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Consolidated Responses for the PAFPNet Discussion for the Third quarter of 2016

Date: 20/07/16 - 16/09/16

“The Conservation, Management and Sustainable Utilization of Forest”

For the third quarter of 2016, PAFPNet hosted the discussion topic themed around the Regional Strategy and Action Plan for the conservation, management and sustainable utilization of forest genetic resources in the Pacific. The Action Plan is an important guide for PICTs in developing and implementing relevant policies, strategies and activities within their own national and local settings to contribute to the sustainable management and development of Pacific forest and tree genetic resources for present and future generations.

Four questions were underlined for the discussion on *reviewing* and exploring *way forwards* on the Regional Strategy, Action Plan that expired in 2015. There were only 8 responses received. Thank you very much for participating!

The Priorities, Strategies and Action Plan (AP), 2007-2015 for the conservation, management and sustainable use of forest and tree genetic resources represented the collective views of representatives of fourteen Pacific Island Countries and Territories (PICTs), and other national and international participants as expressed at a meeting in Nadi in 2007. As pointed out in the discussion the Action Plan has been extremely useful at an international and regional levels, – contributing Pacific input and as an information document into the FAO’s First State of the World Report on Forest Genetic Resources (FGR) in 2013. Contributing to the development and priorities of the Centre for Pacific Crops and Trees (CePaCT) and helped to inform the forestry research projects of the Australian Centre for International Agricultural Research and the Commonwealth Scientific and Industrial Research Organisation (CSIRO), and so on.

As highlighted in the discussion, the unsustainable practices in the management and use of forests and trees continue to threaten the long term conservation and management of important forest and tree genetic resources. In addition to this is the impact of climate change. While forest cover in most PICTs is relatively high at more than 50%, a major portion of this consist of secondary forests with a lower level of diversity and therefore resilience to adequately cope with climate change and other changes. This ultimately means that these forests cannot and will not provide the full range of products and services that are normally expected from native forests for the well-being of Pacific communities. There is an urgent need to improve this situation by either enriching or reforesting these areas to enhance forest diversity.

The Pacific Islands Tree Seed Centre (PITSC) is an important strategy for the region, as agreed during the discussion, to better facilitate the safe and efficient sharing and exchange of forest and tree genetic resources. The PITSC is an essential knowledge centre and infrastructure which has done some excellent work but which needs greater donor support to fulfil its potential to contribute to the conservation and better use of the region’s truly amazing, economically and environmentally vital forest biodiversity.

The assessments of the consolidated responses were gauged from the questions below:

1. **Do you think that the Regional FGR Action Plan has effectively guided PICTs on their conservation, management and utilization of their forest and tree genetic resources? Cite at least 1 example.**
2. **The operating landscape for forests and trees and the overall agriculture/food security sector in the region is constantly changing. What are the main issues that the Regional FGR Action Plan need to address further to make it more effective to the PICTs?**
3. **The Pacific Island Tree Seed Centre is now operational since mid-2012. Do you think the Centre's work has been useful? Do you have suggestions on how we could improve its operations?**
4. **Why do you think that we should support the supply and exchange of germplasm in the region? Can you cite some of the benefits that can be derived from this?**

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Responses from:

1. [Mr Charles Pitt, Herald – Cook Islands](#)
 2. [Mr Patrick Arioka, Ministry of Agriculture – Cook Islands](#)
 3. [Mr Lex Thompson](#)
 4. [Mr Don Miller – New Zealand](#)
 5. [Mr Hannington Tate, Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity – Vanuatu](#)
 6. [Mr Sairusi Bulai, SPC Land Resources Division – Fiji](#)
 7. [Mr Bitaa R Takirua – Kiribati](#)
 8. [Mr Maika Daveta, Ministry of Fisheries and Forestry – Fiji](#)
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1) Mr Charles Pitt, Herald – Cook Islands

Just regarding the topic, I feel it should include the “revitalization” of abandoned forests and forestry projects. Here in the Cook Islands there were previous attempts to establish forests to provide timber for planned timber processing plants. On Rarotonga we have quite a few pine tree plantings in the hills from an abandoned project to provide timber for wooden crates for fruit exports. The problem now is lack of management and how to harvest trees on steep hills. On the island of Mangaia, there is an extensive pine forest, growing with little control and which now is blamed for a water shortage. No timber mills exist on Mangaia or Rarotonga. Trees in these forests have not been pruned or thinned. There is also a risk of fire in dry periods. There is no management plan to speak of. I think any discussion on conservation needs to also consider the matter of revitalizing abandoned projects.

2) Mr Patrick Arioka, Ministry of Agriculture – Cook Islands

Thanks Charles for your comments,

Just some facts first; in the early 90s I was a junior Forestry Officer at the time and we were planting pines on islands of Mangaia, Atiu, Mauke and Rarotonga for a very good reason with purpose as a result of the pineapple plantation abandonment due to international price surge. So these abandonment lead to impacts of serious soil erosion and land loss of the 70s, 80s, and the 90s. Noticeably there are more than one species of forest trees introduced for that specific purpose, from pine, eucalyptus, acacia which are the very common ones identified to be resilient to tropical heavy clay soils and were determined very useful in reducing soil erosion and improving soil structure at the same time. While there were talks on harvesting trees for timber use, these tree species were not planned for timber harvesting, and there wasn't any plans for govt to harvest them at the time. For land ownership reasons, government intention was clear; which was to reduce erosion. The decision for harvesting was left to landowners for Rarotonga to decide what to do with the timber and the Council for the Outer Islands.

So back to your point, the forestry project was not an abandoned project; it achieved its intended objective which was to reduce erosion on these islands and Rarotonga and also it contributed to our carbon sink as a national in terms of our Green House Gas emission. Should landowners and island council decide to harvest them, then a plan has to be devised under bio-diversity principles. The Ministry of Agriculture will be glad to work with the community in partnership with Environment Service and Climate Change. This means an approach with precautionary measures must be followed.

I hope this explains things clearer and in perspective.

3) Mr Lex Thompson

1. The Priorities, Strategies and Action Plan, 2007-2015 for the conservation, management and sustainable use of forest and tree genetic resources represented the collective views of representatives of fourteen Pacific Island Countries and Territories, and other national and international participants as expressed at a meeting in Nadi in 2007. The action plan has been extremely useful at an international and regional levels, for example as a major Pacific input and information document into FAO's First State of the World Report on Forest Genetic Resources in 2013, and in the development and priorities of the CePaCT Pacific Islands Tree Seed Centre. The Action Plan also helps to inform the forestry research projects of the Australian Centre for International Agricultural Research and CSIRO, with recent projects focussed on the Action plans species priorities such as sandalwood, whitewood and canarium nut, and tree seed technology.
2. A follow-up action plan is now needed. This should focus on sharing tree germplasm regionally especially to reduce the key challenges of climate change and soil degradation. Examples would be the need to better research and conduct range-wide trials of local agroforestry trees for soil improvement. The small native tree *Flueggea* produces a highly durable pole and building timber – provenance research in the Solomon Islands is now indicating better performing provenances such as Kolombagara for which seed needs to be produced, shared regionally and grown in mixed timber plantations with mahogany, teak and whitewood to provide local building timber – including for recovery after cyclones, tsunamis and other disasters. The plan ought to also focus on multipurpose food producing tree species such as breadfruit, canarium and many other indigenous nut species which are important for a balanced diet and countering the rising scourge of NCDs.
3. The Pacific Islands Tree Seed Centre (PITSC) is an essential knowledge centre and infrastructure which has done some excellent work but which needs greater donor support to fulfil its potential to contribute to the conservation and better use of the region's truly amazing, economically and environmentally vital forest biodiversity. SPC needs to be more proactive in seeking and securing donor funds for the centre's operations. PICTs also need to avail themselves of the opportunities the Centre offers for long term ex situ conservation of endangered tree species and populations. With improved resourcing the PITSC needs to develop a more focussed seed research program for

indigenous trees – there are major gaps in how to best store and germinate for almost all PI tree species.

4. A first step would be for the PITSC to engage more with national partners to let them know of opportunities for tree seed storage, supply and exchange. Donors much be made aware of the critical link between the availability of appropriate tree germplasm as a strategy for mitigating and adapting to climate change. Samoa has the most cyclone resistant tree in the tropical world – this is malili or *Terminalia richii* – both mature and young plantations of this tree can withstand category 3 and 4 and even the most extreme Category 5 cyclones with minimal damage. Malili produces a excellent general purpose building timber and produces fruits which are attractive to pigeons and should be much more widely incorporated into agroforestry plantings in moist, lowland sites throughout the Pacific Islands. SPC and PITSC can be proactive in liaising with the Samoan Forestry Division to enable the collection and distribution of malili seed in the region. The PITSC has also been a vital partner with the Kew Millennium Seed Bank project and this will have major benefits for long term conservation of Pacific Islands tree species and populations can provide a source of seed in the event that a species becomes locally extinct.

4) Mr Don Miller – New Zealand

With regard to the discussion of Mangaia and the problems of its forests, I was involved in erosion control work on Atiu and Mangaia between 1990 and 1993. The erosion was the result of pineapples being grown on steep slopes with no thought to the consequences and in places over a metre of "soil" has been lost. In most cases the material being ploughed was soft rock as all soil had been long removed.

Acacia mangium and *Pinus caribaea* were being planted by the Forestry department at that time and a serious fire had already destroyed large areas of forest on Mangaia. I had gained some experience on erosion control techniques using contour strips of vetiver grass in Fiji and indications were that this would better control the erosion and also increase infiltration, thus improving the water supply to the essential taro swamps on both islands. My concepts were not tested properly as the project was curtailed and the forestry model prevailed. I have heard that Atiu is now blanketed with wild Mangium trees.

I later used vetiver grass on even worse erosion on the island of Aneityum in Vanuatu with excellent results. The methodology is well proven and documented and I am very happy to advice on its use. The contour terraces formed improve infiltration and allow the establishment of sandalwood and its host species.

I have a comprehensive series of photographs of conditions on both Atiu and Mangia at that time and my report should still be in the library system in the Forestry Department.

5) Mr Tate Hannington, Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity – Vanuatu

1. Yes, I think the Regional FGR Action Plan has effectively guided PICTs on their conservation, management and utilization of their forest and tree genetic resources. The guide was very useful, and to make full use of this guide, each PICTs has to incorporate the guidelines into either their policies or plans to develop respective forest resources. One example I can give is the supply of improved genetic resources, particularly from the Tree Seed Centre to partner countries.
2. We have seen a lot of landscape changes and effects on forests and the chains that follow thereon in the past few years. Some of these changes are conventional, such as effects from population growth while others are not. The non-conventional ones we see over the last two years would probably be Climate Change related, and these are natural disasters. Cyclone Pam and Cyclone Winston which affected Vanuatu and Fiji are two examples. The El Nino which followed also

has some impact, and probably more will come. These events taught us the need for conservation through proper storage of FGR or wide distribution of seed orchards/banks. For instance, TC PAM destroyed seed trees in Shefa and Tafea provinces, but luckily Sanma was not affected, therefore planting materials were sourced from it.

The other issue to consider is the storage of planting materials, especially seeds. Vanuatu Forestry did not store seeds, therefore 12 months after TC PAM, we could not still supply seeds. Therefore, I think the future action plan should also look at this.

3. I do like the Centre's work. It has distributed seeds to Vanuatu and other PICTs. The area that I think needs improvement is training. I think the Centre should organize some training for PICTs, especially in the area of seed treatment, storage and viability checks/assessments.
4. The Seed Centre still has a place for exchange of seeds. In the past, there were some issues that some countries would not allow for exchange of some of their seeds, especially the good ones through the seeds centre, which I am not too sure what the reasons are. But, so far PICTs are already getting seeds, so that support should continue.

For instance, Vanuatu has already collected Mahogany and Teak from the Seed Centre, and it is important that we continue to get that support in the future.

6) Mr Sairusi Bulai, SPC Land Resources Division – Fiji

1. The action plan has helped some of the countries especially Fiji, PNG, Solomon Islands and Vanuatu formulate their national FGR conservation and management plans. Most of the other PICTs have been keen but lack the required resources to put in place plans and to implement them accordingly. Overall though, the action plan has raised the awareness on the importance of FGR and the need to better conserve and manage them for the benefit of Pacific communities.
2. Unsustainable practices in the management and use of forests and trees continue to threaten the long term conservation and management of important forest and tree genetic resources. In addition to this is the impact of climate change. While forest cover in most PICTs is relatively high at more than 50% a major portion of this consist of secondary forests with a lower level of diversity and therefore resilience to adequately cope with climate change and other changes. This ultimately means that these forests cannot and will not provide the full range of products and services that are normally expected from native forests for the well-being of Pacific communities. There is an urgent need to improve this situation by either enriching or reforesting these areas to enhance forest diversity. This will be greatly assisted if the efficient and safe exchange of forest genetic resources can be adequately dealt with within the action plan. Some of the issues that need to be considered will include:
 - Education and awareness to increase understanding of forest genetic resources conservation and management;
 - Capacity and institutional strengthening to enhance coordination, collaboration and cooperation within and between PICTs; and
 - Forest policy and governance to 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.
3. The tree seed centre is an important strategy for us, as a region, to better facilitate the safe and efficient sharing and exchange of forest and tree genetic resources. It operates on the premise that PICTs are able to freely share their genetic resources in recognition of the fact that as small island countries with relatively low forest and tree diversity, we need to work together to enhance this situation and be able to cope better with climate change and other changes. Up to now, Fiji, PNG,

Samoa, Solomon Islands, Tonga and Vanuatu have already signed materials transfer agreement with the centre. In addition to dealing with seed from within the region, the centre is also sourcing seed internationally in support of reforestation projects in some of our Pacific island countries and territories.

But the centre still lacks the required resources in both expertise and finance to strengthen and expand its work. For example, in sourcing seed from other PICTs, we need to ensure that these have been collected, processed, stored and distributed using internationally recognised best practices. With the kind of facilities existing now in the countries that have signed materials transfer agreements, for example, achieving this requirement is still a challenge. So, in addition to improving things at the regional tree seed centre there is an urgent need to establish and maintain a network of national facilities to properly collect, process, store and export seed to the tree seed centre which can then be safely and efficiently shared with countries making seed requests.

On resourcing, an option that may need to be investigated is for the tree seed centre to provide its services on a 'user pay bases'.

4. No one country has sufficient diversity to cope with climate change and other changes including economic. Exchange and sharing of germplasm to improve diversity of forests and trees in the countries will be vital to improve this situation. Also, the implementation of tree improvement programmes requires long term investments by countries. To avoid this situation, countries can shorten the route by requesting germplasm of genetically improved tree species to use in their commercial plantation programmes. Fiji, for example, is receiving seed of improved teak from the Solomon Islands for their commercial teak plantations.

7) Mr Bitaa R Takirua – Kiribati

1. Yes but not really applicable if some issues are not well satisfy in protecting from conservation for example the number of trees disappeared and varieties. My experience in this that if the action plan is not a proper one to control it needs to be revised.
2. From the results or from the data collection if everything possibly maintained the operating landscaping for forests and trees will not to be change.
3. I am not sure about this operational because I ever seen one before but according into my experience this is much more needed during the discussion and sharing with my colleagues from our last workshop.
4. Because the resistant crops can be more effective and more adapted during this climate change so germplasm can take place in this situation.

8) Mr Maika Daveta, Ministry of Fisheries and Forest – Fiji

1. Yes it has greatly assisted in effectively conserving, managing and utilisation of respective countries Forest and Genetic resources through identification of National priority species for the Pacific Island countries:

Fiji priority species – *Santalum yasi*

Some of the activities implemented through SPRIG Project includes:

- Establishment of in situ conservation plot- Nawailevu and Lekutu in Bua, set up nursery in Nawailevu
- Set up of sandalwood nursery at Tilivalevu, Nadroga

- Set up of Nursery in Dravuwalu and Muanisolo, Kadavu as well as selection of superior trees for seed collection and etc.
- Set up of sandalwood nursery in Nausori Highlands (known remnant population)

2. Some issues are:

- More involvement of resource owners and lack of awareness on their genetic resources.
- Lack of Natural Resource development plans at community level, district and provincial levels.
- Lack of information on what Genetic resources are available.
- Lack of enabling mechanisms for conservation such as support for alternative livelihoods, efficient and maximisation of current genetic resource uses/lack of product diversification, development of policies i.e. ABS and etc.
- Lack of integrated approach to conservation, management and utilisation looking at all landscape and land uses.
- Lack of capacity building, networking and exchange programs for technical staff between Pacific Island countries and also with other International partners and countries.

3. The Tree Seed Centre has been very useful especially to the department of forestry in terms of supporting capacity building and also facilitating some request from the department on sourcing seeds from overseas as well as other request.

In terms of improving its services, we believe it would be ideal to re-establish linkages to respective stakeholders through participatory consultations on project development as well as equal sharing of benefits (where applicable). Also need to strengthen its enabling environment such as coordination mechanism, support staff and facility, etc.

4. Germplasm exchange is important especially for ex-situ conservation and breeding programs. In the Pacific, it is integral to support germplasm exchange because of the changing climatic conditions and risks from natural disasters. However there are issue with some Island countries hesitating to exchange their germplasm because of its value and because proper mechanism are not fully in place like the ABS policy as well as hindrance from other National and International regulations and policy.

For Fiji, one benefit is the exchange of Teak from Solomon Island which is observed to be of superior quality.

