Session 5 3:30 – 4:30</b>	<p><b>6. New Caledonia Research and Extension Programs</b></p> <ul style="list-style-type: none"> <li>Dr. Valerie Kagy, IAC, Plant Pathologist/Team Leader, Agro-system Research Department</li> <li>Dr. Christian Mille, Entomologist/Team Leader, Applied Entomology</li> </ul> <p><b>7. Forestry REAS Programs, Mr. Elik Senivasa, Deputy Conservator of Forests, Fiji</b></p> <ul style="list-style-type: none"> <li><b>DISCUSSIONS</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Mr. William Wigmore, Director, Research, Cook Islands</b></li> </ul>
<b>4:30 – 5:00</b>	<b>WRAP UP AND CLOSE</b>	<b>Gibson Susumu</b>
<b>6:30 – 9:00 PM</b>	<b>Networking Cocktail and Information Market (Samoa Tourism Authority Fair)</b>	

**DAY 2 TUESDAY, 25 AUGUST 2015  
HOTEL MILLENIA CONFERENCE ROOMS**

**PARALLEL THEMATIC SESSIONS**

<b>TIME</b>	<b>ROOM A</b>		<b>ROOM B</b>	
<b>8:00 – 8:15</b>	<b>Registration</b>	<b>Facilitators</b>	<b>Registration</b>	<b>Facilitators</b>
<b>Session 1 8:15 – 10:15</b>	<p><b>Session 1A. Industry focused Research Extension Advisory Services for Sustainable Economic Growth and Trade of the Agriculture sector</b></p> <ul style="list-style-type: none"> <li>Industry focused research (MAFF, Samoa Experience)</li> <li>Driving industry growth and sustainability (Fiji Experience)</li> <li>Food Safety and postharvest management systems in response to market driven demands (SROS)</li> <li>Differentiated markets and certification systems (WIBDI)</li> <li>Tackling the challenges in supply chain management (PNG/Indonesia Experience)</li> <li>Papaya industry supply chain development and research (PIFON)</li> <li>Challenges and Way forward</li> </ul>	<p>Fereti Atumurirava</p>	<p><b>Session 1B. Role of Academia in Strengthening Research Extension Advisory Services</b></p> <ul style="list-style-type: none"> <li>University of Goroka, PNG (Professor Alan Quartermain)</li> <li>College of Agriculture, Fisheries and Forestry, Fiji National University (Professor Bukola Babatunde)</li> <li>Land Grant Colleges (Walter James Currie)</li> <li>University of the South Pacific School of Agriculture and Food Technology (Dr. Sonny Lameta)</li> <li>Challenges/Way Forward</li> </ul>	<p>Viliamu Iese &amp; Poasa Nauluvula</p>



**RESEARCH EXTENSION FORUM – APIA – SAMOA – 24-28 AUGUST**

10:00 – 10:30	NETWORKING TEA BREAK		NETWORKING TEA BREAK	
<p><b>Session 2</b></p> <p>10:30 – 12:30</p>	<p><b>Panel Session 2A. Livestock REAS Needs and Priorities</b></p> <ul style="list-style-type: none"> <li>• Livestock Waste Management - Regional Situation and Perspective - (SPC)</li> <li>• Livestock feed – Current Researches in Livestock Feed in the Region– Dr Pihah Kohun (NARI, PNG)</li> <li>• Livestock biodiversity in the changing environment of the Pacific islands – Outcome of the FAO project on conservation of indigenous chickens and pigs in selected PICTs (Dr. Ilagi Puana/Dr. Ken Cokanasiga, SPC)</li> <li>• Private sector and Livestock REAS - Fiji experience - Mr Simon Cole (FCLC)</li> <li>• Animal Welfare and livestock husbandry practices – a regional perspective (Dr. Ilagi Puana, SPC)</li> <li>• Challenges &amp; Way Forward</li> </ul>	<p>Ilagi Puana (SPC) and Tony Aiolupotea (Samoa, MAF)</p>	<p><b>Panel Session 2B. Promoting Agroforestry for Sustainable Food Security and Trade</b></p> <ul style="list-style-type: none"> <li>• The role of Research and Extension in Promoting agro forestry for Sustainable Food Security and Trade</li> <li>• Vanuatu Experience (Watson Lui)</li> <li>• Samoa Experience (Moafanua)</li> <li>• Atoll Agroforestry (Dr. Tuivavalagi)</li> <li>• Private Sector Experience (Tuulima Laiti, Samoa)</li> <li>• Challenges &amp; Way Forward</li> </ul>	<p>Jalesi Mateboto &amp; Poasa Nauluvula</p>
12:30 – 1:30	LUNCH		LUNCH	
<p><b>Session 3</b></p> <p>1:30 – 3:30</p>	<p><b>Panel Session 3A. Transforming Agricultural Knowledge: the role of extension media, ICTs and social media in supporting Research and Extension</b></p> <ul style="list-style-type: none"> <li>• MAF extension services transforming agriculture knowledge : Kiribati/Tokin, Solomon Islands/M Hoota, Samoa/Tommy, Tonga/Mo’ale</li> <li>• Farmer groups, private stakeholders, industry groups: Federated Farmers of Samoa/Malcolm, Plant Health Clinics, PestNet/G Jackson, Samoa WIBDI/Kalais, Faumuina, Samoa Coconut Oil Products/J Bartley, METI/Dr Vermeulen</li> <li>• Livestock Extension Media and ICT: Samoa/Leota, PNG/Dr Nime Kapo</li> <li>• The role of mainstream media in transforming agricultural knowledge: Samoa TV and Radio/Faiesea, Talamua Media/Lance Polu</li> </ul>	<p>Anju Mangal and Emele Ainuu, USAID Coordinator, MAF, Samoa</p>	<p><b>Panel Session 3B. Strengthening Partnerships in REAS</b></p> <ul style="list-style-type: none"> <li>• Global Networking and Partnerships: Lessons from GFRAS (Natalie Ernst, GFRAS)</li> <li>• Regional Collaboration – Lessons from ACIAR ICM Pacific Project (Mike Furlong, ICM, ACAR)</li> <li>• FAO strengthens National and Regional partnerships for effective Research and Extension support (Dr. Viliami Fakava, FAO)</li> <li>• Past Experience and Opportunities for Strengthening REAS in the Pacific (ACIAR)</li> <li>• National Partnership Platforms: Palau Experience (Palau)</li> <li>• Empowering Communities through Strengthened RAS – Lessons and Opportunities (IFAD)</li> </ul>	<p>Valerie Tuia &amp; Gibson Susumu</p>

**RESEARCH EXTENSION FORUM – APIA – SAMOA – 24-28 AUGUST**

	<ul style="list-style-type: none"> <li>Regional Organisations: SPREP/Nanette, Makelesi</li> <li>FAO/Crichton, SPC/Emele, Anju</li> </ul>				
<b>3:30 – 3:45</b>	<b>NETWORKING TEA BREAK</b>				
<b>Session 4</b> <b>3:45 – 4:45</b>	<b>ROOM A</b> <b>Session 4: Plenary Feedback Session: Outcomes from Parallel Sessions</b> <ol style="list-style-type: none"> <li>Session 1a. Private Sector REAS Needs and Opportunities (SPC)</li> <li>Session 1b. Addressing REAS Training Needs (Poasa Nauluvula)</li> <li>Session 2a. Livestock REAS Priorities/Needs (Dr. Ilagi Puana)</li> <li>Session 2b. Agroforestry Needs/Priorities (Jalesi Mateboto)</li> <li>Session 3a. Transforming Agricultural Knowledge (Emele M AINU’U)</li> <li>Session 3b. Partnership and Networking Opportunities (Valerie Tuia)</li> </ol> <b>PLENARY DISCUSSION</b>			<b>SPC</b>	
<b>4:45 – 5:00</b>	<b>Wrap Up/Close</b>			<b>SPC</b>	
<b>6:30 – 8:00</b>	<b>Side Event: FAO’s priority support areas linked to research and extension under our current CPF 2013-17 both at National and Regional level, major lessons learnt, and future opportunities</b>			Dr. Viliami Fakava (FAO) William Wigmore (Pacific member on FAO Commission) Valerie Tuia (SPC)	
<b>DAY 3 WEDNESDAY, 26 AUGUST, 2015</b> <b>HOTEL MILLENIA CONFERENCE ROOMS</b>					
<b>Parallel Sessions</b>					
<b>Time</b>	<b>ROOM A (EXTENSION)</b>			<b>ROOM B (RESEARCH)</b>	
<b>8:00 – 8:30</b>	<b>Registration</b>	<b>Facilitators</b>	<b>Registration</b>	<b>Facilitators</b>	
<b>Session 1</b> <b>8:30 – 9:00</b>	<b>Session 1A: Extension today: New roles and responsibilities</b> <ol style="list-style-type: none"> <li>The New Extensionist</li> <li>Presentation on Global Extension Strategy and (GFRAS)</li> </ol> <b>DISCUSSIONS</b>	Gibson Susumu, Natalie & Poasa Nauluvula	<b>Session 1B: Research Inventory</b> Inventory of Research Needs for Policy Development by Sub-sector: <ul style="list-style-type: none"> <li>Crops (Valerie)</li> <li>Agroforestry (Jalesi)</li> <li>Animal Health and Production (Ilagi)</li> <li>Crosscutting Issues (Climate change, food security, trade, youth, gender, NCDs)</li> </ul>	Valerie Tuia and Siosuia Halavatau	
<b>Session 2</b> <b>9:00 – 10:00</b>	<b>Session 2A: Pacific Extension Strategy Formulation</b> <ol style="list-style-type: none"> <li>Pacific Extension Strategy – Pacific Regional Context and Stakeholder analysis (SPC and Consultant)</li> <li>General comments and feedback</li> </ol>	Gibson Susumu, Poasa Nauluvula, Chris, Salend, GFRAS, Christine	<b>Session 2B: Pacific Research Priorities</b> Analysis and Prioritisation of Research Needs for Policy Development by Sub-sector: <ul style="list-style-type: none"> <li>Crops (Valerie)</li> <li>Agroforestry (Jalesi)</li> <li>Animal Health and Production (Ilagi)</li> </ul>	Valerie Tuia and Siosuia Halavatau	

**RESEARCH EXTENSION FORUM – APIA – SAMOA – 24-28 AUGUST**

			<ul style="list-style-type: none"> <li>Crosscutting Issues (Climate change, food security, trade, youth, gender, NCDs)</li> </ul>	
<b>10:00 – 10:30</b>	<b>NETWORKING TEA BREAK</b>		<b>NETWORKING TEA BREAK</b>	
<b>Session 3 10:30 – 12:00</b>	<b>Session 3A: Group Work</b> a. Defining ideal strategy Policy Purpose, Goals, Objectives, Priorities and Implementation Arrangements (Sanfred) b. Contrasting ideal strategy to current practice to identify opportunities and constraints (Sanfred) c. Sub-regional best practice and knowledge gaps (Sanfred)	Gibson Susumu, Poasa Nauluvula, Chris, Salend, GFRAS, Christine	<b>Session 3B Pacific Research Priorities</b> Analysis and Prioritisation of Research Needs for Policy Development by Sub-sector: <ul style="list-style-type: none"> <li>Crops (Valerie)</li> <li>Agroforestry (Jalesi)</li> <li>Animal Health and Production (Ilagi)</li> <li>Crosscutting Issues (Climate change, food security, trade, youth, gender, NCDs)</li> </ul>	Valerie Tuia and Siosiu Halavatau
<b>12:00 – 1:00</b>	<b>LUNCH</b>		<b>LUNCH</b>	
<b>Session 4 1:00 – 2:00</b>	<b>Session 4A. Feedback Session</b> a. Group Presentations (Sanfred)	Gibson Susumu, Posasa Nauluvula, Chris, Salend, GFRAS, Christine	<b>Session 4B. Pacific Scientific Forum</b> a. Discussions on Pacific Scientific Forum on Horticultural Crops (SPC and Graham Jackson)	Valerie Tuia and Siosiu Halavatau
<b>Session 5 2:00 – 3:00</b>	<b>Session 5A. Reviving PIRAS</b> a. Presentation on PIRAS and Its Linkages to APIRAS and GFRAS b. Group Discussions - Defining PIRAS TOR and Operations	Gibson Susumu, Poasa, Natalie	<b>Session 5B. Pacific Scientific Forum</b> a. Pacific Scientific Forum Discussions Continues	Valerie Tuia and Siosiu Halavatau
<b>3:00 – 3:30</b>	<b>NETWORKING TEA BREAK</b>		<b>NETWORKING TEA BREAK</b>	
<b>Session 6 3:30 -4:30</b>	<b>Session 6A. Revising PIRAS</b> a. Adopting PIRAS TOR and Governance Structure	Gibson Susumu, Natalie	<b>Session 6B. Pacific Scientific Forum</b> a. Pacific Scientific Forum continues	Valerie Tuia and Dr Siosiu Halavatau
<b>4:30 – 5:00</b>	<b>WRAP UP and CLOSE</b>			SPC
<b>7:00 – 9:00</b>	<b>SIDE EVENT: LAUNCH OF PACIFIC ISLANDS RURAL ADVISORY SERVICES</b>			Gibson Susumu and Natalie
<b>DAY 4 THURSDAY, 27 AUGUST, 2015</b>				
<b>FIELD TRIP</b>				
<b>TIME</b>	<b>SITE</b>			
<b>7:00 – 8:30</b>	1. <b>SPC/USAID Project, Savaia Lefaga project site</b> <ul style="list-style-type: none"> <li>Food Security and Climate Change Adaptation/SPC Crops – Ms Emele M Ainu’u</li> </ul>			

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8:30 – 9:30	2. <b>Tanumalala Government Sheep Farm</b>
9:30 – 10:30	3. <b>Tanumapua Farm</b>
10.30 – 12.30	4. <b>Ah Liki Farm Enterprises, Tanumapua</b> <ul style="list-style-type: none"> <li>• Poultry and Vegetable farms</li> </ul>
12:30 – 1:30	<b>LUNCH at MAF Nu’u Crops</b>
1.30 – 2.30	5. <b>Ministry of Agriculture – Nu’u Research Station</b> <ul style="list-style-type: none"> <li>• Crop Improvement Research</li> <li>• SPC Taro Improvement Program</li> </ul>
2.30 – 3.15	6. <b>Women in Business Development Incorporated (WIBDI)</b> <ul style="list-style-type: none"> <li>• VCO and Dried Banana</li> </ul>
3.30 – 4.15	7. <b>Pacific Oil Company - Tuilagi James Bartley</b> <ul style="list-style-type: none"> <li>• Commercial VCO Production</li> </ul>
4.30 – 5.30	7. <b>Scientific Research Organization of Samoa</b> <ul style="list-style-type: none"> <li>• Value added research programs and product development</li> </ul>

**FREE EVENING**

**DAY 5 FRIDAY, 27 AUGUST 2015**

**HOTEL MILLENIA CONFERENCE ROOM**

Session/Time	TOPICS	FACILITATOR
Session 1 9:00 – 9:30	<b>Session 1: Strengthening Extension in the Region</b> <ul style="list-style-type: none"> <li>• Extension Priorities and best practice models (Sanfred Smith)</li> <li>• PIRAS Network operations and linkages (Gibson Susumu)</li> </ul> <b>DISCUSSIONS</b>	<b>Seumanutafa Dr Malcolm Hazelman, President, APEAN</b>
9:30 – 10:00	<b>NETWORKING TEA BREAK</b>	
Session 2 10:00 – 11:00	<b>Session 2: Regional Extension Strategy</b> <ul style="list-style-type: none"> <li>• Presentation on Extension Strategy Framework (Dr. Salend Kumar)</li> </ul> <b>DISCUSSIONS</b>	<b>Seumanutafa Dr Malcolm Hazelman, President, APEAN</b>
Session 3 11:00 – 12:00	<b>Session 3: Regional Extension Strategy</b> <ul style="list-style-type: none"> <li>• Review and Discussions on Extension Strategy Framework (Dr. Christine King)</li> </ul> <b>DISCUSSIONS</b>	<b>Seumanutafa Dr Malcolm Hazelman, President, APEAN</b>
12:00 – 1:30	<b>LUNCH</b>	
Session 4 1:30 – 2:00	<b>Session 4: Research Priorities</b> <ul style="list-style-type: none"> <li>• National &amp; Regional Research Priorities (Dr. Siosuia Halavatau)</li> </ul> <b>DISCUSSIONS</b>	<b>Dr Ramakrishna Akkinapally, DDG, NARI, PNG</b>
2:00 – 3:00	<b>Wrap up (SPC)</b> <ul style="list-style-type: none"> <li>• Review of Background Paper and Recommendations for HOAFS/MOAF</li> <li>• Link to EDF-11 Opportunities</li> <li>• Way Forward</li> </ul>	<b>Dr Ramakrishna Akkinapally, DDG, NARI, PNG</b>

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<b>2:30 – 3:00</b>	<b>NETWORKING TEA BREAK</b>	
<b>3:00 – 3:30</b>	<b>OFFICIAL CLOSING</b> <ul style="list-style-type: none"><li>• Dr. Cokanasiga, Deputy Director, LRD, SPC</li><li>• Ms. Natalie Ernst, Deputy Executive Secretary, GFRAS</li><li>• Hon. Fa’amoetauloa Lealaialoto Taito Nanai Dr. Fa’ale Tumaali’i, Minister for Natural Resources and Environment &amp; SROS Samoa</li></ul>	<b>Tilafono David Hunter, CEO, SROS</b>

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