

# Forest and Tree Genetic Resource Conservation, Management and Sustainable Use in Pacific Island Countries and Territories

## Priorities, Strategies and Actions, 2007-2015

*Healthy Forests, Healthy Families,  
Healthy Futures*

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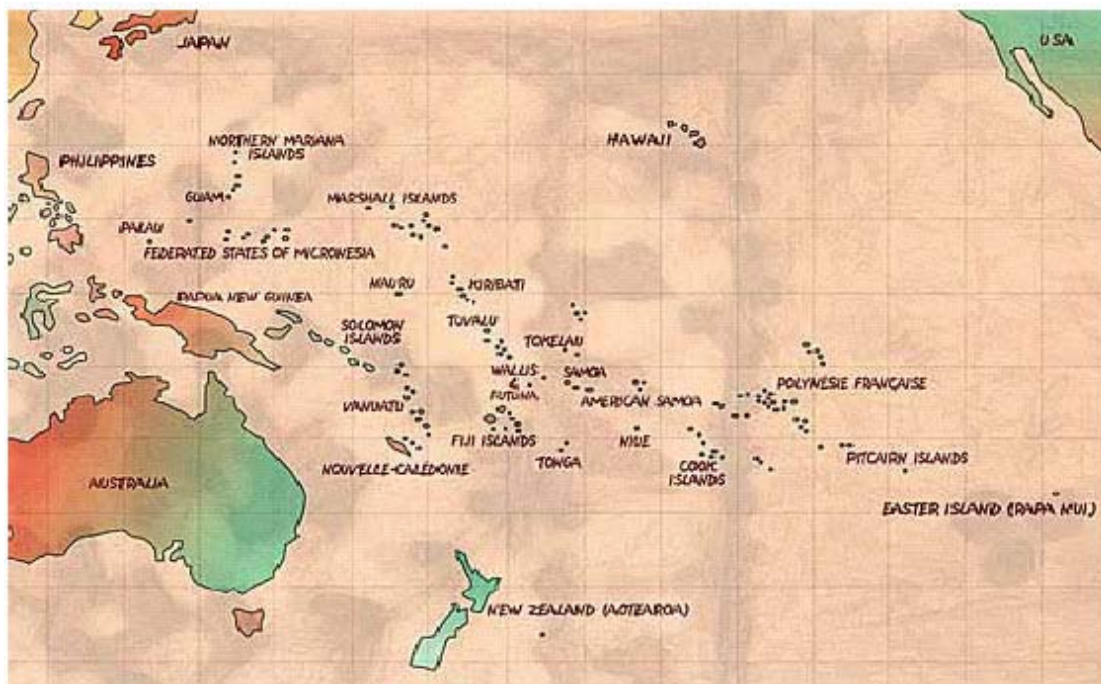


September 2007

## Vision

***By 2020, the Pacific Island Countries and Territories are enjoying improved livelihoods, greater food security and increased environmental protection, resulting from enhanced collaboration and coordination within and between them in the conservation, management and sustainable utilisation of forest genetic resources, while maintaining their unique Pacific cultures***

***Healthy Forests, Healthy Families  
Healthy Futures***



This Priorities, Strategies and Action Plan, 2007-2015 for the conservation, management and sustainable use of forest and tree genetic resources represents the collective views of representatives of fourteen Pacific Island Countries and Territories, and other national and international participants, expressed during a workshop in Nadi, Fiji, from 25-29 June 2007. It is a short version of the full workshop report, which is obtainable from the Land Resources Division, Secretariat of the Pacific Community (SPC) in Suva, Fiji.

## Forest and Tree Genetic Resources

### **Forest and Tree Genetic Resources (FGR) comprise:**

*the genetic diversity within and between tree species with actual or potential socio-economic and environmental values.*

### **The importance of sustainable management of fragile FGR**

- Forests and trees and their inherent genetic resources are an essential foundation of cultural, economic and ecologically sustainable development in all Pacific Island Countries and Territories (PICTs).
- The Pacific's forest genetic resources (FGR) comprise hundreds of indigenous tree and shrub species that provide spiritual, cultural, commercial and subsistence values, as well as a wide range of environmental benefits.
- Forest and tree genetic resources constitute the natural capital and inheritance for present and future generations of Pacific Islanders.
- Investment to support conservation and sustainable management of forest and tree genetic resources will enhance community livelihoods, environmental quality and regional development.

### **Major threats to forest genetic resources:**

- Human practices and urban encroachment which result in deforestation, forest degradation and forest fragmentation.
- Changed physical and biological environments brought about by factors such as extreme climatic events, invasive weeds, pests and diseases, and indiscriminate burning.
- Land use policies and land tenure issues that constrain or inhibit efficient, effective and sustainable management of FGR.
- Lack of capacity (trained human resources, infrastructure and finances) to develop, implement and monitor FGR projects, and general lack of awareness of the importance of conserving and sustainably utilising FGR.

### **The importance of regional coordination, cooperation and collaboration:**

- Regional coordination, cooperation and collaboration are essential for successful implementation of strategies and actions for the conservation, management and sustainable use of FGR within the PICTs.
- Successful implementation of the proposed strategies and actions is affected by cross-sectoral linkages such as environmental management, poverty alleviation, regional development and land policies.

### **The compelling conclusion:**

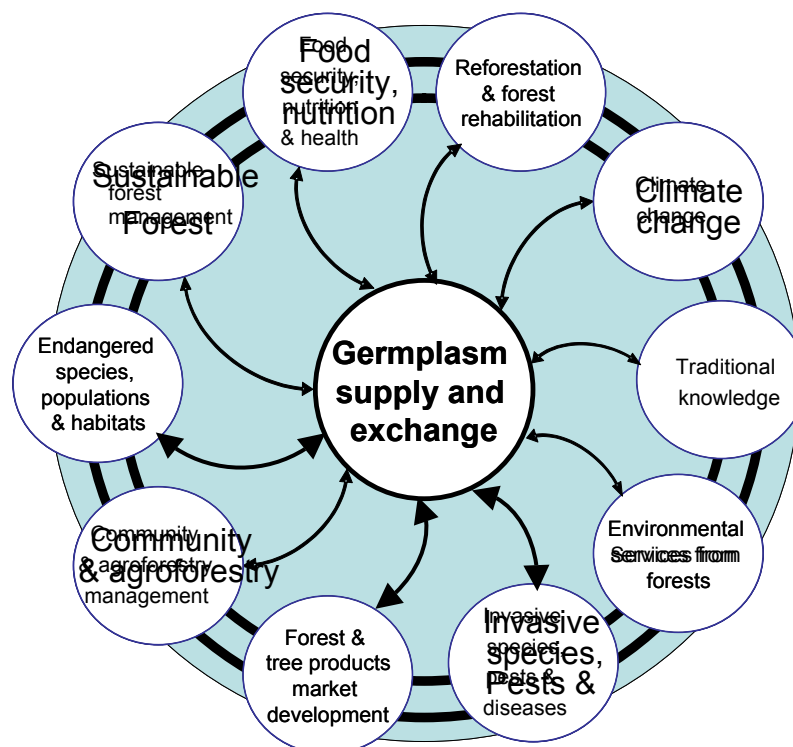
- **Research and development to improve FGR conservation, management and sustainable utilization is an investment for a better future in all Pacific Island Countries and Territories.**

## Research and Development Priorities and Strategies

### The Priority Research and Development Themes are:

1. Germplasm supply and exchange
2. Food security, nutrition and health
3. Reforestation and forest rehabilitation
4. Climate change
5. Traditional knowledge
6. Environmental services provided by forests
7. Invasive species, pests and diseases
8. Forest and tree products market development
9. Community and agroforestry management
10. Endangered species, populations and habitats
11. Sustainable forest management

These eleven priority research and development themes are interconnected. Each theme is directly linked to *germplasm supply and exchange*, without which there would be little progress in each of the other themes. Furthermore, *germplasm supply and exchange* depends on continuing research and development in each of the other ten themes.



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**Priority  
Research and  
Development  
Theme**
**Research and Development Theme Strategy**


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**1.  
Germplasm  
supply and  
exchange**
**Focus:**

This Theme includes all aspects of the conservation, management and sustainable utilization of FGR. It is inextricably linked to each of the other Themes. The efficient, effective and safe exchange of priority germplasm within and between PICTs is critical to sustaining genetic diversity within the Pacific.

**Objective:**

*Facilitate efficient, effective and safe supply and exchange of economically, socially and environmentally important germplasm between communities and countries of the Pacific to ensure the conservation and sustainable use of FGR, thereby enhancing the livelihoods of PICT communities.*

**Priority Actions:**

- By 2008, establish a Regional Tree Seed Centre (RTSC) as a centre of excellence within the SPC Centre for Pacific Crops and Trees (CePaCT). The RTSC will assist PICTs to collect and share germplasm of timber, fruit and nut tree and shrub species of high regional importance.
- Develop a universally accepted Material Transfer Agreement to allow exchange of priority tree germplasm throughout the PICTs.
- The RTSC will provide technical support, training and advice on all aspects of germplasm collection, storage and propagation techniques. The RTSC will also serve as a portal for information and a co-ordinator of R&D activities inclusive of all the R&D Themes identified in this Priorities, Strategies and Action Plan. Proposed activities include:
  - Assist in the preparation of Individual Country FGR Action Plans, with particular emphasis on countries vulnerable to the predicted adverse effects of climate change.
  - Coordinate inventories and R&D, and recommend conservation strategies for endangered tree species, populations and their habitats.
  - Develop and implement a regional sandalwood R&D and awareness program.
  - In association with national and regional partners conduct baseline inventories of degraded and unproductive forests and document reforestation experiences in PICTs. Use this information to establish a R&D program for the rehabilitation of such forests, using low-cost technologies compatible with the principles of Sustainable Forest Management (SFM).
  - With partners such as the University of the South Pacific (USP) conduct baseline surveys of traditional and new agroforestry systems throughout the Pacific as contributions towards a major program to develop and promote agroforestry systems in PICTs.
  - Develop and promote priority project ideas into project proposals.
  - Raise awareness of the economic, social and environmental importance of FGR among government ministers and senior bureaucrats in each PICT.

**Capacity Building and Networking:**

- Strengthen cooperation, coordination and collaboration between PICTs at various levels in relation to the conservation, management and sustainable use of forest and tree genetic resources.
  - Strengthen capacity in areas identified in each priority Research and Development Theme.
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**Priority Research  
and Development  
Theme**

**Research and Development Theme Strategy**

**2.  
Food security,  
nutrition and  
health**

**Focus:**

Research for this theme addresses the conservation and management of FGR, such as fruits and nuts, and how it can make a significant contribution to food security, household nutrition and household health, especially of children. Key research areas are Forest Food Banks, underutilized food tree (UFT) species, multiple-use species and varieties, and medicinal plants.

**Objectives:**

- *Identify the most appropriate agricultural crops, forestry and fruit trees that can be used by households and in agroforestry production systems by 2010.*
- *Develop agroforestry models to support improved food security and nutrition by 2013, including computer models and field tests.*

**Priority Actions:**

- Link with those involved with traditional knowledge.
- Conduct more comprehensive surveys of the available species and foods and trees on farms in all PICTs.
- Conduct more nutritional analyses of foods from different species and provenances of FGR.
- Develop Materials Transfer Agreements for exchange of local foods.
- Improve germplasm supply and exchange including through a Germplasm Bank for priority forest food species.
- Develop local and regional germplasm sources and deployment strategies.
- Strengthen communication and technology transfer capacity among PICT R&D organisations.

**Capacity Building and Networking:**

- Strengthen knowledge of medicinal plants and island foods.
- Build on Island Food Community of Pohnpei (IFCP) and SPC life-style programs.
- Develop propagation techniques.

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**Priority Research  
and Development  
Theme**

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**Research and Development Theme Strategy**

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**3.  
Reforestation  
and forest  
rehabilitation**

**Focus:**

Research for this theme addresses the economic, social, environmental and regulatory aspects of deforestation and forest degradation and the role of new knowledge and technology in reversing recent trends for the benefit of forest dependent communities.

**Objectives:**

- *Reduce deforestation and forest degradation by every feasible means.*
- *Promote reforestation and forest rehabilitation by rational development, deployment and sustainable use of appropriate FGR.*

**Priority Actions:**

- Actions to address identified key issues will be implemented by individual PICTs and, where appropriate and important, coordinated activities between PICTs will be established, subject to agreements of relevant organisations and authorities.

**Capacity Building and Networking:**

- Community based land use planning – participatory land-use planning.
  - Domestication of indigenous tree species.
  - Agroforestry production system design and implementation.
  - Products and market development.
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**Priority Research  
and Development  
Theme**

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**Research and Development Theme Strategy**

**4.  
Climate change**

**Focus:**

Research for this theme includes understanding, monitoring and development of adaptation strategies to accommodate the effects associated with climatic change, such as changing sea levels (which are of particular concern to atoll countries), coastal erosion, changing forest productivity, changing rainfall and temperature patterns and changing incidence and impacts of weeds, pests and diseases. Assessing the resilience of FGR to these influences will be important.

**Objectives:**

- *Identify and assess resilient tree species for FGR conservation and adaptation, and identify, select and evaluate forest species for drought and salt tolerance.*
- *Collect, document, publish and disseminate traditional knowledge in relation to resilient species.*
- *Explore how communities can adapt to the impacts of climate change on FGRs.*

**Priority Actions:**

- Work on identifying species likely to be affected.
- Studies of species adaptation.
- Coastal forest protection/management.
- Consideration of possible species extinction.
- Consideration of the possibility of the introduction of invasive species.
- Attention to the potentials for carbon sequestration as one way of mitigating climate change.
- Consultation with similar regions, such as the Caribbean and the Maldives.

**Capacity Building and Networking:**

- Mobilise effective partnerships to address probable impacts.
  - Training in all aspects of impact adaptation, insofar as they affect FGR.
  - Capacity supplementation through regional and other organizations – take a regional approach.
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**Priority Research  
and Development  
Theme**

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**Research and Development Theme Strategy**

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**5.  
Traditional  
knowledge**

**Focus:**

Research for this theme aims to redress the rapid loss of traditional knowledge of FGR among villagers as part of a deliberate effort to capture, utilise and disseminate this knowledge before it becomes extinct. Questions of Intellectual Property Rights might arise in this connection.

**Objective:**

*Collect, preserve, promote and utilise existing traditional knowledge of those forest trees and other species which are traditionally known to have commercial, medicinal, social and cultural importance, and the potential to provide much enhanced values if further developed.*

**Priority Actions:**

- It is imperative to capture as much as possible of the existing (but rapidly diminishing) knowledge of the medicinal uses of FGR (including their preparation and use), and the values of such FGR for income generation, satisfying nutritional requirements and subsistence needs, and for environmental protection and conservation.
- Practical actions for multiplying valuable FGR are then needed.
- Encouraging public awareness, especially including among youth.

**Capacity Building and Networking:**

Capacity Building is needed in all aspects of collecting, preserving, promoting and using the existing traditional knowledge, including:

- Documentation of knowledge of FGR with market potential on national and regional levels, such as fruits and nuts, essential oils, pandanus, fibres such as tapa cloth, dyes and many other products.
  - Documentation of knowledge of FGR with nutritional importance, and methods of processing and preservation.
  - Documentation of knowledge of the existing range of FGR provenances, followed by *ex-situ* and *in-situ* conservation.
  - Maintenance of the knowledge base once captured and preserved, followed by integration with extension programs and school curricula.
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**Priority Research  
and Development  
Theme**

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**Research and Development Theme Strategy**

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**6.  
Environmental  
services  
provided by  
forests**

**Focus:**

Research for this theme addresses the numerous environmental services that forests and trees provide including soil and catchment protection, biodiversity and habitat protection, provision of reliable high-quality water supplies, flood mitigation, eco-tourism, and cultural and amenity provision.

**Objective:**

*Improve and promote the environmental values of forests and their FGR, with a particular focus on conservation, rehabilitation and improvement of natural forests and their protective services for soil conservation, flood control, maintenance of water quality and reliability, forest ecosystem biodiversity and provision of carbon sinks.*

**Priority Actions:**

- Studies to quantify and evaluate the environmental services provided by forest ecosystems and their FGR, and the human capacity to undertake such studies.
- Education at all levels of these values and environmental services, and promotion and awareness raising among many types of people in the general public and numerous agencies.
- More effective and rational government policies to enable preservation of environmental qualities, combined with better land-use policies and planning.

**Capacity Building and Networking:**

- Build partnerships and capacities between government, rural people and non-government organisations.
  - Increase scientific capabilities for quantifying the environmental services provided by forest ecosystems and their FGR.
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**Priority Research  
and Development  
Theme**

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**Research and Development Theme Strategy**

**7.  
Invasive  
species, pests  
and diseases**

**Focus:**

Research for this theme addresses the growing threat to many PICTs, especially the smaller islands and atolls, associated with the rapid and easy transmission of invasive plants, animals and diseases. Research will consider both positive and negative aspects of invasive plant and animal species.

**Objective:**

*Develop and implement appropriate management systems to address the negative impacts of major invasive species on FGR conservation.*

**Priority Actions:**

- Priorities include establishing clear definitions for exotic, indigenous, endemic and weed species, and assessing their impacts.
- Description and quantification of the negative and positive impacts of invasive species, in social, economic and environmental terms, and especially the impacts of forest weeds on forest ecosystems and their FGR.
- Quantification of species extinction as a consequence of invasive species.
- Quantification of the actual and potential problems arising from introduction of pests and diseases.
- Development of cost-effective control measures.
- Development and implementation of a continuing monitoring program.

**Capacity Building and Networking:**

- Development and mobilization of partnerships between affected groups in order to identify, report, and plan and implement appropriate control measures.
  - Characterizing the ecological/biological features of invasive species in order to develop effective control measures (for University and other scientific groups).
  - Identification and survey of invasive species (for Government officers, NGOs, communities).
  - Implementation of appropriate control measures.
  - Appropriate training for quarantine officers.
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**Priority Research and Development Theme**

**Research and Development Theme Strategy**

**8. Forest and tree products market development**

**Focus:**

Research for this theme explores the significant economic benefits of forest and tree products, and how they can be capitalized upon through skilful marketing and sales, efficient and reliable production and processing and distribution of high-quality products and services. Opportunities for partnering with imaginative entrepreneurs and appropriate sources of finance will be explored.

**Objective:**

*Identify and develop promising, economically viable and sustainable market opportunities for a wide range of forest products derived from FGR.*

**Priority Actions:**

- Survey existing products and research market potentials, and disseminate marketing information to communities.
- Develop simple value-adding technologies for promising non-wood forest products.
- Research market acceptance
- Provide appropriate training
- Explore feasibility of a regional approach to product marketing and development.

**Capacity Building and Networking:**

- Capacity needs to be developed in all fields related to the Priority Actions identified above.
- A primary deficiency is a lack of entrepreneurial skills among both the public and private sectors, and means must be found to identify and develop these.
- Training is needed on bio-security and quarantine issues for inter-island and international trade.
- Training in simple business skills and accounting is needed.
- Regional cooperation and links to outside markets need to be strengthened.
- Successful examples of the development of forest products markets need to be identified, publicized and the appropriate lessons learned and applied.

**Priority Research and Development Theme**

**Research and Development Theme Strategy**

**9. Community and agroforestry management**

**Focus:**

Research for this theme focuses on ways to effectively advise and assist farming households and communities to plant individual trees and stands of trees, to enhance their social, economic and environmental benefits. An important focus of research will be to assess how better utilization of FGR within modified farming systems can reduce the risks faced by rural households.

**Objectives:**

- *Advise, assist and provide appropriate technologies to communities for sustainable management of FGR, to improve and sustain livelihoods and to strengthen and promote socio-economic, environmental and cultural values.*
- *Develop sustainable agroforestry systems based on teak, sandalwood, eaglewood and other species with superior economic potential.*

**Priority Actions:**

- Improve systems to facilitate germplasm exchange between communities and countries.
- Build technical capacity in design and management of nursery and agroforestry systems.
- Document community-based Sustainable Forest Management (SFM) practices, and learn from them.

**Capacity Building and Networking:**

- Enhance the capacity of extension services.
- Build working partnerships between researchers and farmers.
- Training of government, university and other groups in developing and proving improved agroforestry systems is needed.
- Communities need training in the establishment and operation of agroforestry systems which are demonstrably superior for the required outputs.
- Government, university and NGO extension services need to be improved.
- Training on nursery systems, agroforestry systems and forest management in rural communities will be essential.

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**Priority Research  
and Development  
Theme**


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**Research and Development Theme Strategy**


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**10.  
Endangered  
species,  
populations and  
habitats**
**Focus:**

Research for this theme addresses protection of endangered tree species, populations and habitats in PICTs. The factors contributing to their endangered status include invasive species, pests and diseases (and increasingly climate change) as well as poorly informed decisions and actions in land-use planning and land development. Research for this theme aims to increase and improve education and awareness, especially among decision-makers, to mitigate some of these undesirable trends.

**Objective:**

*Develop conservation approaches to in-situ and ex-situ areas for priority FGR, in order to protect them from further erosion and to prevent extinction.*

**Priority Actions:**

- Replenish populations of endangered species through infusion of germplasm from within and outside the country.
- Develop and implement appropriate and successful propagation techniques for certain species.
- Develop better knowledge of the biology and ecology of certain endangered species.
- Preservation of habitats containing endangered FGR is just as important as conservation of the individual species themselves.
- Training of individuals in key organisations in survey methods, data handling and eventually in effective conservation methods.

**Capacity Building and Networking:**

- Train sufficient numbers of people in interested groups, including government agencies, universities and rural communities in survey methods, data handling and eventually in effective conservation methods.
  - University-based training in the biology and ecology of certain endangered FGR species.
  - Awareness raising among governments and other decision makers of the importance of these endangered FGR, and ensuring that sufficient resources are forthcoming to address the problems.
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**Priority Research  
and Development  
Theme**

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**Research and Development Theme Strategy**

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**11.  
Sustainable  
forest  
management**

**Focus:**

Research for this theme is focused on how sustainable forest management can sustain the benefits of FGR, through providing the environment for conserving, managing and sustainably utilizing FGR.

**Objective:**

Conservation and management of FGR in accordance with Sustainable Forest Management (SFM) prescriptions and practices in all PICTs.

**Priority Actions:**

- Develop understanding and appreciation of the principles, practices and importance of SFM at all levels of forest governance in each PICT.
- Lobby governments on the importance of SFM.
- Develop and/or enhance Codes of Forest Practice based on principles of SFM for natural and planted forest management.
- Develop and implement training programs on key aspects of successful SFM.
- Monitor and evaluate the success and benefits of SFM methods.

**Capacity Building and Networking:**

- There is a serious need for training of technical support staff to implement, monitor, evaluate, document and report SFM.
  - Rural communities need to be engaged and supportive.
  - SFM must be linked to other land management practices such as agriculture and agroforestry, within adjacent areas.
  - Effective Codes of Forestry Practice, especially for forest harvesting, must be developed, implemented and enforced.
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## Research and Development Project Priorities

Within the next one to three years the following project ideas will be developed into project proposals by representatives from relevant PICTs and regional organisations. This list is not exhaustive, and other project ideas will be developed in line with the relevant Research and Development Theme Strategies and Actions.

Research and Development Theme	Project Ideas
<p><b>1. Germplasm supply and exchange</b></p>	<p>By 2008, SPC will establish a Regional Tree Seed Centre (RTSC) within its Centre for Pacific Crops and Trees (CePaCT). The RTSC will assist PICTs to collect and share germplasm of timber, fruit and nut tree and shrub species of high regional importance, including for example <i>Artocarpus altilis</i>, <i>Barringtonia spp.</i>, <i>Canarium spp.</i>, <i>Cocos nucifera</i>, <i>Cordia subcordata</i>, <i>Endospermum spp.</i>, <i>Flueggea flexuosa</i>, <i>Inocarpus fagifer</i>, <i>Intsia bijuga</i>, <i>Pandanus tectorius</i>, <i>Pterocarpus indicus</i>, <i>Pometia pinnata</i>, <i>Santalum spp.</i>, <i>Spondias dulcis</i> and <i>Terminalia spp.</i> and species of particular importance for coastal protection and atolls. The RTSC will act as a centre of excellence providing technical support, training and advice on germplasm storage and propagation techniques. It will develop a Materials Transfer Agreement for exchange of tree germplasm and inform member countries and territories on access and benefit sharing and related Intellectual Property Rights.</p>
<p><b>2. Food security, nutrition and health</b></p>	<p>Projects should be formulated to identify the most appropriate agricultural crops, forestry and fruit trees that can be used by households and in agroforestry production systems by 2010, and then to develop agroforestry models to support improved food security and nutrition by 2013, including computer models and field tests. These projects should link with those involved with traditional knowledge, include comprehensive surveys of the available species and foods and trees on farms in all PICTs, complete nutritional analyses of foods from different species and provenances of FGR, and develop Materials Transfer Agreements for exchange of local foods. Such projects should also improve the supply and exchange of the germplasm of priority forest food species, develop local and regional germplasm sources and deployment strategies, and strengthen communications and technology transfer capacity among PICT R&amp;D organisations.</p>
<p><b>3. Reforestation and forest rehabilitation</b></p>	<p>Projects should be formulated to reduce deforestation and forest degradation by every feasible means, and to promote reforestation and forest rehabilitation by rational development, deployment and sustainable use of appropriate FGR. Such projects should, in association with SPC, FAO and national partners, establish a research and development program based on principles of Sustainable Forest Management for the rehabilitation of degraded and unproductive forests with the aid of low cost technologies. By 2010 a baseline inventory of degraded forests and documentation on reforestation in PICTs should be completed.</p>



<p><b>4. Climate change</b></p>	<p>A research and development program should be formulated and implemented to help vulnerable communities to adapt to the predicted more extreme climates in the Pacific islands, including salinity (more frequent incursions of sea water), more severe cyclones, drought and fire. Research will include the identification and promotion of Pacific Island tree species and genotypes which will be adapted to grow and produce in more extreme, variable and uncertain climates. Studies will include surveying traditional knowledge and national experiences with regard to climate extremes, especially including resistance to cyclonic winds. Key species will include breadfruit, coconut, mangroves, and <i>Pandanus</i> for atolls and low-lying near-coastal environments. Multi-location field trials will be established to test the ability of different species and mixed species planting configurations to resist tropical cyclones and/or provide economic benefits in their aftermath.</p>
<p><b>5. Traditional knowledge</b></p>	<p>Research and development projects should aim to redress the rapid loss of traditional knowledge of FGR among villagers as part of a deliberate effort to capture, utilise and disseminate this knowledge before it becomes extinct. Questions of Intellectual Property Rights might arise in this connection. Projects should collect, preserve, promote and utilise existing traditional knowledge of those forest trees and other species which are traditionally known to have commercial, medicinal, social and cultural importance, and the potential to provide much enhanced values if further developed. Practical actions for multiplying valuable FGR must be developed. Considerable capacity building and networking would be required to collect, preserve, promote and use existing traditional knowledge, including documentation of FGR with nutritional importance, and those with market potential on national and regional levels, such as fruits and nuts, essential oils, pandanus, fibres such as tapa cloth, dyes and many other products.</p>
<p><b>6. Environmental services provided by forests</b></p>	<p>The focus of any projects on this topic should be to characterise, improve and promote the numerous environmental services that forests and trees provide, including soil and catchment protection, biodiversity and habitat protection, provision of reliable high-quality water supplies, flood mitigation, eco-tourism, cultural and amenity provision, and provision of carbon sinks. In addition, projects should include education at all levels of these values and environmental services, and promotion and awareness raising among many types of people in the general public and numerous agencies. Projects should lead to more effective and rational government policies to enable preservation of environmental qualities, combined with better land-use policies and collaborative planning.</p>
<p><b>7. Invasive species, pests and diseases</b></p>	<p>Research and development projects for this theme should address the growing threat to many PICTs, especially the smaller islands and atolls, associated with the rapid and easy transmission of invasive plants, animals and diseases. Research should consider both the positive and negative aspects of invasive plant and animal species, but should develop and implement appropriate management systems to address the negative impacts of major invasive species on FGR conservation. Priorities would include: establishing clear definitions for exotic, indigenous, endemic and weed species, quantifying their impacts; developing cost-effective control measures; and developing and implementing a continuing monitoring program.</p>

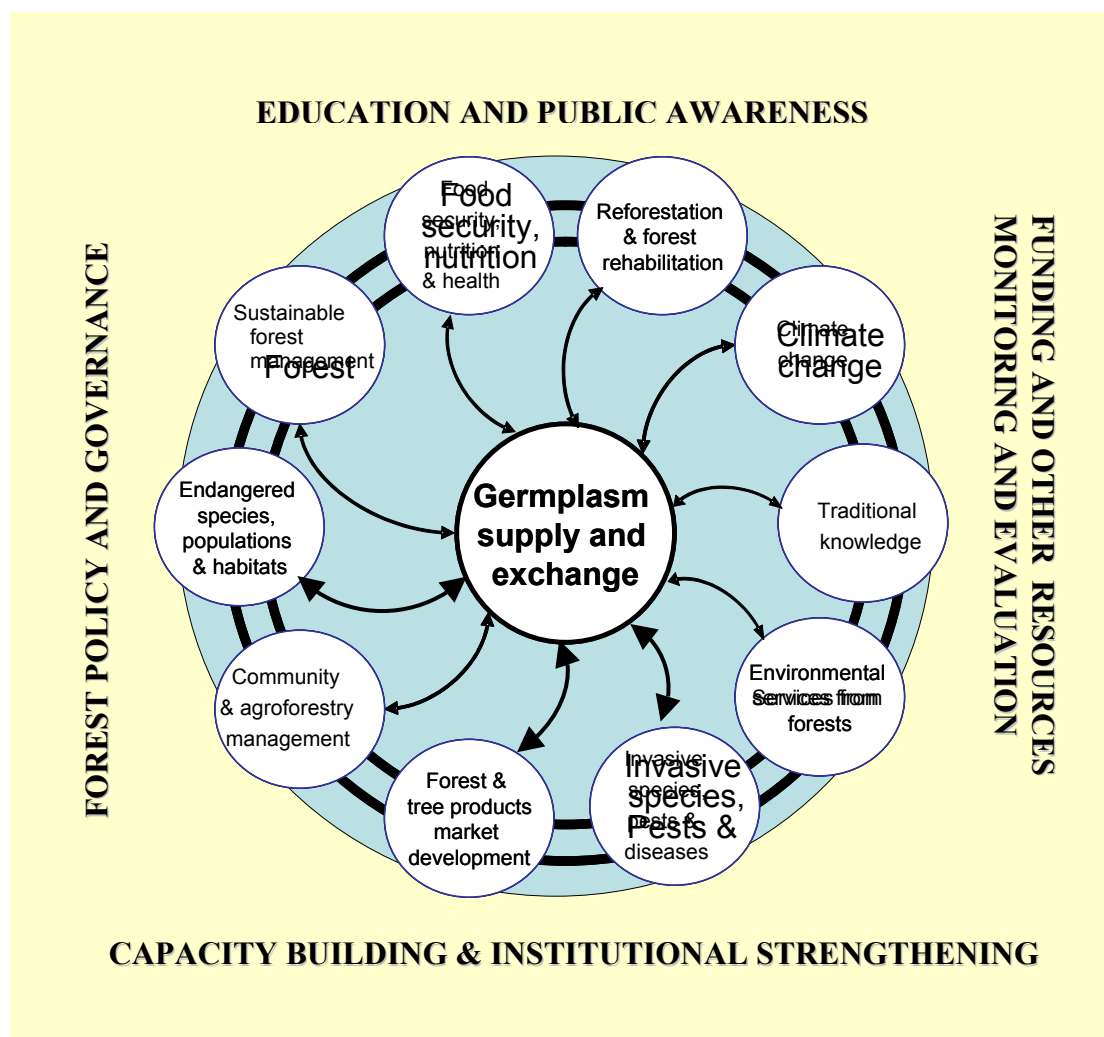
<p><b>8. Forest and tree products market development</b></p>	<p>An example of research and development of forest and tree products for defined markets is a regional sandalwood research and development and awareness program. By 2008 the SPC Forest and Agricultural Diversification program should develop a Regional Sandalwood Research, Development and Awareness Program that aims to maximise the potential of sandalwood to contribute to sustainable rural livelihoods in the Pacific Islands. It will be an inclusive program that effectively involves key stakeholders, Governments, private sector, research organizations, NGOs and donors. The program will include a long term research component on host species, silviculture and heartwood formation. It will take urgent measures to assist PICTs and communities to conserve diversity in remnant sandalwood populations. Over the next five years it will provide practical training to landowners, including market information, and encourage replanting by smallholders through innovative extension in at least ten PICTs.</p>
<p><b>9. Community and agroforestry management</b></p>	<p>SPC and USP will coordinate a baseline survey of traditional and new systems of agroforestry in PICTs by 2008. Successful Pacific Island agroforestry systems will be documented, including using video, and distributed and shown to Pacific Island communities by 2010. This will provide background for partnering with communities to establish demonstration plantings and community nurseries. Research will be conducted to identify appropriate and reliable agroforestry systems for different Pacific Island environments that will provide regular returns to growers and their families. These systems will also seek to optimise the use of genetic diversity in both crop and tree components. Other associated studies will look at economic and environmental impacts and benefits, monitoring and reporting community acceptance of different models.</p>
<p><b>10. Endangered species, populations and habitats</b></p>	<p>The main objective of projects would be to identify and develop conservation strategies for endangered tree species and populations and their habitats, in order to maintain priority FGR. Inventories and research will be undertaken to identify endangered FGR, tree species and populations by 2010. Subject to resources and training, "Red Listing" will be undertaken according to IUCN Red List categories. This work will involve partnerships between SPREP, Forestry and Environment Departments, Conservation NGOs and communities. By 2010 work will be initiated with communities to restore endangered species and develop protected areas for endangered FGR which will include sustained utilisation of these resources.</p>
<p><b>11. Sustainable forest management</b></p>	<p>The focus of research would be to demonstrate how sustainable forest management can sustain the benefits of FGR, through providing the environment for conserving, managing and sustainably utilizing FGR. Research and development would have to: (i) develop understanding and appreciation of the principles, practices and importance of SFM at all levels of forest governance in each PICT; (ii) lobby governments on the importance of SFM; (iii) develop and/or enhance Codes of Forest Practice based on principles of SFM for natural and planted forest management; (iv) develop and implement training programs on key aspects of successful SFM; and (v) monitor and evaluate the success and benefits of SFM methods. Considerable capacity building would be required, and rural communities would need to be engaged and supportive. SFM must be linked to other land management practices such as agriculture and agroforestry, within adjacent areas.</p>

## Strategies to enable the efficient, effective and safe supply and exchange of forest and tree genetic resources within and between PICTs

Critical enabling strategies for the conservation and exchange of forest and tree germplasm within and between nations of the Pacific region depend on improvements in three key areas:

- Education and Public Awareness
- Capacity Building and Institutional Strengthening
- Forest Policy and Governance

Strategies and actions in each of these enabling areas are influenced by the individual and collective needs of the eleven research and development themes.



## ***Education and Public Awareness***

### **Focus:**

In line with the FGR Vision, specific programs will be developed and implemented to raise the priority of FGR among Ministers and senior bureaucrats in economic and social Ministries as well as in Agriculture and Environment in each country of the Pacific Islands. It will be critical to impart to these key stakeholders appreciation and understanding of the contribution that sustainable management and use of FGR makes to overall sustainable development in each country and the region as a whole.

### **Objective:**

- The immediate objective is:  
*Increased awareness and understanding of FGR conservation and management to support the success of various research and development initiatives and projects at regional and national levels.*
- The longer term objective is:  
*Incorporation of FGR initiatives and projects into departmental and agency strategic plans, operational plans and relevant programs.*

### **Priority Actions:**

- Incorporate FGR conservation, management and sustainable use into school curricula.
- Connect with church communities to assist with dissemination of information and materials.
- Use local media.
- Inform key decision makers in government of the importance of FGR to the health and economic well-being of communities in PICTs, as well as to the conservation and sustainable use of natural environments.
- Each R&D Theme includes specific actions to improve public awareness and education. These will be coordinated at appropriate levels to ensure their effectiveness at the regional and national levels.

### **Capacity Building and Networking:**

- Delivery capacity is an area in need of strengthening for each of the eleven research and development themes.
- Efforts to develop and strengthen extension, technology transfer and communication between researchers and user communities will be coordinated across the region.
- Preparation of extension materials for local communities in local languages and use of appropriate media channels for dissemination are essential.

## ***Capacity Building and Institutional Strengthening***

### **Focus:**

The skill levels of individuals require development and strengthening in a number of technical and support areas. Institutional strengthening addresses the operations of national and regional organisations and the impact and feasibility of greater coordination, collaboration and cooperation at various levels within the region.

### **Objective:**

*Greater coordination, collaboration and cooperation within and between PICTs to address critical skill gaps in technical and enabling fields for both researchers and managers.*

### **Priority Actions:**

- Attend to the capacity building needs of each research and development theme in a coordinated and collaborative way.
- In the case of enabling skills development, priority needs include accessing research and development funds, preparation of research and development project proposals for funding, and meeting the requirements of funding agencies.
- Management training in general is recognised as an area in need of strengthening in many of the key institutions involved in FGR conservation and management.

### **Capacity Building and Networking:**

- By establishing institutional capacity at a regional level for the benefit of all PICTs through collaboration and with the assistance and support of donor funding agencies, critical capacity gaps can be better managed over the long term.
- Sharing resources, knowledge, skills and ideas across national boundaries will benefit FGR conservation and sustainable use.

## ***Forest Policy and Governance***

### **Focus:**

Critical to the success of regional exchange of FGR is the establishment of policy mechanisms and networks to enhance regional cooperation. This will facilitate exchange of ideas, information, knowledge and resources between PICTs and allow sharing of better practices and experiences.

### **Objective:**

*Strengthen regional cooperation and integration through formal networks and inter-governmental agreements for the conservation, management and sustainable use of forest and tree genetic resources.*

### **Priority Actions:**

- Improve communications between relevant agencies to avoid duplication of research and development efforts and to strengthen relations with extension services.
- Explore the prospects of an inter-governmental policy on FGR exchange and conservation.
- Raise awareness among relevant ministers and senior bureaucrats in each PICT of the impact of critical constraints on efficient and effective regional cooperation and integration and the exchange of woody plant germplasm.
- Identify possible strategies for addressing critical constraints including:
  - inadequate information and communications infrastructure
  - policy restrictions on the movement of FGR between PICTs
  - high costs of transport within the region
  - appropriate training and re-training
  - IT support services

### ***Other enabling strategy areas:***

#### **Financial and other resource acquisition and management**

- Various sources of external funds will be identified in relation to the research and development themes and the project ideas. Hopefully these will provide support for FGR-related activities in each of the PICTs or for regional initiatives.
- Individual countries will explore ways in which they can more effectively apply external funds and other resources which are currently available to them, and will seek other sources of locally-generated funds to augment funds from constrained government budgets.
- It will be important to involve the private sector in new projects and activities, especially in relation to the development of forest-based products.

#### **Monitoring and evaluation of all activities**

- Monitoring and evaluation of the progress and performance of actions and initiatives established under this Strategic Plan for each research and development theme will be conducted on an annual basis.
- Lessons learnt from project successes and failures will be documented and shared among PICTs to enhance the success of future activities and projects.

### ***Individual Country Action Plans***

- **These are Plans and Activities which can be implemented immediately by the countries within their own resources and in the context of their current institutional environments. They will be partly based on the outcomes of the Workshop, and will aim to implement the Priority Actions in at least some of the Research and Development Themes.**
- **Each of the Individual Country Action Plans should be documented in a brief statement, showing: (i) what has been (or is already being) done; (ii) what is going to be done; (iii) how and when it will be done; and (iv) how it will be monitored and reported. Forestry officers in any country should collaborate closely with the available advisory and mentoring services available from SPC, Ensis, USP, GTZ and other sources.**