Pacific Community
Communauté du Pacifique

The Pacific Islands Extension Strategy

STRATEGIC PRIORITIES IN AGRICULTURAL EXTENSION AND RURAL ADVISORY SERVICES IN THE PACIFIC REGION (2018–2028)

LRD
Land Resources Division

EUROPEAN UNION

IFAD
Investing in rural people

University of the Sunshine Coast
The best of both worlds

The Pacific Islands Extension Strategy

STRATEGIC PRIORITIES IN AGRICULTURAL EXTENSION AND RURAL ADVISORY SERVICES IN THE PACIFIC REGION (2018–2028)

Prepared by
the Land Resources Division
of the Pacific Community

Pacific Community
Communauté du Pacifique

Suva, Fiji, 2018

Original text: English

Pacific Community Cataloguing-in-publication data

The Pacific Islands Extension Strategy: strategic priorities in agricultural extension and rural advisory services in the Pacific region (2018–2028) / prepared by the Land Resources Division of the Pacific Community

1. Agriculture — Oceania.

2. Agriculture — Management — Oceania.

3. Rural development — Oceania.

4. Agricultural assistance — Oceania.

5. Agricultural development projects — Oceania.

6. Economic development — Oceania.

I. Title II. Pacific Community

338.10995 AACR2

ISBN: 978-982-00-1121-2

Prepared for publication at SPC's Suva Regional Office, Private Mail Bag, Suva, Fiji, 2018

www.spc.int

Printed by Quality Print, Suva – Fiji. 2018

DEDICATION

A friend, mentor, leader and a Pacific Extension Champion who will be greatly missed. We will always cherish the wisdom and knowledge that you have passionately shared with PIRAS and the whole Pacific agricultural community.

Seumanutafa Dr Malcolm Hazelman, (1951-2018)
First President, PIRAS

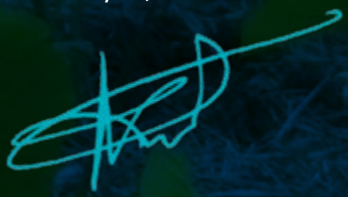
ACKNOWLEDGEMENT

The Pacific Islands Extension Strategy (PIES) 2018–2028 provides a vision and direction for agricultural extension and rural advisory services (RAS) that hinges on national and regional priorities. The strategy has multiple purposes, including: (i) prioritising areas that need strengthening within the context of policy, funding, resources and capacity; (ii) strategies to support priority interventions to improve agricultural RAS; and (iii) initiatives around which resources should be mobilised.

A range of stakeholders and partners have contributed to the development and finalisation of the PIES. With that and on behalf of PIRAS community, I would like to thank the EU-funded Pacific Agricultural Policy Project (EU-PAPP) and the International Fund for Agricultural Development (IFAD) for the generous funding support provided to mobilise resources for the development of the PIES. I would like to sincerely acknowledge the ongoing support from the Pacific Community (SPC) for being the main thrust behind the development of PIES, providing the technical support as well as the Secretariat functions and backstopping support for PIRAS. The development of PIES would not have been possible without the many contributions from PIRAS members – I thank all the agricultural extension and rural advisory services across the Pacific for their active participation and contributions to the development of PIES. I also wish to thank the Global Forum for Ural Advisory Services (GFRAS) for their contributions towards the development of PIES and the ongoing funding and partnership support for PIRAS. A special acknowledgement goes to the University of the Sunshine Coast Australia (USC) for the support provided by Dr Christine King and Dr Christine Jacobson to facilitate the development of the PIES.

Ensuring ownership has been the key to the successful development of the PIES, and will continue to be key to its implementation. Teamwork, partnerships stakeholders, and understanding farmers' needs and values is essential, as well as a shared aim of providing seamless continuity to contribute to agricultural innovation in Pacific countries. Commitment from the PIRAS Board, SPC, stakeholders and development partners are needed to ensure that sufficient funding and resources are mobilised for successful implementation of PIES priorities. The PIRAS Board, with the support of SPC as the Secretariat, will play a leading role in the oversight and coordination of the PIES implementation process. With that, I would like to call on stakeholders and development partners to support PIES implementation through alignment of programmes at the national level, and joint resource mobilisation, to ensure successful realisation of the priorities outlined in the document.

Thank you,



Michael Ho'ota (Mr)

President

Pacific Islands Rural Advisory Services (PIRAS)

CONTENTS

FOREWORD

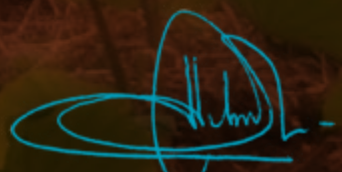
The Land Resources Division (LRD) of the Pacific Community (SPC) is putting member countries in the driver's seat to work with strategic development partners in the prioritisation of needs and the development of this Pacific Islands Extension Strategy (PIES) to address some of these needs.

This strategy is recognised by the heads of extension services in Pacific Island countries and territories (PICTs) as an essential tool to ensure that resources, services and systems are all able to address current and future needs of the Pacific Island agriculture sector. This sector is key to economic development and to food and nutrition security. In the Pacific, this means establishing how rural advisory services (RAS) can best meet the needs for food security and the new demands for commercially viable and export-driven food systems, given the often complex nature of land use for agriculture. It also means understanding the unique needs of the Pacific, with all its diversity in culture, climatic conditions, geography and finding a balance between traditional agriculture with its links to social obligations and developing farm systems with the capacity support resilient development.

Extension services that will bring the vision of '***Promoting extension excellence for prosperous and resilient communities in the Pacific'*** to reality will require a multilateral focus on issues such as quality improvement, safety, education, research, staff development and training, and institutional support, to embed best practice and extension excellence in advisory services.

Prosperous and resilient communities will be achieved by placing farmers at the heart of service delivery, where stakeholders engage with farmers using a range of extension models, facilitated by rural extension and advisory service agents who understand 'best fit' models for different types of problems (simple and complex), contexts and cultures.

A focus on equity will be at the forefront of service design and practice, including (but not limited to) people living in poverty, agriculture land tenants, aging farmers, women and youth. A fundamental focus will be on building the capacity of communities to identify their own needs, and engaging other stakeholders to address these needs. Achieving these priorities will require effective partnerships, more funding, and a commitment to ensure appropriate and effective service delivery that will address the needs in the Pacific. LRD is committed to working with its development partners and the PICTs to mobilise technical and financial resources to support the implementation of the priorities outlined in the PIES.



Jan Helsen (Mr)
Director
Land Resource Division
The Pacific Community (SPC)

MAP OF THE PACIFIC ISLANDS

ABOUT SPC LAND RESOURCES DIVISION

LRD's mission is to provide effective expert scientific advice and services on agriculture and forestry development issues, utilising the latest innovative and relevant applications for sustainable food and nutritional security and enhancement of climate change adaptation and resilience of Pacific communities. Its mission directly contributes to SPC's mission to support the well-being of Pacific people through the effective and innovative application of science and knowledge, guided by a deep understanding of Pacific Island contexts and cultures.

SPC adds value to development for regional, subregional and targeted groups, and individual members by:

- providing cost-effective specialist services due to economies of scale;
- supporting the sustainable management of shared natural resources and the environment;
- promoting region-wide norms and standards;
- facilitating transboundary coordination;
- piloting initiatives; and
- influencing global agendas relevant to the Pacific.

1. OVERVIEW

The Pacific Islands Extension Strategy (PIES) 2018–2028 was developed over a two-year period through three key phases: foundation building, exploring existing and desired approaches to extension, and strategic development. PIES development was informed by a series of need and demand assessments, regional and national consultations and online forums. Finally, ministerial approval was sought, including agreement on language, outline and priority focus areas.

PIES provides a vision and direction for regional collaboration in strengthening agricultural extension and rural advisory services (RAS) across the Pacific. PIES has multiple purposes, including:

a. providing a coherent regional framework for RAS to ensure alignment with common opportunities and concerns;

b. acknowledging participatory research and extension principles, and clarifying roles and responsibilities of stakeholders involved in RAS;

c. advocating for and streamlining investment in RAS across the Pacific;

d. institutionalising support for RAS at local, national and regional levels; and

e. establishing partnerships by working with the Pacific Community's Land Resource Division and the Pacific Islands Rural Advisory Services (PIRAS) stakeholders to enhance the effectiveness of networking, knowledge sharing and capacity building for extension to empower smallholder farmers in the Pacific.

1.1. What are extension and rural advisory services?

While understanding, and usage of the terms 'extension' and 'rural advisory services' vary, this document uses both terms. They are defined as all the different activities that provide the information and services needed and demanded by farmers and other actors in rural settings to assist them in developing their own technical, organisational, and management skills and practices so as to improve their livelihoods and well-being (Christoplos, 2010).

1.2. About PIRAS

Pacific Islands Rural Advisory Services (PIRAS), formerly known as the Pacific Islands Extension Network (PIEN), is a network of agricultural extension and RAS first established at the first Pacific Extension Summit convened by SPC in the Kingdom of Tonga (2005). Its establishment was in response to a demand by PICTs to establish a Pacific RAS network to collaboratively advocate and explore innovative approaches to strengthening RAS in the region to support the food and nutrition security and sustainable livelihood needs of Pacific farming communities. PIRAS was endorsed by the Pacific Heads of Agriculture Services and the Pacific Ministers for Agriculture meeting in 2009, Nadi, Fiji. In August 2015, with funding support from the EU-funded Pacific Agriculture Policy Project (PAPP), USAID, the International Food Policy Research Institute (IFPRI,) and the Global Forum for Rural Advisory Services (GFRAS), PIRAS was revived. A new PIRAS Board was elected, and adopted its mission: ***'to provide advocacy and leadership on research and extension to meet sustainable livelihoods needs for PICTs'.*** The Board also recommended the development of PIES to articulate regional priorities to strengthen RAS in the Pacific.

1.3. Rationale and background

The Pacific region is facing a number of challenges, including the effects of climate change, degradation of ecosystems due to unsustainable use of both land and marine resources, and the need to meet food security needs and generate livelihoods to maintain populations in the islands. Increased consumption of imported, highly refined foods, accompanied by decreased local food production and consumption, are also having serious effects on the health of island populations.

The bulk of the Pacific Island populations (more than 80%) depend directly or indirectly on the agriculture sector for food and livelihood security. The majority of this population are smallholders, mostly located in isolated rural areas, operating on scarce resources with limited access to services, new agricultural information and technologies, and credit and markets; they also possess low capacity for product diversification and face challenges in meeting quality standards for commercialisation and export. These challenges are compounded by a number of production constraints, such as pests and diseases, declining productivity, spiralling soil fertility problems, and the impacts of climate change and natural disasters.

RAS play a crucial role in addressing these challenges but faces its own set of challenges to effectively address the emerging needs in agricultural production, to meet the needs of an increasing number of stakeholders, and to keep up with advancements in technology. Regional forums – Extension Summit, 2005; Second Regional Conference of Heads of Agriculture and Forestry Services, 2006; and the Third Regional Conference of Heads of Agriculture and Forestry Services, 2008 – have identified gaps in the delivery of effective and efficient RAS, and have recommended strengthening the capacity of RAS staff and associated institutions regionally. This strategy articulates regional priorities to strengthen the capacity of RAS to serve farming communities effectively.

2. RAS CHALLENGES IN THE PACIFIC REGION

Numerous studies on RAS in the Pacific region have documented a number of challenges that influence the ability to deliver effective RAS to Pacific communities. These challenges include:

- limited capacity of RAS;
- institutional and budgetary constraints of RAS;
- lack of favourable policies for RAS;
- limited communication and coordination of actors in RAS;
- limited targeted support for vulnerable groups; and
- limited access to information and sharing amongst RAS.

2.1 Limited capacity of RAS

Several Pacific-wide capacity needs assessments on RAS have identified diverse capacity-building needs at various levels. At the individual level, over fifty different areas of capacity-building needs were identified. The key needs are grouped into two categories:

a. Technical skills: The highest priority needs are related to emerging needs and challenges such as pest and disease management, soil health, implications of climate change, disaster risk reduction, crop and livestock production and agribusiness (business planning, access to finance, value chain analysis); and

b. Functional skills: Process skills, knowledge and attitudes needed to deliver effective and efficient RAS, and to nurture partnerships with research and service development services – government agencies, NGOs and other institutions. The gaps are mainly due to RAS functional skill needs currently not being offered as a professional field of study in most universities.

2.2 Institutional and budgetary constraints of RAS

At the organisational level, RAS management was identified as problematic. This covers issues related to partnerships, project management, reporting, administration, finance and governance. In addition, while the private sector and farmer organisations are becoming increasingly important as input suppliers to RAS, there is weak coordination to meet the diverse demands, due to weak institutional and organisational capacity to articulate these demands. Furthermore, most RAS have suffered from limited budgets with declining numbers of staff and infrastructure to support service delivery. There is also limited synthesis of evidence-based approaches in accessible formats that can be used for advocacy with key decision-makers, development partners and donors.

2.3 Lack of favourable policies for RAS

Although RAS are recognised as a priority by most PICTs, a lack of clear and favourable policies for RAS is contributing to poor investment, resulting in poor infrastructure, limited incentives, and limited training opportunities for RAS, and ultimately poor performance of RAS. In addition, information and evidence are needed to support RAS providers in their work and to strengthen the position of RAS in the development context. However, there is currently very little information available on returns to investment and on value for money for different RAS approaches.

2.4 Limited communication and coordination of RAS actors

The number of rural and agricultural service providers is constantly increasing, but their activities are not necessarily coordinated and they do not necessarily work towards a common agenda. There is a lack of common understanding and focused analysis of the roles of different RAS stakeholders and actors, of how they should relate, and of which ones can reach different target groups. In particular, there is a conceptual lack regarding the definition of the relations between the public and private sectors and civil society in RAS. In addition, lack of access to most of the research information in the region has been recognised as an ongoing challenge for RAS due to poor linkages between research and RAS. The lack of effective co-ordination and priority setting results in duplication of expertise and effort, more competition and less information-sharing. Although there are pockets of effective communication and coordination, improvement is needed in three primary sets of relationships: universities and government, public and private RAS providers, and between researchers, RAS providers and farmers.

2.5 Limited targeted support for vulnerable groups

Currently, there are few targeted programmes for youth and vulnerable groups in agriculture, although exposure to skills is needed to strengthen their role in agricultural development through entrepreneurship and employment opportunities. Youth engagement in agriculture strengthens knowledge-sharing across generations, and therefore plays an important role in the continued cultural resilience of Pacific people. Likewise, the role of women in agricultural development is changing, with women taking a stronger leadership role in improving community health through growing and using traditional foods and improving nutrition standards, and in developing and running agribusinesses in most PICTs.

2.6 Limited access to information and sharing amongst RAS

Access to information in the Pacific region is recognised as an ongoing challenge for RAS due to lack of centralised information systems. Strengthening information access can enable adoption and scaling of innovation. This would harness existing and new scientific skills and better match research with the needs of farming communities and consumers, increasing the overall efficiency of both RAS and national agricultural research services.

3. STAKEHOLDERS

There are numerous stakeholders involved in providing agricultural advisory and research services in the Pacific context. Table 1 identifies the main services and organisations that will work collaboratively to implement the strategy, and their areas of expertise.

Table 1. Stakeholders and their roles

	Stakeholder group	***Role***
1	Regional organisations and intergovernmental bodies, e.g. SPC	Facilitate resource mobilisation to support implementation of PIES. SPC has taken a lead role in the development of this strategy and their ongoing support will be critical to its successful implementation
2	Regional and national groups and networks	Drive networking, learning, communication and co-ordination on a regional scale
3	National governments	Coordinate and connect actors to support implementation at the national level by provision of resources, alignment of PIES priorities and provision of feedback and lessons learned
4	Research organisations	Development of new technologies to engage with RAS and ensure best practice and technological developments are shared across contexts
5	Extension and advisory services	Contribute to networking and providing feedback on implementation progress and challenges
6	Educational providers (e.g. universities, schools)	Provide education and vocational training that ensures clear career pathways, RAS skill development and passion for agricultural development
7	Farmer organisations	Identify and communicate farmer needs and support best practice agricultural development by sharing lessons learnt
8	Private sector enterprises	Work with RAS to provide skills and mentoring that enables farmers to bridge the gap between subsistence agriculture and market-based agricultural economies. Private sector enterprises are crucial drivers of change, pulling quality products through the supply chain as they seek to comply with market expectations.
9	Regional and International development partners and donors (e.g. ACIAR, FAO, IFAD)	Provide scientific and technical knowledge that addresses regional priorities of mutual interest and benefit and mobilisation of funding to support PIES implementation
10	Non-governmental organisations	Work with a range of stakeholders to ensure that the needs of all, including the most vulnerable, are incorporated

4. THE PIES FRAMEWORK

PIES is grounded in the vision and guiding principles that guide implementation of strategic priorities outlined in the document. It is a 'living document' and its implementation shall be reviewed annually, when priorities will be updated and emerging needs and priorities incorporated.

4.1. Vision and principles

Vision: ***Promoting extension excellence for prosperous and resilient communities in the Pacific***

Two fundamental goals underpin this vision:

1. ***Extension excellence*** is demonstrated by: (i) critical thinking around best-fit models to diverse scenarios; (ii) academic alliances in education and research; (iii) workforce development and training; (iv) creating accessible rural advisory hubs that function as multi-stakeholder RAS platforms; (v) public-private partnerships that leverage resources for RAS; (vi) placing farmers and communities at the centre of RAS models; (vii) a systems focus, addressing social and cultural contexts across the spectrum of sectors; (viii) adopting best practice and an evidence-based approach to RAS; and (ix) translating research findings into practice.
2. ***Prosperous and resilient communities*** are those where individuals (including youth, women, people with disabilities) and families can work with RAS, building on existing knowledge and capacities and using evidence-based programmes, in order to: (i) build the capacity of individuals and communities to improve their health through food security and food nutrition; (ii) fully engage in RAS processes; (iii) create farming systems that are adaptive, including being adaptive to the effects of climate change and climate-related disasters; (iv) improve financial literacy where needed; and (v) ensure social and physical environments that enable healthy communities.

'Extension excellence for prosperous and resilient communities' aligns with the goals of PIRAS and assumes that there will be collaboration through teamwork and partnerships within and between countries. Such partnerships will involve individuals, communities, the private sector and government agencies, and will be grounded in an understanding of community needs and values, and will support seamless continuity of service delivery. This requires integrated planning of service and programme delivery. It also assumes that there will be innovation (e.g. within rural advisory hubs) demonstrated by:

- a culture of inquiry and exploration of new modes of service delivery;
- A forward-looking approach that considers drivers and opportunities for change;
- evaluating approaches and fostering extension research;
- investing in redesign and change management;
- trialling and developing solutions tailored to local needs; and
- building the evidence base for broader use.

Underpinning these goals is equity in service delivery: tailoring services and initiatives to reach vulnerable groups; creating integrated networks to facilitate access; providing information and communicating with farmers to enable them to self-manage and take greater control of their farming systems and farm families; building the capacity of communities to address food security issues; and understanding community values.

PIES PRINCIPLES

1. Systemic partnership: Service delivery will be based on excellence and shared responsibility through effective partnerships.
2. Evidence-based approaches: Service delivery will focus on evidence-based measures and best-fit practices.
3. Demand-driven and accountable: Service delivery will focus on demands and accountability to members, including farmers and clients. It will provide guidance adapted to context rather than prescription.
4. Transparent and inclusive: Service delivery will be inclusive, from priority setting to service delivery, respecting equity and opinions and knowledge of farmers and stakeholders.
5. Alignment: Priorities are aligned to the demands and national development goals and accountable to investment in extension service delivery and alliances.
6. Networking: shares information on a local, national, regional and global scale. All created information is shared and managed in the public domain.
7. Monitoring, evaluation, and learning: Promotes accountability and learning within all activities related to support services to demonstrate impacts and scaling of successful approaches.

5. REGIONAL PRIORITIES FOR RAS IN THE PACIFIC

The following regional framework for agricultural extension and advisory services is comprised of four focus areas: (1) capacity development for RAS human resources; (2) policy development support for RAS; (3) strengthening systemic partnerships in RAS, and; (4) knowledge management (KM) in RAS (Figure 1). For each focus area, expected outcomes and impacts are highlighted, and understanding each of these focus areas enables key strategic action areas and responsible stakeholders to be established for joint resource mobilisation and implementation (Annex 2).

5.1 Goal

The PIES goal is to empower the Pacific communities to enhance food, nutrition and income security through access to effective and demand-driven agricultural extension and rural advisory services (RAS). To achieve the goal, the following objectives will be pursued:

1. Enhanced competencies of human resources in RAS to respond effectively to the differentiated and emerging needs in agricultural production, agribusiness, value chains, climate change adaptation and food and nutrition security.
2. Rural advisory services are fully resourced through enabling mechanisms supportive of effective RAS.
3. Communities have enhanced access to demand-driven RAS through effective RAS partnership platforms and innovation hubs.
4. Enhanced access to information and knowledge through effective RAS networks and knowledge management systems.

5.2 Objectives, outcomes and strategic focus areas

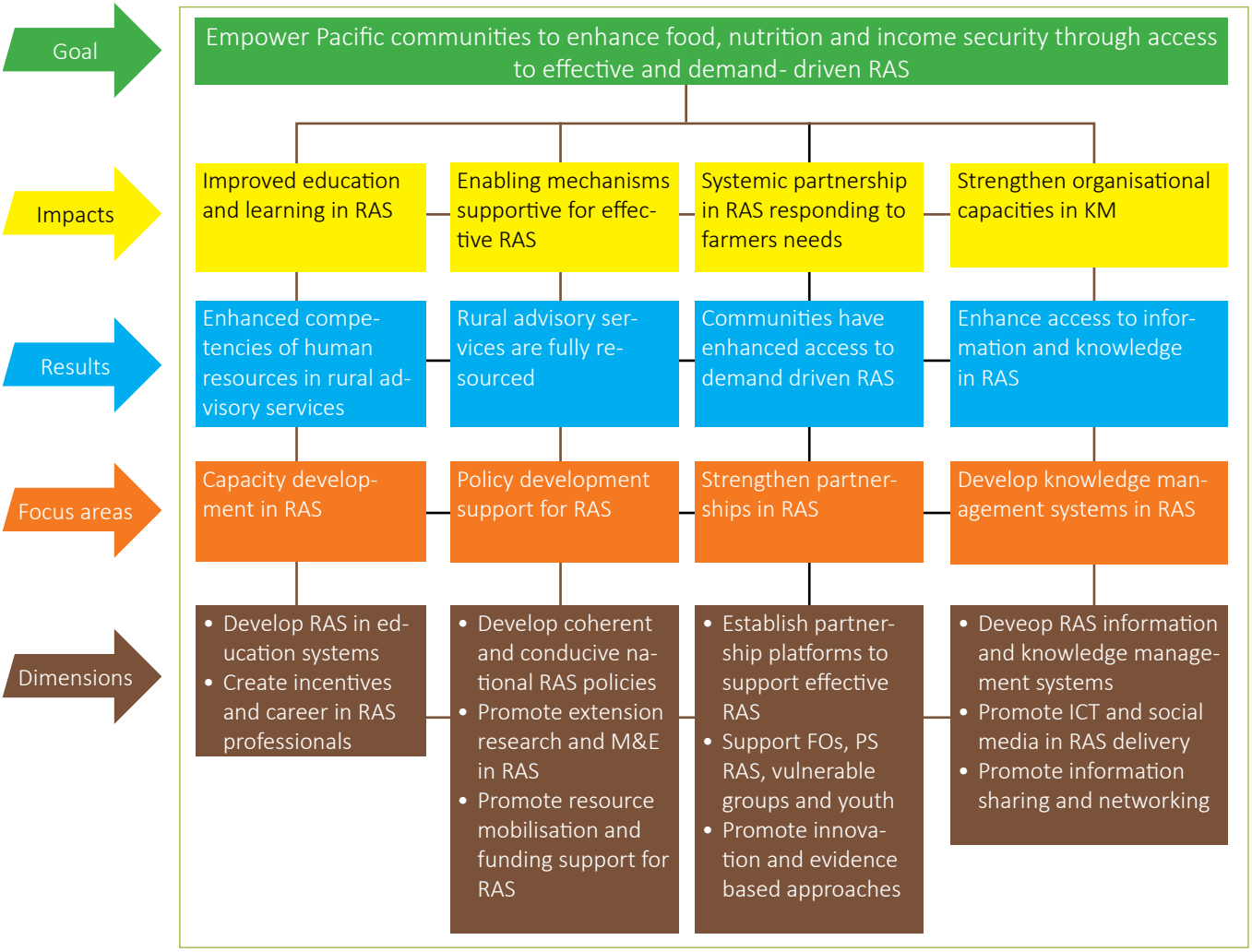
5.2.1 Enhanced knowledge and competencies of human resources in RAS

Outcome: Improved education and learning in RAS

The highest priority for the Pacific over the coming decade is to build the capacity of RAS to promote food and income security, support climate change adaptation, and accommodate market needs. RAS professionals are increasingly required to have basic technical skills across a broad range of farming systems, and to have well developed facilitation skills in order to organise producers, link farmers to markets, and employ social processes to mobilise farmers. To achieve this outcome will require strengthening both training programmes offered in learning institutions, and capacity development for RAS professionals through ongoing training programmes. There are three key strategic focus areas:

1. ***Develop RAS curricula in education systems***: Establish a consortium of RAS education providers to jointly strengthen RAS curricula offered in learning institutions and support the development of training modules aligned to extension technical and functional skill needs.
2. ***Create incentives and careers to support RAS studies***: Provide incentives and scholarships to increase the attractiveness of a career in RAS for youth. In addition, ongoing capacity-building needs to become an integral part of the departments and institutions that are providing extension services in the countries.
3. ***Develop skills for RAS professionals***: Enhance the skills of extension staff so they become critical thinkers in terms of appropriate extension models and facilitators of stakeholder learning and action. Training modules will need to be developed and delivered to RAS professionals and stakeholders to support new approaches to advisory service delivery to address emerging challenges of the Pacific. This is to enable capacity building to become an ongoing process, thus gaps in capacity and competency of the staff will be reduced effectively.

Figure 1. ReglonaIframework for RAS·In t he PaC"lflc



5.2.2 RAS are fully resourced through enabling mechanisms supportive of RAS

Outcome: Strengthened enabling mechanisms supportive for effective RAS

Evidence has shown that poor institutional support for RAS contributes to the poor performance of RAS delivery, lack of evidence on impacts of RAS and poor resourcing of RAS. Lack of favourable and clear policy direction, weak leadership and inefficient investment in RAS contribute to poor institutional capacities. There is a need for assessment of current institutional support mechanisms so that change processes can be put in place to strengthen RAS management, facilitate collaboration and partnerships amongst actors, and to gain the funding and resources required. This will involve reviewing and developing regional and national policies tailored to context, with clear justification of the differences at each level, and clear articulation of the roles that organisations at each level can play so farmers' needs are well served. There are three key strategic focus areas:

1. ***Develop coherent and conducive national RAS policies***: Develop institutional and policy support mechanisms that meet the demands of a range of stakeholders, including farmers and align to funding opportunities. Policies need to be created that address institutional support and deal with situations that are likely to occur in the implementation of RAS projects and programmes, providing security and consistency.
2. ***Promote extension research and M&E in RAS:*** Develop RAS monitoring and evaluation (M&E) systems and promote extension research to identify RAS-specific needs and to demonstrate evidence-based practices that contributes to achieving policy priorities and development outcomes at regional and national levels. In addition, extension research can support monitoring and evaluation needs at all levels so that results are used to inform advocacy on a regional and national scale.
3. ***Promote resource mobilisation and funding support for RAS:*** Establish advocacy platforms in RAS for ongoing policy dialogue, sharing lessons and joint advocacy. This will also require identifying RAS champions to increase recognition on the importance of RAS and for increased resource mobilisation to support RAS priority needs.

5.2.3 Enhanced access to demand-driven RAS

Outcome: Systemic partnership in RAS responding to changing needs and demands

There is growing realisation by PICTs of the need to support public private partnerships (PPPs) as a means of pooling and leveraging resources and sharing lessons learnt and best practices. This will improve the livelihoods of subsistence farmers, support value chains in semi-commercial or commercial farms and export markets, climate change adaptation, food and nutrition security and address environmental challenges. Similarly, advocacy and awareness raising are needed to strengthen the position of RAS in the wider context of rural development. Furthermore, because the voice of producers and service providers in determining agricultural research, science, and technology agendas is insufficient, there is a need to provide a platform for both research and RAS to collectively advocate for more investment in RAS. There are three key strategic focus areas:

1. ***Establish partnership platforms to support effective RAS***: Strengthen coordination through partnership platforms involving partners across system boundaries, with research and development partners, across supply chains and within innovation systems to better serve farmers' demands and contribute to the process of innovation. Rural advisory hubs need to be established as centres of extension excellence and will function as multi-stakeholder RAS platforms to facilitate best practice service delivery within communities. These platforms will also serve advocacy needs for increased investment in RAS.
2. ***Support farmer organisations, private sector RAS providers, vulnerable groups and youth:*** Assess, identify, develop and promote effective RAS models (e.g. plant health clinics, farmer field schools, ICT in RAS, etc.) to meet the diverse needs and demands from the farming community including for vulnerable groups and youth. This will also involve partnership with farmer organisations and the private sector to strengthen their roles in RAS in order to achieve strong partnerships and increase their participation in RAS provision. This will also include partnerships with communities, traditional governance structures and local governments, and engaging youth in RAS activities.
3. ***Promote innovation and evidence-based approaches:*** Identify and promote case studies that are evidence-based and share across RAS partnership platforms to enable scaling through a more pluralist approach to RAS provision, reducing reliance on government provision of RAS and increasing the role of those best placed to provide particular services in particular sectors.

5.2.4 Enhance access to information and knowledge in RAS

Outcome: Strengthen organisational capacities in knowledge management

Knowledge management is recognised as critical to support research and RAS delivery, particularly around knowledge retention and information sharing within and across organisations and networks. Knowledge management within most organisations across the Pacific region is poorly supported. There is a need for regional collaboration to strengthen knowledge management support to ensure timely access to knowledge, retention of knowledge, information-sharing and scaling of best practices. There are three key strategic focus areas.

1. ***Develop RAS information and knowledge management systems***: Explore and document regional coordination mechanisms and how these mechanisms can be improved at the regional and national scales. This will provide a useful way of capturing knowledge and case studies and making them accessible to stakeholders and farmers. It will involve building on the Pacific Agricultural Information System (PAIS) and other repositories with regional and national platforms that allow the use of stored information, including innovative practices, along with organisational knowledge management procedures.
2. ***Promote ICT and social media in RAS delivery***: ICTs and social media platforms need to be assessed for accessibility and usability in terms of different stakeholders, and used where appropriate for sharing stories. ICTs will provide a mechanism to optimise PAIS, strengthen M&E processes for RAS – especially in dispersed communities – and support scaling of evidence-based RAS practices. This will also involve developing customer service desks for farmers.
3. ***Promote information sharing and networking***: Strengthen regional coordination and networking within and across countries to ensure that information (research findings, innovative practices) and lessons learnt are shared to facilitate scaling of evidence-based practices and innovations. The diverse geographical, cultural and political contexts of PICTs means that research, RAS and farmer needs are often disparate, evolve in isolation from one another, and are not easily shared. This also means there is a tendency to duplicate efforts and increases the likelihood of failure to learn from existing practices. Strengthening the role and functions of PIRAS will be paramount to coordination of networking and sharing of lessons and to support scaling of innovations and evidence-based practices.

6. IMPLEMENTATION ARRANGEMENTS

This strategy is grounded on priorities identified from PICTs to support and strengthen RAS across PICTs. It recognises the need for guidance in developing country-specific strategies for RAS, linked to the PIES. An implementation matrix with key strategic actions, timeframe and responsible stakeholders is presented in Annex 2.

SPC as the Secretariat for PIRAS jointly with the PIRAS Board, will assume the responsibility of facilitating the implementation process by mobilisation of required resources and funding. The process will involve coordinating and engaging key stakeholders for discussions at the PIRAS annual forums, where priorities for each year will be compiled and translated into a full proposal. Implementation of priorities will focus on providing the right services, by the right team, in the right place, in the right way and at the right time. This process can also be used to enable regional priorities to be adapted to sub-regional and country-specific contexts (Figure 2).

6.1 Providing the right services

Implementation process will be based on promoting RAS approaches that are evidence-based, aiming to display best practice. It implies a review and evaluation framework, where RAS models are monitored and outcomes are benchmarked. Models are adapted as evidence changes; where the evidence is unavailable or equivocal, participation is within the ethical framework of scientific enquiry – monitored, measured and evaluated. Where there is evidence of no change or little benefit, models are refined and changed to be more effective. Through this process, a focus on consistency and efficiency of RAS practice remains forefront.

Figure 2. Implementation of PIES priorities

6.2 By the right team

Implementation will involve RAS delivery that reflects multi-stakeholder practice, with formal and informal links among RAS professionals, and across countries, sectors and functions, within the framework of farmer-centred RAS. This principle extends to approaches that focus on action within communities.

6.3 In the right place

RAS providers, wherever possible, will ensure that services are delivered in the most cost-effective setting that optimises farmer access. The systems, infrastructure and support that facilitate linked-up action also enable more flexibility in providing RAS outside traditional high-density, high-cost, highly-congested and complex flow environments. Technological advances in connectivity ensure that the diagnostic information to support RAS provision can be made available outside traditional sites, no longer constrained by requirements of critical mass.

6.4 In the right way

RAS models need to be adapted to the cultural and geographical context of countries. The principles behind the method chosen will stay the same and guide the adaptation and application of the model. This also applies to contextualising processes from policy through to practice. This is also a key to ensuring alignment between regional and country-specific policy.

6.5 At the right time

RAS providers, wherever possible, will ensure that services are delivered in a timely manner through effective partnerships amongst RAS providers, with a clear delineation of roles and understanding of capacities across services providers. To do this, continuous dialogue and training is needed to support the sharing of lessons and the building of competencies of RAS providers and the farming community.

7. MONITORING, EVALUATION AND LEARNING

M&E, is a critical mechanism to ensure effective policy implementation. The priorities identified in this strategy are intended to be implemented over a ten-year timeframe. Responsibility for M&E rests with the PIRAS Board with support from SPC and key partners (e.g. member governments). An annual M&E process is envisioned. M&E results will be collated and shared with member countries through annual meetings and PIRAS online platforms. A key consideration is whether we have the capacity for robust impact pathways and, if so, how will RAS modalities adjust over time to take stock of new realities and shifting priorities. Annex 1 outlines core indicators, measures and targets related to each priority, which will be monitored and evaluated each year.

Annex 1. Monitoring and evaluation framework

Regional priorities	Success indicators	Baseline	Short-term target (Year 1–2)	Med-Term target (Year 3–5)	Long-term target (Year 5+)
1. Enhanced competencies of human resources in rural advisory services	• Improved skills and performance of RAS • Training modules developed • New training programmes targeted for RAS	• Limited technical and functional skills of RAS • Poor performance and coverage of RAS • Lack of scholarship and training opportunities for RAS	• Resource and capacity gaps are identified in all national RAS • Training modules for RAS developed and delivered in countries • Harmonise education and training in RAS in partnership with learning institutions	• RAS modules mainstreamed in school curricula • Improved training, education, standards, and opportunities for RAS actors with incentives, certification, and career development mechanisms in place	• Evidence on RAS approaches in contributing to development outcomes at national levels
2. Rural advisory services are fully resourced	• Increased investment in RAS • National RAS policies in place • Evidence-based RAS models	• Lack of favourable RAS policies and • Unclear priorities for RAS • Low funding for RAS • Lack of voice and advocacy on RAS	• Funding opportunities for regional priorities identified and mobilised • Guidelines for policy development, extension research and RAS M&E developed and implemented • Policy dialogue occurs to support consistent framing and scope in national RAS policy development • RAS needs are identified and integrated in policy and advocated to Pacific leaders and donors	• Mechanisms are in place for extension research and RAS M&E processes and integrated into service delivery for both public and private groups (farmer, supplier, producer and market groups) • A coordinated approach to RAS policy development across the Pacific	• Sufficient funding and political support for regional RAS initiatives is secured independently of individual countries • Strengthened institutions, governance, coordination, and financing structures for national RAS
3. Communities have enhanced access to demand-driven RAS	• Public-private partnerships are in place to support coordinated RAS delivery, including rural advisory hubs • Agricultural, forestry and extension research is clearly aligned to the needs of farmers, and supports resilient livelihood development	• Limited coordination and partnership amongst RAS providers • Limited sharing of best practices and lessons • Piloting of rural advisory hubs • Simple useable frameworks that can help assess the benefit of RAS programmes and farming practices.	• Opportunities for supporting PPP identified as part of RAS policy • RAS models inclusive of vulnerable groups (youth, women, others) and cross-cutting issues (gender, climate change, nutrition and food security) developed and promoted across countries through PIRAS • Development of rural advisory hubs	• Partnership platforms established at national levels linked to PIRAS • Best practices shared amongst RAS providers • Rural advisory hubs established • Learning within rural advisory hubs	• PPP contribute to RAS provision in key areas identified within national RAS policy • RAS delivery is evidence-based • Improvement in extension:farmer ratio • Self-functioning rural advisory hubs • Learning across rural advisory hubs
4. Strengthen organisational capacities in knowledge management	• Information and knowledge management platforms developed and utilised • Information sharing and networking	• Fragmented information and knowledge systems • PIRAS established	• Funding secured for PIRAS annual meetings • Information and knowledge management capacity in organisations • Information and knowledge management systems in place	• Lessons on best practice are shared and adapted • Databases are updated regularly and appropriate quality control processes exist	• Improved access, sharing, and use of information, knowledge, and experience in RAS

Annex 2. Implementation plan matrix

Objectives/Outcomes/Key Strategic Actions	Responsibilities	Timeline
Objective 1. Enhanced competencies of human resources in RAS to respond effectively to the differentiated and emerging needs in agricultural production, agribusiness, value chains, climate change adaptation and food and nutrition security.		
Outcome 1.1 Improved education and training in RAS		
Output 1.1.1 Develop RAS curricula in education systems		
1.1.1.1 Establish a consortium of education in RAS to coordinate capacity building of RAS in the region. 1.1.1.2 Review education and training needs in RAS and develop curricula aligning to RAS training needs. 1.1.1.3 Support the development of training modules and strategies to support ongoing capacity development needs. 1.1.1.4 Work with learning institutions (schools and universities) to mainstream training modules into school curriculum. 1.1.1.5 Promotion of scholarship and in-service training opportunities.	USP – Lead Co-Lead – PIRAS, Tertiary Partners – SPC, development partners	2018–2019
Output 1.1.2 Create incentives and careers to support RAS studies		
1.1.1.1 Provide incentives, such as scholarships, to increase the attractiveness of RAS studies for youth. 1.1.1.2 Work in partnerships to leverage resources for RAS training and to support field activities and professional development activities. 1.1.1.3 Promote ongoing capacity-building needs to become an integral part of the departments and institutions providing extension services. 1.1.1.4 Providing incentives (increased salaries, increased status, scholarships and other funding) and pathways (e.g. undergraduate/postgraduate degrees) for young people, women and others to become involved in agriculture and extension roles (e.g. research, extension, management, volunteerism).	USP – Lead Co-lead – PIRAS, Tertiary Partners – SPC, development partners	2018–2019
Output 1.1.3 Develop skills for RAS professionals		
1.1.1.1 Support capacity needs of RAS actors through capacity strengthening events (training, learning routes, peer-to-peer coaching). 1.1.1.2 Develop the skills of extension staff so they become critical thinkers in terms of appropriate extension models and facilitators of stakeholder learning and action. 1.1.1.3 Develop capacity-building programmes for RAS professionals (formal and informal). 1.1.1.1 Promotion of scholarship and in-service training opportunities. 1.1.1.2 Revitalise local educational facilities to support training in extension skills, teamwork and communication, to translate extension research into practice in a supported environment, and integrate ways to store extension research and lessons through regional databases.	PIRAS – Lead Co-lead – Universities Partners – SPC	2019-2022

Objective 2. Rural advisory services are fully resourced through enabling mechanisms supportive of effective RAS			
Outcome 2.1. Strengthened enabling mechanisms supportive for effective RAS			
2.1.1 Develop coherent and conducive national RAS policies			
2.1.1.1	Assess current institutional support mechanisms and identify structure and functions required to strengthen RAS institutions.	SPC – Lead Co-lead – PIRAS Partners – GFRAS, API-RAS and development partners	2019–2023
2.1.1.2	Support organisational/institutional systems (e.g. administrative management systems, networking and coordination, operating procedures) through functional reviews, system development, capacity development programmes and process improvement.		
2.1.1.3	Develop institutional and policy support mechanisms that meet the demands of a range of stakeholders, including farmers, and align to funding opportunities.		
2.1.1.4	Develop coherent and conducive national RAS policies that are tailored to contexts, needs and national priorities.		
2.1.1.5	Build capacity of organisations/institutions (e.g. SPC) to partner with stakeholders (e.g. USP, private service providers, PIRAS) to strengthen institutional support mechanisms (e.g. funds, resources, staff, training) that will ensure RAS project and programme success.		
2.1.2	***Promote extension research and M&E in RAS***		
2.1.2.1	Carry out assessment of current effective organisational/institutional support mechanisms.	SPC – Lead Co-lead – PIRAS Partners – GFRAS, API-RAS and development partners	2019-2024
2.1.2.2	Develop effective M&E systems that are appropriate for policy development at different scales, with particular emphasis on participatory monitoring and evaluation to involve farmers for demonstrated impacts.		
2.1.2.3	Review existing extension research across the range of existing service providers (public and private) and identify evidence-based practices, impacts and returns on investment in RAS.		
2.1.2.4	Document case studies of effective institutional support mechanisms that can be shared through the PIRAS network and be used as best practice/best fit case studies.		
2.1.2.5	Promote the importance of extension research to research organisations and funding bodies so that research on extension itself is carried out as part of research (as with the importance of research on the research process itself).		
2.1.2.6	Promote extension research to support monitoring and evaluation needs and to inform advocacy on a regional and national scale.		
2.1.2.7	Promote extension research specialisation in education (and promote or conduct extension research across the Pacific region).		
2.1.3	***Promote resource mobilisation and funding support for RAS***		
2.1.3.1	Establish advocacy platforms in RAS.	PIRAS – Lead Co-lead – SPC Partners – GFRAS, API-RAS and development partners	2019-2028
2.1.3.2	Identify and engage RAS champions in advocacy process for more investment in RAS.		
2.1.3.3	Ensure that current and future policy addresses cross-cutting issues of environment, nutrition and food security, energy, sustainable development, engagement of women and youth, and climate change impacts.		
2.1.3.4	Utilise partnerships to increase government/ministry role as a policy-making and regulatory entity, including through evidence-based, and bottom-up and participatory policy development and planning.		

Objective 3. Communities have enhanced access to demand-driven RAS through effective RAS partnership platforms and innovation hubs		
Outcome 3.1 Systemic partnership in RAS responding to changing needs and demands		
Output 3.1.1 Establish partnership platforms to support effective RAS:		
3.1.1.1 Evaluate existing PPPs and opportunities for new models of PPPs. 3.1.1.2 Assess different roles of extension agents in relation to pluralistic extension provision, country context, technical application areas and different sectors and markets, and institutional structural and functional issues. 3.1.1.3 Establish partnership platforms at national levels to facilitate coordination among RAS providers and links to regional and global platforms. 3.1.1.4 Formalise and promote recognition of national partnership platforms. 1.1.1.5 Establish and pilot rural advisory hubs as centres of excellence to support multi-stakeholder service delivery. 3.1.1.6 Support and develop links between research and extension. 3.1.1.7 Develop and implement service delivery standards that support policy and have a strong service ethos, with extension agents building partnerships with a diversity of stakeholders to enable pluralistic models of extension, and support consistently high quality service delivery.	PIRAS – Lead Co-lead – SPC Partners – GFRAS, API-RAS and development partners	20219–2028
Output 3.1.2 Support farmer organisations, private sector RAS providers, vulnerable groups and youth		
3.1.2.1 Create a strong research and teaching culture in local communities to attract high quality academics, particularly academics associated with extension research, but also academics in agriculture and other related fields (e.g. health, environmental management, climate change). 3.1.2.2 Assess, identify and promote effective RAS models (e.g. plant health clinics, farmer field schools, etc.). 3.1.2.3 Support targeted extension service delivery for women and vulnerable groups, including youth participation in RAS. 3.1.2.4 Support farmer organisations and the private sector to strengthen their role needs and increase their participation in RAS provision. 3.1.2.5 Establish linkages to communities, traditional governance structures and local governments, and engage youth in RAS activities. 3.1.2.6 Work closely with ministries of health, education and environment to ensure a holistic approach to engagement, and incorporate issues facing vulnerable groups in engagement strategies. 3.1.2.7 Develop extension products tailored to young people, promoting their engagement in agriculture in different ways. 3.1.2.8 Create conducive environment for women to engage in agriculture and REAS.	PIRAS – Lead Co-lead – SPC Partners – GFRAS, API-RAS and development partners	2019-2028

Output 3.1.3 Promote innovation and evidence-based approaches			
3.1.3.1	Identify and promote case studies that are evidence-based and share across RAS partnership platforms to pool resources, sharing lessons learnt and best practices.	PIRAS – Lead Co-lead – National RAS, SPC Partners – GFRAS, APIRAS and development partners	2018–2028
3.1.3.2	Promote a more pluralist approach to RAS provision, increasing the role of actors best placed to provide particular services in particular sectors and to enable scaling.		
3.1.3.3	Develop partnerships across supply chains (e.g. importers, food processors) and with other stakeholders (e.g. health ministries) to address food security and food safety standards, biosecurity issues, marketing and auditing processes, climate change, agribusiness.		
3.1.3.4	Identify key advocacy messages and jointly carry out advocacy through partnership platforms.		
3.1.3.5	Promote and mainstream extension approaches and models that addresses cross-cutting issues, nutrition and food security, value chains, agripreneurship, sustainable development, engagement of women and youth and climate change impacts.		
3.1.3.6	Develop and promote 'best fit' models of RAS to effectively address different needs of farmers.		
Objective 4. Enhanced access to information and knowledge through effective RAS networks and knowledge management systems			
Outcome 4.1 Strengthen organisational capacities in knowledge management			
Outcome 4.1.1 Develop RAS information and knowledge management systems			
4.1.1.1	Develop a regional database and knowledge management system	SPC – Lead Co-lead – PIRAS & NARS Partners – PICTs, GFRAS, ACIAR, APIRAS and development partners	20181–2022
4.1.1.2	Assist in further developing PAIS as a regional repository and create linkages to national knowledge management databases to capture extension data and practices along with organisational knowledge management procedures.		
4.1.1.3	Update PAIS regularly.		
4.1.1.4	Document and build on innovative and best practice/best fit case studies and share these case studies through existing knowledge management sites and networking forums.		
4.1.1.5	Develop training materials and conduct training on different methods for knowledge management and evidence-based practice.		
4.1.1.6	Assess ICTs and social media platforms for appropriateness, usability, accessibility and scaling up opportunities (including trialing at national levels).		
4.1.1.7	Review ongoing progress on and recommendations for knowledge management and evidence-based practice.		
Outcome 4.1.2 Promote ICT and social media in RAS delivery			
4.1.2.1	Assess usability of ICTs for information and lessons sharing in RAS.	National RAS/Partners ICT providers	2018-2028
4.1.2.2	Promote the use of ICTs (including social media) to support RAS delivery, and to promote monitoring and evaluation in RAS through effective partnership mechanisms.		
4.1.2.3	Optimise PAIS to strengthen M&E processes for RAS, especially in dispersed communities, and support scaling of evidence-based RAS practices.		
4.1.2.4	Build on/utlise social media/technology to encourage young people to pursue careers in agriculture, particularly RAS		
4.1.2.5	Develop extension products tailored to young people, promoting their engagement in agriculture in different ways		
4.1.2.6	Support development of customer service desks for farmers.		

Outcome 4.1.3 Promote information-sharing and networking		
4.1.3.1 Create a mechanism in local communities for the collection and storage of local evidence-based research findings, and link this to national and regional databases and knowledge management systems. 4.1.3.2 Strengthen PIRAS Secretariat functions and linkages through registration, encourage members to contribute to its activities and information sharing (such as newsletter, etc.), and participate in forum discussions. 4.1.3.3 Formalise PIRAS focal points to act as former Regional Agriculture Liaison 4.1.3.4 Hold regular extension exchanges (such as annual forums and peer-to-peer exchanges) and engage PIRAS to take a lead role in enabling the sharing of best practice/best fit case studies at regional extension summits. 4.1.3.5 Hold regional extension exchanges and engage PIRAS to take a lead role in enabling the sharing of best practice/best fit case studies at regional extension summits.	SPC – Lead Co-lead – PIRAS & NARS Partners – PICTs, GFRAS, ACIAR, APIRAS and development partners	2018-2028

Annex 3. Glossary and abbreviations

Access	The capacity or potential to obtain a service or benefit. Access incorporates notions of geographical access, cultural access, service appropriateness and affordability
Benchmark	A process of comparison of like processes, outputs or outcomes
Best practice	The case which will lead to the maximum benefit for an individual or a population
Capacity-building	Improving the ability of an organisation to meet needs through: enhanced building, equipment, services, resources and staff; technology; skills, knowledge and capacity to seize opportunities; leadership; learning and education; awareness, confidence, motivation and empowerment; and enabling policies and systems
Centralise	To bring under a single authority
Community	A group of people with diverse characteristics who are linked by social ties, share common perspectives, and engage in joint action in geographical locations or settings
Community participation	The process of involving community members in decision-making about their own farming, extension services, policy development, priority setting and addressing quality issues in the delivery of extension services
Consultation	The ways used to gain community input or feedback around a specific issue or topic. These are usually one-off or short term
Decentralise	The process of redistributing or dispersing functions, power or things away from a single location or authority
Effectiveness	The benefit achieved as a result of a service, intervention or process
Efficiency	Best value for money and making the best use of limited resources
Equity	Equal opportunity for access to services for equal or similar needs
Evidence-based	An approach to extension that requires the explicit, judicious and conscientious incorporation of the results of research in decision-making at all levels, including individual one-on-one extension, multi-stakeholder extension, public policy, planning and resource allocation
Extension and rural advisory services	The function of providing need- and demand-based knowledge in agronomic skills to rural communities in a participatory manner to improve production, income and quality of life
FAO	Food and Agriculture Organization of the United Nations
Farmer-centred extension	Extension services are provided in a way that addresses farmer needs, beginning from and building on their existing knowledge base, and recognising their ability and desire to learn by doing from their own experiences
GFRAS	Global Forum for Regional Advisory Services
ICT	Information and communication technologies (e.g. mobile phones)
IFAD	International Food and Agricultural Development
NARS	National Agricultural Research Services
Part-time farmer	A person who has regular employment but is also farming for income
PICTS	Pacific Island countries and territories
PIEN	Pacific Islands Extension Network
PIRAS	Pacific Islands Rural Advisory Services
PRA	Participatory rural appraisal
Resilience	The ability to thrive in an environment characterised by change, uncertainty, unpredictability and surprise
RAS	Rural advisory services
SPC	The Pacific Community
Pacific sub-region	Cultural or geographical grouping within the Pacific, including Polynesia, Melanesia, Micronesia, and atolls

Annex 4. Bibliography

ACIAR (n.d.) ***Capacity Building Needs Assessment of Agriculture Extension Personnel in the Pacific.*** Assessment Report (unpublished)

ACIAR (n.d.) ***Pacific Islands active projects***. Australian Center for International Agricultural Research. Retrieved from http://aciar.gov.au/files/node/14547/aciar_pacific_island_project_profiles_doc_12357.doc

ACIAR (n.d.) Pacific Island Countries. Annual Operational Plan 2013–14. Australian Center for International Agricultural Research. Retrieved from http://aciar.gov.au/files/aop2013/files/pacific_islands.pdf.

ACIAR (n.d.) Pacific Island Countries. Annual Operational Plan 2011–12. Australian Center for International Agricultural Research. Retrieved from http://aciar.gov.au/files/node/13817/pacific_island_countries_pdf_15863.pdf.

ACIAR (2012) Improving resilience and adaptive capacity of fisheries-dependent communities in Solomon Islands. Australian Center for International Agricultural Research. Retrieved from http://aciar.gov.au/files/node/14335/fr2012_03_improving_resilience_and_adaptive_capac_13184.pdf.

Baldacchino, G. (May 01, 2006) Innovative development strategies from non-sovereign island jurisdictions? A global review of economic policy and governance practices. ***World Development, 34,*** 5, 852–867.

Barnes, W. R. and Foster, K. A. (2012) Toward a more useful way of understanding regional governance. A paper for presentation at the September 2012 conference of the European Urban Research Association, Vienna, Austria. Retrieved from http://brr.berkeley.edu/wp-content/uploads/2012/10/Barnes-Foster-Toward-a-more-useful-way-of-understanding-regional-governance.pdf.

Bentley, J. (2013) Plant clinics in the Solomon Islands: A review of the plant clinics activity in the project: "Strengthening integrated crop management research in the Pacific Islands in support of sustainable intensification of high-value crop production."

Böcher, M. (n.d.) The concept of regional governance in different national funding programmes. Georg-August-University Göttingen, Institute of Forest Policy & Nature Conservation. Retrieved from http://www.regionenaktiv.de/bilder/paper_boecher_hagen.pdf.

CGIAR (2013). ***Research on agricultural extension systems: What have we learned, and where do we go from here?*** Report on workshop organised by the CGIAR Research Program on Policies, Institutions and Markets. Retrieved from http://www.g-fras.org/en/knowledge/documents/all-documents.html?download=168:workshop-summary-research-on-agricultural-extension-systems-what-have-we-learned-and-where-do-we-go-from-here.

Christoplos, I. (2010). ***Mobilizing the potential of rural and agricultural extension***. Rome: Food and Agriculture Organization of the United Nations and the Global Forum for Rural Advisory Services.

Erickson, J. D., & Gowdy, J. M. (1 January 2000). Resource use, institutions, and sustainability: A tale of two Pacific Island cultures. ***Land Economics, 76,*** 345–354.

FAO (2005). ***Agricultural extension and training needs of farmers in the small island countries: A case study from Samoa***. Rome: Food and Agriculture Organization of the United Nations (FAO).

FAO (2009a). Organic agriculture and fair trade in Pacific Island countries. Natural Resources Management and Environment Department, Food and Agriculture Organization of the United Nations. Retrieved from http://www.fao.org/3/a-ak356e.pdf.

FAO (2009b). ***Utilisation of the HTFA facility to expand the export of fresh fruits and vegetables from Tonga to New Zealand: A value chain approach***. Sub-Regional Office of the Pacific Islands, Food and Agriculture Organization of the United Nations (FAO). Retrieved from http://www.fao.org/docrep/015/an424e/an424e00.pdf

FAO (2011). A report on a workshop on market-oriented agricultural extension in the Pacific. Rural Infrastructure and Agro-Industries Division (AGS) and Sub-Regional Office of the Pacific Islands, Food and Agriculture Organization of the United Nations (FAO). Retrieved from http://www.aglinks.net/sites/default/files/Market-oriented%20extension%20in%20the%20Pacific_workshop%20report_final.pdf.

Greer Consulting Services (2008). Review of Vanuatu's agricultural extension services. New Zealand Agency for International Development (NZAID). Retrieved from: http://www.aid.govt.nz/sites/default/files/2357736-v1-Review_of_Vanuatu_Agricultural_Extension_PDF_Version.pdf.

IFAD (n.d.) Developing strategies for institutional change. Retrieved from http://www.ifad.org/english/institutions/guidance/7.pdf

IFAD (2004) Pacific Island countries: Subregional strategic opportunities paper. International Fund for Agricultural Development, Executive Board – Eighty-Third Session, Rome, 1-2 December 2004. Retrieved from http://www.ifad.org/gbdocs/eb/83/e/EB-2004-83-R-33-Rev-1.pdf.

IFAD (2010). Pacific Island countries: Environmental and climate change assessment. Prepared for the Subregional Strategic Opportunities Programme, International Fund for Agricultural Development. Retrieved from http://www.ifad.org/climate/resources/pacific.pdf.

Irving, D. B., Perkins, S. E., Brown, J. R., Moise, A. F., Murphy, B. F., Colman, R. A., Power, S. B., ... Brown, J. N. (22 November 2011). Evaluating global climate models for the Pacific island region. ***Climate Research, 49,*** 3, 169–187.

MALFFB (n.d.) ***Vanuatu Agriculture Sector Policy 2015–2030***. Ministry of Agriculture, Livestock, Forestry, Fisheries, and Biosecurity (MALFFB), Vanuatu. Retrieved from http://www.malffb.gov.vu/doc/Vanuatu_Agriculture_Sector_Policy.pdf.

Manueli, K., Latu, S., Koh D. (2007). ICT adoption models. CITRENZ (Computing and Information Technology Research and Education New Zealand (formerly NACCQ).The 20th Annual Conference 2007. Retrieved from http://www.citrenz.ac.nz/conferences/2007/175.pdf

Mapusua, K. and Maccari M. (2007) An overview of organic agriculture in the Pacific. Germany: International Federation of Organic Agriculture Movements. Retrieved from http://www.ifoam.bio/sites/default/files/page/files/oa_pacific_web.pdf.

Ministry of Agriculture and Livestock (2007). ***National Agriculture Development Plan 2007–2016: Policies and Strategies Volume 1***. Ministry of Agriculture and Livestock, Independent State of Papua New Guinea. Retrieved from http://aciar.gov.au/publication/ext05.

Seth, A. Institutions and rural services: Lessons from IFAD-supported projects in Asia. The ninth in a series of discussion papers produced by the Asia and the Pacific Division, International Fund for Agricultural Development (IFAD). Retrieved from http://www.ifad.org/operations/projects/regions/pi/paper/9.pdf.

SPC (2005). Agricultural Extension Summit: Bringing about change – promoting participatory agricultural extension in the Pacific: Proceedings of the inaugural extension summit for the Pacific region, held at the International Dateline Hotel, 21–25 November, 2005 [Nukualofa, Kingdom of Tonga] / Secretariat of the Pacific Community, Land Resources Division.

SPC (2008). Participatory approaches for agriculture and forestry development in the Pacific. Policy brief 4/2008 prepared by the Land Resources Division of the Secretariat of the Pacific Community. Retrieved from http://www.spc.int/pafpnet/attachments/article/138/pafpnet_participatory%20approaches%20for%20agriculture_a4.pdf

SPC (2009). Report of the 2nd Pacific Extension Summit 18–22 May 2009, Nadi, Fiji. Compiled by the Secretariat of the Pacific Community Land Resources Division, Suva, Fiji.

SPC (2010). Developing a policy framework for extension systems. Policy brief 12/2010 prepared by the Secretariat of the Pacific Community. Retrieved from http://www.spc.int/lrd/publications/doc_download/1194-policy-brief-12-developing-a-policy-framework-for-extension-systems.

SPC (2013). LRD Strategic Plan: 2013–2017. Land Resources Division Strategic Plan: 2013–2017 / prepared by the Land Resources Division of the Secretariat of the Pacific Community. Retrieved from https://lrd.spc.int/strategic-plan

SPC (2015). Regional Research and Extension Forum: Strengthening agriculture and forestry research and extension linkages for sustainable food security and trade. Compiled by the Secretariat of the Pacific Community Land Resources Division, Suva, Fiji. Retrieved from http://www.spc.int/pafpnet/attachments/article/138/pafpnet_participatory%20approaches%20for%20agriculture_a4.pdf

SPREP (2011). ***Pacific Islands framework for action on climate change, 2006-2015***. Apia, Samoa: Secretariat of the Pacific Regional Environment Programme. Retrieved from http://www.sprep.org/climate_change/pycc/documents/PIFACC.pdf.

Tuilaepa, Faletoi Suavi. (1998). ***Towards an appropriate system of agricultural extension for Samoa***. Lincoln University. Retrieved from https://researcharchive.lincoln.ac.nz/handle/10182/2683

Vea'ila, Tevita Taukei. (2009). ***The use of education theory to guide the implementation of participatory rural appraisal in the Kingdom of Tonga***. Faculty of Education, University of Wollongong. Retrieved from http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1833&context=theses.