Forests, Climate and REDD

Pacific Heads of Forestry Meeting 2009

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1. INTRODUCTION

The 2009 Heads of Forestry Meeting was held in Nadi, Fiji from the 21st until the 24th of September 2009. The objectives of the meeting were to review past and present implementation of activities under the strategic plans of the Land Resources Division of the South Pacific Commission; discuss and endorse new initiatives, and address important regional issues for tabling in the next HOAFS.

The theme of the 2009 meeting was **"Forests and Climate Change"**. This is in recognition of the projected impacts of climate change on Pacific Island communities and natural resources. Forests and the forestry sector are vulnerable to climate change impacts (e.g. increasing intensity of extreme weather events such as drought and storms). Forests also have an important role to play in building and maintaining resilient landscapes capable of adapting to future climate change.

The aim of the consultancy is to bring more awareness and understanding on the role forestry has to play in combating climate change and the international negotiations and discussions on this issue. This is to be achieved by helping the participants better understand their role in combating climate change and also assist them in identifying appropriate actions to effectively participate nationally, and as a region, in forestry-related climate change initiatives and programmes.

The reporting responsibilities in this consultancy include a report on the meeting outcomes pertaining to the REDD & Forest Carbon Trading components, and recommendations for future actions.

1.1 Challenges

The development challenges facing Pacific Island nations in the coming decades are historically unprecedented. They include several intersecting global keystone issues that in their aggregate threaten the economy and well being of Pacific Island nations to a potentially higher degree than other parts of the world.

The keystone global issues challenging the Pacific island economies include climate change, world oil prices, population growth, and food security.

Climate Change

Key impacts of climate change[1] on Pacific Island nations include:

- Sea level rise of between 20cm to 60cm globally in the coming 90 years and continuing to rise thereafter according to models that do not take into account the possibility of rapid

[1] Impact data derived from the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007).

dynamic change in ice sheets in Greenland and West Antarctica. With dynamic change in ice sheets global sea level rise can be expected in the scale of 1m – 2m (or greater)

- Increasing storm/cyclone intensities resulting from higher latent energy in the weather systems resulting in greater and more frequent damage from storms and cyclones together with an increase in the frequency of storm associated flooding events
- Shift in the El Nino Southern Oscillation towards a more predominant and more intense El Nino climate pattern resulting in frequent drought in the western Pacific
- Ocean acidification and increasing sea surface temperature resulting in coral bleaching and associated loss of fisheries productivity in the in-shore marine environment.

World Oil Price Escalation

Escalation of world oil prices following a peak in global oil production. The majority of independent forecasts converge on 2010 as the global peak in oil production after which time world oil production may go into terminal decline for the rest of the century – escalating oil (and food) prices. The flow-on effects on the world and Pacific regional economy are potentially significant due to inelastic demand for oil and consequent loss of surplus financial resources for non-energy sector spending.

Population Growth

Population growth pressures on finite Pacific Island resources are likely to intensify competition for food and water resources, at the same time that coastal environments are challenged from the combination of sea level rise, flood damage, and erosion associated with storm surges.

Food Security

Threats to food security are likely to arise from sea level rise, inundation, salt water intrusion to fresh water lenses, soil salinisation, and more persistent droughts in the western Pacific (diminishing agricultural productivity), diminishing fisheries food supplies arising from ocean acidification, and the escalation of food prices associated with the escalation of oil prices.

1.2 Role of Forests

Forests play an important role in climate change adaptation, and water and food security. The forest sector therefore, will need to play an increasingly central role in helping Pacific Island nations cope with future climate change challenges, the impacts of which can be amplified by cross cutting global issues such as those mentioned above. The responsibilities of Heads of Forestry in the Pacific are therefore likely increase in coming decades. Sustainable development leadership in the forest sector will benefit from a greater understanding of the emerging opportunities to address these issues through international forest sector financing instruments associated with climate change.

2. CLIMATE CHANGE & FORESTS

2.1 Forests In The Global Climate System

The climate system is influenced by several different components of the Earth System including:

1. Variations in the sun's luminosity
2. Orbital influences
3. **Atmospheric aerosols**
4. Atmospheric circulation
5. Ocean heat transport systems
6. **Albedo (reflectivity)**
7. **Greenhouse gases**
8. **System feedbacks**

Forest fires produce aerosols (wind borne particles). These particles reflect the sun's energy and cool the atmosphere. Aerosols also form cloud condensation nuclei and thereby "seed" clouds which also reflect the sun's energy and cool the atmosphere.

Forests present a dark surface to incoming solar radiation and thereby decrease the reflectivity of the Earth's surface (warming the climate). Aerosols from forest fires have the opposite effect and cool the atmosphere.

Forests are made of carbon (about 50% of the dry weight of wood is carbon), and this carbon comes from carbon dioxide in the air. Forests are, therefore, made of air. When forests are growing (e.g. regenerating after disturbance) they act as carbon sinks and take carbon dioxide out of the atmosphere by transforming it from a gas to a solid (wood). This is because the rate of photosynthesis will be running ahead of respiration for the forest biome. When forests are degrading (e.g. harvested, burnt or dying back) the rate of respiration runs ahead of photosynthesis and as a consequence forests become a source of atmospheric carbon. Currently forests in developing countries are a net source of atmospheric carbon dioxide and account for approximately 20% of global carbon emissions.

Forests contribute to several feedback mechanisms in the climate system. For example, when the climate warms up, it commonly dries in some regions. This can lead to persistent drought and associated forest fires. Because forests produce latent heat (evapo-transpiration and photosynthesis) they cool the land surface. When we lose (e.g. burn) a forest we lose the latent heat production and the land surface heats up. We also add lots of carbon to the atmosphere and this also warms the climate.

2.2 Forest Ecosystem Services

Living forest systems provide several ecosystem services of importance to human well being, several interacting with the climate system. These include:

Elevating soil moisture[2]	Reducing rain impact on soils
Influencing the planetary boundary layer	Reducing surface erosion
Maintaining lower albedo (reflectivity)	Moderating evapotranspiration
Reducing sunlight penetration to the forest floor	Maintaining local precipitation rates
Slowing and elevating winds	Inhibiting anaerobic soil conditions
Increasing the water holding capacity of the ecosystem	Altering sensible and latent heat fluxes (keeping the land surface cooler).
Reducing flood impacts	Enhancing water security
Enhancing resilience to storms	Enhancing resilience to droughts

Forest protection and growing new permanent forests are important components of climate change adaptation for countries with forests and/or the potential to grow and maintain them. There are a number of emerging opportunities arising in the climate change mitigation sector that can assist countries to finance the growing and protection of forests for climate change adaptation. This form of forest management helps to maintain the ability of forest ecosystems to provide a range of climate-related ecosystem services including:

- water supply in the face of projections of a warming and drying climate (e.g. under a stronger El Nino climate pattern for the Pacific)
- flood mitigation in the face of projections of more frequent and intense rainfall events
- cyclone mitigation in the face of projections of more intense cyclone events
- sea defences (mangroves) in the face of projections of sea level rise

In the Vanuatu National Adaptation Programme of Action for example, sustainable management of forests featured as a priority for climate change adaptation. Effective forest management is an integral component of national climate change adaptation strategies, and is capable of being (at least partly) financed through climate change mitigation funding channels.

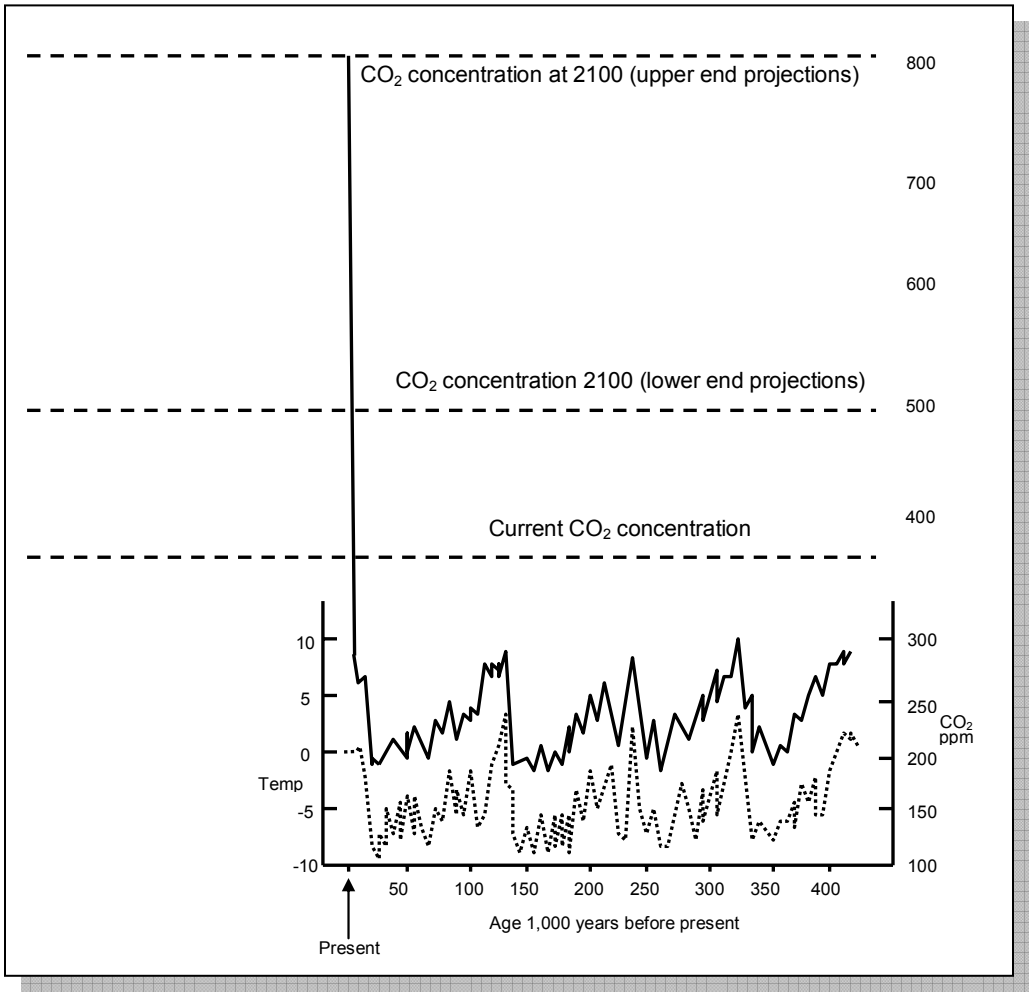
[2] Niles, J. O. 2002. Tropical forests and climate change, in Schneider, S. H. et al, Climate Change Policy. A Survey. Island Press, Washington.

2.3 Forests and Carbon Emissions

Since 1850 about 80% of human-induced carbon emissions have come from burning fossil fuels, which is why the Kyoto Protocol (a mechanism of the UNFCCC) focuses primarily on reducing fossil fuel use. The remaining 20% of emissions stem from "land use change," and are mostly caused by "deforestation." The global task of cutting greenhouse gas emissions, therefore, needs to include measures to slow deforestation rates – particularly in tropical countries.

In both cases carbon reservoirs are being turned into atmospheric carbon at a rate that is threatening to cause dangerous interference with the climate system. Current CO_2 concentrations (about 390 parts per million) are approximately a third higher than any time during the last million years.

Figure 1. Current and future projections of atmospheric CO_2 concentration[3]



[3] *Based on the Vostok Ice Core baseline. Current CO_2 concentrations are well above interglacial peak concentrations for the last 3 interglacials. Future projections based on IPCC projections under different mitigation scenarios.*

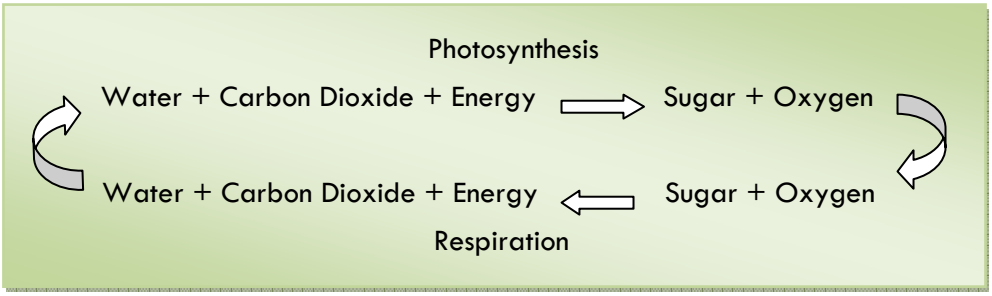
2.4 Source Sink and Reservoir

Carbon sequestration (carbon sink) occurs through the process of photosynthesis, which is when a plant fixes atmospheric CO_2 by combining it with water to produce sugar and oxygen. This process harnesses the sun's energy by storing it as chemical energy in the form of complex sugars, some of which become incorporated into wood.

Carbon dioxide is released (carbon source) from plants and animals though respiration, decomposition, and combustion, each of which releases energy previously stored in complex sugars and their metabolic derivatives. Every living system will constantly give out and take in CO_2 (carbon flux).

Photosynthesis and respiration operate as a reciprocal pair and the net carbon balance of a system (tree, forest, ecosystem, biome) will result from the balance between the rate of photosynthesis and the rate of respiration in that system. When photosynthesis runs ahead of respiration in the system (e.g. a forest), the system will accumulate (sequester) solid carbon with positive net biomass accumulation (i.e. a carbon sink). When respiration runs ahead of photosynthesis the system transfers carbon to the atmosphere (i.e. becomes a carbon source).

Figure 2. The core of the carbon cycle. A simplified representation of the reciprocal relationship between photosynthesis and respiration.

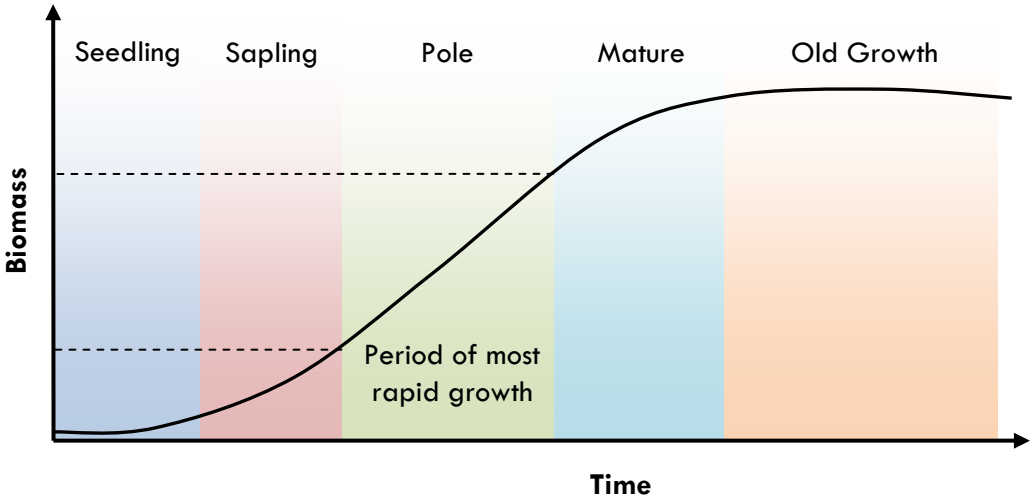


2.5 Forest Development and Sequestration

Forest development (like individual tree development) passes through different stages of growth with different rates of growth. This growth pattern tend to follow an "s" curve (see figure 3 below). The fastest growth rates occur at the pole stage (mid succession). Forestry management involves organizing the harvest cycle to maximize economic returns from the most rapid phase of growth. A planted forest will be harvested before the growth rate slows as the stand approaches maturity.

In terms of carbon sequestration, the most rapid rate of sequestration will occur during this rapid growth stage. Once the forest reaches maturity and old growth stages, the level of carbon stored in the living system will be high but the rate of accumulation of carbon will be low, zero, and sometimes negative (e.g. dieback). For this reason, an old growth forest is a carbon reservoir but not a carbon sink.

Figure 3. Carbon sequestration rates in different aged forest.



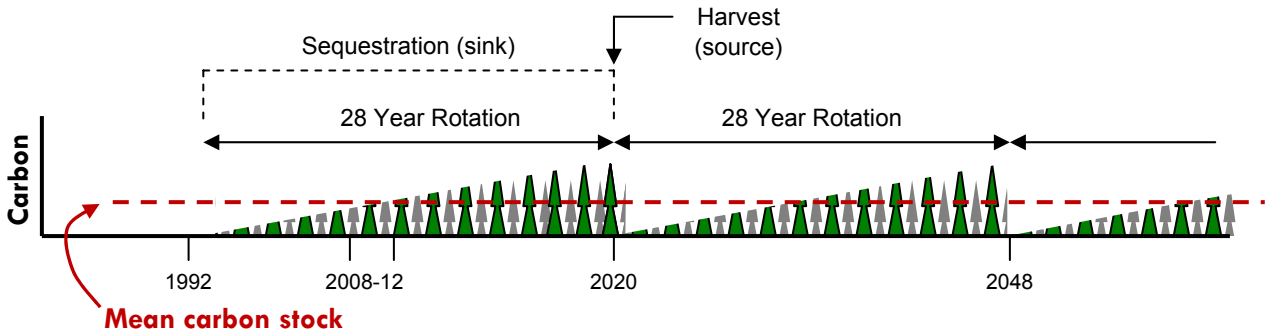
In general, a forest will sequester the most carbon per hectare when the stand is a "teenager" – in mid succession. This is after the trees have established a well developed root system, but before the forest approaches maturity and "old growth". The timing of this will vary depending on the species and forest type. Oak for example, will take more than a century to mature, whereas Caribbean pine will begin to mature after 15 years.

When a planted forest is harvested the carbon in the wood and wood products will begin a process of decomposition – sometimes accelerated by burning. This means that the carbon volume taken out of the atmosphere through sequestration will eventually all be transferred back to the atmosphere. In fact, the Kyoto Protocol assumes that all of the carbon in the harvested wood returns to the atmosphere immediately at harvest, and this affects carbon finance associated with forest based carbon credits. In spite of this it is well known in science and policy circles that harvested wood products do not all enter the atmosphere immediately, and some can persist outside the atmosphere for decades and centuries. For this reason, some countries are currently negotiating for a change to this particular rule in the Kyoto Protocol, or for a future climate change agreement (post 2012).

The carbon balance of a forest system is not measured in single snap shots but is measured through time. This generates a mean permanent carbon stock for a particular land type. For example, if a pine forest is planted and harvested in a continuous 28 year cycle, the system will maintain a mean

carbon stock indefinitely, so long as there is no land use change (deforestation) or degradation of the soil. The mean carbon stock will be averaged out over several rotation cycles. In this way we can show that even for clear fell harvest cycles, the forest sector is able to maintain a higher carbon stock than without forestry.

Figure 4. Carbon sink and source cycle for planted forests, showing mean carbon stock.



Establishing new permanent forest is beneficial to the climate system because it amounts to the sequestration and storage of atmospheric carbon dioxide. For this reason such activity can attract carbon finance to support it in competition with other land uses that would either, sequester and store less carbon, or land uses that release carbon to the atmosphere (e.g. many forms of agriculture).

If a forest is established that is not destined to be harvested (e.g. permanent natural forest rehabilitation), the volume of carbon sequestered and stored permanently in the system will be greater than if the forest is destined to be harvested. But as indicated above, even forest that is destined to be harvested forms part of the additional carbon stocks of a country, and thereby can contribute to forest carbon credit projects (e.g. under the Clean Development Mechanism of the Kyoto Protocol).

3. DEFORESTATION AND REDD

Deforestation and forest degradation are a major source of greenhouse gases to our atmosphere. At this stage in history most of this is occurring in developing countries in tropical regions. According to the Intergovernmental Panel on Climate Change (IPCC) emissions from tropical deforestation during the 1990s amounted to 1.6 billion tonnes of carbon per year equating to 20% of global carbon emissions. Designing a mechanism for reducing emissions from deforestation and degradation (REDD) is therefore an important component of global climate change mitigation.

"*If we lose the battle against tropical deforestation we lose the battle against climate change*" – Charles, Prince of Wales.

"*If a post-Kyoto climate agreement fails to act on avoiding tropical deforestation, the achievement of overall climate change goals will become virtually impossible*" – President of Guyana.

3.1 Policy Background

'Avoided deforestation' was excluded from the Kyoto Protocol at the 6th Conference of Parties (COP-6) in 2000. The reasons for this are complex but relate to the way that a) forest projects tended to be categorised in climate change policy language as carbon sink projects, and b) the fact that carbon sink projects were pushed to the margins of the Kyoto regime during negotiations between member states at COP-6.

By excluding 'avoided deforestation' from the Kyoto Protocol, the intergovernmental climate change policy community gave a big green light to logging and forest conversion activities around the world (particularly in the tropics) at a time when we most need a major international push for the conservation of what remains of natural forests – especially large forest areas like the Amazon basin and Borneo. The Rio Earth Summit failed to deliver a forest conservation convention in 1992 and then the Kyoto Protocol and the World Summit on Sustainable Development failed a decade later. In the mean time logging and land conversion continues apace and a great opportunity is being lost.

In an attempt to remedy this, the Governments of PNG and Costa Rica made a submission to the UN Framework Convention on Climate Change (UNFCCC) to address this policy gap. The UNFCCC put avoided deforestation on the agenda at the 11th Conference of Parties in Montreal in December 2005 in the form of 'Reducing Emissions from Deforestation in Developing countries (REDD). The REDD acronym has since shifted to mean 'Reducing Emissions from Deforestation and Degradation.'

At the broadest level the United Nations Framework Convention on Climate Change (UNFCCC) invites the international community to work together to stabilise atmospheric CO_2 concentrations at a level that will "avoid dangerous anthropogenic interference of the climate system" (Article 2). From a geophysical point of view there are two ways to lower atmospheric CO_2 concentrations:

- Stop carbon reservoirs getting smaller by slowing their transformation into atmospheric CO_2;
- Help increase the size of carbon reservoirs by soaking up carbon from the atmosphere (sequestration).

For many developing countries without large industrial sectors, the principal source of carbon emissions is from deforestation and forest degradation. 'Deforestation' is defined differently depending on the agency or country. The FAO definition is: "The conversion of forest to another land use or the long-term reduction of the tree canopy cover below the minimum 10 percent threshold." The UNFCCC definition is: "The direct human-induced conversion of forested land to non-forested land." Unsustainable high intensity selective logging of indigenous forest will remove the vast majority of the carbon in a forest, but often will not result in a permanent change in land use and as such will commonly not be defined as 'deforestation.' Instead this is called forest 'degradation' and in many countries accounts for a large proportion of forest-based carbon emissions.

3.2 Incentive Mechanisms

The international policy agenda for REDD involves the development of incentive mechanisms and associated quality assurance criteria to reduce the rate of forest-based carbon emissions in developing countries. Incentive mechanisms are likely to include technical support, grant funding, and possibly market or market-linked financial instruments (carbon credits).

REDD incentive mechanisms are designed to enable developing countries and/or their forest resource owners to gain financial support for activities that result in a reduction in forest-based carbon emissions. This is designed to provide a counter-balance to the current situation whereby existing financial incentives tend to motivate countries and/or resource owners to increase their emissions through unsustainable timber harvesting and conversion to agriculture.

REDD incentive mechanisms encompass a means of assigning a monetary value to the climate-related ecosystem services that are provided by in-tact forest ecosystems. For such incentive mechanisms to work effectively they need to address the social and economic drivers of deforestation and forest degradation. Addressing deforestation and degradation drivers commonly requires redirecting economic production in the rural landscape, in a way that can satisfy resource owners and the strategic development interests of developing country governments. Accordingly, activities that reduce deforestation and degradation will often need to be linked to other rural development activities such as afforestation and reforestation (A/R) (activities that sequester atmospheric carbon).

Furthermore, natural forests that have never been logged are not generating carbon emissions. Forest conservation activities that prevent such forests from being degraded or deforested, therefore, do not involve "reducing emissions" and thereby lie outside the scope of 'REDD'. In addition, changing forestry practices from unsustainable logging practices to sustainable forest management (SFM), or undertaking SFM instead of deforestation also forms an important part of an effort to reduce forest-based emissions in developing countries.

For these reasons the scope of 'REDD' policy has broadened to include A/R, SFM, and forest conservation – now framed as 'REDD+'.

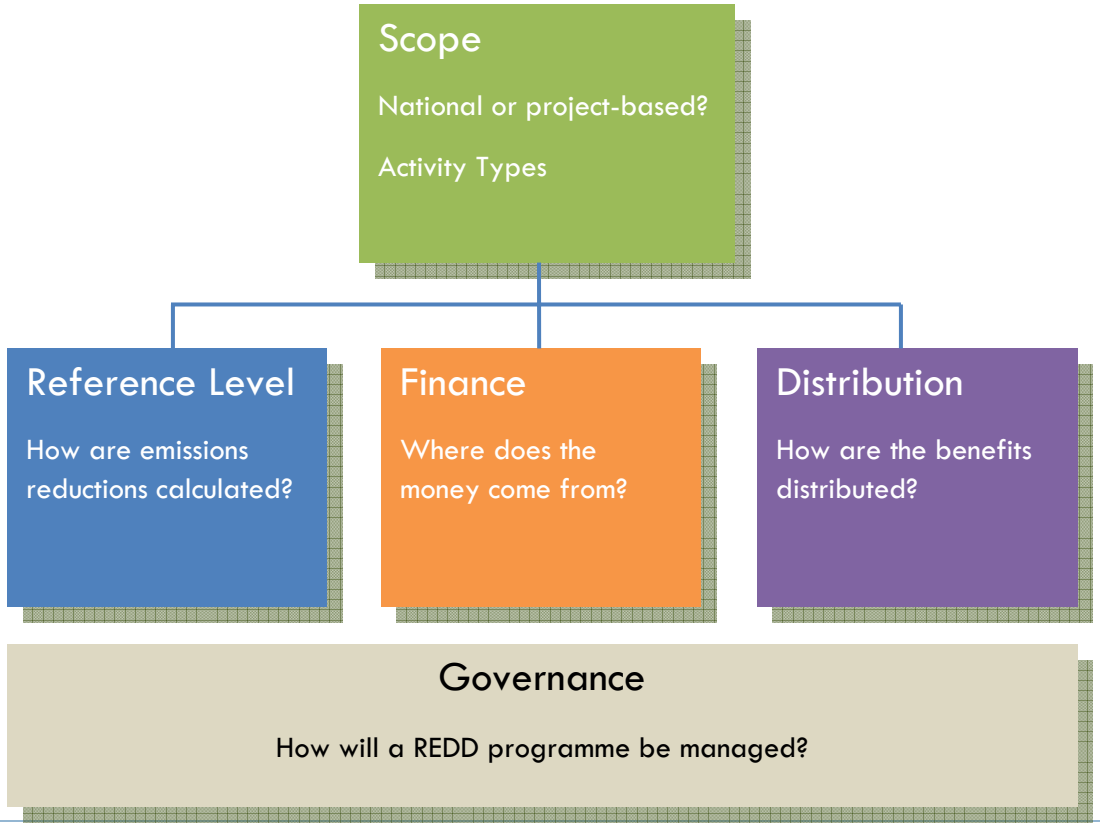
3.3 Non-UNFCCC Players

The UNFCCC is the forum for the intergovernmental policy debate on REDD. The REDD policy framework arising from Copenhagen in December 2009 will bring REDD into the post-2012 international climate agreement, and link developing country and developed country participants (e.g. developed country buyers of potential REDD credits from developing countries). But there are also other contexts for the development of incentive mechanism for REDD activities. These include:

1. The USA domestic emissions trading scheme (outside the UNFCCC process)
2. Multilateral financial institutions (e.g. the World Bank Forest Carbon Partnership Facility)
3. Bilateral initiatives (e.g. the governments of Norway and Australia are both supporting REDD in Asia/Pacific)
4. The voluntary carbon market

3.4 How Would A REDD Program Work?

The nature of the UNFCCC REDD instrument arising from Copenhagen is yet to be determined. Either way the basic architecture of a REDD program will need to include the following components:



4. CARBON AND CLIMATE RELATED FINANCE FOR REDD

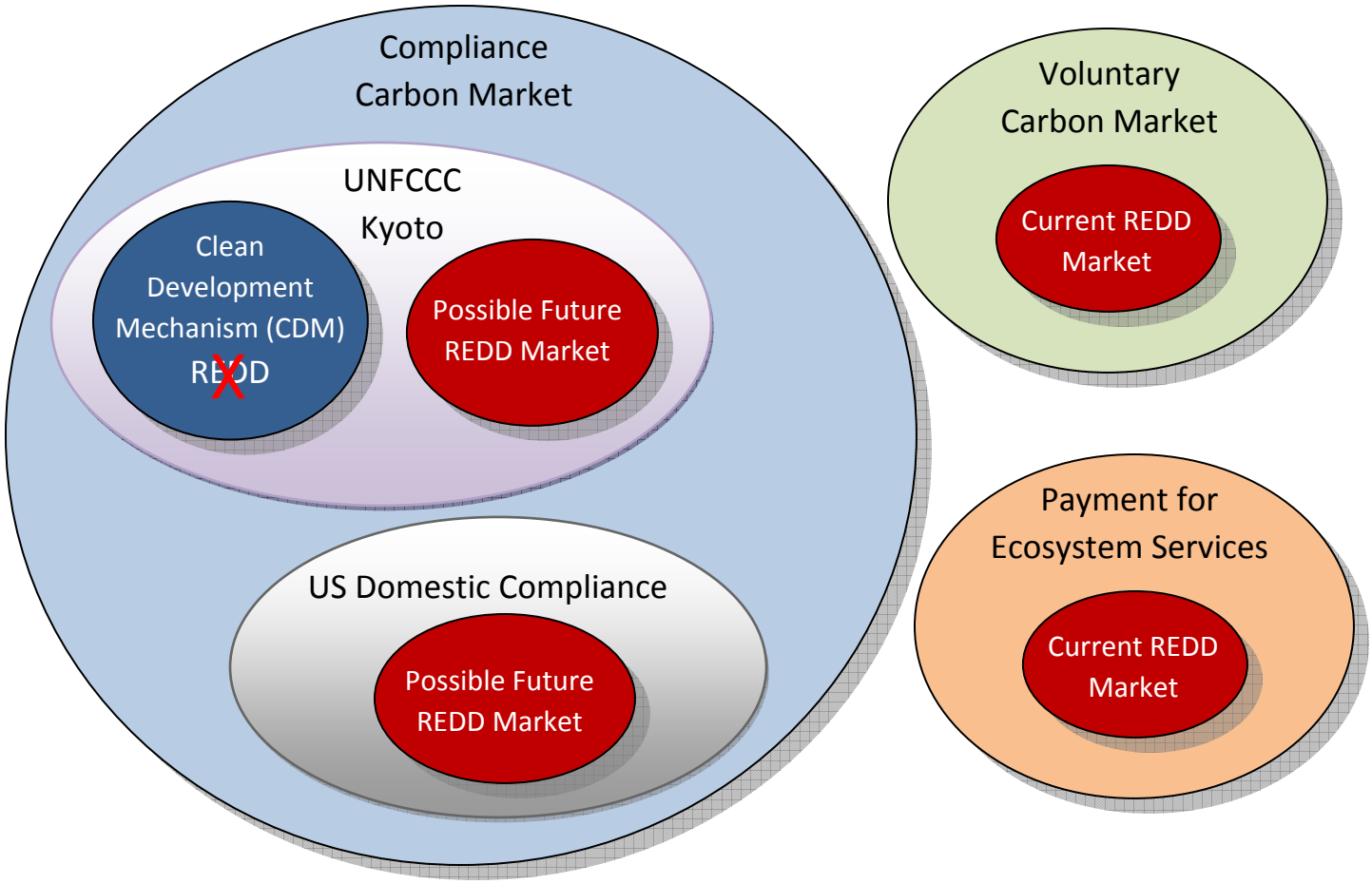
There is a growing range of financial instruments for mitigating climate change including carbon emissions trading and payment for climate-related ecosystem services in the form of grants and funding schemes. Some are markets for commodities which act as a proxy for climate protection (i.e. CO_2 emissions reductions or sequestered CO_2), while others exist as payment for particular management outcomes in the landscape. This chapter presents an overview of carbon and climate-related finance by first exploring carbon markets and then looking at Payment for Ecosystem Services, followed by a section on non-market instruments for forest based climate-friendly development.

In general, there are two types of carbon market. The first is the **compliance carbon market** which stems from obligations taken on by developed countries under the Kyoto Protocol or within a domestic emissions trading scheme. The second is the **voluntary carbon market** which mainly stems from initiatives by governments, firms and individuals to reduce their carbon footprint (sometimes with a goal of carbon neutrality) by lowering their emissions and offsetting emissions they are unable to eliminate in-house.

The other two main financing options for forest projects in developing countries include the payment for ecosystem services (PES) market, and private or public sector grant finance.

The Payment for Ecosystem Services market includes finance for project outcomes that currently have no formal market (e.g. combination of climate change mitigation, biological diversity, water security) but where there is an obvious economic or social value to society (i.e. the protection of non-market ecosystem services). Some forms of private sector finance can include the more flexible end of the voluntary carbon market spectrum where “buyers” are interested in purchasing project outcomes that include carbon emissions reduction (or sequestration) together with the generation of other co-benefits such as the protection of a range of ecosystem services (e.g. biological diversity, water systems, soil resources). Climate-related finance is perhaps best categorised as Payment for Ecosystem Services (PES) – now an internationally recognised “market.” The buyers in PES markets increasingly include elements of the private sector pursuing a profile in corporate social responsibility (CSR).

Figure 5. Market finance instruments for REDD

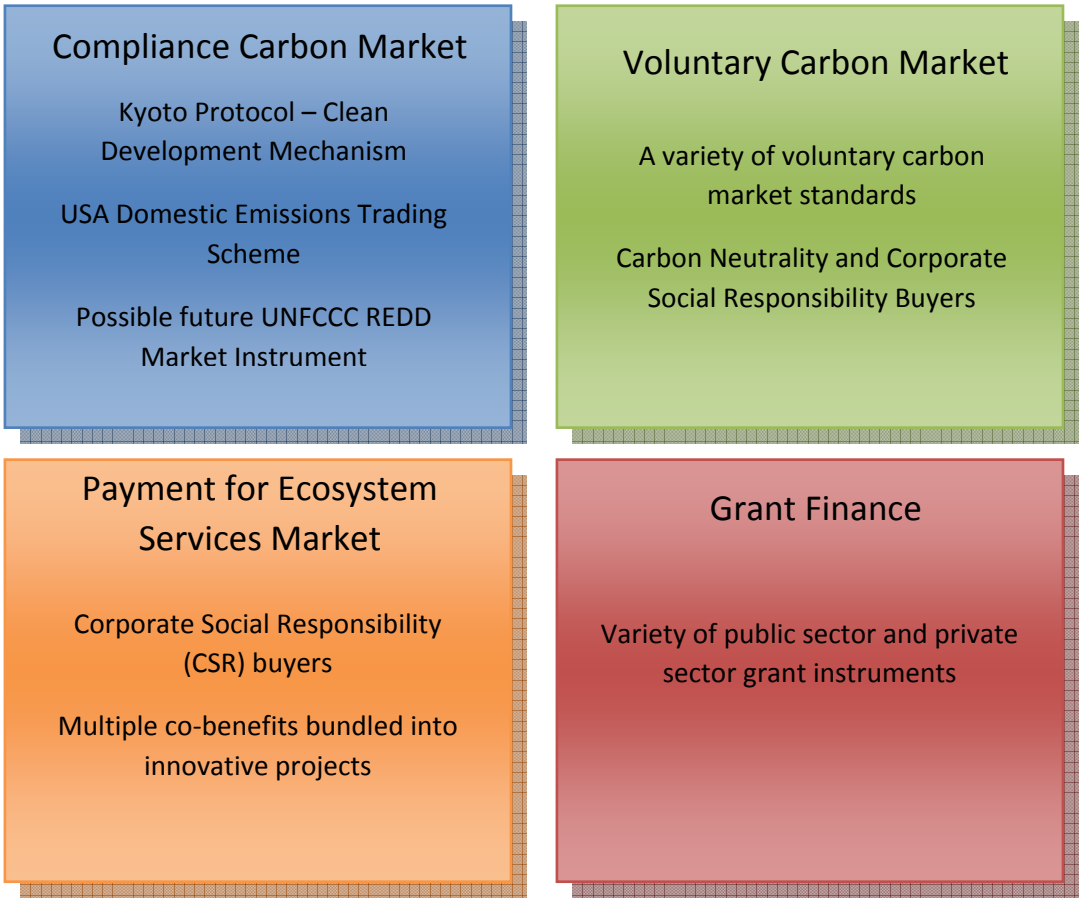


As indicated in Figure 5 above, REDD was excluded from the CDM in the Kyoto Protocol and therefore excluded from the compliance carbon market. But there may be a compliance REDD market instrument or instruments available after 2010 due to changes at the UNFCCC, and also the USA domestic emissions trading scheme that may allow international REDD credits into that system. In the mean time, however, there is a voluntary carbon market for REDD and this is available as a means to finance forest protection presently. The Payment for Ecosystem Services (PES) market also exists currently as an option for financing REDD activities.

Carbon and climate-related finance can be seen as a set of financial instruments potentially available to forest owners and governments interested in pursuing a sustainable development path where this can include REDD activities. The opportunities range from formal carbon markets (compliance and voluntary) as well as the less formal PES market and non-market grant finance. From a seller/resource owner point of view, carbon and climate-related finance presents a new set of opportunities to repackage development, business and management plans along the lines of climate-friendly

development pathways. There is also a growing demand for projects that deliver climate-friendly development ranging from buyers of carbon commodities, to those seeking carbon with co-benefits, to buyers wanting to purchase the protection of a portfolio of non-market or quasi-market ecosystem services.

Figure 6. Carbon and Climate-Related Finance



In summary, there are several financing opportunities in the forest sector including REDD and its associated activity types under REDD+ (i.e. including afforestation/reforestation activities). A key point to recognise however, is that REDD and carbon/climate related finance is by no means a "carbon gold rush". Instead these financing instruments are more appropriately seen as financing innovations worth exploring as part of a national strategy to support climate change adaptation and mitigation through climate change mitigation funding streams.

5. REGIONAL COORDINATION FOR SUSTAINABLE DEVELOPMENT

Discussions at the Pacific Heads of Forestry Meeting were held on the role of regional and international coordination for sustainable development in the face of substantial strategic challenges facing the region in coming decades. Such challenges include population growth, food and water security, climate change, international energy prices, and the international financial situation. This suit of issues and the scale of challenges they present are historically unprecedented.

The country delegates made it clear that there was a strong need for improved coordination and communication with regional (Pacific) and international agencies. A key problem identified by different delegates was a lack of awareness of opportunities for technical, policy, and financial support for sustainable development initiatives in the forest sector. Another common theme was a lack of capacity to fully engage in regional and international initiatives, which was partly a product of a lack of institutional memory due to staff turnover among some government agencies.

Regional agencies commented on the way in which they could provide support (e.g. technical support, training and education). There are already forums for technical and policy support and there was room for more coordination. One of the training problems identified was the “brain drain” from government departments after staff are trained up in some areas of technical capability. For example GIS training programs by SOPAC would commonly lead to staff getting promoted (and no longer in a technical role), or moving to more highly paid jobs outside government or outside the region.

Representatives from the UNFF and FAO pointed out that there are commonly technical, policy and financial support structures available to Pacific Island nations that were not always utilized to full potential by Island nations. This was partly a function of lack of capacity in Pacific island nations to fully engage as indicated above. Another challenge from a donor point of view was the inadequate alignment of a) the supply of technical and financial support from regional and international agencies with b) local demand and need for this support (linking supply and demand).

The Pacific Islands Forum already exists as a high level policy forum for Pacific Island heads of state. But there seems to be a need for another layer of regional coordination capable of providing a more coherent context for regional cooperation and coordination at the level of departmental directors and their senior staff. Such people are responsible for the implementation of policy and are often more aware of the issues on the ground and any mismatch between high level policy aspiration and realities at the grass roots.

An institutional context for greater coordination and collaboration at the level of departmental directors could possibly come in the form of a Pacific Islands Sustainable Development Forum that sits beneath the Pacific Islands Forum and provides coordinated advice on sustainable development to heads of state for mandating at the Pacific Island Forum.

A possible model for such a forum exists at the UN with the technical and policy streams of the UNFCCC process. This involves an on-going annual work program for government technical and policy advisers (senior public servants) combined with technical and policy support from expert agencies (including research institutions and international technical bodies), donors and financial institutions.

The value of this model is that it provides an environment for the development of technically robust and locally relevant policy recommendations to the PIF. It also allows for the coordination of regional and country-specific financing proposals arising from coordinated dialogue between those in the region responsible for the implementation of sustainable development (senior staff of government agencies), and those support agencies responsible for facilitating, financing, and assisting such sustainable development (donors and technical/policy support agencies).

Such a group could also form a mandating body for the South Pacific Commission and SPREP in terms of representing Pacific Island nations at international policy forums. The South Pacific Commission is a logical location for such a forum and already plays this role to some extent. The existing SPC capability and function could potentially be upgraded in future to provide the secretariat for a greater level of sustainable development coordination in the region.

One way to consider establishing such a Pacific Island Sustainable Development Forum process would be to review all existing regional meetings and workshops and their financing arrangements and see whether there is an opportunity to generate economies of scale by combining them into a larger annual event (and associated inter-meeting processes), and meet any financing short fall from donors who recognize the value of greater coordination and support for Pacific Island nations in their attempts to meet the significant challenges facing the region this century.

6. RECOMMENDATIONS

Pacific Island governments would be well advised to review the potential opportunities to use carbon and climate-related finance as a means of assisting the financing of no-regrets sustainable development in their countries. This includes opportunities in the forest sector ranging from forest conservation through to industrial plantations, agroforestry, and forest-energy sector linkages such as biomass electricity generation and coconut-based biofuel. Keeping a financing strategy open to all forms of carbon and climate-related finance will increase the options available to forest sector sustainable development activities.

The scale of the global climate change problem is very large and as such, the scale of financing for climate change mitigation solutions is also large and growing. For this reason there are opportunities for the development of relatively ambitious strategic shifts in the direction of sustainable development

which can potentially be financed by relatively ambitious funders and buyers in industrialised nations (governments and private sector players). A further advantage that many Pacific Island nations have is that relatively small size makes innovative integrated solutions easier to implement from an institutional management point of view. This means that a selling point for integrated climate change mitigation and adaptation projects includes the ability to pilot innovations that could be scaled up in other larger nations if proven at a smaller scale.

There are opportunities for a regionally coordinated approach to a strategic forest-climate programme.

This could include coordinated development in policy and technical aspects of forest sector climate change adaptation and mitigation.

One option would be to shift to a regional Designated National Authority[4] (DNA) (if acceptable to the UNFCCC) for carbon trading projects in the region. This would help to avoid duplication of several small scale institutions (China for example has a billion people and only one DNA).

Another option is to establish regional components of forest carbon monitoring that could be rolled out in a way that achieves economies of scale but provides benefits to several nations at the same time. This could include a regional approach to regular forest area change assessments using remote sensing capabilities within the region (SOPAC/SPC) and financed by donor partners. Forest carbon monitoring capabilities and methodologies could also be shared within the region and assist with a regionally strategic approach to REDD project development (different pilot project types tested in different countries and information shared for maximum mutual benefit.

Such regionally coordinated initiatives would also enable valuable contributions to policy refinement at the UNFCCC in REDD, to take adequate account of Pacific Island circumstances. It would also help to increase a regionally coherent approach to international policy development in forest sector climate change adaptation and mitigation (accommodating necessary differences, whilst avoiding intra-regional policy conflicts).

Given the scale and scope of climate change and other global challenges faced by Pacific Island nations this century it is worth considering the development of a more robust and streamlined form of regional coordination in sustainable development. This could take the form of a Pacific Island Sustainable Development Forum hosted by the South Pacific Commission involving an annual multi-sector coordination meeting that replaces the current sectoral meetings. These annual meetings could function as regional coordination workshops that provide recommendations to the Pacific Island Forum and facilitate donor coordination and more efficient linkages between financial, policy and technical supply and demand.

[4] A Designated National Authority (DNA) is a necessary institutional gate-keeper for carbon trading under the UNFCCC Clean Development Mechanism, responsible for providing national approval of CDM carbon projects.