Pacific Extension Summit

Bringing about Change - *Promoting Participatory Agricultural Extension in the Pacific*

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SPC Land Resources Division

SPC DSAP

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Nukualofa,
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FOREWORD

In the eyes of some commentators on rural development, agricultural extension services in the Pacific was losing its image. To rivive it, they needed thawing out and a total make-over. For some time now, the process of change has been ongoing in some countries with the help of development partners. More recently, the Secretariat of the Pacific Community's Land Resources Division (LRD) and development partners that promote participatory approaches to programme planning and implementation have advocated the concept of making Participatory Agricultural Extension part of national planning processes. The concept is based on recognition of the fact that participatory approaches, with strong involvement of rural communities at all stages of the extension process, are essential for successful implementation of development projects.

The essential element of Participatory Agricultural Extension is the facilitation of learning processes in rural communities to empower people and enable them to make decisions that will improve their livelihoods in a sustainable way. Participatory Agricultural Extension achieves this through activities such as farmer field schools, participatory technology development and participatory plant breeding.

To date, Participatory Agricultural Extension in the Pacific has largely been confined to project-based interventions. Very little effort has been expended on incorporating mainstream participatory approaches in national policies and institutionalizing them in national services. Most Pacific countries still rely on traditional delivery of extension services – that is, the top-down approach. It was the objective of the Summit to seek the support of countries and territories, identify challenges to the approach and consult extension practitioners to identify ways and means of institutionalizing Pacific Agricultural Extension.

This Summit reviewed approaches to extension in the Pacific, identified global and regional scenarios where participatory approaches have been successful, and sensitized participants to the advantages of various participatory approaches.

The ultimate aim was greater coordination of participatory extension approaches in the Pacific and the formation of a Pacific Island Extension Network. The involvement of top-level extension professionals in this international consultation was aimed at lobbying for their support for institutionalizing Participatory Agricultural Extension in national extension systems.

'Aleki Sisifa
Director,
Land Resources Division,
Secretariat of the Pacific Community

CHAPTER 1

PROMOTING PARTICIPATORY AGRICULTURAL RESEARCH AND EXTENSION

Background

The inaugural Agricultural Extension Summit for the Pacific Region, which was held in the Kingdom of Tonga in November 2005, brought together 96 participants from 23 Pacific Island countries and territories (PICTs) and further afield. They included extension managers, researchers and practitioners, university lecturers, members of civil society organisations and farmers. A summary of the professions and location of participants is given in Table 1, while Annex 3 provides their names and contact details.

Table 1: Profession and location of participants who attended the Extension Summit.

Participant Types	Number of Participants
PICTs Participants	
Researchers	9
Extension Managers	12
NGOs	9
Extension Officers	33
Educational institutes	5
SPC staff	15
Outside the region	
Australia	8
Thailand (FAO)	1
Philippines	1
Netherlands	1
New Zealand	2
Total	**96**

The meeting was organised by the Land Resources Division (LRD) of the Secretariat of the Pacific Community (SPC), with funding assistance from the Technical Centre for Agricultural and Rural Cooperation (CTA), European Union (EU), Australian Centre for International Agricultural Research (ACIAR), Food and Agricultural Organization (FAO), SPC Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) Forestry, and the Ministry of Agriculture and Food (MAF) of the Government of Tonga.

In recent years, agricultural extension has picked up an additional dimension – that of on-farm participatory generation of appropriate technologies and extension information. This involves participation by rural communities in all stages of the extension process, from problem analysis, planning, and implementation (including on-farm trials) to monitoring and evaluation. This field of participatory technology development (PTD) is wide-ranging with a diverse array of experience worldwide. Experience has shown that adjusting top-down programmes to local needs is extremely challenging. These issues are critical to the institutionalization or internalization of a more participatory extension service by adjusting management systems to reflect new ways of service delivery.

Unlike other regions of the world, the impact of participatory agricultural extension (PAE) in PICTs has been limited and largely confined to project-based interventions. It has thus lacked sustainability or has not contributed to institutionalization. Although there are localized successes, most countries still rely on traditional delivery of extension services.

This report is a synthesis of the main findings, lessons learnt, conclusions and recommendations from the presentations and discussions of the summit. Papers presented at the summit are summarized in Annex 2.

Objectives

The summit aimed to strengthen support for Pacific Agricultural Research Extension (PARE) at the regional and national level through sensitizing senior policy- and decision-makers.

Extension summit objectives were to: (i) review the status of PARE in PICTs and elsewhere; (ii) develop guidelines for institutionalizing PARE in PICTs; and (iii) prepare a regional framework for supporting the institutionalization process. The summit included keynote addresses, presentations of extension models, plenary discussions, and small-group discussions.

Specifically the summit aspired to:

- Establish the status of PARE in PICTs, and consider experiences and lessons learnt in its application.
- Develop guidelines for institutionalizing PARE at regional and national levels.
- Improve awareness among agricultural educators of the status of PARE in PICTs and internationally, leading to the development of relevant curricula in regional universities.
- Strengthen linkages with PARE practitioners within and outside the region, such as FAO, ACIAR, International Institute of Rural Reconstruction (IIRR), and Action Group on Erosion, Technology and Concentration (ETC Group).

Workshop Process

To organize the summit, a committee was set up consisting of representatives from sponsoring agencies, keynote speakers, SPC and the host country, Tonga. Invitations were sent to potential keynote speakers, and to selected regional and international

Dr Pita Taufatofua, Tonga Ministry of Agriculture and Food, with Hon Fred Sevele, Minister for Labnour, Commerce and Industries at the opening of the Extension Summit.

organizations with experience in extension models and ICT define that the summit could learn from. Final speakers were chosen from those who responded.

The summit opened with a keynote address by the Minister of Labour, Commerce and Industries, Government of Tonga (Annex 1). This was followed by plenary keynote addresses and thematic presentations. Small group discussions looked at the major issues covered in the presentations. These were followed by presentations on experiences, both regional and international, different extension models and use of ICTs. Up to this stage, the objectives of the program was to learn from all these experiences and to move to group discussions furthering issues that came out of these sessions.

Issues were grouped into the following broad categories:

- Traditional cultures and indigenous issues
- Farmer-to-farmer extension
- Farmer-level knowledge management
- Institutional knowledge management
- Best combination of research-extension collaboration
- Participatory monitoring and evaluation
- Partnerships
- Gender and youth
- Building capacity of extension practitioners
- Sustainability, up scaling and institutionalizing

Participants were asked to participate in the discussion groups of interest to them and to use the following terms of reference for group work: (i) elaborate on the selected issue, and how it relates to participatory agricultural extension, (ii) discuss strategies/suggestions to overcome challenges; and (iii) suggest recommendations on the issue.

The next phase consisted of break-out sessions with participants divided into professional groups: (i) extension managers, (ii) research scientists, (iii) NGOs and farmers, (iv) field extension staff, and (v) academics. They were asked to look at the outcomes of the issue-based group discussions and see how realistic the outcomes were; what could be practically done; and opportunities, risks and concerns. The groups were asked to propose strategies and recommendations to address the issues.

The last phase was the country group discussion where country representatives were asked to list activities that they could undertake to further the objectives of the summit, and to list activities that needed collaboration or support from regional and international organizations. Another group of representatives of regional organizations looked at the same questions.

The Australasian Pacific Extension Network (APEN) was requested to share its experiences with the formation of a Pacific Islands Extension Network (PIEN), as this was an issue raised at the plenary session.

The summit ended with acknowledgements to participants for taking time to attend the summit and to SPC partner organizations EU, CTA, FAO, and SPC GTZ. Special thanks were given to the hosts, Tonga MAF, for logistical support.

CHAPTER 2:

INSTITUTIONALIZING PARE IN THE PACIFIC REGION

Evolution of Extension in the Pacific Region

Traditionally, extension services in the Pacific region have been given low priority because of the negative image of service delivery. As a consequence, limited budgets and staff are allocated to extension, making it an unattractive career. Extension in the region has basically evolved through three phases.

Phase 1 (1950s – 1960s)
Extension systems were established within Departments or Ministries of Agriculture and were export-commodity oriented. The focus was on the whole farm and primarily crop oriented. Extension strategies were mainly based on traditional technology transfer. The drivers of the systems were export needs (banana, copra, cocoa, coffee, etc.) and central governments.

Phase 2 (1970s – 1980s)
The main features of this phase were agricultural diversification, tertiary graduates available (from the University of the South Pacific (USP), Fiji College of Agriculture (FCA), University of Papua New Guinea (UPNG) etc.), and strong donor/aid push (World Bank (WB), AusAID, NZAID, EU etc.). The main focus was on diversification and applying extension models such as community/rural development, commodity approach, training and visiting system, farming system research and extension, and the Agricultural Liaison Officers (ALO) Network of USP's Institute for Research Extension and Training in Agriculture (IRETA). The drivers of the systems were community/rural development, market challenges, information/communication, and funding availability/ donor and project support.

Delegates at the Extension Summit

International organisation representatives attended the Summit.

Phase 3 (1990s-2000s)
This phase in the development of extension in the Pacific is characterized by pluralism and a bottom-up approach. The extension focus is on participatory approaches, decentralization, improved research/extension linkages, privatization, and use of information technologies. The drivers of the systems are food security and sustainable agricultural development, pest and disease concerns, globalization, and environmental and food quality concerns.

The time has come to institutionalizing PARE

The evolution of agricultural extension in the region has reached the stage where institutionalizing PARE is becoming important. For PARE to become part and parcel of the regular programmes and activities of an organization, the organisation must change. There are four key components integral to change when institutionalizing PARE: (i) creating and maintaining motivation for change, (ii) competence development, (iii) pilot activities, and (iv) re-structuring at the organizational level. Care must be taken not to put too much emphasis on the institutionalization process but to keep it in perspective while remaining focused on principles, activities and their expected outputs, collective methodologies and implementation guidelines. There is also a need to establish and strengthen partnerships, and for partners (farmers, decision-makers, etc.) to be viewed as equal actors and generators of solutions and new technologies/ideas, and not merely as sources of information. It can be very helpful to capitalize on existing traditional structures because they are well organized and established.

Extension agents must know how to engage and interact with their environment and recognize that all players/stakeholders are dependent on each other. In this way, NGOs in the region complement and strengthen government's efforts and are often

Presentation by Tony Jensen of Kastom Gaden Association (NGO) Solomon Is

the only service providers in remote areas where government services are not present or not functioning.

Within multi-stakeholder platforms, tertiary institutions (e.g. universities) are in a good position to help institutionalize PARE if they can nurture a continuous learning process. This means confronting the tendencies of academics to look down on farmers' indigenous knowledge, as well as the elimination of attitudes of superiority over extension workers. PARE can be promoted by developing university curricula to include courses and practical information on actual PARE work at the field level.

It is therefore crucial to link the formal and informal sectors and improve mechanisms for collaborative work. And to ensure the sustainability of any development project, all partners within a project/programme need to be totally committed and must also understand the roles of participatory monitoring and evaluation to ensure a balance between processes and outcomes.

Issues Related to Extension and Institutionalizing PARE

Experiences from outside the Pacific in institutionalizing PARE in government and non-government organizations have highlighted issues such as over-institutionalization, farmer involvement, and unclear definition of the roles of researchers and extensionists. The question of the role of extension agencies is central. Extension workers are often sandwiched between farmers and researchers, between authorities and people's organizations that seek change, or between hard technology and processes. The profile of extension is fading along with funding, further blurring the role of extension.Issues and lessons learnt from the presentations and discussion of the keynote addresses and thematic presentations are listed below:

- Youth should be involved in PARE as it not only encourages food security but is also a means of improving livelihoods.
- Extension officers need to change their attitude and to appreciate farmer knowledge and skills.
- Farmer-to-farmer extension is quite effective as farmers tend to listen to other farmers more than they listen to extension officers.
- There is no one-shoe (extension model/system) that fits all, or works in all situations.
- Gender issues need to be given prominence because of the many differences in cultures in the region.
- The effectiveness of PARE for agricultural development can only be realized if research and extension work together.
- The attitude and behavior of technical staff affects the effectiveness of participatory approaches.
- There is a need to encourage donor agencies to be flexible towards cultural activities in terms of funding for participatory approaches.
- Field staff should be given incentives to implement participatory approaches in their work.
- There should be more programmes within existing systems to promote environmental issues to target audiences.
- Capitalizing on village authority systems should be considered.
- There is a need to support traditional structures in rural communities as technology transfer channels.
- All stakeholders should be involved in monitoring and evaluation of PARE.
- Research institutes are starting to adopt participatory approaches and farmers' organizations are becoming more empowered.
- What role should extension agencies now play?

Pila Kami of Tongan Agriculture Research contributing to Discussions

'Aleki Sisifa, LRD Director (second left, front row) with Pacific Heads of Extension

CHAPTER 3:

EXPERIENCES FROM THE REGION IN EXTENSION DELIVERY AND USE OF ICTs

Experiences in various Pacific and overseas countries in extension delivery and use of ICTs were presented in the context of institutionalizing PARE and assisting the process.

Lessons Learnt from Extension Models

The lessons learnt from different extension models were related to several important issues that have a bearing on the institutionalization of PARE and its successful operationalization.

Attitudes

1. 'To improve your attitude, let go of self pride, antipathy and jealousy, and fear of being criticised, and never let go of your willingness to share, and be positive'.
2. 'You must become the change you wish to see in the world'.

Farmers

1. It is possible to operate farmer to farmer extension without funds, as properly managed farming organizations can use local networks to assist fellow farmers.
2. People need to change their attitude that farming is a poor person's job. Farming is a money-generating activity.
3. Farmers are willing to improve. They will be more comfortable in working with extension if a 'side to side approach' is used.
4. Ensure flexibility in carrying out on-farm trials so that trials coincide with the day-to-day activities of the farmer.

Extension Agency

1. Good farming should be a passion for extension officers; they should take lead roles in paving the way for agriculture.
2. Extension officers should be role models for the younger generation.
3. How do we restructure and maintain an efficient and effective extension service in the face of challenges such as restricted human and financial resources resulting from PICT governments further reducing funding and staffing; the growing demand for participation by both commercial and non-commercial resource owners; few income and employment alternatives; the risk of further marginalizing low income households through commercialization of extension services ('If you don't pay, you don't get'); and the different needs of subsistence farmers, commercial smallholders and community based producers.
5. How do we reduce sectoral fragmentation of extension services and promote integrated extension service delivery.
6. What is a good recipe for combining extension methods/ models?
7. When carrying out surveys on agricultural activities, include members of the public as well as farmers.

Partnership

1. It is important to give field workers an opportunity to learn along with the farmer about the success and failure of field activities.
2. Partnering with NGOs at national level is advantageous in that activities have a faster rate of implementation, as NGOs tend to be project-oriented and ministries can provide technical advice.
3. Development often requires agribusiness solutions, which involve participation and partnership along the production and market chain, with sometimes a push from the bottom and a pull from the top.

4. How do we avoid role conflicts (often inherent in public sector organizations): adviser – controller – middleman

Gender

1. Mainstreaming of gender issues is especially weak in agriculture extension in PICTs. The Fiji case showed the need for collaboration amongst all ministries to get mainstreaming of gender institutionalized

Support

1. How do we reduce dependency on external funding/ donors?
2. Facilitating development of higher levels of participation requires human capital development, social capital development, and time – a long-term view.
3. Political support is critical to ensure the benefits of this process are mainstreamed into government restructuring processes.
4. Input of technical support is necessary till staff capacity in PARE is improved.

Traditional Structures and Networks

1. Use of village agricultural committees in extension services will help greatly in advocating participation.
2. Programmes should be community driven with a focus on building on traditional and indigenous knowledge. Training in PARE should be tailored to suit the local culture and norms.

Training

1. There is a great potential for mentoring in farmer extension training.
2. Training at regional institutions like SPC (Community Education Training Center (CETC), which has been training women for community development, would be beneficial if training could be targeted at income generating activities.
3. What is the role of Farmer Field School (FFS) in extension training in the region?

Externalities

1. Factors outside the boundary of projects can have major influence on achievements of outcomes.

Sustainability

1. To ensure sustainability, there is a need to continue building farmers' trust and confidence in the system - PARE
2. The sustainability of the goals of participatory projects, after funding ends and support agencies withdraw, is a crucial issue and strategies need to be identified to address this.
3. Participatory monitoring and evaluation are crucial for successful institutionalization of PARE.

Lessons Learnt From Experiences in ICTs

There were several lessons learnt from the ICT presentations that are important to bear in mind in incorporating ICTs in the operationalization of PARE.

1. Bridging the digital divide? Lack of ICT use is more a social (knowledge) problem than a technical one.
2. There is a lack of agricultural information in many agriculture departments throughout the region and this is a recurring problem.
3. Lack of capacity, inefficient knowledge management and inadequate dissemination networks are the main problems relating to lack of agricultural information.
4. To reach potential target audiences, it is wise to use existing community structures and to address target audience interests, as well as using innovative methods of communication (e.g. holding sporting events, strengthening cultural traditions, using farmer to farmer training and farmers' indigenous knowledge, and establishing information resource centers).
5. How do we overcome fragmented information and knowledge systems (division between local, science and traditional systems)?
6. It is crucial to build capacity for participation and engagement by science and end users (policy makers and land managers).
7. The rural email station is a new technology in the region and the Solomon Islands project will provide experiences from which other countries can learn.
8. The internet and ICT empower people, if information is kept up to date and supported by resources such as brochures and handouts produced by effective networks on-the-ground. Different communities will require different information resources.
9. ICT cannot replace face-to-face exchange and learning. E-discussions are stronger after face-to-face events
10. Technologically simple options with low connectivity requirements are often adequate (Yahoo groups, Skype).

Will Allen, Fraser Bule, Tolo Iosefa and Mana'ia in a group discussion session.

CHAPTER 4:

SYNTHESIS OF ISSUES AND RECOMMENDATIONS

Issues raised during the course of the first three days were consolidated into the major groups of issues listed below. Participants were asked to discuss these issues, which arose from the Round 1 and 2 group discussions, and suggest strategies and recommendations.

1. Traditional structures and indigenous knowledge.

Main concerns regarding use of traditional structures and indigenous knowledge in agricultural extension work:

- The need to recognize and respect the importance of traditional structures, channels and cultural obligations
- Strengthening the role and use of indigenous knowledge.
- How can we overcome the problems of working with mixed cultures?

To improve use of traditional structures and indigenous knowledge it was recommended that:

1. National governments include traditional structures, channels and indigenous knowledge in normal operating procedures.
2. Educational institutes (tertiary) develop curricula to promote traditional structures and channels and indigenous knowledge.
3. Traditional leaders are included in agricultural councils and more village-oriented extension models are promoted.

2. Farmer to farmer extension

Farmer to farmer extension was very appealing to participants. The main questions regarding its improved adoption were:

- How do we encourage farmer to farmer extension.
- Do we need to build capacity in communities for local facilitation and training and how would we do it?

To make it work the following strategies were suggested:

1. A selection process to identify extension farmers. Criteria will vary according to community and culture. Extension farmers must be involved, have the confidence of the community and be dedicated. May be on voluntary basis initially with a salary once established.
2. Extension farmers need training and farmer field schools will provide the means.
3. Use of model farms for demonstration should be promoted and farmers encouraged to do their own experimentation.

Identifying livelihood opportunities and issues by women in Wallis

3. Farmer level knowledge management

The main issues regarding farmer level knowledge management were:

- Use of ICTs by farmers.
- To what extent is ICT relevant to rural farming communities?
- Effective communication (effective use of media, knowledge management).

For better farmer-level knowledge management, the following were recommended:

1. Use both older (radio, etc.) and newer (computer, etc.) ICTs.
2. ICT systems should be integrated to suit the purpose.
3. Email centres are useful, but extension farmers and other operators will need community facilities and training.
4. The knowledge management system must respect traditional systems such as family and clan networks.

4. Institutional level knowledge management

The main concerns regarding institutional-level knowledge management were:

- Consistent cycle of lack of information within agricultural ministries in the region.
- Need for simple data bases for extension practitioners.
- How do we access experience in extension models/ approaches.

- Need to establish information centre/consolidate efforts.
- Need to assess information needs.
- Strengthen ICT use/network.

Strategies proposed to improve knowledge management at the institutional level were:

1. Develop policy to support the institutionalizing of knowledge management.
2. Build capacity (in skills and technology) for knowledge management.
3. Increase number of staff in national information units in agriculture departments/NGOs, etc. in the countries.

5. What is the best combination of extension systems?

The main issues were:

- Identify workable Pacific extension systems for different communities.
- What are the costs/benefits of extension tools?
- No one-shoe fits all – no one extension model will work for all situations.
- Labour requirement for now/future PARE agricultural development.

6. Research-extension collaboration

The concerns were:

- Role of research versus extension in PARE?
- What are the significant differences between PARE and PAE?
- Participatory Agricultural Extension Development and Research (PAEDR), not PARE
- Strengthen research and extension linkages.
- PAE or PARE?

Strategies suggested to address issues 5 and 6 above:

1. 1. Use partnerships to build relationships and strengthen linkage between research and extension and for information and technology transfer.
2. Take recommendations of the extension summit, including research-extension linkage, to heads of agriculture and forestry (HOAFs) meeting in 2006.
3. No one extension system works for all communities; therefore the strategy is to identify systems that best suit the situation of each community.
4. Researchers should be involved in all stages of PAE.
5. Extension workers should be trained in facilitation.

7. Participatory monitoring and evaluation

Concerns regarding participatory monitoring and evaluation:

- What is the impact of new extension methods at the community level and in the region?
- Participation in monitoring and evaluation for accountability – how, and who are the stakeholders?
- How do we monitor and evaluate PARE?

Proposed activities to address issues of participatory monitoring and evaluation:

1. Monitoring and evaluation should be included in capacity training and assessment at all levels.
2. Develop and introduce appropriate monitoring and evaluation tools in all projects.
3. Monitoring and evaluation should be part of planning, implementation and wrap-up of projects to show people are on track.

8. Partnerships, inter-institutional collaboration

Partnership is crucial to furthering institutionalization of PARE. The major concerns were:

- Creating effective, equal partnerships – government, NGOs, community based organizations (CBOs), etc.
- Partnerships and their relationship to government, farmers and businesses.
- How do we develop and strengthen networks – within professions, between institutions (government, NGOs), with and between farmers.

Partnerships and inter-institutional collaboration will be strengthened by the following activities:

1. Study tours to see examples of successful collaboration. Regional organizations/donors to support.
2. Each country to set up a small working group consisting of representatives from government, NGOs, and farming communities to develop plans to mainstream partnerships and inter-institutional collaboration.
3. Conduct gender and stakeholder analysis of agriculture looking at roles, responsibilities, power/decision making, and stakeholders and their needs, to ensure equal participation.
4. Establish partnership and inter-institutional focal points/positions in agricultural ministries.
5. Facilitate multi-stakeholder process to build trust and understanding.

9 & 10. Gender and Involvement of youth

Mainstreaming of gender issues is especially weak in agriculture in the region and there is little involvement of youth in agricultural development in most PICTs. Several issues were raised regarding gender and youth involvement in PARE.

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- Most of the time, men play a visible role in decision making
- However, women sometimes play a role in decision making, e.g. children listen more to mothers. Older people play important roles – younger generations look up to their experience and wisdom in making decisions
- Young people learn experientially through listening, seeing, and doing in the family
- They learn through other social institutions in villages, e.g., peers and church.
- They also learn through formal learning institutions, e.g. school
- Young people have limited opportunities for learning and training

- There are also limited fora through which their voices can be heard
- Women are seen as change agents, e.g. in Tonga and Futuna.
- Gender analysis should be part of extension activities.
- What are some strategies for involving youth in PARE programs?
- Ensure inclusion of youth in target groups of project and programmes.

Proposed strategies for addressing issues of gender and youth involvement in agriculture and PARE:

1. Enable young people to actively contribute to decision making, e.g. through PIEN.
2. Strengthen opportunities for young people to participate in different fora in the community.
3. Use key people to voice women's opinions and major concerns in the community.
4. Raise awareness of women's contributions regarding community work and their involvement.
5. Use teamwork approaches on an organizational level to promote community sustainable development work.
6. Share success stories and recognize the role and contributions of women to the community.
7. Use PRA tools and partnerships to address gender issues.
8. Recruit more female Extension Officers, but be aware that this may not solve the problem.

11. Capacity building of extension practitioners

Extension practitioners in the region are usually the mediocre and with poor qualifications and experiences. Key issues for building the capacity of extension practitioners:

- Capacity building of extension staff/practitioners. How can this be done?
- Build capacity of our extension people using media and local knowledge.
- Improve extension officers' access to and understanding of social assessment tools, Participatory Rural Appraisals (PRA), etc.
- How do we provide professional development for extension professionals? Constraints include language barriers, resources and their availability.
- Institutionalize participatory approaches and gender issues in educational curricula (agricultural tertiary institutions).

Community Mobilization, Samoan Community taking responsibility to control coconut rhino beetle.

To address this issue it was decided that the following activities be adopted:

1. SPC and USP should assess the needs of extension agencies/staff in the region in collaboration with national agricultural departments/NGOs/colleges/and farming communities.
2. Develop a capacity building program for the region and countries.

12. Sustainability, up-scaling and institutionalization

The question of sustainability is very important, especially as projects phase out and with funding for extension on the decline in most PICTs. Issues of concerns were:

- How sustainable is participation after the end of project interventions? Do farmers and communities continue to use participation?
- How do we upscale experiences and lessons learnt from case studies/extension models presented at the summit?
- How can we adequately and appropriately disseminate all lessons learned from case studies/extension models to relevant stakeholders?
- How can we sustain the institutionalizing process?

Proposed strategies:

1. Develop appropriate agricultural research and extension policies.
2. Heads of Extension to meet regularly to review progress on extension policies, activities, recommendations, etc.
3. Governments should fund NGOs to provide services where possible and where NGOs are better service providers (either directly from donor funds or from national budgets).
4. A regional extension network should be established to coordinate regional and national processes of institutionalization.

CHAPTER 5:

THE WAY FORWARD

Country and Regional Plans

Country plans for furthering PARE were developed by country groups in the Round 3 group discussions. The plans include activities that national governments can support and activities that regional and international organizations can support. Table 2 outlines the plans developed by individual countries. Country needs can be grouped into needs for capacity building, linkage and networking, and empowerment.

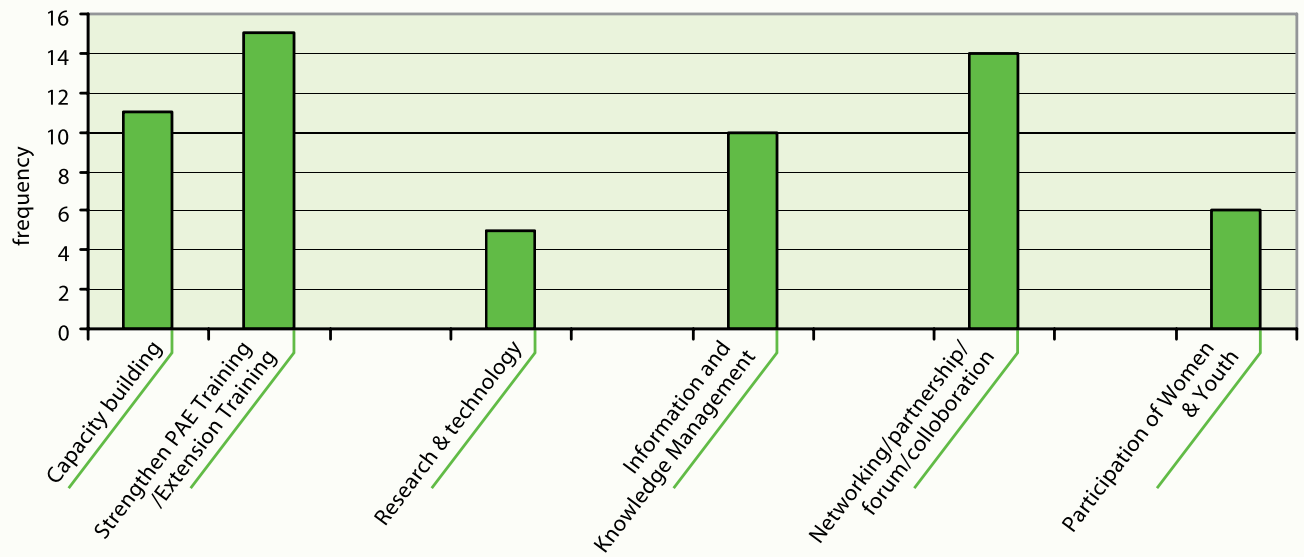
Table 2. Country Plans to Support Institutionalization of PARE (■ capacity building; □ linkage and networking; ■ empowerment).

COUNTRIES	ISSUES AND ACTIVITIES THAT CAN EASILY BE CARRIED OUT BY COUNTRIES AT NATIONAL LEVEL (Who will deliver)	ISSUES AND ACTIVITIES THAT NEED COLLABORATION (Collaborate with who?)	ISSUES AND ACTIVITIES THAT NEED SUPPORT FROM REGIONAL/INTERNATIONAL ORGANISATIONS (Which organisations)
FSM/Palau/ Marshall Islands/ Nauru	Carry out PRAs (DSAP project staff, Extension Officers)	Farmer Training (SPC/FAO/GTZ)	Capacity Building
	Include gender analysis in PRA and in agriculture (DSAP project staff /Extension Officers)	Agriculture Staff training in PRAs and gender (SPC DSAP)	Research
	Involve youth in agricultural activities (DSAP project staff/Extension Officers)	Strengthen partnerships (DSAP/Extension staff/Land Grant/PCC/CMI)	Information dissemination
Fiji	Capacity Building (MASLR)	Networking – Extension and Research Collaboration (Regional and International Organisations)	
	Institutional Knowledge Management (MASLR/Extension Department/Information Department/EP&S Department/Research)	Capacity Building (Regional/International Organisations/NGOs)	
	Youth Empowerment/Women Empowerment (MASLR/ Ministry of Youth/Ministry of Women/Provincial Administration/NGOs)	Knowledge Management (Regional/International Organisations/Private Companies)	
Papua New Guinea	Strengthen networking of delivery of extension services (NDAL/Provinces/NGO/ Statutory Bodies/Commodity Corps)		Institutionalise PARE (All agriculture institutions/ Agriculture Colleges)
	Strengthen collaboration between stakeholders (NDAL/Provinces/NGO/Statutory Bodies/Commodity Corps)		Make available information on extension methodologies (SPC/EU/FAO/IRETA/CTA/ACIAR/ GTZ)
			Make available appropriate technology (SPC/EU/FAO/IRETA/CTA/ACIAR/GTZ)
			Support women in agriculture (SPC/EU/FAO/ IRETA/CTA/ACIAR/GTZ)
Cook Islands	Farmers Training (Agriculture/Environment/ Education Departments)	Extension training and support (SPC/FAO/IRETA – sub regional)	Improve water supply to agricultural areas (FAO/SPC/SOPAC/R.REID)
	Training in information and communications skills (DSAP/Agriculture Department/ICT library)	Capacity Building (SPC/FAO/IRETA – sub regional)	Assist women's and cottage industry (FAO/ SPREP/GTZ)
		Assist and promote young farmers (SPC/FAO/IRETA – sub regional)	
Solomon Islands	Different stakeholders to present to DAL their priorities		
	Strengthen collaboration between NGOs and DAL		
	Promote PAE in workshop		
	Create a list of PAE/farmer to farmer sites for student attachment		
	Senior management of DAL and KGA will engage in exchange visits to familiarize and build trust in each others' programs.	Farmer forum to develop plans with farmer (DAL/NGO/ Farmer)	
	NGOs will make presentations to National Agriculture Council on their views on what DAL priorities and approaches should be.	Study tour to PNG on alternative extension approaches (DAL/Farmer/NGO)	
		Strengthen PAE training capability in institutions (SICHE/DAL/NGO)	

Tonga	MAFF and NGOs to create awareness of PAE	Strengthen sharing of tasks within ministry to bring out the best extension systems (MAF)	Capacity building of extension practitioners(SPC/FAO/IRETA/MAF)
	Strengthen linkages between MAF/NGO/ Other government ministries/TNYC	More research and extension collaboration (MAF)	Documentation of indigenous knowledge (SPC/FAO/MAF)
			Involvement of youth and gender in income generating projects (FAO/SPC/NGO/MAF)
Wallis and Futuna	Analysis of the failure of establishing a vegetable market (DSAP/Officers from the Service/Farmers)	Promote Wallis and Futuna participation at CETC (DSAP)	Document indigenous knowledge (DSAP/ Regional organisations)
	Promote vegetables as nutritious for school food (School teachers/students/DSAP)		Exchange expertise and experiences through an extension network.
	Establish cooperatives using the participatory approaches (DSAP/Service staff/farmers)		
	Analyse taro cultivation/pythium rot (DSAP)		
Vanuatu	Strengthen research and extension linkages through fair distribution of responsibilities and ownership (MAQEF/NGO/Farmers)	Collaborative research involving PICTs (MAQFF/ACIAR/ USP)	Using Farmer Field Schools for training (MAQFF/ SPC)
	Effective partnerships with government/ CBOs/NGOs (Government/NGO/CBO)	Setting up of resource centres (MADFF/SPC)	Capacity Building of government, NGOs, farmer extension leaders(Government/NGO/Donors)
	Facilitate and provide training in the formation of farmer groups (Government/ CBO/NGO)		Study tours to examples of successful collaboration (MAQFF/Donors)
	Encourage farmers to do their own experimentations (Research and Extension)		
French Polynesia	Promote PAE to SDR (DSAP)	Involvement with CETC (DSAP/CETC)	
	DSAP to take lead role in promoting French Polynesian participation at CETC	Setting up of an Extension network (SPC and others)	
	A DSAP site in French Polynesian exclusively for promoting participatory approaches	Conserving indigenous knowledge (DSAP and others)	
	Promote PAE to agriculture training schools		
Samoa	Recognising farmer associations (Ministerial level)	PAE Regional networking (SPC and regional countries)	
	Institutionalising participatory approaches (MAFF)	Promote PAE inter-Samoa (SPC/FAO/ACIAR/UNDP)	
	Develop partnerships with relevant stakeholders to promote youth development projects	Capacity building (SPC/FAO/ACIAR/UNDP/EU)	
		Leadership and Managers training in PAE (SPC/FAO/UNDP/ EU)	
		Improve research/extension linkages between USP and other PICs (PICs)	
Tuvalu	Establish assorted commercial vegetable growing (DSAP)	New technology on vegetable and livestock products (SPC)	Pest and Diseases assistance (SPC)
	Poultry Semi-commercial farming (ducks and chicken (SPC)	Research – extension collaboration (DSAP)	Continue on-going projects (vegetable, livestock, gene banks) (SPC)
Kiribati	Research and Extension collaboration (SPC, Agriculture Department)	Capacity building (Department of Agriculture and donors)	Capacity building (Donors)
	Capacity building for extension practitioners (Agriculture Department, farmers)	Research (Kiribati and International Institutions)	Research (Donors0
	Traditional cultivation (DSAP, Agriculture Department)	Institutional knowledge management (SPC)	Extension campaign (Donors)

Result of Extension Summit Country Requests

Clustering of issues for colloboration and support



Regional Capacity Building for Extension Practitioners

A regional plan for capacity building was proposed by participants from educational institutes. A training needs analysis was proposed for formal educational institutes to ensure that their courses meet the needs of the Pacific region. This analysis should be conducted by regional organizations (SPC/USP and interested stakeholders) and at the national level by local educational institutions and Ministries of Agriculture. The training needs analysis should also assess capacity of the region and countries to deliver the training. The aim of the capacity building exercise should be to promote use of participatory methods in both formal and informal training. Opportunities should be explored for creating a network of education providers involved in extension to discuss PARE and its institutionalization.

It was suggested that the possibility of holding IIRR training in the region be explored. It was also suggested that the regional network look at the opportunity of developing a regional FAO TCP for a regional training programme aimed at strengthening PARE.

A plan by regional organizations for furthering the outcomes of the summit was also developed. The major activities of the plan are listed below:

- Capacity building needs assessment (USP/SPC/ACIAR/UQ)
- Collaborative courses in participatory extension (USP/UQ/LandCare
- Open Distance Learning (USP/FAO)
- Improved participatory extension in French territories (USP/SPC/DSAP)
- Use of DSAP staff and DSAP network to promote participatory extension in PICTs
- Networking of agricultural institutions (SPC/USP/APEN)

Malia of Wallis and Futuna making her presentation.

Regional Network

The summit also approved the formation of an extension network called *Pacific Islands Extension Network* (PIEN). It was suggested that existing networks such as DSAP and the Melanesian Farmer First Network (MFFN) be used to strengthen PIEN.
A regional coordination committee was elected and the following were approved by the committee:

Regional Coordinator – Stephen Hazelman
Micronesia (Northern Pacific) – Mereseini Nagatalevu Senilola
Micronesia (atolls of Kiribati and Tuvalu) - Kinaai Kairo
Melanesia – Apisai Ucupoi (Government) / Tony Jensen (NGO)
Polynesia – Kamilo Ali (Government) / Jeff Atoa (NGO)
French Territories - Judith van Eijnatten

Advisors to the Coordination Committee were also appointed:
Dr. Laurens van Veldhuizen
Dr. Christine King
Dr. Siosiua Halavatau

TOR –for the Coordinating Committee

- Look at the activities presented during the summit
- Develop framework for establishing an independent Pacific Extension Network
- Explore linkages with other relevant and reputable extension networks
- Explore the mode of ICTs to be used for the network
- Consider the problems faced by French territories regarding language
- Meet regularly to implement the network
- Discuss by email the implementation of a Pacific Network

The minutes of the first meeting of the Regional Coordination Committee are attached as Annex 4.

Evaluation of the Summit

Overall the participants were satisfied with the structure of the summit and the logistics. Most were also happy with the methods used for presentations and rated the presentations and content as of high quality. Interaction amongst participants and with resource personnel was considered quite satisfactory but lack of time was regarded as a hindrance to interaction.
According to participants, the most useful topics were:

1. 1.Institutionalizing PARE
2. ICT experiences
3. Presentation of different extension models
4. Networking and capacity building
5. Farmers/NGOs/research/extension linkages and networking
6. Participatory monitoring and evaluation
7. Gender issues
8. Traditional structures and networks

Table 3. Draft Plan by Regional Organizations to Support Institutionalization of PARE.

Regional Organisations	Capacity Building Needs assessment (USP/SPC/ACIAR/UQ)
	Develop collaborative courses in participatory extension (USP/UQ/LandCare)
	Open Distant Learning (USP/FAO)
	Improve participatory extension in french territories (USP/SPC/DSAP)
	Use DSAP staff and build on DSAP network to promote participatory extension in PICTs
	Networking of agricultural institutions (SPC/USP/APEN)

ANNEX 1 : OPENING ADDRESSES

i.. Keynote Address: Hon Fred Sevele, Minister for Labour, Commerce and Industry

Colleagues from international agricultural organizations, directors of agriculture and extension professionals from Pacific Island Countries and Territories, I extend to you a warm welcome to the Kingdom of Tonga. The Tongan government is privileged to be hosting this premier Extension Summit for the Pacific region.

Ladies and gentlemen, the agricultural sector in the Pacific region is still the backbone of our island economies. It accounts, on average, 30% of Gross Domestic Product, 50% of export revenues, more than 60% of employment (paid and subsistence) and a large number of the rural population still depend on subsistence agriculture.

This Summit, the first of its kind in our region is timely, as improving agricultural extension services to the Pacific farming communities is more important now than ever before.

Agricultural development projects world-wide reveal significant trends of ineffective technology and knowledge transfer and uptake. This is attributed to the failure of the project design to take into account the diversity of environments, cultures and everyday realities in the lives of common people.

Participatory Agricultural Extension is about moving agricultural technology research and extension closer to the reality of day-to-day activities of the farmers. Through seeking and listening to their concerns, encouraging their involvement in decision-making processes, they can sustainably manage resources to improve their livelihoods.

The United Nation's Millennium Development Goal on poverty alleviation is significant to this gathering.

Participatory Agricultural Extension is one of the most effective mechanisms to achieve the objectives of the Millennium Development Goals in reaching out to risk-prone poorly resourced farmers.

The summit also presents the opportunity for countries to critically reflect on the existing government and non-government organisation extension structures and approaches. This forum is a golden opportunity to rediscover extension as a profession that attracts well trained and highly qualified professionals to continue to develop and strengthen participatory processes.

This week is momentous for all of us who work with communities, particularly in the field of agricultural development. Through galvanising support and cultivating Participatory Agricultural Extension, we are *bringing about change*.

If as a result of this summit, ministries of agriculture mainstream participatory approaches in their policies, it paves the way for researchers, extensionists and farmers to work together as equal partners in the development process.

This participatory process is grounded on the willingness of mankind to share. This willingness is the only way that we can reach out to those that are in need of our services.

I wish you fruitful and pleasant deliberations during the week. I hope that you will make time visit our small island and enjoy the sights of Nuku'alofa and why Tonga is known as the Friendly Islands. I wish you God speed upon your return home to your families and loved ones.
I now declare this extension summit open.

Sanfred Smith testing the bucket-irrigation system during field visit.

ii. Opening Remarks: Mr 'Aleki Sisifa, LRD Director

Hon. Fred Sevele, Minister for Labour, Commerce and Industry, Fr Seluini 'Akau'ola, Pita Taufatofua, Head of Research and Extension Division, CTA representative, ladies and gentlemen. This summit brings together extension professionals from the Pacific and renowned international organizations to evaluate past experiences and map the future of agricultural extension in the Pacific. The summit titled, 'Bringing about change', is the battle cry of extension work. Extension brings positive change to farmers to improve their livelihoods.

Agriculture is still the main activity in our rural areas. We still need to grow food to feed ever rising island populations. We need to continue to find innovative ways to increase the efficiency of our food production systems. And extension is the time-tested channel to reach our farmers in a participatory way.

SPC's re-structured agricultural programme the Land Resources Division, is committed to assist Pacific island countries and territories improve their food production systems in a sustainable manner. The Land Resources Division is recognizing this crucial link to involve farmers in planning their own development by putting emphasis in the work of the Information, Communication and Extension, the ICE Group. This thematic group of LRD is in the forefront, where the tire meets the road, of initiatives to introduce positive change to grass roots level in the Pacific islands.

The concept of moving towards a Pacific Agricultural Extension and making extension a part of the national planning exercise recognizes the participatory approach with rural communities involved in all stages of the extension process.

The essential element of Pacific Agricultural Extension is the facilitation of learning processes in rural communities to empower people and enable them to make good decisions to improve their livelihoods in a sustainable way. Pacific Agricultural Extension achieves this through activities such as farmer field schools, participatory technology development and participatory plant breeding.

Participatory Agricultural Extension in the Pacific, as you would hear from keynote addresses later today, have largely been confined to project-based interventions. Very little effort has been expended to mainstream participatory approaches in national policies.

Most Pacific countries still rely on traditional delivery of extension services, the top-down approach. It is the objective of the Summit to identify challenges to this approach and consult extension practitioners to identify ways and means to institionalise Pacific Agricultural Extension.

This Summit will review approaches to extension in the Pacific islands, identify global and regional scenarios where participatory approaches have been successful, and to sensitise participants to the participatory approaches of farmer field schools, participatory technology development and participatory plant breeding.

Involving top level extension professionals in this international consultation is aimed to lobby their support to make commitments to institionalising Participatory Agricultural Extension in national extension systems.

You will hear presentations ranging from lessons learned from past extension systems, some of which have failed to deliver on their objectives, to presentations on the use of ICT's in agricultural extension. The break-out sessions will seek your views and recommendations on a number of topics including the crucial one on instititionalising Participatory Agricultural Extension in regional and national support frameworks. We will also seek your views in a session looking at incorporating participatory agricultural extension in tertiary curricular with our USP colleagues leading discussions in this area. Monitoring and evaluation is increasingly demanding attention as donors seek accountability of funds expended on country/regional projects. We look forward to discussions and list of recommendations on implementing monitoring and evaluation.

At this point I would like to acknowledge our donors and collaborators who have come forward with funds to organize and host this inaugural Extension Summit. To CTA in the Netherlands who is keen to work with us to push the information and extension angle in agricultural development. The EU, whose mandate on sustainable agricultural development runs parallel to LRD objectives. FAO, our traditional partner in regional agriculture, for never failing us and willingness to work with SPC. AUSAid for their continuing programme funding of LRD activities in the past and future, and to GTZ for being one of our consistent partners in agricultural development in the Pacific.

To all who have made the effort to be with us this week, we thank you for your support and wish you well in your deliberations through-out the week.
Good luck and God speed when you return to your loved ones.

Malo Aupito.

1. Reflecting on change in participatory agricultural extension

Danny Hunter, DSAP Team Leader, SPC - Fiji

Objectives

- **I hope to;**
  - reflect on participation
  - discuss what this means for M&E?
  - describe some possible indicators
  - propose a useful framework, the Cone
- **I am not going to;**
  - Discuss blueprints, M&E systems
  - Discuss guidelines/toolkits

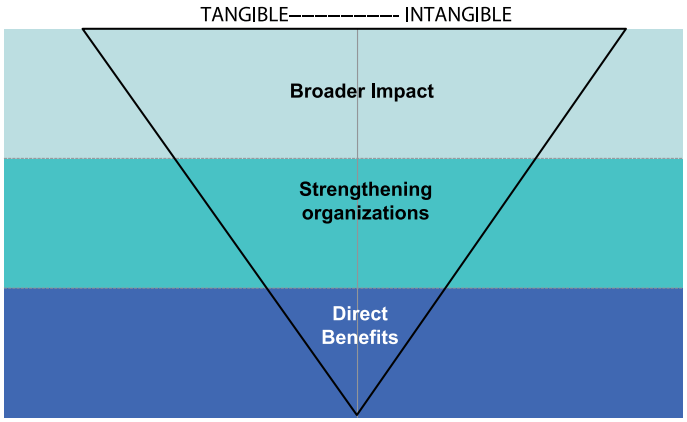
What do we really mean by PARE?

- PARE is not the same as PRA
- More involved, challenging
- Changes in attitudes, values, behaviours
- PRA is the toolbox, PARE is the vehicle
- Who initiates? Who controls? Who leads?
- Many typologies/ladders of PARE

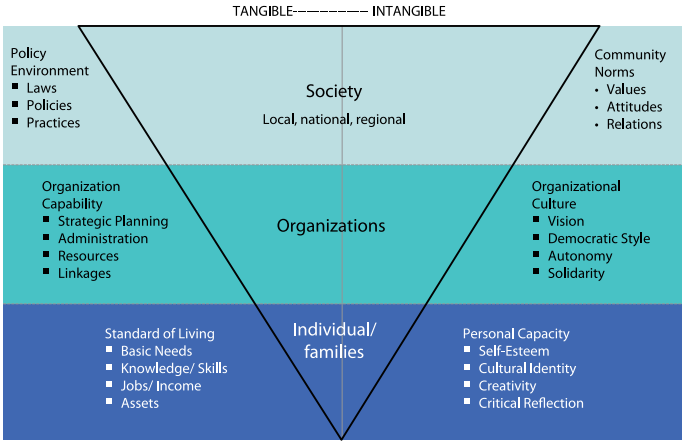
What does this mean for M&E?

- Need to seek a balance between measuring process as well as product
- Reflection on outcomes and impacts at three main levels
- Development of appropriate measures or indicators
- A suitable framework to capture this diversity

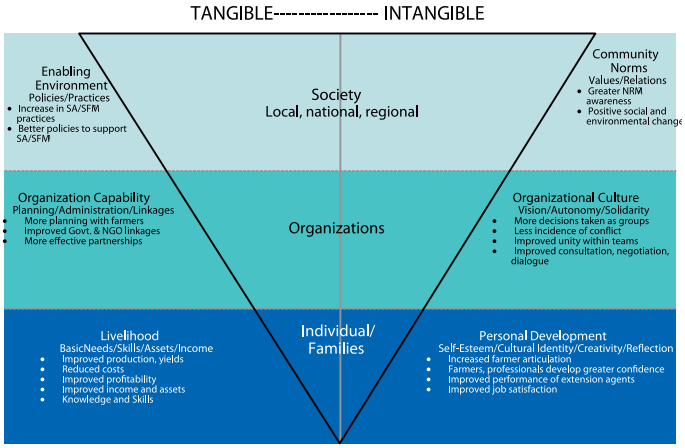
The Cone: Basic Structure



The Logic of the Cone: Categories & Variables



A possible framework for assessing participatory agricultural extension



Benefits to Individuals - farmers, families, professionals

- Improved production, yields
- Reduced costs, improved profitability
- Improved adoption rates
- Improved income, assets, livelihoods
- Increased farmer articulation
- Farmers, professionals develop more confidence, enhanced self-esteem, better working relationship
- Improved performance of professionals
- Professionals get more recognition due to improved output, increased job satisfaction

Strengthening Organizational Capacity and Culture (NARES, NGOs, regional organizations)

- Greater farmer participation, planning
- Increased involvement of marginalized groups, youth, women
- More effective partnerships, less conflict between organizations
- Participatory approaches integrated into organizations
- Organizational shift to more decentralized planning and delivery
- Improved information flows
- All organizations/stakeholders have equal opportunity for involvement in M&E
- Greater flexibility by regional organisations/donors

Wider Community and Society

- Increase in sustainable agriculture/SFM practices
- Greater awareness of natural resource management, environmental and social problems
- Strengthened social capital, increased number of community leaders/groups
- Strengthened institutions
- Better policies to support sustainable agriculture/SFM
- Better policies to support participatory approaches
- Positive changes in society and environment

Who should do the M&E?

- M&E should seek to engage key stakeholders/partners/beneficiaries
- All should be involved in deciding what should be measured and how
- All should be involved in reflection, learning and planning
- Already have useful experiences in the region to share

Conclusions

- The challenge of PARE is considerable, it will require effective M&E
- There are no blueprints or blanket instructions for M&E
- The Cone framework captures much of what could be measured while remaining flexible
- Innovate, experiment, reflect, share and learn

2. Overview of agricultural extension in the Pacific: the continuing search for the right shoe

Dr. Malcolm Hazelman, Senior Extension, Education & Communications Officer
FAO - Regional Office for Asia and the Pacific

This presentation traces the evolution of approaches to agricultural extension in the Pacific region, an evolution driven to a large degree by global perceptions of the value of extension and its relationship to other agricultural development activities but also by the special circumstances of Pacific island countries.

Two definitions of agricultural extension are presented:

- A service or system which assists farm people, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income, bettering their level of living, and uplifting the social and educational standards of rural life. [Maunder 1973]
- On-going process of getting useful information to people (communication dimension) then assisting them to acquire necessary knowledge, skills and attitudes to utilize effectively this information or technology (educational dimension). [Swanson and Claar 1984]

The common elements of these two definitions are that extension is a process that occurs over time, is an educational process and involves communication. The target is farm people (men, women, youth) and the focus is on getting people to confront and help solve their own problems.

Pacific specifics

Extension work in the Pacific faces a range of its own special problems.

Geographic and climatic circumstances are often difficult. There is rapid population increase in some countries. Island culture and lifestyle necessitate adaptation of 'standard' extension approaches. Farms are usually small and scattered, and farmers may have difficulty in adjusting to an increasingly market and commercially orientated agribusiness.

Losses due to pests and diseases, and the costs of their control, present other challenges, as do the often long distances to markets for produce. Most island farmers grow the same standard, traditional crops. In the absence of commodity diversity and segregation, competition is more intense. Island farmers tend to be price takers in the marketplace, and are further disadvantaged by limitations in infrastructure and equipment.

It is noted that, despite these obvious challenges to farmers and rural development, extension is generally accorded a low priority in the Pacific, receiving low budgets and being viewed as the poor cousin within agriculture ministries and departments. The numbers of staff trained in extension are limited, and extension is an unattractive career path for the most part.

What has been done about extension?

Despite the low priority accorded it, a great deal of work has been done to identify and overcome the problems of agricultural extension in the Pacific. Three phases of extension activity in the region are identified, the first starting in the 1950s, when the focus was on whole farm, crop-orientated and traditional technology transfer approaches. Key features of the second phase, in the 1970s–1980s, were support for policies of agricultural diversification and experimentation with different models for delivering extension information. It also saw the first tertiary graduates from regional universities begin work. In the third phase, continuing today, the focus is on participatory approaches, decentralisation, research–extension linkages, privatised systems and making more use of the latest information technology.

The findings of several important regional and other meetings covering agricultural extension and communication are summarised.

At the South Pacific Workshop on Agricultural Extension, held in Samoa in 1985, the importance of extension was acknowledged and emphasised, together with the need to rationalise, strengthen and consolidate extension services. Extension services needed to be given clear mandates, and ongoing training provided for extension staff at all levels.

Participants in other conferences have promoted similar precepts, most recently at FAO's 28th Regional Conference for Asia and the Pacific, held in China in May 2004. This conference reconfirmed the need to continue to support and strengthen agricultural extension.
It recommended that advice be provided to countries on the most effective agricultural extension approaches and delivery mechanisms, together with information on measures by which the capacity of national agricultural extension services can be strengthened.

Also precised are the results of some research studies and international project activities that have influenced the directions of extension work in the Pacific. It is concluded that the overall assessment that can be drawn from conferences, studies and projects is that extension is still needed, but the approaches used need to be tailored to the particular circumstances presenting themselves. No one shoe fits all.

Contemporary activities

The drivers of current extension approaches are recognition of the need for food security and sustainable agricultural development, concerns about management of pests and diseases, the impact of globalisation on market requirements for agricultural commodities, and attention to food quality and environmental matters.

Effective rural extension relies, it is suggested, on underpinning by:

- sound agricultural policy
- recognition of extension as facilitation rather than technology transfer
- perception of producers as clients, sponsors and stakeholders rather than 'beneficiaries'
- understanding that market demands create an impetus for a new relationship between farmers and other participants in agricultural supply chains.

Contemporary approaches to extension must take account of trends to decentralise the delivery of government services. They must build on team-based, multidisciplinary, participatory approaches. The benefits of the new information and communications technologies need to be captured in extension work. The value of farmer-to-farmer extension strategies must be recognised. Successful older extension strategies should not be abandoned. The old and new can be combined to deliver successful outcomes.

3. Promoting Participatory Agricultural Research and Extension

Dr. Laurens van Veldhuizen
Prolinnova International Support Team/ETC Ecoculture

A keynote presentation by ETC Ecoculture, 'Institutionalising participatory agricultural research and extension: lessons and challenges', promoted the benefits of participatory approaches to agricultural research and development and traced the steps by which agencies could adopt such approaches.

ETC International Group is a non-government organisation based in the Netherlands. A network of professional organisations, its core activities are knowledge management and networking for innovative development activities aimed at poverty alleviation and sustainable development.

By 'institutionalising' is meant making participatory agricultural research and extension (PARE) a routine factor in the planning and implementation of the programs and activities of agricultural research and development institutes.

ETC sees PARE as one of four central areas in which change is needed to make agricultural and rural development more effective in terms of both farming and environmental outcomes. It identifies the others as alternative agricultural systems, responsive and collaborative institutions, and supportive policies.

Community Participation in Research Trial, Fiji

Equal partners

It is essential that those involved in PARE activities understand that they are part of a collaboration of *equal* partners; account must be taken of all views. As well as equality, another key concept is that of *farmer innovation*; the idea that farmers as the main 'field workers' are a primary source of potential solutions to farm and rural development problems.

ETC cautioned against 'over-institutionalising' participatory approaches. There should be no long lists of rules and regulations, or heavy bureaucracy. Rather, PARE should become part of the inherent culture and spirit of the agency, and focus on the main principles: the steps in PARE and expected outputs; the methods available; and guidelines for implementation.

A change process

ETC describes the institutionalisation of PARE in an organisation as a *change process* with four components: fostering change; competence development; experiential learning and organisational redesign.

The crucial first component is to create and maintain motivation for change and its benefits, both within the organisation and in outside agencies that affect its operations, such as ministries and funding bodies. A primary aim should be to get decision-makers interested and involved by, for example, inviting them to chair PARE committees.

PARE activities and outcomes should be promoted at every opportunity and information disseminated proactively to policymakers and the wider community. Visits to field sites where innovative methods have been implemented and team participants can be met may be especially useful for maintaining the interest and commitment of supporters.

Opportunities to show how PARE could contribute to the achievement of existing policies should not be missed as another means of creating a favourable climate for organisational change.

Organisational redesign

ETC discusses the organisational changes needed for effective PARE under three, interrelated headings: mandate, structure and human resources.

PARE starts at the planning stage. The planning mechanisms of the organisation must be participatory. The organisation needs to be allocated the resources for PARE programs and the local experimentation that will be required. It is crucial that there be flexibility and decentralisation in resource allocation and use.

For each PARE project there will generally be an initiating team drawn from across agencies and constituting a virtual, interdepartmental unit. It is not the role of the initiating team to become an implementation unit, but rather to provide guidance and encourage learning and networking, and foster schemes for competence development, training and coaching.

There need to be staff rewards and incentives to recognise success.

PARE invariably involves inter-institutional collaboration. Agencies may need to build the capacity required to work with stakeholders across organisations. Organisations will need to assess if their research program design is friendly to building partnerships and if changes will be needed to make possible decentralised, transparent management of funds and other resources.

Changing attitudes

ETC notes that certain values, norms and attitudes are implicit in the PARE approach. These include poverty reduction, the impact of agricultural research and development work on farming and the environment, an openness to all contributions — listening is as important as instructing, and respecting farmer knowledge and experience.

It may be necessary to effect attitudinal change to successfully institutionalise PARE. This can be done by giving staff direct, structured experience of participatory approaches and benefits through attendance at field days and farmer innovation markets and in study and training programs.

Conclusion

ETC sees institutionalisation of PARE as a *learning process* in itself. The net effect of the process is increased *accountability* of agricultural research and development workers and their institutes.

The whole process hinges on personal change.

4. A participatory approach to developing an information and communication technologies-based management information system for agriculture and the environment

Will Allen, Margaret Kilvington and Chrys Horn
Landcare Research, New Zealand

Improved processes for extension are essential to achieve more sustainable natural resource management. This will require collection and improved use of high-quality information from not only research, but also local and traditional knowledge systems. Information and communication technologies (ICT) can support the integration and dissemination of this knowledge. By focusing on improving information use within a collaborative approach, people can broaden the scope of their actions and solve problems previously beyond their capacity. The integrated systems for knowledge management (ISKM) is a model (Figure 1) for such collaboration, facilitating the engagement of people in collective endeavour. ISKM is designed to improve links between research, management and policy to promote the introduction of constructive change in 'real' situations.

The ISKM approach supports ongoing processes of constructive community dialogue and the provision of practical support for decisions about resource management. Like other participatory approaches, ISKM does not offer a recipe for desirable change, but rather a description of an action-oriented process that may enable change. Where it does differ from related participatory approaches (PAR, PRA, RAAKS etc.) is that it emphasises the development of a management information system within an adaptive management framework, and encourages the use of the Internet to support information sharing.

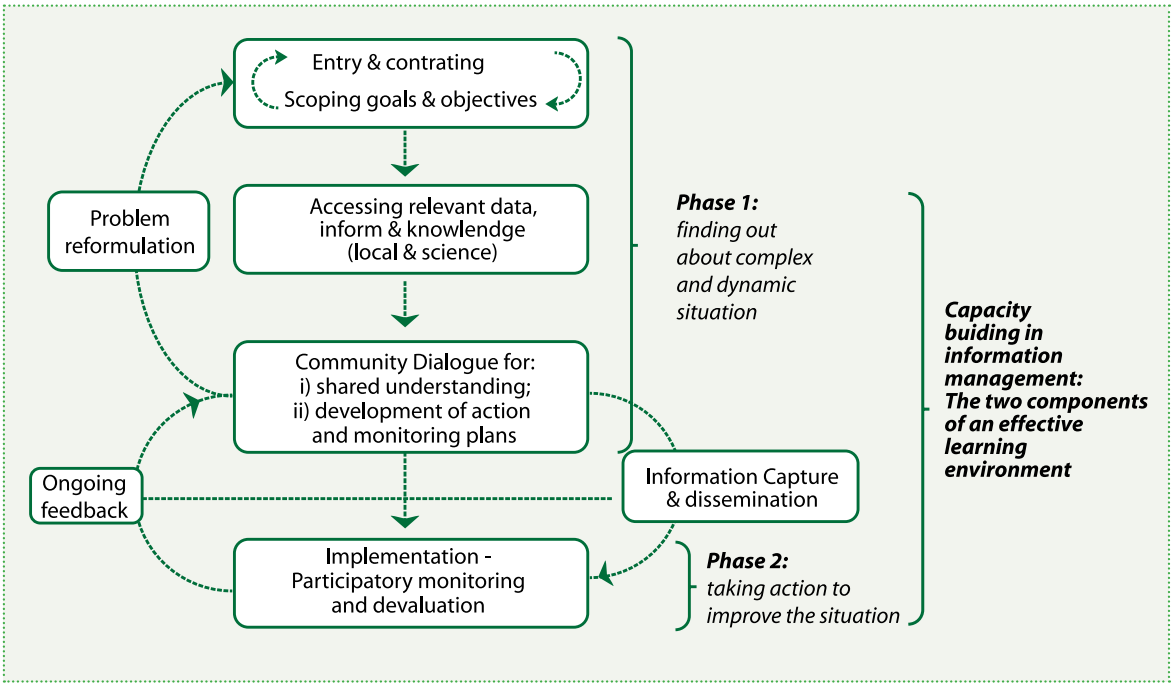
The lessons learnt through the development of websites in integrated case studies highlight the need for science agencies to take advantage of the Internet to allow stakeholders to access and debate information about complex environmental issues. Use of the Internet helps to overcome one of the major problems of environmental decision-makers—that information held by different stakeholders (local, tradition and science) is rarely available on a collective basis. The Internet provides a new and convenient system for managing complex information, which allows people to create, annotate, link and share information from a number of disparate sources and media.

Similarly, the linking abilities of the Internet enable scientists, and other information providers, to display any new piece of information in relation to how it addresses knowledge gaps in a wider context. This is important, as solutions to emerging environmental issues are rarely provided through the development of discrete pieces of information and technology. Rather, to move forward we need ongoing information distillation and synthesis along with debate among different stakeholder groups concerned with the linkages between different pieces of information, management systems and scales. In this regard, the Internet is emerging as a supporting technology in multi-stakeholder situations to extend information sharing, learning and networking. The biggest advantage of this technology is probably not in creating new 'virtual' communities, but in strengthening already existing social networks.

Often, agency and research staff do not appreciate the need for debate and see the use of the Internet as just one more way of 'getting the right information out there'. However, it has a wider use than this: it can become a focal point around which to build more opportunities for farmer–scientist discussion and learning. This is consistent with the steps outlined in the ISKM framework for engendering a collaborative approach to generating and managing information, through which different groups and individuals interact to learn together and broaden their perspectives of the world. One major question is how to improve our understanding of how to develop these learning environments through practice.

It is important that collaborative approaches not be seen simply as the development and strict application of a plan or set of rules; rather they are processes that require ongoing review and improvement. The most important result of these approaches is not a plan or a solution to a problem, but rather a working partnership, capable of responding to changing needs in an effective way. In these approaches we can see clearly that an information system is not just about transfer, rather it is best viewed as a social system where people interact to create and use knowledge.

Further information about ISKM can be found at <www.landcareresearch.co.nz/ research/social/iskm.asp>



Agricultural extension in the Pacific is embracing ICTto deliver information to a varied extension audience.

5. Reflections on over 30 years of applied entomological research (and extension)

P. Zalucki - University of Queensland

Professor Zalucki's presentation covered aspects of his research and extension work on crop pests in Australia, Korea and the Pacific.

He began with work on Helicoverpa (heliothis) moth pests. These are a difficult to manage because they have many crop hosts, they can migrate long distances by flight, their populations are not uniform — appear in crops as outbreaks (there are good and bad years), and they readily develop resistance to insecticides used for control.

There is widespread use of SSP type integrated pest management (IPM) to manage Helicoverpa in field crops such as cotton.

It is possible to forecast outbreaks of Helicoverpa using variables such as rainfall in certain areas or rainfall predictors (e.g. the southern oscillation index, SOI) 3–16 months in advance of a spring generation of moths. Also, moth catches, rainfall and crop area at a particular time can provide a useful guide to the likely size of subsequent generations. But so far there has been little application of such approaches.

Nevertheless, new approaches are needed, because SSP IPM has not worked. There is resistance to the compounds used, pest pressure remains high and natural mortality factors have not been utilised.

Can things be done better? Professor Zalucki moved to a discussion of research and extension work to improve IPM in brassica crops in Queensland, Australia and elsewhere.

The major pest of brassica crops is *Plutella xylostella*, the diamondback moth (DBM). DBM is a serious problem. It has developed resistance to a wide range of insecticides — pyrethroids, carbamates, organophosphates and organochlorines. During the 1980s in Australia there was public concern over environmental contamination and residues in food following spraying for control of DBM. There have been instances of spray failure and ploughing in of crops that could not be protected by insecticides — a strong incentive for change.

There are several components to the successful IPM program for DBM in brassica crops in south-eastern Queensland:

- resistance management, entailing reduced use and alternation of pesticides applied
- production breaks between brassica crops
- control recommendations based on scouting (SSP approach)
- use of *Bacillus thuringiensis* (Bt) as a soft option
- use of beneficials (DBM's natural enemies, of which there is a wide range).

Following the implementation of IPM, the results of area-wide field experiments in 2002–03 showed that the impact of natural enemies in controlling had been enhanced and that the combined action of predators was important, and that insecticide inputs had fallen from over eight per crop with conventional control to less than three under IPM.

A key to the success of brassica IPM was that the research to develop and implement it was done in participation with farmers. Widespread adoption of the management practices was farmer driven. The proportion of farmers using monitoring or IPM rose from 25% in 1996 to 65% in 2003. Whereas less than 30% of growers were using Bt in 1990, the figure has risen to 95% by 1998. A marked improvement in application practices was also evident.

Professor Zalucki briefly described two other brassica IPM projects building on the success of the work in Australia — one in North Korea and one currently underway in Fiji and Samoa.

The project in North Korea undertook pest and natural enemy surveys and introduced the concepts of IPM though cooperative farms and in replicated field trials. Studies were made of the impact of natural enemies. Yield and quality assessments of crops were made of crops grown under IPM and conventional strategies. IPM strategies reduced pest damage from 30–35% to less than 10%, and also gave significant increases in net plant weight.

'Integrated pest management in a sustainable production system for brassica crops in Fiji and Samoa' is a major ACIAR-funded project that started in 2005 and will run to 2010. Partners with ACIAR in the project are SPC, Fiji's Ministry of Agriculture, Sugar and Land Resettlement, and the Ministry of Agriculture and Fisheries, Samoa.

Objectives are:

- to demonstrate effective integrated approaches to brassica pest management
- to introduce a farmer field school approach for improved sustainable production
- to determine the role of major natural enemies in the management of brassica crop pests
- to develop a refined local IPM strategy using selective plant protection products.

Professor Zalucki concluded his presentation by stressing that, while there are no silver bullets for solving pest problems, there are great gains to be made from current technologies and potential new developments. The basic research approach, however, remains the same: identify real pests, problems and questions (ask the farmers); understand population dynamics (where do the pests come from?); identify suitable alternative control methods; develop models for forecasting and assessing the effectiveness of programs.

6. GTZ approach to participatory extension: from international experience to the Drawa model area in Fiji

Christine Fung and Rainer J. Blank – GTZ

The Drawa model area in Fiji is part of the Pacific–German Regional Forestry Project is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), and implemented through German Technical Cooperation (GTZ) and the Secretariat of the Pacific Community. The project contributes to the sustainable management of forests by assisting Pacific island countries in mainly three areas:

- improving the regulatory framework (policies, legislation, sector plans etc.) for a widespread application of sustainable forest management (SFM)
- developing models for community-based SFM, and testing them in model areas such as Drawa, for the promotion of SFM practices
- promoting awareness of sustainable forest and land management, both for the resource owners and the general public, including children.

The extension approach employed by GTZ in Drawa and other project areas is the current expression of an evolutionary process that began with the establishment of GTZ in the in 1975. From the mid 1970s to the early 1980s, primary project objectives were poverty alleviation, improved food security, increased production, enhanced self-help and employment generation. Projects worked with the primary target groups (e.g. farmers) and on-site staff of the country's line ministries.

The mid 1980s–early 1990s saw steady reduction in direct involvement with primary target groups. The focus shifted to advisory tasks and cooperation with counterpart intermediaries (government and NGO) which were expected to deliver extension services to the target groups. Concomitantly, sectoral, technical extension services began to give way to more integrated, multisectoral, holistic approach, driven by framing systems research underway at that time.

Community demonstrate sustainable forest management, Drawa Fiji

These trends have continued from the mid-1990s till the present. The main rural stakeholders (e.g. representatives of farmer groups, producer associations, NGOs etc.) are now having a much greater say in setting project objectives, which invariably have an overarching theme of sustainable and integrated management of natural resources and the environment.

Also, commercialisation of extension services has proceeded apace, with greater involvement of private organisations such as resource-owner associations, NGOs and landcare and environmental groups in service delivery. Public–private partnerships for extension delivery are also being promoted.

This is the backdrop to the Pacific–German Regional Forestry Project in Fiji and elsewhere. The challenges for extension delivery have been:

- how to restructure and maintain an efficient and effective service, despite:
  - restricted human and financial resources of Pacific island countries and territories, forcing governments to further reduce funding and staff
  - the growing demand for participation of both commercial and non-commercial resource-owners
  - few income and employment alternatives to an increasingly unsustainable subsistence agriculture
  - the risk of further marginalising low-income households through commercialisation of extension services ('If you don't pay, you don't get!')
  - the different needs of subsistence farmers, commercial smallholder and community based producers.
- how to balance the need to increase productivity and income in all sectors (e.g. agriculture, forestry, water–energy, settlements and infrastructure or tourism) with the growing international, regional and national requirements to sustainably manage natural resources and the environment (e.g. conflicting land use)
- how to reduce sectoral fragmentation of extension services and promote integrated extension service delivery
- how to avoid role conflicts (more often inherent in public sector organisations)
- how to reduce dependence on external funding and donors.

Insofar as participants in the Drawa forest project have harvested and sold their first sustainable timber harvest for F$60,000, it seems that at least some of these challenges have been met.

7. DSAP's experience with farmer-led participatory extension

Dr. Siosiua Halavatau, Participatory Extension Officer, SPC-DSAP.

The Development of Sustainable Agriculture in the Pacific (DSAP) project is a 16-country partnership of farmer, government and non-government stakeholders managed by SPC. It is the extension phase of the European Union-funded Pacific Regional Agricultural Programme (PRAP). PRAP investigated solutions for problems of deforestation, soil erosion, declining yields and food security caused by increased intensity of land use in Pacific island countries. It also sought answers to the problems of increased incidence of pests and diseases, and poor delivery of agricultural information and extension.

The DSAP project aims to improve and activate the capacity of the national agricultural research services, non-government organisations and farmer groups to identify and promote sustainable agricultural technologies with farm families.

The approach taken is highly participatory. By a process of farmer consultation, problems are identified and solutions devised. To date, consultation has involved 45 participatory rural appraisal (PRA) events attended by almost 1500 farm people. Sixteen training sessions have delivered over 200 PRA facilitators. To extend the technologies identified for promotion, training in technical skills has been provided in 51 sessions to almost 800 people.

Pacific island farmers need to overcome wide range of problems including poor farming skills, poor soils, pests and diseases, droughts, poor planting materials and poor market structures.

DSAP approaches the problem of poor farming skills by first conducting an assessment of the needs of farmer and field staff in implementing new technologies. These needs have been met by a combination of farmer training, field schools and on-farm demonstrations. Information and communication technologies play a major role in delivering outcomes here.

The primary solutions to overcoming poor soils have been identified as the use of compost and cover crops, the implementation appropriate agroforestry systems and, on sloping lands, the creation of contour barriers to minimise erosion. In some instances, use of synthetic fertilisers might be feasible. The training of farmers in diagnosis of plant nutritional disorders resulting from soil deficiencies is a useful adjunct.

Pele shoot borer, taro beetle and caterpillars have identified as major plant pests and taro leaf blight as the most serious plant disease in the region. A suite of approaches including organic production, training in diagnosis of plant pest problems, planting of insecticidal neem trees and a IPM trial make up a package for sustainable solutions to pest and disease problems.

Bucket irrigations systems are the recommended technology to overcome problems of poor water availability for agriculture. These require scaling-up in some cases. The use of mulches, composts and appropriate agroforestry systems are also employed to conserve water by reducing evaporation from the soil surface.

Ensuring that nurseries deliver healthy planting material and providing seed production training are means of overcoming poor quality and shortages of planting material. An overriding aim of project work in this area is to widen the genetic diversity of planting material. New crops and varieties have been introduced, and there is potential to cultivate wild varieties of crop plants. Taro pits need reviving in some instances.

To overcome poor market structures, commodity pathways (supply chains) are analysed. Market development is as important an activity as improvements in production. The market for organic products is growing and establishing farming systems for such produce can capture price premiums for farmers. Whatever type of production is engaged in, it needs to deliver a reliable supply of commodities of the quality sought by the market. Encouraging the development of product standards helps here.

The major lesson learnt in the DSAP project is that involving the people at every step in the research and extension process — diagnosing their problems, identifying solutions, planning and implementing interventions, and monitoring and evaluating the results — is an essential first step towards sustainable livelihood.

At the farmer level, real needs have been identified. At a wider socioeconomic level, some households now have better purchasing power, nutrition and health, and women are now more involved in agricultural development. At a biophysical level, soil fertility is improving and consequently productivity. There is a stronger focus on soil and biodiversity conservation, and the reintroduction of traditional varieties of crop plants is broadening the genetic base of island agriculture.

The challenge now is how to instutionalise the participatory approach to extend and maintain its benefits.

Extension Summit Participants Field Visit

8. Institutionalising participatory agricultural research and extension: lessons and challenges

Laurens van Veldhuizen, ETC Ecoculture, Leudsen, The Netherlands

Participatory agricultural research and extension (PARE) is a powerful tool for economic and social development. Through PARE, all players in the supply chain from research and extension, through farmers to retailers, contribute their knowledge

To maximise the benefits it can bring, it needs to be institutionalised, by which is meant making it a routine, established component of the regular programs and activities of agricultural research and development institutes.

It is critical to understand that PARE entails a collaboration of *equals*: all contributions are important and acknowledged be they from farmers, researchers, extension workers, technicians, or product specialists.

Critical to the approach too is farmer innovation; acknowledgment that farmers, as the hands-on practitioners, might be the richest source of potential solutions to farming problems.

While seeking to make PARE a routine, established activity, the danger to 'over-institutionalise' through bureaucratic lists of rules, regulations and formats must be avoided. They will kill the spirit of PARE.

Only the essentials need be institutionalised. The focus should be on the main principles; the sets of activities, or 'steps', and expected outputs; the collection of methods to choose from; and implementation guidelines.

Institutionalisation is a process of change with four components

- creating and maintaining motivation for change
- competence development
- pilot activities, the learning ground, creating the evidence
- redesigning at organisational level.

Maintaining support for PARE means maintaining management awareness. Means of doing this might include getting decision-makers to chair PARE committees; making sure that reports of PARE experiences are on the agendas of regular meetings; getting policymakers involved in PARE international events; preparing policy briefs on PARE concepts and practices; the dissemination of information about PARE successes through accessible journals; and highlighting instances where the PARE approach contributed to achieving existing policies.

The following can be adopted as a useful framework for considering the tasks involved in redesigning at organisational level:
Adminstrative nuts and bolts issues include the implementation of participatory planning mechanisms, the provision of resources for PARE programs and local experimentation, and flexibility and decentralisation in resource allocation and use.

At the structural and human resources cells of the matrix, PARE initiating teams must provide guidance rather than becoming implementation units, and encourage learning and networking. Full implementation should see the formation of virtual PARE units across departments. Promotion of competence development, training and coaching are key activities.

Important too in institutionalising PARE will be appropriate staff rewards and incentives. PARE criteria should be incorporated in performance assessment; career committees should be apprised of PARE work and achievements; awards could be made for outstanding PARE work; publishing outlets for PARE work should be made known etc.

In terms of values, norms and attitudes the main thrust of PARE is towards poverty reduction and the impact on farming and environment of agricultural research and development work. Openness to all contributions is a central tenet: listening is as important as instructing. Respect for farmer knowledge and experience is paramount.

To enable attitudinal change needs direct structured exposure of staff to field days, study programmes, farmer-innovation markets, travelling seminars, PRA exercises etc. Training programs should combine these with a problem-posing approach to learning.

Inter-institutional collaboration is essential. PARE organisations need to be able to engage in effective partnerships with other stakeholders. Institutionalisation of PARE must accommodate the capacity to build these, including the capacity for decentralised, transparent management of funds and other resources.

It can be seen that institutionalisation is a learning process in itself the net effect of which is increased accountability of ARD workers and their organisations.

	Mandate	Structure	Human resources
Administrative –'nuts and bolts'	*Operations*	*Tasks, responsibilities*	*Expertise*
Political – the power game	*Policy-making*	*Decision-making*	*Room for manoeuvre*
Sociocultural – identity, behaviour	*Organisational culture*	*Cooperation and learning, norms, values*	*Attitudes*

9. An education-institution model for sustainable agriculture and rural development

Abdul Halim and William Kerua
Department of Agriculture, PNG University of Technology, Lae, Papua New Guinea

Various extension approaches have been tested to develop agriculture and improve the rural sector. Some of the familiar generic approaches are top-down, commodity-specific, training and visit, project, farming system and development, participatory, cost-sharing, and the education-institution approach. These approaches have benefited rural agriculture and welfare to varying degrees. Nevertheless, there is often a lack of a unified, cohesive approach to the delivery of agriculture extension services to smallholder farmers. The Papua New Guinea (PNG) University of Technology is seeking to take a leadership role among South Pacific countries in providing research and extension education.

There is currently no satisfactory model or approach for PNG and other South Pacific countries to reach the farming community, particularly subsistence and semi-subsistence farmers. As the PNG University of Technology has ready access to extension services, it is opportune for it to share the responsibility of extension services for the benefit rural people and the nation and for its own teaching, research, training and extension activities.

The South Pacific Institute of Sustainable Agriculture and Rural Development (SPISARD) is an education-institution model for sustainable agriculture and rural development being tested by the Agriculture Department of PNG University of Technology. SPISARD's program seeks to complement and strengthen the academic programs of the department in teaching, research and extension. The model aims to improve the farming system as a whole, through five major programs for students: (i) capacity building, (ii) research, (iii) training, (iv) technology transfer and (v) industrial training. SPISARD proposes to deliver these programs through partnership and linkages that include donor agencies. It would welcome more partnership with other South Pacific countries and donor agencies.

10. Lessons learnt from the Use of ICTS in Agricultural Extension – Australian Experience

Dr Simon Hearn – Senior Adviser, ACIAR

Introduction

- Internet impacting on all aspects of people's work – learning, communication and recreation.
- ICT is transforming interactions across all segments of society including farming with increasing attention on the contribution of (particularly the Internet) to community development and social capital building.
- Some 65% of Australians aged 14 and over use the Internet, with 84% of home users using it for email and 21% for interactive discussion (Nielson 2004).
- Now mobile phone technology is transforming social interaction and communication at affordable rates in many countries.

Definition of ICT

- Agricultural extension is about the application into knowledge and adoption.
- Such as the application of scientific research to agricultural practices through farmer training.
- ICT broadly defined as facilitation by electronic means the creation, storage, management and dissemination of information.
- Two types of ICT – old and new. ICT usually restricted to digital technologies.
- The former refers to newspapers, radio and TV which are low cost and require little skill to use.
- The latter forms of ICT include networked computers, satellite sourced communication, wireless technology and the Internet.

ICT and Rural Development in Australia

- Opened new horizons for farmers given the widespread of rural communities.
- Distance learning has new potential and horizons.
- Hundreds of ICT projects in rural and remote communities across Australia have received funding through the Australian Government's 'Networking the Nation' Program.
- Farmers have varied uptake of ICT. Push/pull factors with need for farmers to articulate their needs.

Australian Examples from Agriculture

Portals and gateways (government and private)

- Government (Australian agricultural portal – www.agriculture.gov.au)
- Australian agricultural and natural resources online – www.infoscore.com.au
- ACIAR – www.aciar.gov.au
- Australian Farmers guide to the Internet (www.rirdc.gov.au)
- CSIRO, Federal and State Departments, RDCs and ACIAR all have websites that include on-line information sheets and publications.



ICT an essential tool in communication and extension

Australian Development Gateway (ADG)

- ADG is a knowledge sharing website for Asia Pacific countries.
- A mechanism for Australia and others in the Asia Pacific to contribute knowledge and exchange discussions.
- The ADG facilitates collaboration by sharing practical knowledge faster.
- Is part of the Development Gateway Foundation launched by the Worldbank as a hub for the worldwide network.
- Australia first OECD country to develop its own gateway – www.developmentgateway.com.au.

Agriculture and the ADG

Recent examples on ADG include:

- Natural resources information toolkit – National Land & Water Resources Audit
- Climate change: adaptation in agriculture – Bureau of Rural Resources
- Agriculture and pro-poor growth: an Asian perspective – Centre for Global Development
- Rural finance learning centre
- Asian Wetland Inventory (Wetlands International)

Bridging the Digital Divide in Australia

- Requirements, access and challenges for ICT can vary in rural districts.
- The FARMSCAPE action research program evolved to learn how simulation techniques can be useful to farmers and farming consultants/extension officers.
- Working with 280 farms in 28 groups and 15 advisers to examine alternative ways to deliver decisions support to farms.
- Over 3 years CSIRO produced a way for farmers, commercial advisers and researchers to meet via Internet – less travel and increased timeliness

Lessons Learnt

- Cannot disentangle broader social issues from ICT.
- Lack of ICT use is a social (knowledge) problem, not technical.
- ICTs will be used if they solve a compelling problem.
- Implementation – new participatory methodologies needed.
- Use ICT across value chains.
- Government, commercial and community sector partnerships.

Developing a Community of Practice

- One farm monitoring to ensure local relevance.
- Information managers/service providers need to form the bridge between researchers and users of agricultural information.
- Need networks of practitioners to share ever growing understanding of best practice.

Questions for Systems Developers

- Who are we designing this for?
- Do we know what the farmers and advisers need?
- How do they currently get information?
- Will this system meet their needs?
- Will they be able to access it?

Where To From Here

- ACIAR is keen to apply learning from bridging the digital divide in Australia to developing country context.
- Work with researchers and farmers in developing country contexts to provide access to scientists and their tools in Australia.
- Use Internet meetings and video conferencing for:
  - Capacity building – training activities
  - Joint design of experiments
  - Share photos and video of sites
  - Increase frequency and timeliness of meetings

Current World Situation

1. More than 80% of people in the world have never heard a dial tone, let alone surfed the web.
2. The gap between the haves and have-nots is widening.
3. Fewer than 2% of people are actually connected to the Internet.

4. Industrialised countries with 15% of world population account for 88% of all Internet users. Less than 1% of people in South Asia are on-line.

Other Considerations

- Deployment of ICT in developing countries is often too focused on provision of hardware and software.
- Insufficient attention paid to the social systems within which these are deployed.
- Sustainable access to ICT needs to be undertaken in a participatory style that involves locally available physical, human and social resources.
- Enhanced impact from more effective engagement with local economic, institutional and cultural systems, eg. Indian Alliance to ensure rural poor benefit from ICT.

ACIAR Project

. Enhancing the efficacy of international R & D through the application of ICT

. ACIAR project focuses on activity in Indonesia and South Africa. Activities include:

- Identification of key researchers and ICT specialists within collaborating R&D institutions.
- Undertake face to face workshop involving key research and IT providers.
- Site telecommunications infrastructure survey.
- Undertake semi-structured baseline interviews with key participants.
- Trialling Microsoft networking and windows messenger over local phone lines.

11. Reforms of agriculture extension in Papua New Guinea

The delivery of agricultural extension in Papua New Guinea has been changing over the past 30 years or so, paralleling changing policy on the roles of the different levels of government in the country.

The overall objective of the changes that are being implemented is to enhance PNG's agricultural and rural development. This is a challenge in a country with a rural population as diverse and dispersed as that of PNG. A key aim has been to increase direct farmer participation through contact between farmers and extension officers.

There are three broad delivery systems for extension services in PNG: the state-run system delivering on an areal basis, be that national, provincial or district; the system targeting commodities or agricultural institutions; and the system based on services provided by non-government organisations.

The first of these was a fundamentally centralised extension system until the mid 1970s. Then, in 1977, the delivery of government services was decentralised to 19 provinces. The passage of organic law on provincial and local-level government (LLG) in 1996, led the creation of 98 LLG districts and a need for further tuning of extension services.

The commodity-based extension system changed markedly during the 1980s through privatisations and corporatisations that created up to a dozen semi-government agencies.

The main challenges facing national and provincial government extension services have thus been to realign to decentralisation on the one hand and to service the increasing demands of cash crops such as coffee, cocoa and oil palm on the other. These and other challenges have had to be met with fewer resources as provincial governments have favoured social over economic issues in their priorities.

Thus, while the influence of projects initiated by the national government has remained strong, agricultural development in the provinces has nevertheless been poor as has been extension delivery to non-priority projects there. Moreover, farmers have generally been slow to participate in rural development.

The commodity-based extension systems emerged in the late 1980s with the establishment of agencies with responsibility for coffee, cocoa, coconuts, fresh produce and oil palm. At the same time, four new commodity-focused agriculture institutes were established: the National Agriculture Research Institute; the National Agriculture Quarantine and Inspection Authority; the Spice Industry Board; and the Livestock Development Company.

The objectives of these changes were to meet the increased demand for research and extension on cash crops to improve productivity, to refine program-based resource allocations and to regulate the development of various respective industries.

Functions once controlled by the National Department of Agriculture & Livestock are thus now the responsibility of commodity agencies targeting specific cash crops and livestock. These agencies, which are legally endorsed, semi-government, institutional structures, are also the conduits for delivery of information, extension, and research and technology development and transfer to farmers.

They face many of the same challenges as did their predecessors and their achievements have been mixed. They need to improve linkages with the agencies of the various levels of government and with the non-government sector. There is currently some duplication in roles and functions that needs to be rationalised. They need more resources and to increase their capacity to fill the large gaps that have emerged in food crop and livestock extension services as a result of shifting priorities.

To overcome these challenges, other models for agricultural extension may need to be engaged. There are many to choose from, including:

- nuclear and estate extension, as practised in oil palm and rubber
- village extension worker
- farmer to farmer extension
- farmer association/corporative extension delivery
- media extension
- donor-funded extension programs
- output-oriented contract extension
- Melanesian Farmers First Network
- church-run extension (holistic development).

12. Farmer Designed Training

Osanti Luda Bakale - Farmer/trainer, Solomon Islands

Farmer to Farmer extension in remote Solomon Islands

Extension is very thinly spread in parts of Solomon Islands. In wards 10 and 12 in North Malaita in the Takwa area, for example, there is one extension officer for every 14,000 farmers according to the 1999 national census.

Farmers see very little of the extension officer, and very little information therefore reaches the farmers.

To help overcome this problem, a farmer-designed mentoring strategy has been developed for watermelon growers. The focus on interested family units within the extended family and the clan. The process starts with a leading farmer who participates in a five-day train-the-trainer program.

When a farm is being established, the new family is linked to a trained family. Leading farmers visit newer farmers, and train them in the field on crop establishment and management techniques. After two crops, training and extension is reinforced through a five-day field management workshop.

There are several benefits to the strategy. Watermelon is a short-rotation crop that commands a good price, so it is attractive to farmers. Frequent visits by the leading farmer, assisted by other trained farmers, mean that problems can be solved without excessive delays. Farmers can learn to do things under supervision that will immediately pick up any mistakes being made.

Implementation of the strategy does not interfere with the fulfillment of family needs and obligations. Communication is easy, as the local language is used, and there are no cultural barriers to overcome.

In summary, the strategy works because it uses local knowledge and skills and helps families with their problems while the necessities of daily life continue to be met. The approach is tailored to local circumstances. The main requirement is that the leading farmer must be with the families for the full cropping circle

13. Sustainable targets: sustainable structures

Stephen Hazelman – SPC Land Resources Division

There are strong traditional structures in Pacific island communities, within the context of which participatory approaches to extension, for maximal effect, could be framed. Indeed, it might be that Pacific islanders, through their structured, traditional decision-making processes might have been the first practitioners of participatory approaches.

So, the primary question is, can traditional leadership, structures and customs be harnessed to benefit contemporary participatory extension work, or might they be an obstacle? What are the views of donors on this question? Are traditional structures being harnessed effectively at present and, if so, how can they be further supported and improved?

The village is a strong structural component of Pacific island communities, within which an overt development mode already exists. Village communities are seeking to improve their food security and wider standard of living. An understanding of how they set and implement their priorities and evaluate progress can help development assistance agencies ensure that their participatory projects work with and not against the existing structures.

A typical traditional approach to ensuring village food security might go as follows. The village council meets and decides that there must be a root crop planting program. There is a direction to all village youth to plant a specified number of taro plants per month. The planting scheme is monitored by a village committee making farm visits. Failure to meet the planting target attracts harsh punishment in terms of family shame at not making its full contribution to village food supply. Overall, however, village food security is achieved through an increase in production. Thus, traditional authority can be seen as an effective mechanism for implementing and monitoring a community project.

Experiences in Papua New Guinea and Solomon Islands, working with key farmers and individuals, reinforce the potential of the village-based approach to extension, particularly in the circumstance that it is likely that government agencies will never be able to employ enough extension officers.

Contribution of women contribution to agriculture development, Vanuatu

Essential to success of the village-based approach is enlisting a good community leader, someone who has the community at heart and is committed to it, and has earned community respect and trust.

There are many advantages in building traditional governance or administrative structures into extension activities. They are organised, structured and resilient, have authority and power, and are a conduit for regular and effective dissemination of information.

The Butaritari breadfruit rot project in Kiribati exemplifies the community-centred approach to extension. The aim is to work with the island council, the Department of Agriculture and Livestock, and community members to identify low-cost tree-management techniques that will enable growers to manage the breadfruit rot disease in a sustainable manner.

The first step in developing the extension work was to get it approved by traditional island leaders at a village council meeting. It is critical to get the right people involved as early as possible in the planning. An extension activity should start by finding out what local people already know, and how they operate, and building on those things.

Future Farmers of Samoa, another community-focused extension activity, is guided by village councils. Its campaign against the rhinoceros beetle, a serious pest of coconut, covers all villagers under the control of village mayors who, in turn, are directed by the Department of Internal Affairs. The hope is that village committees will enforce laws that will encourage people to remove breeding sites of the beetle and thereby bring the pest under control.

In thinking about approaches to extension, and particularly the value of participatory approaches, it is essential to keep in mind that the majority of Pacific island people continue to live in rural communities operating under traditional structures, leadership and customs. Agencies supporting and promoting the extension of new or remedial farming technologies thus have good opportunities to enhance their activities by working with community groups. There is no need to set up new machinery where there are traditional mechanisms for enlisting community support and cooperation, which are, after all, at the heart of the participatory approach.

So, from various experiences to date, it seems clear that traditional leadership, structures and customs can — and perhaps must — be harnessed if the full benefits of contemporary participatory extension work are to be captured.

14. Integrating participatory agricultural extension into tertiary education curricula

John James, Department of Primary Industries and Fisheries, Queensland, Australia

The Centre for Rural and Regional Innovation – Queensland (CRRI–Q) in Australia offers a range of courses in participatory agricultural extension (PAE). These are designed for postgraduate students, because local experience has been that, for various reasons, undergraduate students and employers of new graduates do not fully appreciate the benefits of training in extension.

Those students who are fortunate to be studying at one of the very few universities that include extension in its curriculum may see the subject as soft option in which you just learn how to give talks and entertain farmers. Employers often don't place a high enough priority on training in PAE when selecting and employing staff. The managers, often from a science background, believe that it is more important to select staff who have a solid grounding in the scientific disciplines of soil science, plant protection, agronomy, plant breeding and so on. They believe new staff can easily learn about extension while on the job, pointing to the fact that others have done so in the past.

Those things aside, CRRI–Q believes that formal training in extension theory and methodologies is usually better delivered to people who have experienced the farming environment and the way people think. While it may be useful for undergraduates to learn the theories, such training is much more powerful if the theories can be applied to one's own work. This was borne out in the author's experience at the University of Queensland, working with postgraduate students who had been in the field for a few years. They were keen for more knowledge to help them deal with their current situation. Most had studied science-based courses in their undergraduate years, and so were proficient in animal and plant production, but had little understanding of the 'people' aspects of agriculture. They therefore evinced a very clear desire to increase their knowledge and skills in this area.

CRRI–Q is a partnership between the Department of Primary Industries and Fisheries, the University of Queensland and CSIRO (Commonwealth Scientific & Industrial Research Organisation). In the 12 years since its inception, the centre has delivered over 500 courses, with more than 4000 enrolments by over 2200 individuals, from almost 300 organisations, and with nearly 300 graduations. It offers 12 postgraduate courses all of which centre around the topic of PAE:

- Managing communication for change
- Adult learning for regional development
- Research methodologies in management and extension
- Evaluation of programs and projects

- Leading and facilitating groups
- Project management for regional development
- Contemporary extension models and theories
- Rural community development
- Innovation for regional development
- Models and strategies for change in regional communities
- Negotiation and conflict management in resource management
- Continuous improvement and innovation.

The training format used is seen as being very user-friendly and ideal for those working full-time and studying as an extra activity. Each course follows the same basic structure:

1. A **five-day residential** session that is highly interactive and participative. At the beginning of the week, students are introduced to theories and concepts relating to the course material. As the week progresses, they apply this to their own situation. By the fifth day, they will have developed an action plan to implement a learning project in their workplace or local community. They present that to their learning colleagues for peer feedback. The attendance at this residential session is estimated to contribute 50% to the average student's learning.
2. A **work-based learning project** conducted over 10 weeks, in which they implement their learning project in their workplace or local community as part of their normal work. This consolidates the theoretical learning and grounds it with real-life experiences. The results are shared at a **two-day second residential** stay when they present their results from their learning project to their learning colleagues for peer feedback. The practical application here contributes another 30% of the average student's learning.
3. A **final written report** where they document their learning as a 3000-word assignment which, when submitted two weeks later completes, the assessment for the course. Having to consolidate their learning in a written form contributes the final 20% of the average student's learning.

The philosophy that acts as a foundation for these courses is that of adult learning. By using interactive methods, it is relatively easy to incorporate learning activities that keep the audience attentive and involved. As a result, the learning outcomes are not only more effective, but more enjoyable as well.

15. Non-government organisations and participatory agricultural extension in the Pacific: some examples and a view of NGOs from Solomon Islands

Tony Jansen - Network Coordinator
Melanesia Farmer First Network

Non-government organisation (NGO) is an umbrella term covering a wide range of groups and agencies. NGOs are playing important roles in a number of participatory agricultural extension (PAE) projects in Pacific island countries. What are the main features of these roles and how can the contributions of NGOs be strengthened? How can NGOs and governments work together to scale-up and institutionalise PAE in the region?

PAE is not a new concept and is already being practised in many forms in Pacific island countries. Farmers are at the centre of PAE, and strategies adopted by NGOs and others must accord with the attributes and aspirations of farmers.

In Solomon Islands, farmers work mostly within household, family and extended family groups. Some 85% of the population lives in rural clans, tribes and communities. Much like anywhere else, farming households have multiple goals. Through their farming activities, they need to feed the family and earn income to meet basic needs and longer-term objectives. They also have social, cultural, community and church obligations. More and more, they see the need to manage the environment to sustain a production base for future generations.

Farming household livelihood strategies thus centre on reducing risk, building self-reliance and diversifying farming activities. They need to manage complex farming systems, and innovation, learning and sharing are essential responses to interactions with the human and physical environment.

There are many groups interacting with farming households: community-based organisations (CBOs) and local, provincial, national and international NGOs. Informal and formal farmer groups and associations are important conduits of information at local to provincial levels.

International NGOs often work in partnership arrangements with local NGOs. In North Malaita, Solomon Islands, for example, TerraCircle is working with the local Sustainable Livelihoods for Rural Youth Project (SLYRP), funded by AusAID. An important innovation here has been the development by Joseph Kirio, a retired agricultural scientist and trainer with SLYRP, of an cropping system with *Gliricidia sepium* to maintain soil fertility. Other successes of international–local NGO partnerships have been the introduction of 'nutrition gardens' or 'sup sup gardens' to encourage greater use of annual vegetables to improve the family diet, and the Makira banana collection of 81 varieties planted in a large garden which functions as a field gene bank at a rural training centre.

NGOs can play diverse roles in extension work. They are likely to be lead partners in facilitating PAE by bringing together participants at different levels. They are good at facilitating connections and linkages, particularly at community and farmer level. They can be effective providers of services such as training. They can operate as agents of empowerment, mobilising individuals or communities, and organising farmers into action groups. NGOs can be effective at disseminating information on lessons learned and in scaling-up farmer innovations at local or wider levels.

NGOs may be better placed than government agencies to identify and express farmers' needs
at different levels, and at reaching the most remote or vulnerable groups.

There remain, nevertheless, strong roles that governments might take on. Government agencies could provide the technical and scientific information needed for PAE to occur, and carry out research (on-farm wherever possible) to support PAE. Another strong role could be to enlist and retrain extension workers to partner with NGOs in PAE at local and national levels. Governments could develop plans, policies and practices that lead to real participation of farmers, and create an enabling environment for PAE to occur by opening up market opportunities, providing infrastructure and creating a framework where service providers can work well. Governments are probably best placed to monitor development assistance.

The key questions remain:

- How can we link the informal and non-government sector with formal extension and research?
- What are the mechanisms for collaboration that work? Why has it proved easy in some places and difficult in others?
- What is the role of each?
- Why has scaling-up local success proven so elusive?
- How can we grasp the opportunity to build a better Pacific agriculture through PAE?

Delegates observe a demonstration plot of the leguminous mucuna bean as an excellent cover crop for fallow land.

16. Using the Internet to support a social knowledge management system

Will Allen, Margaret Kilvington and Chrys Horn
Landcare Research, New Zealand

The main characteristics required of an integrated system for knowledge management (ISKM)* are discussed using the example of participatory work on tussock grasslands in the high country of New Zealand's South Island.

A knowledge management framework needs to support collaboration, bring fragmented systems together in one place and make sense of different perspectives on the issue at hand. Typical outputs might include best-practice guides and the creation of networks to share information. Networks need to be adaptive, support feedback and experiential learning. To foster productive change, a knowledge management system must build relationships. In this regard, previous experience with collaboration is important. Getting key stakeholders to become involved can sometimes be difficult. Investigating and overcoming underlying emotional issues can help to begin the process of getting people on board. At other times, simply building the capacity to permit participation will be the starting point.

Information and knowledge are generally fragmented and must be sourced from the full suite of stakeholders. Note that all information is 'expert' when it is set in its proper context. People appreciate their knowledge being valued, and taking it into a projects will help to 'buy them in'.

The knowledge management system must support the dialogue needed to place information in context and foster a living experience of enquiry. Dialogue helps groups to work together and enables learning through bounded conflict. Dialogue brings out stakeholder values and helps integrate science with local and traditional knowledge to meet project objectives.

The Internet and other information and communication technologies are potent synergists for all these processes. Through them, people are empowered through ready access to information. The Internet allows placement of the latest information at a single site accessible to all, and supports the rapid distribution of brochures and other handouts, supporting on-the-ground networks such as farmer groups.

Monitoring and evaluation (M&E) are important components of collaborative learning from environmental management. They assist in maintaining motivation and help groups to reflect on their activities and build capacity for change. M&E should consider not only the task (i.e. have we achieved our objective?), but also the process (i.e. would we have done it another way, knowing what we now know?)

** See also 'A participatory approach to developing an information and communication technologies-based management information system for agriculture and the environment', by the same authors.*

17. Experiences with information and communication technologies and New Zealand farmers

Neels Botha, AgResearch and Will Allen, Landcare Research, New Zealand

New Zealand (NZ) rural communities have embraced the information and communication technologies (ICT) delivered by computers and the Internet. The results of two surveys (Botha et al. 2001, 2004[1]) indicated that over 70% of rural New Zealanders believed that Internet access was essential to them. Of the rural New Zealanders sampled who were computer owners — farmers and non-farmers — nearly 85% had an Internet connection.

As other research in this area has found, there was a strong relationship between education levels, computer ownership and Internet connectivity. The principal barriers to ICT access for the rural NZ communities were infrastructural and financial. Nearly 70% of the respondents claimed that they had telecommuncations problems either for their phone, fax, mobile phone or Internet connection. These problems were exacerbated with increasing distance from the nearest town (a proxy for distance from the nearest telephone exchange). Finance represented a barrier to 65% of respondents.

Lack of Internet skills, followed by lack of local technical support, lack of local computer/Internet training and lack of general computer skills were identified as important barriers to rural communities' use of computers. Rural New Zealanders are keen to redress this problem. As with research findings in other countries, email was the most favoured Internet activity of rural New Zealanders. This was followed closely by educational and business activities, and information searching.

Generally speaking then, rural New Zealanders are well connected, but have a few barriers to getting the most out of the Internet. We are concerned here with extension, so it is important to know how farmers prefer to learn about farming and if and how they use the Internet to do so.

A study by Botha and Atkins (2004[2]) sought to assess how New Zealand sheep-and-beef and dairy farmers choose to learn about different farming topics. They found that the majority of these farming groups had used the Internet and were confident with their level of Internet skills yet did not use the Internet for learning about farming. There was a weak positive correlation between frequency of Internet use and stated suitability as stand-alone on-farm learning tool. However, only 3.5 per cent of farmers used the Internet at least monthly to learn about farming. It was therefore concluded that the Internet is an insignificant learning tool for farming topics, but that the situation may change in future. The results also showed that groups are viewed by farmers as ineffective for learning about farming topics and that the majority of farmers in their study preferred person-to-person or one-on-one learning.

How can we improve the effectiveness of ICTs such as the Internet in rural New Zealand? The community service model is suggested. The concept of 'telecottages', 'telecentres' or community centres that provide access to ICTs for communities was first used in Sweden in more than 20 years ago. We can therefore draw on overseas lessons with different ICT delivery models.

Rather than telecottages or telecentres, the authors prefer the term 'access centres' in line with the objective of giving more people access to ICTs. They outline desirable characteristics of access centres.

The leaders of access centres should have skills in communication and community development — it is relatively easy to train them in technology. Local development champions need to be identified and trained. The authors recommend that community people, not technologists, be hired to work at the centre. An important aspect is that a centre be established by, and integrated into, the community, but have an external support network as well. Networking with other centres and sharing ideas, information and resources are advantageous.

An access centre is about people rather than technology, therefore centre staff are crucial to its success. International literature and local experts agree that there should be ongoing development programs for staff. Clients need to feel welcome, and be provided with the level of support that they require. Staff need to be trained to develop the appropriate level of skill and customer-service orientation.

International experience indicates that the vast majority of rural ICT access centres, established on the basis of the business model, have ended in failure because of financial constraints. In most cases, the primary objective of access centres is the provision of opportunities to the community. They are an investment in the people and the future.

In New Zealand, excellent work is being done at local access centres. Because of the fragmented, piecemeal approach and lack of financial robustness, however, these delivery models, on their own, do not provide an optimal solution. There is need for an overall strategy driven by strong leadership at the highest level, and by the community at grassroots level. Research has shown that the most successful model internationally is the Community Access Program (CAP) implemented by the Canadian Government (Botha et al. 2001[1]). This model is based on effective leadership (by an independent coordinating group), combined with a community-driven approach to initiating and operating the community centre.

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[1] Botha, N., Small, B., Crutchley, P. and Wilson, J. 2001. Addressing the rural digital divide in New Zealand. Report prepared for the Ministry of Agriculture and Forestry.

Botha, N., Small, B. and Atkins, K. 2004. 'Wired' for learning: computers and the Internet in rural New Zealand. Paper presented at the Conference on Learning and Human Capability in Agriculture, Hamilton, New Zealand, 23–24 November.

[2] Botha, N. and Atkins, K. 2004. Learning preferences of New Zealand farmers. Paper presented at the Conference on Learning and Human Capability in Agriculture, Hamilton, New Zealand, 23–24 November.

In summary, rural New Zealanders are well connected to use ICTs, but have a few barriers in getting the maximum out of tools such as the Internet. NZ farmers don't use the Internet to learn about farming and are averse to learning in groups. They want one-on-one interaction to learn about farming. Communities can improve the use of ICTs by establishing access centres that provides different services driven by the community's needs and preferences. The government should play a role in setting condition conducive for access centres, but these centres should be locally owned and managed.

18. ICT and the facilitation of learning and exchange within international networks: the case of PROLINNOVA

Dorine Ruter and Laurens van Veldhuizen
ETC Ecoculture, The Netherlands

There is now a very wide range of information and communication technologies (ICT) available to facilitate discussion, learning and exchange of information and ideas in international networks concerned with agricultural and rural development and related activities. Prolinnova — **Pro**moting **L**ocal **Innova**tion — is such a network that is making extensive use of ICT.

Prolinnova started in 2002 and now has activities in nine countries (Cambodia, Ethiopia, Ghana, Nepal, Niger, South Africa, Sudan, Tanzania and Uganda). It supports agricultural research and development partnerships facilitated by non-government organisations. A central objective is to investigate how participatory innovation development (PID) can be further developed and institutionalised.

Communication and connectivity are a challenge given the many players in Prolinnova. The nine country programs each involve various partners. There is an international support team drawing on people from ETC Ecoculture, the International Institute of Rural Reconstruction, the Swiss Centre for Agricultural Extension and the Free University of Amsterdam. In addition, there is a Prolinnova oversight group — the 'Board' — not to mention many interested individuals outside the nine countries in the program.

Essential to the success of the program are exchange and learning on concepts of local innovation, indigenous knowledge and intellectual property rights, implementation of PID and PID capacity-building approaches, facilitation of effective partnerships, advocacy and policy dialogue strategies, and program management.

For Prolinnova, ICT supports exchange and learning that is open to all. Key instruments are an annual electronic newsletter, the PTD/PID Circular, sent to subscribers by email, the Prolinnova website at <www.prolinnova.net> which has country pages, news items and general information on international developments. A recent innovation on the website was the introduction of a debate function. Prolinnova also runs a semi-moderated Yahoo discussion group (prolinnovagroup@yahoo.com>, a low-budget, easily accessible discussion platform.

Other useful ICT are e-conferencing, teleconferencing via the Internet and chat software for e-meetings. Each has its advantages and drawbacks. For Internet phone conferencing free, downloadable software such as Skype® or the more advanced Teamspeak is available. These are easy to use and there are no phone costs, but they do need good connectivity, i.e. broadband.

There are many packages supporting online chatting. They allow real-time interaction with much less demand on connectivity. In practice, however, there us is complicated. They allow only short messages and the sequencing of messages in and out can be difficult. Chat software is not suitable for discussing complex or sensitive issues.

Blogs — easy to use 'personal' websites — are perhaps the tool with greatest immediate potential for group communication and exchange of ideas. Blog sites are free and information can be uploaded by email. Prolinnova sees possibilities for country teams sharing information via blogs, and for linkages between blogs through search functions, subscriptions or via RSS (rich site summary), an XML format for syndicating and sharing web content.

Short for RDF Site Summary or Rich Site Summary, an XML format for syndicating Web content. A Web site that wants to allow other sites to publish some of its content creates an RSS document and registers the document with an RSS publisher. A user that can read RSS-distributed content can use the content on a different site. Syndicated content includes such data as news feeds, events listings, news stories, headlines, project updates, excerpts from discussion forums or even corporate information.

When seeking to choose the best option for a particular network the first thing to consider is the main purpose that it will serve: will it be for informing and publishing, or archiving and filing for future reference, or for higher-order functions such as exchange and learning, or even group decision making, management and monitoring and evaluation.

Technical factors that must be considered are the level of connectivity of group members, their computer and Internet skills and interests, the budget available and if the information provided can be effectively provided in writing only, or if the transfer process would benefit from audio and visual components.

From its experience, Prolinnova has concluded that ICT approaches cannot replace face-to-face exchange and learning, but that e-discussions can provide a strong adjunct in following up face-to-face events. The technologically simple options, such as Skype® and Yahoogroups, which have low connectivity requirements, are often perfectly adequate but, as the development of information and communications proceeds apace, networking projects need to remain aware of any new possibilities that emerge.

19. A systems approach to the Fiji–NZ Bilateral Quarantine Agreement: an extension perspective in the Sigatoka Valley

Osea Rasea, Ministry of Agriculture, Sugar and Land Resettlement, Fiji.

Extension is a key activity in expanding the Bilateral Quarantine Agreement (BQA) between the Fiji Ministry of Agriculture, Sugar and Land Resettlement (MASLR) and the Biosecurity Authority of the New Zealand Ministry of Agriculture. The bilateral agreement covers the export from Fiji to New Zealand of commodities that are host to fruit fly species of economic significance. It is an agreement forged under the terms of the WTO SPS Agreement.

An ongoing project funded by the Fiji's Ministry of Finance is implementing, refining and extending a systems approach to meet the country's obligations under the BQA. The project also receives support from SPC and associated donor agencies, which review it annually.

The systems approach will eventually be applied to all potential export commodities, but current activities are confined to fruits and vegetables such as pawpaw, mango, breadfruit, eggplant and chillies. The Sigatoka Valley, known as the salad bowl of Fiji, is the main source of exported horticultural produce and therefore a major target area.

A primary aim of the systems approach is to deliver for export, produce of consistent quality. Fiji has learnt from long experience that the major constraint to exports is not markets per se, but rather marketing. Together with volume and continuity of supply, quality is seen as a key to market success, more so than price competitiveness.

Fiji's past experience has shown that high-value export markets cannot be developed and sustained simply by small exporters securing supplies from farmers in an informal, ad hoc fashion. An export system in which small farmers work under the direction of commercial exporters, and with the support of extension services, will best serve the development of horticultural and other high-value export commodities.

The objectives of extension activities to support the development and expansion of the export system are:

- to help farmers understand BQA and its importance
- to maintain consistency of production of produce of quality produce
- to uphold the confidence of our trading partner and comply with their requirements to sustain the market
- to motivate other farmers to become participants in the system.

The frontline officers in these activities are the local extension and quarantine officials. They work in direct contact with farmers, exporters and other stakeholders in the system. Where appropriate, participatory techniques are used for training and in discussions between the various parties.

The systems approach entails application of the following phytosanitary measures:

- grower site registration
- field control measures, e.g. spraying of fruit fly bait
- hygiene and sanitation
- harvesting from registered sites only
- grower supply records to ensure produce comes from registered sites only
- grading and quality standards
- pest risk management.

Extension officers allocate one day per week for inspections to ensure conformance with these measures.

Growers are responsible for bait spraying using the recommended compounds. This is a pest risk management activity to reduce the population of fruit flies in registered fields. Growers must keep records of spraying for MASLR quarantine auditing. In addition, extension staff monitor spraying to ensure it is done in accordance with safety precautions and that a stipulated seven-day withholding period is adhered to.

Grading and quality standards are an essential component of the system. A committee is currently reviewing the minimum standards for BQA produce. These standards were established by the Nature's Way Cooperative based at Nadi Airport, which has nine active exporters who deal directly with farmers. While various groups have roles to play in establishing standards, it is the buyer who is the final arbiter of quality.

The systems approach to meeting the requirements of BQA has been refined and improved over the years. Realising the benefits to their livelihoods, longer-term BQA-registered farmers have taken ownership of the system. Production losses have fallen and success in the highly competitive marketing system provides registered growers with price premiums for their products in both domestic and export, with benefits to their standard of living and the wider domestic economy.

Trade has benefited substantially. Commodities that are hosts to fruit flies can now be exported to Australia and New Zealand. Fiji has been at the forefront of the adoption of improved fruit-fly management. Currently, more than 500 tonnes per year of fresh produce—mostly eggplant and papaya—are exported, and this is forecast to rise with the recent opening of new markets for Fijian produce.

An economic evaluation of the results of the project to date estimated that it will generate $A14.8 million over a 30-year period at a 5% discount rate and that the internal rate of return on the investment of project funds was 14%.

20. Farmer Field School: A Case Study at Banay-Banay Village, Cabuyao, Laguna, Philippines

Ruben Perez, Master Farmer Field School Trainer, Philippines

Project Name
KASAKALIKASAN – Kasaganaan ng Sakahan at Kalikasan-(The National IPM Program) Farmers' Field School (FFS), a government program design to introduce hands-on education for farmers at a specific location. It is a comprehensive and well-structured farmers training using a non-chemical alternative pest control.

Funders
The funds for the program is from the National Government, Local Government Unit (Provincial and Municipal Government) and the NGO, which is the Farmer-participants, with the following sharing of funds:

65 % - from the National Government
20 % - from the Provincial Government
10 % - from the Municipal Government
5 % - from NGO, which is the Farmer-participants

Providers
The FFS learning teams are the ones who deliver the services of conducting the Farmers' Field School. This is composed of two graduates of Rice Specialist Training Course (RSTC) and two Training of Trainers (TOT) graduates serves as facilitators. They are assisted by two Agricultural Technologist assigned in the area and they will serve as report officer and documentors. Resource Persons for Special Topics coming from Philippine Rice Research Institute (PhilRice) and from Regional Crop Protection Center (RCPC) specialist are also invited.

This group will lead and work with the farmer-participants in the undertaking of the activities in the FFS, by facilitating, developing and enhancing the decision making of the participants.

Key Contact
The major contact point is the Executive Committee chaired by the Secretary of the Department of Agriculture. This is the highest decision making body of the program.

Industry/Issues/Geography
An FFS is a must in every Barangay or village in every rice growing area. However, a season-long training was not seen as feasible in other Barangay or Villages for the following reasons;

- most of the farmers not residing in the barangay where their rice field is located.
- some rice fields are too far from the Barangay or Villages.
- some cannot plant rice because of water shortage.

Considering the problems mentioned above, Banay-Banay Village in Cabuyao, Laguna, was chosen as the site for the FFS. The available farm with enough water and convenient to reach was selected as the site for the demonstration trials for FFS. This programme is both commercial and food security oriented because in this 2nd district of Laguna the agricultural area is decreasing because some are converted into Industrial, Commercial and Residential area.

Project Context
Farmers have realized various agricultural problems particularly in raising crops utilizing their common practices. Conventional farming has lead to a number of set backs, such as low productivity, environmental threats, growing human and animal hazards and development of pesticide resistance in pest population. These are the common concerns of farming communities in the country. This situation has prompted the Office of the Municipal Agriculturist to coordinate with the Office of the Provincial Agriculturist and bring home the Integrated Pest Management – Farmers' Field School (IPM-FFS), especially as the Department of Agriculture intensifies to campaign to increase grains production and attain food self-sufficiency.

This program is designated to allow farmers to discover and decide for themselves how best to manage their farm and their resources and how to make them more productive, profitable and sustainable.

Specific Objectives

- To bring farmers together to carry out an intensive training on IPM methods and issues throughout the life cycle of the crop.
- To become IPM experts in their own farm field.

Approach
The approach used is participatory, which is to empower participants (both facilitators and farmers) with analytical ability and skills to investigate the 'cause and effect' relationship of problems in farming practices and thereby stimulate them to design a set of actions for solving their problems.

Farmer Field School, Fiji

21. Implementing a contract extension-delivery system based on outputs: the SSSPP experience in Papua New Guinea

Geoving Bilong, Department of Agriculture and Livestock, Morobe, Papua New Guinea.

The Smallholder Support Services Supply Project (SSSPP) aims to increase the smallholder household access to improved agricultural support services so as to increase agricultural production, productivity and household incomes. By focusing services on food crop production, it also seeks to enhance the status of women, who are the main contributors to the sector.

Central principles of SSSPP are that it is process oriented, the extension services delivered are aligned with smallholder producer needs and are contracted to local service providers who are often independent, single owner or operator business. The extension contracts awarded are output based.

The Department of Agriculture and Livestock's role is to manage the delivery system through the Smallholder Support Contract Facility (SSCF). It identifies and documents extension program activities, manages the contracts let, and monitors and evaluates outputs.

Contract-based extension, as exemplified by SSSPP, is one of several approaches to delivering better extension services to smallholder farmers in response to the decentralisation and corporatisation of agricultural research and development in Papua New Guinea that has occurred since independence.

Traditional extension services delivery has tended to be project orientated and driven by targets such as numbers of farmers, hectares, livestock etc. reached. Remote areas have been disadvantaged and high levels of operating funds and advisors have been needed. Moreover, their results have been characterised by poor sustainability: when the funding stops, so too do the improvements they have fostered.

Thus, it is highly desirable to develop an improved extension system which:

- delivers services at the local level (district, local level government, ward, village)
- reaches remote areas
- supports development of the private sector
- is cost-effective
- engages full stakeholder participation.

The SSSPP is testing a system that fulfils those principles. It operates as follows:

- smallholder extension needs are identified
- needs turned into proposals for extension activity
- tenders are called and contracts awarded
- payments made as output milestones are reached
- activities are monitored and evaluated.

There is a dedicated fund for the award of contracts under the project. To ensure transparency in project activities, funding and management are separate from delivery arrangements, contracts are awarded on the basis of technical merit and value for money, and there is a stakeholder steering committee as a watchdog.

Dr Simon Hearns (left) of ACIAR presenting Pacific excellence in agricultural extension award.

The work is done with farmer groups — formal and informal; women, men and youth. The focus is on smallholder ownership and commitment; farmers set agenda and specify needs, and contribute to costs.

SSSPP is making substantial progress in Morobe Province. Almost 300 contracts have been awarded, 80% of them for extension support to smallholders. The balance of contracts have gone for capacity building, and for information, school, technology improvements. There are now some 270 registered service providers, 90% of them small-scale enterprises. Activities to improve their management and technical skills are being developed.

Extension contractors have made contact with over 5000 farmer households, which are now implementing extension programs. A large number of other households are indirecly benefiting and there is a long queue of yet more households wishing to join a project.

Institutional strengthening is a significant spin-off of SSSPP. Some 70 Department of Agriculture and Livestock staff in Morobe and Eastern Highlands provinces are gaining valuable experience through their work in SSCF and have received training to upgrade their computing and analytical skills.

New technology outcomes from extension contracts include the use of Jatropha shrub as live fencing and a source of oil for soap and fuel, a hand-operated press for extracting oil from Jatropha and coconut, development of a rice-milling machine and formulation of a poultry feed for rural areas.

Evaluation of SSSPP extension delivery indicates that participating farmers are overwhelmingly satisfied with the services delivered and with the service providers. Economic analysis of project activities yields positive benefit–cost ratios averaging 10.

Acknowledgment

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DSAP is working with grassroots NGOs to create employment opportunities in rural areas. DSAP Tonga is helping local Vava'u NGO increase production of paper mulberry plant of socio-cultural significance.

22. Tonga Community Development Trust: an NGO experience

Samisoni L. Kanongataa, Project Manager

The Tonga Community Development Trust (TCDT) is a non-government organisation whose focus is poverty alleviation, giving special attention to the less-developed, more disadvantaged areas and communities of Tonga, and most specifically with an interest in the poorest of the poor.

Two current activities across the nation's islands are Village Women's Development (VWD) and the Disaster Preparedness Strengthening Project (DPSP).

The aim of the VWD project is to capture the unique contributions that women can make to development and extension, and to thereby also assist the women of Tonga and their families to achieve their full national and human potential. It seeks to empower women by encouraging them to be agents of their own development through provision of practical assistance.

VWD, through a participatory rural appraisal process, has drawn up a list of five priority activities for Vava'u, Ha'apai and 'Eua islands:

- cement water tanks
- fencing for backyard gardens
- nurseries for growing seedlings
- appointment of island extension officers
- income-generating activities.

Projects to meet these priorities are at various stages of implementation. The plant nursery project has successfully revitalised nurseries on Vava'u and 'Eua, and has established a new nursery on Ha'apai. A new extension centre for 'Eua and Ha'apai was opened in April 2005.

The range of income-generating projects currently underway is wide, extending from cultivation of peanuts, potatoes, pandanus, kava and yam, and paper mulberry, to compost making, poultry raising, and textile design. On the 'Eua–Esia island groups, 42 women are participating in a kava and yam income-generating project with total project funding of about $Tonga11,400. On Esia, the Takenulangi Women's Group has established a drip irrigation system demonstration plot on half an acre, supported by TCDT–DSAP.

The Disaster Preparedness Strengthening Project (DPSP) of the trust is working with communities that are particularly vulnerable to cyclones and other disasters, participating with them to plan, develop and implement training activities that will increase awareness of their vulnerabilities and better prepare them to respond to disasters. A major aim is to better integrate such communities into the Asia Pacific Alert Network operated by the Australian Foundation for Asia and Pacific.
The project covers some 1000 of the most vulnerable households (as identified by the community) in the outer islands of the Eua, Ha'apai, Vava'u and Niua Toputapu groups. An organisation and communications network has been set up with linkages to earth science and monitoring agencies in New Zealand, Hawa'ii (tsunami warning) and Fiji. DPSP has prepared a training manual and posters, and a video presentation, to support its activities.

We have described here just two of the Tonga Community Development Trust's extension activities. They exemplify the ability of the trust to deliver rapid and direct extension services to the nation's outer islands. They demonstrate also the effectiveness of group work, and particularly that of women's groups, in extending new technologies to large numbers of rural people.

The trust is working to continue its extension activities, seeking extra funding while consolidating the good rapport it has with existing donors.

23. Taro beetle media awareness: evaluating an information campaign

Emil Adams, Information Officer, LRD Plant Protection Service

Background

Data from the information survey conducted on taro farmers in Taveuni, Fiji, showed high levels of awareness of the taro beetle pest. Information collected point out a role the media plays in disseminating technical information to strengthen positive behaviour 96% of farmers surveyed have heard of the taro beetle. More than 80% first heard of taro beetle from posters, billboards, TV and radio. Furthermore, 33% of farmers said they shared their knowledge of the taro beetle with other family members, while 23% used the information to help them stop the spread of the taro beetle. A total of 160 farmers, members of the Taveuni Farmers Association, were visited at their farms for the survey. There are over 300 farmers belonging to the association. Taro is the prominent cash crop in Taveuni earning millions of dollars in export revenue for the Fiji economy. A multi-media information campaign, sustained over a period of less than a year (November 2004 – September 2005), was carried out as a collaboration between SPC Plant Protection Service and Fiji Ministry of Agriculture, Sugar and Land Resettlement targeting farmers with information to prevent the spread of the taro beetle.

Findings

Data from the survey point out a role the media plays in disseminating technical information to raise levels of awareness and strengthening positive behaviour. Caution should be exercised that credit for positive behaviour is not attributed to media messages alone. People make decisions all the time about their behaviour based on many exogenous factors; the media plays a significant role in molding behaviour. We all are aware of the on-going debate on media and violence.

Farmers on Taveuni are acutely aware of the socio-economic significance of taro to their livelihoods. Taro is not only traded, but is used in socio-cultural obligations and as a staple food item. The taro beetle thus is a threat to food security as well as trade. The information campaign helped increase knowledge of the pest and tied to specific behaviours to help reduce the threat. In essence farmers in Taveuni are convinced of the real threat of the taro beetle to their main source of livelihood and the information campaign served to reinforce positive behaviour, such as not taking to Taveuni plant host material.

Taro beetle management technology transfer used mass media and extension field days to disseminate research results to farmers.

24. An overview of the Extension Services Provided by Tonga's Ministry of Agriculture

Introduction
Agriculture continues to be a major sector of economic activity in Tonga. As well as providing food for the people, it makes significant contributions to the local economy in terms of cash income and employment, contributes to the nation's gross domestic product and, through food exports, earns much-needed foreign exchange.

Farmers are supported by an extension system delivered by the Research and Extension Division of the Ministry of Agriculture (MAF). This paper gives a brief overview of the system, which is emphasising a participatory approach to extension.

Role and structure of MAF extension services
The role of the Ministry's extension services group is:
to provide technical advice and support to farmers and other stakeholders through a participatory, team approach.

Farmers, and representatives of women's, youth, agribusiness and community interests, participate in district extension teams, which are supported by specialists in various aspects of crop or animal production.

The Research and Extension Division is headed by a chief executive officer, while teams in the outer island each have an officer-in-charge. The district extension teams, with the support of specialist personnel, tackle problems raised by the local farming communities.

A typical district extension team consists of:

- the officer-in-charge
- a root crop officer
- a farming system officer
- a animal production officer
- a vegetable production officer
- a women's development officer.

Extension services programmes
The activities of the division are delivered via an annual work plan which currently includes programmes covering food security, export crops, farming systems, livestock, on-farm trials/demonstrations, women's development issues and a youth development project. On-ground extension work is supported by information disseminated through the local media. Extension activities are routinely monitored and evaluated, and extension staff meet regularly to discuss progress and problems.

Methods used to get information to farmers
The MAF Research and Extension Division uses a wide range of tools in promoting and encouraging the adoption of more productive and sustainable agricultural technologies. They include:

- presentation of methods and results on demonstration farms
- promotions at agricultural shows
- media reports
- farm visits
- participation in District Agricultural Committee activities
- telephone advice
- on-farm trials.

Farm visits by extension staff is the method most preferred by farmers seeking information about better production techniques and their implementation.

Approaches to extension
While employing standard tools of agricultural extension, such as training and visits, commodity targets, cost-sharing and farmer-to-farmer communication, the MAF group is continuously moving to more participatory approaches to extension. These aim to involve all players in the agricultural sector in assessing new technologies through problem-solving approaches and farming systems development. Participatory approaches increase the chances of adoption and success of new and improved production techniques by enhancing information transfer and communication and sharing the perceived risks of a change in practices.

Participatory agricultural extension – interaction through common interest
Participatory agricultural extension is founded on participatory rural appraisal methods. The World Bank <http://www.worldbank.org/wbi/sourcebook/sba104.htm> nicely summarises these as follows:

Participatory rural appraisal (PRA) is a label given to a growing family of participatory approaches and methods that emphasize local knowledge and enable local people to make their own appraisal, analysis, and plans. PRA uses group animation and exercises to facilitate information sharing, analysis, and action among stakeholders É The purpose of PRA is to enable development practitioners, government officials, and local people to work together to plan appropriate programs.

Participatory rural appraisal evolved from rapid rural appraisal – a set of informal techniques used by development practitioners in rural areas to collect and analyze data. Rapid rural appraisal developed in the 1970s and 1980s in response to the perceived problems of outsiders missing or miscommunicating with local people in the context of development work. In PRA, data collection and analysis are undertaken by local people, with outsiders facilitating rather than controlling. PRA is an approach for shared learning between local people and outsiders É PRA techniques are É not limited to assessment only. The same approach can be employed at every stage of the project cycle [including extension] and in country economic and sector work.

Though this description is given in the context of development assistance projects, the techniques are equally applicable to domestic agricultural research, development and extension work.

The approach was first applied in Tonga in 1993 to identify agricultural and forestry development bottlenecks and needs and, since then, in:

- the 1996–1997 Secretariat of the Pacific Community (SPC)–Pacific Regional Agricultural Project (PRAP)
- a 1998 PRA project to identify farmers needs
- an SPC/MAF (PRA) plant protection project in 2002.

From the findings of those activities, the following projects were identified and implemented:

- an on-farm trial to screen colocasia and sweet potato varieties
- a trial with yam farmers to determine optimal fertiliser use and plant spacing
- an on-station trial to assess the most suitable fungicides for use by squash pumpkin growers.

In addition, there are projects in the pipeline to extend the work on squash pumpkin fungicides to farm trial, and for on-farm screening of cassava varieties for cyanide levels.

The future

The Research and Extension Division aims to continue to support the attainment of MAF objectives through a participatory approach to the development and transfer of appropriate agricultural technologies and by applying effective systems to communicate technical information to clients.

To do this, it needs adequate funding and a sufficient complement of trained staff. A continuing program of staff development is essential to ensure that farmers have ready access to the types of information that will help them to increase their productivity and returns. Fundamental to this will a further strengthening of working relationships and closer collaboration between all partners and stakeholders and an ongoing commitment to seeing projects through to a sustainable completion.

25. Lessons learnt in Tonga from participation in the DASP project

Kamilo Ali, DSAP Tonga

The Development of Sustainable Agriculture in the Pacific (DSAP) project is a 16-country partnership of farmer, government and non-government stakeholders managed by SPC. This presentation discussed the lessons learnt from the development in Tonga of a bucket drip irrigation system as part of the project.*

The National Steering Committee for the bucket drip project had wide representation:

- the Ministry of Agriculture and Food (MAF), with input from its Research and Extension sections, Women's Development Unit, Information Unit and the Forestry Division
- a higher learning institute nominated by the Ministry of Education
- the Tonga Community Development Trust, a non-government organisation
- the Tonga Youth Congress
- a farmer representative.

The author refers to Robert Chambers' list of attitudes and behaviours that impinge on participatory rural appraisal (PRA) and notes that hierarchical spaces present huge challenges to such appraisal. Further information on these issues can be found at <http://www.ids.ac.uk/ids/particip/research/pra/pranotes04.pdf>, for example.

The stimulus for the project was the identification of drought as a top priority problem for farmers and food production. To help overcome the problem, a bucket trip irrigation was given to farmers to trial. The system was simple, consisting of irrigation pipe running from an elevated bucket. An innovation suggested by farmers was to scale up the bucket to a 1500 litre water tank mounted on a truck tray, so to be able to irrigate a larger area. This innovation was adopted, despite the advice of the project consultant against doing so. The expert advice was that the hydraulic head provided by a tank at 1 metre elevation is sufficient to supply, at most, 30 metres of irrigation line, placing a severe constraint on scaling up.

Lessons were learnt from the project. On-farm trials should be adapted to meet farmers' needs, but they must also be kept informed of expert advice that will impinge on project outcomes. Project space needs to be opened up for field workers and farmers to learn together the reasons for success or failure. Field trials need to be flexible enough to support the day-to-day activities of the farmer.

The 'lacks' identified in comments on the project by senior staff of the research and extension divisions of MAF included resources, monitoring, trust, accountability and commitment. They also mentioned 'poor system', 'loss of discipline', 'antipathy/jealousy', 'favouritism' and 'embedded paradigm' as contributing to poor project outcomes.

* See also 'DSAP's experience with farmer-led participatory extension' by Siua Halavatau

Development of Sustainable Agriculture in the Pacific Project Regional Team

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ANNEX 4 SUMMIT PROGRAMME

Extension Summit Program
Bringing About Change – promoting participatory agricultural extension in the Pacific
International Dateline Hotel, Nuku'alofa, Kingdom of Tonga
21 – 25 November 2005

Monday 21st November 2005		
Official Opening		
09:00 – 09:10	Prayer Pacific Regional Seminary, Suva, Fiji	Fr. Seluini 'Akau'ola, Former Rector of the Marist House,
09:10 – 09:20	Welcome address	from MAF Dr. Pita Taufatofua, Head of Research and Extension Division, Ministry of Agriculture and Food (MAF), Tonga
09:20 – 09:35	Welcome address	from SPC Mr. Aleki Sisifa, Director Land Resource Division, SPC, Suva, Fiji
09:35 – 10:00	Opening address	Hon. Sione Peauafi Haukinima, Minister of Forestry, Tonga
10:00 – 10:30	Morning tea	
Plenary Session 1. Key Note Addresses		
Chairman:	Dr. Pita Taufatofua,	Head of Research and Extension Division, MAF, Tonga
10:30 – 11:10	Review of Agricultural Extension in the Pacific Islands (FAO), Bangkok, Thailand	Malcolm Hazelman, Senior Extension, Educations and Communications Officer, Food and Agriculture Organisation of the United Nations
11:10 – 11:50	Institutionalizing Participatory Agricultural Research and Extension (PARE)	Laurens van Veldhuizen, ETC Ecoculture, Leudsen, Netherlands
11:50 – 12:30	International Perspectives on Contemporary Extension and Systemic Change: Sharing stories with the Pacific	Christine King, University of Queensland, St. Lucia, Australia
12:30 – 13:30	Lunch	
Plenary Session 2.	**Thematic Presentations**	
Chairman:	Mr. Paula Taukei, (MASLR), Suva, Fiji	Deputy CEO, Ministry of Agriculture, Sugar and Land Resettlement
13:30 – 14:00	Roles of NGOs in PARE	Tony Jansen, Kastom Gaden, Solomon Islands
14:00 – 14:30	Farmer Field School (FFS)	Reuben Perez, Farmer Field School Master Trainer, Philippines.
14:30 – 15:00	Integrating PAE into tertiary education curricula	John James, President, APEN Australia
15:00 – 15:30	Afternoon tea	
15:30 – 16:00 Measuring real change in	Beyond Head Counting: Agriculture in the Pacific (DSAP), SPC participatory agricultural extension approaches	Danny Hunter, Team Leader Development of Sustainable
16:00 – 17:00	Discussion (Consolidate issues that will feed to group discussions)	
Tuesday 22nd November 2005		
Plenary Session 3.	**Lessons Learnt from Extension Models in the Region**	
Chairman:	Mr. Fred Muller	Secretary of Agriculture, Ministry of Land and Resources, Majuro, Marshall Islands.
08:30 – 08:50	Village Extension Model	William Kerua, Lecturer Agricultural Extension, UNITECH, Papua New Guinea
08:50 – 09:10	SSSPP Smallholder Support Contract Facility	Geoving Bilong, Provincial Program Advisor, PDAL, Morobe, PNG
09:10 – 09:30	SPC PPS Experience: Traditional Channels	Stephen Hazelman, Coordinator, Information, Communication and Extension Group, SPC
09:30 – 09:50	MFFN approaches	Joseph Warai, Community Based Health Care, Southern Highlands, PNG
09:50 – 10:10	Linking Farmers, PestNet	Stephen Hazelman, Coordinator, Information, Communication and Extension Group, SPC
10:10 – 10:40	Morning tea	

10:40 – 11:00	GTZ approach to participatory extension: From international experience to the "Drawa" Forestry Project Model Area in Fiji	Rainer. J. Blank and Christine Fung, SPC/GTZ Pacific-German Regional
11:00 – 11:20	Women in Business in Samoa	Adi Maimalaga Tafunai, Women in Business, Samoa
11:20 – 11:40	DSAP experiences	Siosiua Halavatau, Participatory Extension Officer, DSAP, SPC
11:40 – 12:00	TaroGen	Tolo Iosefa, Tarogen Coordinator, Samoa
12:00 – 13:00	Lunch	
13:00 – 13:20	Tonga experience	Lamipeti Havea and Kamilo Ali, MAF, Tonga
13:20 – 13:40	Taveuni experience	John Cox, Extension Officer, MASLR, Taveuni, Fiji
13:40 – 14:00	Lessons learnt from Mainstreaming Gender in Agriculture Extension in PICTs	Mereseini Seniloli, Participatory Extension Officer, DSAP, SPC
14:00 – 14:20	Farmer Federation	Malia Tafili, ECA, DSAP Wallis and Futuna
14:20 – 14:40	BQA Extension System	Osea Rasea, Technical Officer, Sigatoka Research Station, MASLR, Fiji
14:40 – 15: 10	Discussion (Consolidate issues and lessons learnt to feed to group discussions)	
15:10 – 15: 30	Afternoon Tea	
Plenary Session 4. **Chairperson:**	**International Experiences** Ellen Iramu,	DSAP National Cooperator, Solomon Islands.
15:30 – 15:50	Australian experiences	Roy Murray-Prior, Senior Lecturer in Farm Mabagement, Muresk Institute, Curtin University of Technology, Western Australia
15:50 – 16:10	New Zealand experiences	Neels Botha, Team Leader, Social Systems Research, AgResearch, New Zealand; and Will Allen, Research Coordinator for Collaborative Learning for Environmental Management, Landcare Research, New Zealand
16:10 – 17:10	Discussion (Consolidate lessons learnt from international experiences to feed to group discussions)	
18:30 – 20:30	Cocktail function hosted by MAF	

Wednesday 23rd November 2005

Plenary Session 5. **Chairman:**	**Lessons Learnt from Use of ICTs in Agricultural Extension** Charles Rogers,	Progressive Farmer, Port Vila, Vanuatu
08:30 – 09:00	Roles of ICTs in PARE	Neels Botha, Team Leader, Social Systems Research, AgResearch, New Zealand
09:00 – 09:20	NGO experience	Samisoni Kanongata'a, TongaTrust, Nuku'alofa, Tonga
09:20 – 09:40	SPC Plant Protection Services (PPS)	Emil Adams, Information Officer, SPC PPS Experiences
09:40 – 10:00	DSAP experiences	Bernadette Masianini, Information Officer, DSAP, SPC
09:50 – 10:20 10:20 – 10:40 Morning tea	Discussion (Develop a list of issues to feed to group discussions)	
Plenary Session 6. **Chairperson:**	**International Experiences** Judith van Eijnaten,	SPC Participatory Extension Officer, Noumea, New Caledonia.
10:40 – 11:00	Australian experiences	Simon Hearn, Senior Advisor, Australian Centre for International Agricultural Research (ACIAR), Australia.
11:00 – 11:20	New Zealand experiences	Will Allen, Research Coordinator for Collaborative Learning for Environmental Management, Landcare Research, New Zealand
11:20 – 11:40	Experiences of ETC EcoCulture	Laurens van Veldhuizen, Staff Member, ETC Ecoculture, Leudson, Netherlands
11:40 – 12:10	Discussion (Develop a list of lessons learnt from international experiences to feed to group discussions).	
12:10 – 13:10 Lunch		
13:10 – 17:00	**Field Trip to look at DSAP Tonga Field Works.**	

Thursday 24th November 2005

08:30 – 12:00 **Working Groups**

Themes

1. Introducing and institutionalizing PARE in PICTs.
• National Framework to support the institutionalization process.
• Regional Framework to support the institutionalization process.
2. Role of ICTs in PARE.
3. Participatory M and E for PARE.
4. Incorporating PARE into tertiary curricula.

The participants will be divided into 4 groups consisting of research scientists/managers, extension officers, staff from educational institutes, NGOs andfarmers.

The working group discussion will involve:

(i) Brainstorming the lists of issues and lessons learnt from the presentations and any others that participants can suggest that are not in the consolidated list.
(ii) Develop lists of issues for each of the four themes above.
(iii) Use the lists of issues and develop guidelines or elements the groups think essential for introducing and institutionalizing or operationalizing PARE.
(iv) How can ICTs facilitate the guidelines you proposed?
(v) What are the roles of tertiary institutes and how can we incorporate PARE into their agricultural extension curricula?

Using the results of the above discussions, develop a strategy for introducing and institutionalizing PARE taking into consideration the regional and national contexts.

12:00 – 13:00 Lunch

13:00 – 17:00 **Working Groups (continued)**

18:30 – 20:30 Cocktail and dinner hosted by SPC, CTA and SPC/GTZ Pacific –German Regional Forestry Project

Friday 25th November 2005

8:00 – 13:00 **Presentation of Working Groups**
Chairman: Aleki Sisifa, Director SPC Land Resource Division, Suva, Fiji

08:30 – 9:30 Pacific Chapter of APEN and linkages to ETC EcoCulture. Stephen Hazelman, John James and Laurens van Veldhuizen

09:30 – 10:00 Group 1

10:00 – 10:30 Group 2

10:30 – 11:00 Morning Tea

11:00 – 11:30 Group 3

11:30 – 12:00 Group 4

12:00 – 13:00 General discussion

13:00 – 14:00 Lunch

14:00 – 15:00 **Closing Plenary**

Plenary discussion of the summit outputs, identified gaps, issues and questions on institutionalizing PARE.
Reflection and discussion on lessons learnt and identification of practical recommendations.
Informal evaluation will be conducted by getting reactions of the participants to workshop and personal objectives.

15:00 – 15:30 Closing Remarks

Participants will start leaving for home on Friday 25th evening.