Readiness Preparation Proposal (R-PP)

for Country: Vanuatu

Date of submission or revision: 28 September 2012

Forest Carbon Partnership Facility (FCPF)

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Annexes Providing Additional Guidelines or Information: [in the separate Annexes document]

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General Information

Contact Information

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R-PP Development Team

Please list the names and organizations of the authors and contributors to the R-PP (insert as many rows as necessary in the table below).

Name	Organization
Sean Weaver	Carbon Partnership Ltd
Jotham Napat	Vanuatu Meteorological Service
Brian Phillips	Vanuatu National Advisory Committee on Climate Change
Tate Harrington	Department of Forestry
Bjoern Hecht	GIZ
Jorg Seifert-Granzin	Mesa Consulting
Martin Herold	GOFC-GOLD

Summary of the R-PP

Dates of R-PP preparation (beginning to submission):	10 October 2011 – 6 August 2012
Expected duration of R-PP implementation (month/year to month/year):	May 2013 – May 2014
Total budget estimate:	
Anticipated sources of funding:	from FCPF: from UN-REDD: National government contribution: other source: other source:
Expected government signer of R-PP grant request (name, title, affiliation):	Jotham Napat, Director, Meteorological Service, Government of Vanuatu
Expected key results from the R-PP implementation process:	Outcome 1) Outcome 2) Outcome 3) Outcome 4)

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Executive Summary

Note that this document is a very early draft with each section still being actively edited.

The overarching goal of this draft of the Vanuatu R-PP is to establish a place-holder in the FCPF R-PP schedule for Vanuatu. Vanuatu was a late starter in the R-PP process with FCPF grant funds mobilized only in mid 2012, and will spend the third and fourth quarters of 2012 completing the process.

Most progress in this R-PP has been made in REL/RL and forest monitoring. Policy elements are still in development.

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Introduction

Vanuatu is a Pacific Island country located to the north west of New Zealand and east of northern Australia. Vanuatu consists of 83 islands, with about 220,000 inhabitants, and about 12,000 sqkm of land area. More than 90% of the land area is covered with more than 10-15% tree canopy cover, which includes primary forest land and other wooded land according to national definitions.

The production forests of Vanuatu occupy approximately 36% of the total land mass (FRA 2005). This data was based on the interpretation of the 1988 aerial photography with data analysis completed in 1993.

71% of Vanuatu's land mass is covered by other vegetation types in the following categories; Mid height forests (20-30m) (205,307 hectares), Low forests (10-20m) (234,089 hectares), Woodland (<10m) (386 hectares) and Thickets (3-8m) (433,941 hectares).

Vegetation Type	Definition
Forests	Land with forest having tree canopy greater than 10m in height. This includes mid height forests of 20-30m and low forests10-20 meters. The main type of forests containing most of the commercial timber species for timber productions
Wood land (<10m)	Forest areas with separated crowns, generally <10m tall. A clearly visible ground layer of herbs and /or small grasses.
Thickets (3-8m)	Forests with dense canopy of poorly formed trees and/or or other arborescent life forms 3 to 8 m tall and no ground layer being visible.
Scrub (<3m)	Forests that are dense to open layer of shrubs and <3m tall.
Grassland or Herbaceous communities	Land covers consisting of grasses, sedges, herbs and low woody shrubs. Few scattered trees may be present
Fresh water swamp communities	Land having a complex comprising thicket, scrub and herbaceous vegetation. It is subjected to permanent or near permanent inundation. Other where possible it can be mapped as woody or herbaceous.
Mangrove communities	Forest areas also having a complex comprising low trees, shrubs and herbs subjected to tidal inundation
Bare ground/man made	Land areas where there is man made activities going on. It could be agricultural subsistence farming or any other activities or development made by inhabitants within the area

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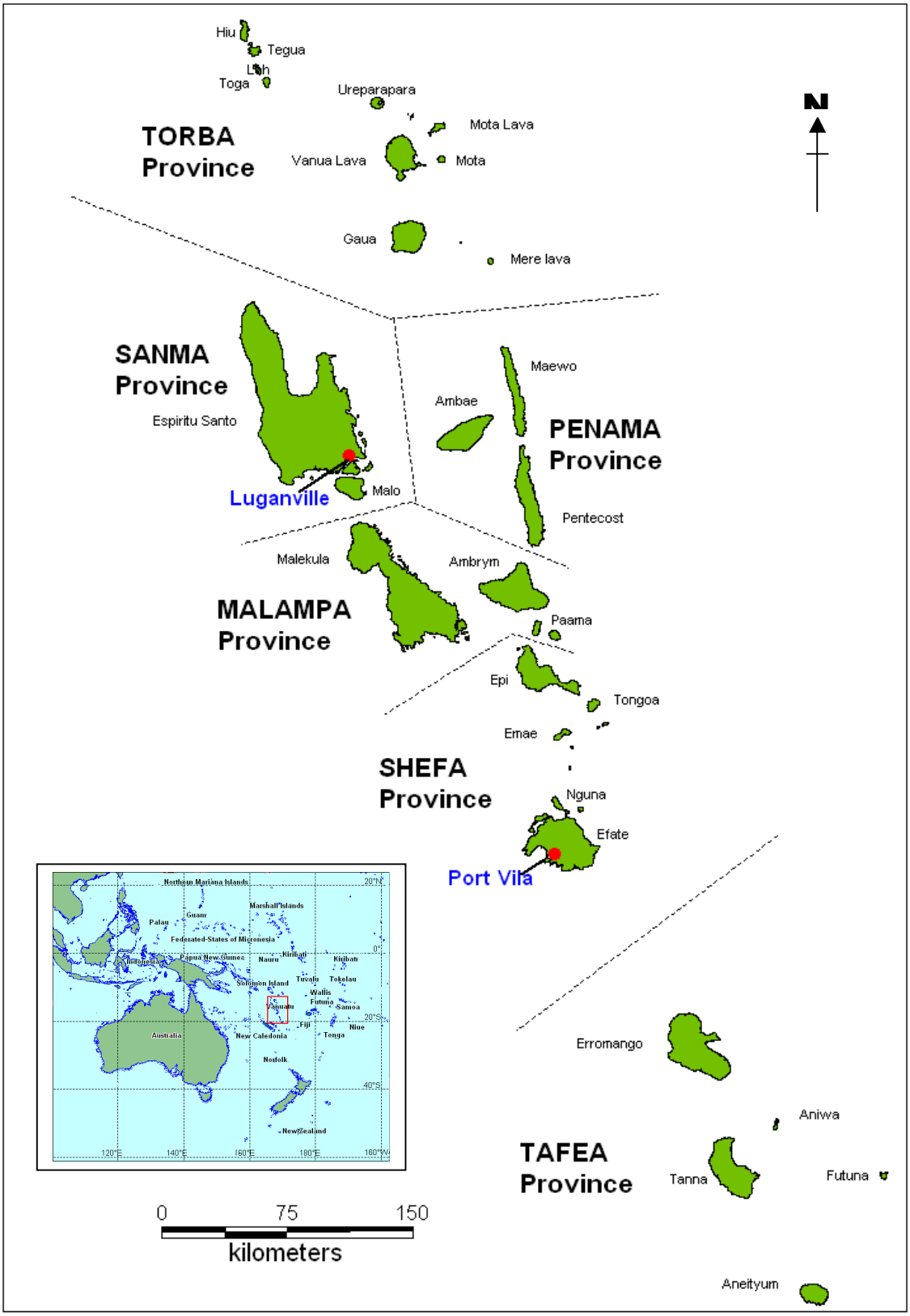
Map of Vanuatu



Component 1: Organize and Consult

1a. National Readiness Management Arrangements

Standard 1a the R-PP text needs to meet for this component:
National Readiness Management Arrangements:

The cross-cutting nature of the design and workings of the national readiness management arrangements on REDD-plus, in terms of including relevant stakeholders and key government agencies in addition to the forestry department, commitment of other sectors in planning and implementation of REDD-plus readiness. Capacity building activities are included in the work plan for each component where significant external technical expertise has been used in the R-PP development process.

Each component of this R-PP first draft has been organized by means of guideline requirements provided by the FCPF UNREDD R-PP Template and Guidelines document V6 – Nov 23, 2011. Each of these guideline requirements is presented in a yellow box with responding text below. For those components and elements not yet started the reviewer will only find the guideline elements with place-holding text below. Vanuatu is actively undertaking the drafting of this R-PP during the course of October – December 2012. Each section of this R-PP will be updated prior to the formal submission of the R-PP in January 2013. Some sections are well developed and will need only minor adjustments (e.g. responding to recommendations of the TAP review team) whereas others will require substantial additions arising from the R-PP preparation process underway during September – December 2012.

R-PP Roadmap Timeline

Vanuatu R-PP Policy Roadmap: Consolidated Timeline		
1	R-PP Drafting Committee Meeting 1	04/08/2012
2	Recruitment of Extension & Outreach Lead Consultant	30/09/2012
3	Send request to World Bank for extension to R-PP grant	30/08/2012
4	REDD+ Standards Workshop	17/09/2012
5	National REDD+ Policy Workshop	19-21/09/2012
6	Extension & Outreach Training & Planning Workshop	15-16/10/2012
7	Extension & Outreach Workshop: Shefa Province	27-28/10/2012
8	Variation on contract for REDD Policy Consultant	30/09/2012
9	FCPF Participant Committee 13, Brazzaville, Congo	20-23/10/2012
10	R-PP Drafting Committee Meeting 2	11-12/12/2012
12	R-PP Drafting Committee Meeting 3	21/01/2013

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13	Vanuatu Government approval of final R-PP	22/01/2013
14	Submission of final R-PP to FCPF for TAP Review PC 15	23/01/2013
15	FCPF Participant Committee 15, Washington DC, USA	23/01/2013
16	FCPF Participant Committee 16, (location tba)	June 2013

Describe the national readiness management arrangements such as the design and methods of operation, the roles and responsibilities at various levels of management, and the relative hierarchy between institutions across sectors

The national readiness management arrangements for the Vanuatu REDD+ Programme are in active development, based on a governance and management structure presented in the structure diagramme below.

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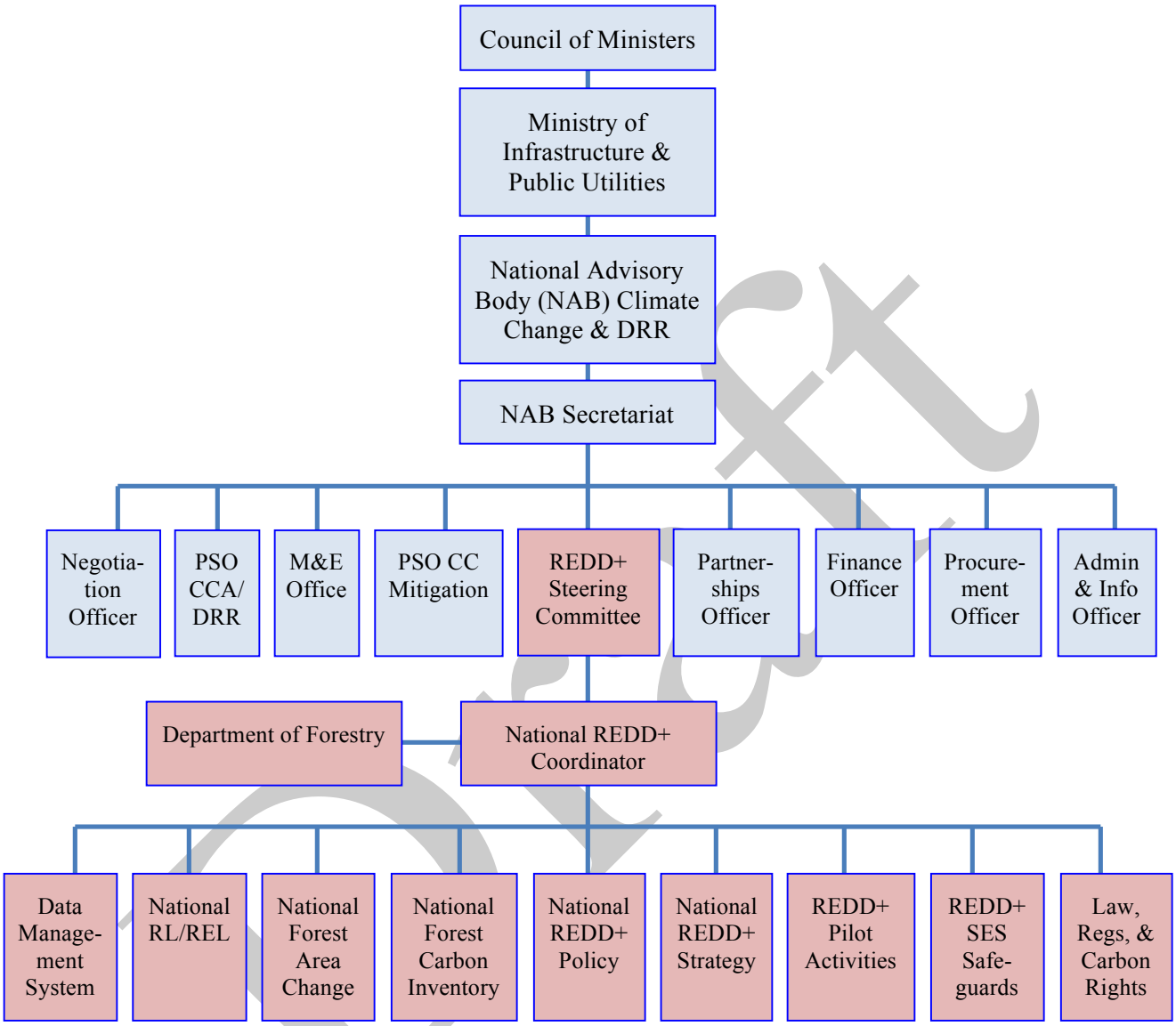
Draft Structure of the Vanuatu National REDD+ Programme



The establishment of the National REDD+ Steering Committee and its location in government structure has been agreed by a multistakeholder REDD+ workshop, but is yet to be executed by the National Advisory Body.

Describe mechanisms to manage potential disagreement between working group members or across sectors/institutions (e.g., potential use of legislative provisions, ultimate decision making authority, level of transparency etc.)

Any disputes in the overall management or implementation of the National REDD+ Programme need to be brought to the REDD+ Steering Committee. Intractable disputes will follow a dispute resolution framework yet to be finalised by the REDD+ Steering Committee (a draft dispute resolution framework has been developed and is presented in Annex 1c.

Responsibility for implementing the Vanuatu REDD+ Programme currently rests with the Department of Forestry Department. Implementation activities will also be carried out by agencies other than the Department of Forestry (DoF), but only with DoF approval and under the oversight of the National REDD+ Coordinator.

Key agencies involved in the implementation of the Vanuatu REDD+ Programme include: Department of Forestry, Department of Agriculture, Department of Lands, Landowners, CSOs, regional organisations (such as the Secretariat of the Pacific Community (SPC), technical support organisations (e.g. GIZ, consultants), and the private sector.

The REDD+ Steering Committee will meet three times per year. The NAB will normally meet monthly.

There is an opportunity for periodic review of the REDD+ Steering Committee as the need arises.

Explain how Readiness activities for REDD-plus will be coordinated, and ultimately, how REDD-plus implementation will be managed

The National REDD+ Programme is coordinated by the National REDD+ Coordinator. The National REDD+ Coordinator is located in the Department of Forestry, which is the core implementing agency for the Programme. The REDD+ Coordinator will be guided by, and report to the REDD+ Steering Committee. The role of the REDD+ Steering Committee is to make recommendations to the NAB for decisions on the National REDD+ Programme, and to provide strategic oversight to the National REDD+ Programme.

Explain how the integration of environmental and social issues, including assessments of environmental and social risks and potential impacts of REDD-plus, and the preparation of an ESMF will be coordinated during the preparation and implementation of REDD-plus readiness activities (e.g., a SESA sub-committee)

The REDD+ Steering Committee will be responsible for the development of a framework for the integration of environmental and social safeguards into the National REDD+ Programme.

Present the composition of the existing or a new working group

The REDD+ Steering Committee was selected during the multistakeholder National REDD+ Policy Workshop in September 2012. The REDD+ Steering Committee is comprised of representatives from the following agencies: Forestry (REDD+ Coordinator, Chair), Environment, Agriculture, Project Management Unit (PMU), Lands, Foreign Affairs, CSOs (2 reps one of which being Live & Learn Environmental Education), Trade & Industry.

If a new working group will be formed, describe how representatives from stakeholder groups in the working group will be chosen

n/a

Provide the name of the ministry/organization responsible for overall coordination of REDD-plus activities and of donor efforts supporting REDD-plus or land use activities

The National Advisory Body for Climate Change and Disaster Risk Reduction (NAB) is the governing body for the National REDD+ Programme. The NAB establishes mandates for the multistkeholder REDD+ Steering Committee to provide direct oversight of the National REDD+ Programme.

The NAB is comprised of Directors of the government agencies affected by climate change and disaster risk reduction. The NAB reports to the Minister for Infrastructure and Public Utilities, which in turn reports to the Council of Ministers.

Describe the specific roles and responsibilities of each member of the working group, if already defined, towards achieving the objectives of each component of the R-PP including integration of environmental and social issues in the readiness process

REDD+ Steering Committee Roles & Responsibilities	
Committee Member	Role
Department of Forestry	REDD+ Coordinator Chair; logging concessions, forest management, technical support, forest policy governance & law
Department of Environment	Environmental safeguards and community conservation areas
Department of Agriculture	Addressing drivers of deforestation & strategic relationship between forestry and agricultural lands and land management
Project Management Unit	Coordination of REDD+ programme with broader climate change mitigation strategies and programmes, NAB liaison person, UNFCCC focal point & coordinator of international REDD+ policy with other agencies
Department of Lands	Representing landowner and land issues, databases, mapping
Foreign Affairs	International engagement, consistency with multilateral agreements
CSOs (x 2)	Social & environmental safeguards, extension & outreach, on the ground, grievance process, independent advice
Department of Trade & Industry	Commercial elements of REDD+ & carbon trading activities, consistency with trade policy, benefit distribution & marketing

Describe the relationship of the REDD-plus working group to the existing working structure and processes for national forestry and land use policy dialogue

The REDD+ Steering Committee is a newly appointed entity, but comprised of individuals that have long been involved in land-based resource management in Vanuatu. This Steering Committee uses a mode of engagement that is a familiar model to resource-management governance and policy development in Vanuatu.

Explain the types of practical activities conducted as part of management of readiness, e.g., workshops, meetings for key government agencies beyond the forestry sector and other stakeholder consultations, consultations on environmental and social priority issues and concerns of key stakeholders, modes of communication, outreach and communication and budgetary requirements. Include the schedule and sequencing of such activities

The governance of the Vanuatu REDD+ Programme will operate by means of national multistakeholder workshops, meetings, and consultations under the REDD+ Steering Committee, governance by means of NAB meetings, and an Extension & Outreach programme to enable the direct involvement of rural communities in the provinces. National Workshops and Extension & Outreach activities will be conducted for training and informed consultation. A draft programme of activities is presented below:

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Vanuatu REDD+ Programme Governance and Management Schedule: 2013-2014		
	REDD+ Steering Committee Meetings	
	Meeting 1 2013	March 2013
	Meeting 2 2013	July 2013
	Meeting 3 2013	November 2013
	Meeting 1 2014	March 2014
	Meeting 2 2014	July 2014
	Meeting 3 2014	November 2014
	National REDD+ Policy Workshops	
	Vanuatu REDD+ Policy & Strategy Scoping Workshop	June 2013
	Vanuatu REDD+ Policy & Strategy Drafting Workshop	October 2013
	Vanuatu REDD+ Policy & Strategy Validation Workshop	February 2014
	Special Working Group Meetings	
	REL/RL Validation	tba
	National Forest Carbon Monitoring Plan Validation	tba
	Social and Environmental Safeguards	tba
	Pilot Activities	tba
	Carbon Financing & Carbon Rights	tba
	National Implementation Structure	tba
	Extension & Outreach Consultations	
	Vanuatu REDD+ Policy Scoping Outreach	June – October 2013
	Vanuatu REDD+ Policy Drafting Outreach	October – December 2013
	Social & Environmental Safeguards	tba
	Carbon Financing & Carbon Rights	tba
	National Implementation Structure	tba

Where readiness management arrangements are not yet established, explain the activities that would be undertaken (by the nodal agency) leading to establishing management arrangements (e.g., consultations for early engagement of government agencies, early engagement of civil society including Indigenous Peoples, NGOs, donors, and assessment of current and potential roles and responsibilities for members of the WG).

n/a

Explain how the working group will report, disclose, and disseminate information, and incorporate stakeholder views so as to promote transparency, accountability, and public outreach and compliance with the World Bank's applicable safeguards policies, or those in use for UN-REDD

The REDD+ Steering Committee will use rules of order, with decisions recorded in minutes, and circulated to all Steering Committee members for sign-off prior to being finalized. All final minutes of REDD+ Steering Committee meetings will be filed in the Vanuatu REDD+ Data Management System.

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A template for REDD+ Steering Committee reporting will be developed. The Chair of REDD+ Steering Committee and the Principal Mitigation Officer (PMU) will represent the REDD+ Steering Committee at the NAB meetings.

Address the issue of government ownership of the R-PP: If significant external assistance has been relied on, then country capacity building activities need to be included in the relevant component work plans

The NAB has already made a decision to endorse R-PP and appoint the National REDD+ Coordinator position. This has followed the endorsement of a national REDD+ Programme by the Development Committee of Officials, and the Council of Ministers (late 2006), the first national REDD+ Roadmap workshop (February 2008), the endorsement of the Vanuatu R-PIN by the NACCC (predecessor of the NAB) (2008), and the National REDD+ Planning Workshop (July 2011). The next decision of the NAB is to approve the formation of the REDD+ Steering Committee (scheduled for the next NAB meeting likely in October or November 2012).

Propose a feedback and grievance redress mechanism (an FGRM), to be operational early in the R-PP implementation phase

The CSO and Department of Lands representatives on REDD+ Steering Committee will be responsible for developing a feedback & grievance mechanism. A draft Vanuatu REDD+ Dispute Resolution Framework has already been developed and is supplied in Annex 1c.

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The budget for this component is yet to be determined

Table 1a: Summary of National Readiness Management Arrangements Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (in thousands US$)				
		2011	2012	2013	2014	Total
…	Meetings (e.g., travel for stakeholders on WG)	$	$	$30	$30	**$60**
	Dissemination of reports	$	$	$20	$20	**$40**
…	Hire information specialist	$	$	$30	$30	**$60**
	Hire economist	$	$	$30	$30	**$60**
		$	$	$	$	**$**
Total		**$**	**$**	**$80**	**$80**	**$160**
Domestic Government		$	$	$10	$10	**$20**
FCPF		**$**	**$**	$70	$70	**$140**
UN-REDD Programme (if applicable)		$	$	$	$	**$**
Other Development Partner 1 (name)		$	$	$	$	**$**
Other Development Partner 2 (name)		$	$	$	$	**$**
Other Development Partner 3 (name)		$	$	$	$	**$**

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1b. Information Sharing and Early Dialogue with Key Stakeholder Groups

Standard 1b the R-PP text needs to meet for this component:
Information Sharing and Early Dialogue with Key Stakeholder Groups:

The R-PP presents evidence of the government having undertaken an exercise to identify key stakeholders for REDD-plus, and commenced a credible national-scale information sharing and awareness raising campaign for key relevant stakeholders. The campaign's major objective is to establish an early dialogue on the REDD-plus concept and R-PP development process that sets the stage for the later consultation process during the implementation of the R-PP work plan. This effort needs to reach out, to the extent feasible at this stage, to networks and representatives of forest-dependent indigenous peoples and other forest dwellers and forest dependent communities, both at the national and sub-national level. The R-PP contains evidence that a reasonably broad range of key stakeholders has been identified, voices of vulnerable groups are beginning to be heard, and that a reasonable amount of time and effort has been invested to raise general awareness of the basic concepts and process of REDD-plus including the SESA.

Undertake and summarize in this component your stakeholder mapping/analysis exercise to identify the relevant stakeholders that have an interest in the forest and those that may be affected either negatively or positively by proposed REDD-plus activities

A REDD+ stakeholder analysis was undertaken during the June 2011 National Planning Meeting for the SPC/GIZ project entitled: "Climate protection through forest conservation in Pacific Island countries." This was a multistakeholder meeting held in Port Vila.

During this meeting three different approaches were used in a stakeholder mapping exercise, in order to highlight different aspects of stakeholders' interests and relationships. Approach 1: Stakeholder Relations; Approach 2: Stakeholder Interests; Approach 3: Stakeholder Management.

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Approach 1: Stakeholder Relations Approach

The Stakeholder Relations approach categorised stakeholders according to the following definitions:

Key stakeholders: Those who have skills, knowledge or power to significantly contribute to the success of the Vanuatu REDD+ Programme.

Primary stakeholders: Those who are directly affected by REDD+, i.e. who stand to gain or lose.

Secondary stakeholders: Those who are indirectly or temporarily involved but can influence implementation and outcome to a degree that requires action from the Vanuatu REDD+ Programme.

This exercise resulted in the generation of a stakeholder map as illustrated in the photo on the right and presented as a diagram below.

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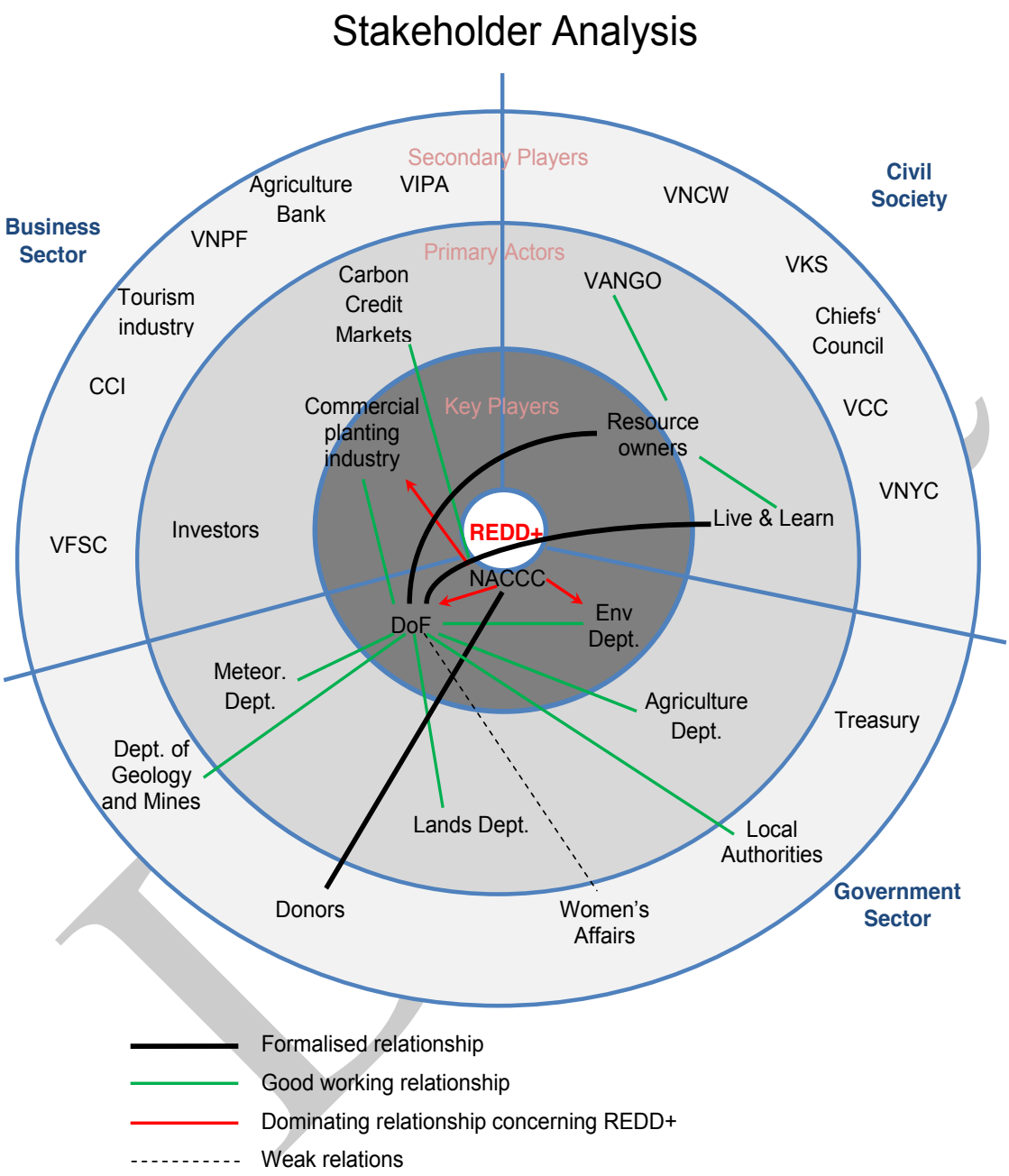
Vanautu REDD+ Stakeholder Map

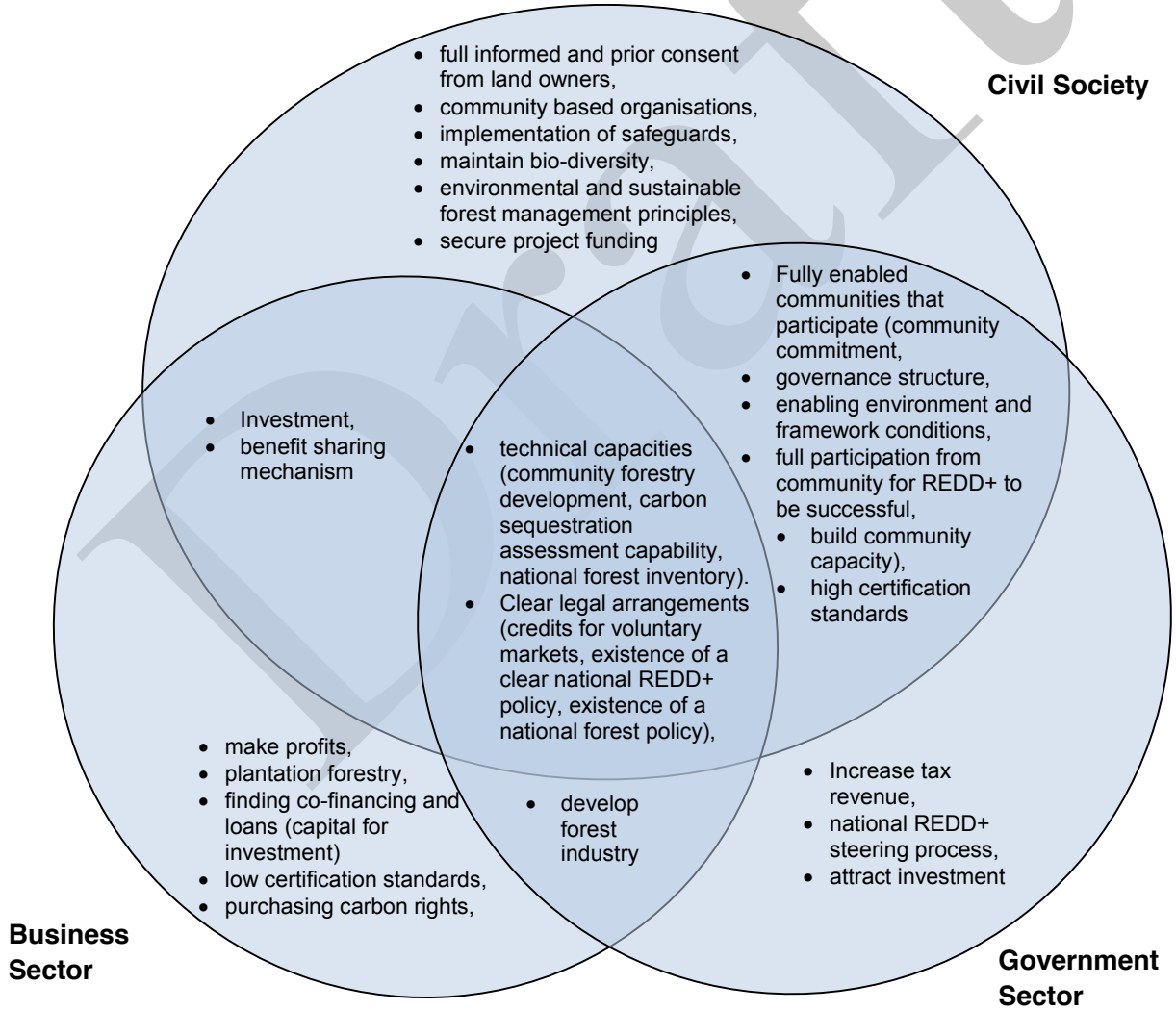


The group clearly defined DoF, DEPC and NACCC (now NAB) as key stakeholders while land owners and commercial plantations were sitting on the fence between key and primary stakeholdership. Other primary stakeholders included Department of Meteorology. Dept. of Agriculture, Lands Department, investors, carbon credit markets, Live & Learn as well as VANGO (Vanuatu Association of Non-Governmental Organisations). All other players were categorised as secondary stakeholders.

It was interesting to see that the perception is of good and trustful collaboration between most stakeholders while no conflicts were identified. NACCC/NAB was seen as being able to exert power over the other key players except for the land owners.

Approach 2: Stakeholder Interests Approach

The Stakeholder Interests approach focused on stakeholders' interests and tried to identify which interests concerning REDD+ are shared between groups of stakeholders. Stakeholders were again categorised between three groups: Government Sector including international agencies, Civil Society (including land owners) and the Business Sector. A graph with three intersecting circles allowed identifying interests exclusively held by one group as well as those held between two groups or all three of them.



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Exclusively held interests were identified as follows:

Government: Increase tax revenue, national REDD+ steering process, attract investment;

Business Sector: make profits, low certification standards, purchasing carbon rights, plantation forestry, finding co-financing and loans (capital for investment);

Civil Society: full informed and prior consent from land owners, community based organisations, implementation of safeguards, maintain biodiversity, environmental and sustainable forest management principles, secure project funding;

Shared by Government/Business: develop forest industry;

Shared by Civil Society/Business: Investment, benefit sharing mechanism;

Shared by Government/Civil Society: Fully enabled communities that participate (community commitment, governance structure, full participation from community for REDD+ to be successful, build community capacity), enabling environment and framework conditions, high certification standards;

Shared by all groups: Clear legal arrangements (credits for voluntary markets, existence of a clear national REDD+ policy, existence of a national forest policy), technical capacities (community forestry development, carbon sequestration assessment capability, national forest inventory).

The **third method** focused on how different stakeholders need to be managed appropriately as seen from the perspective of the key stakeholders, those who "run the show" (Department of Forests, Department of the Environment, NACCC).

Four options were made available:

1. Stakeholders who are essential to the entire operation and that need to be managed very closely: Lands Department, Department of Agriculture and Live & Learn. This should be done by including these together with the above mentioned key stakeholders in a future steering committee for REDD+.

2. Those who are important but not as directly influential as the first group and that need to be kept satisfied: Ministry of Agriculture, Fisheries and Forests, Council of Chiefs, Provincial Governments, Treasury, land owners as well as big commercial interests (e.g. Summit Estate – tree growing, Melcoffee – logging and processing, etc.). These should be directly and intensively involved in the policy development process. A second group of influential stakeholders are multilateral organisations and donors with on-going programmes. These will receive full reports on all steps of the process and participate according to their interests in the policy process.

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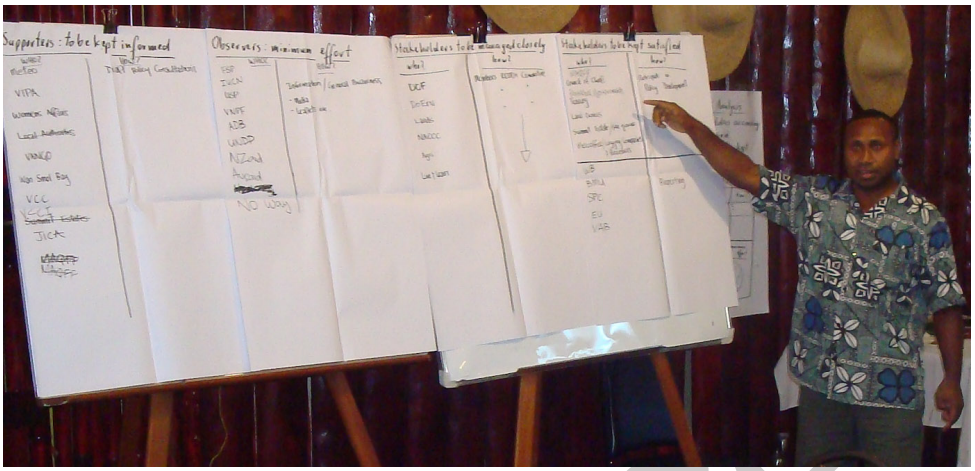

3. Supporters who can influence outcomes but have a fairly weak direct involvement. These will receive regular reports on progress: all donors having shown interest but not yet committed to any projects, Department of Meteorology, Women's Affairs, Vanuatu Investment Promotion Authority (VIPA), Chamber of Commerce (CCI), VANGO, Council of Churches (VCC), Won Smolbag theatre group.

4. Observers who cannot make much of a difference and where only a minimal effort is required on behalf of the REDD+ key players: Foundation for the People of the South Pacific (FSP), International Union for the Conservation of Nature (IUCN), University of the South Pacific (USP), Vanuatu National Provident Fund (VNPF).

Incorporate gender into information sharing and dialogue: Analysis of gender concerns should be conducted to identify potential gender-based risks and/or unequal benefits that can hamper the welfare of different social groups, especially women, youth and children

The Vanuatu REDD+ Programme will adopt an approach that is consistent with the recommendations of the National Plan of Action For Women 2007-2011. The Extension & Outreach programme will also pay particular attention to gender, both in terms of the staffing of Extension & Outreach and the approach to Extension & Outreach activities.

Further detail on this element is yet to be added.

Convene and summarize in this component a national level multi-stakeholder workshop to initiate the REDD-plus/R-PP information sharing, sensitization and awareness process. The workshop should include a broad range of local and national stakeholders

The first national-level multistakeholder REDD+ workshop was held in February 2008. The key outcome of this workshop was the generation of a multistakeholder mandate for the preparation of the Vanuatu R-PIN. A National REDD+ Planning Workshop was held in July 2011. A National REDD+ Policy Workshop was held in September 2012 as a training and consultation exercise to inform the development of the Vanuatu R-PP. Outputs from the consultation process in this workshop have formed the core inputs for Components 1 and 2 of this R-PP (Components 3 and 4a had been prepared prior to that workshop).

Participants who attended the National REDD+ Policy Workshop in September 2012 are listed in the table below:

National REDD+ Policy Workshop Participants, 19-21 September 2012, Port Vila		
Names of Participants	Organization	Contact Details
Vano Esrom Marek	Department of Women's Affairs	7118846, hesronvano@gmail.com
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Juha Seppala	World Bank	jseppala@worldbank.org
Martha Kaluatman	Presbyterian Church of Vanuatu	5455830
Pastor Shem Tema	Presbyterian Church of Vanuatu	7772852, 27300
Benwel Tarilongi	DQL	7749237
Johnny Koanapo	Department of Foreign Affairs	5688217
Michael Mangawa	Ministry of Lands	5989889
Karlton Sam	Ministry of Cooperatives	5955269
Donald James	Wan Smol Bag	5419968, 27119
Gina Tari	Live & Learn Environmental Ed.	5949283, 36807
Glarinda Andre	Live & Learn Environmental Ed.	27448
Angali Nelson	Live & Learn Environmental Ed.	27448
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Ioan Viji	Vanuatu REDD+ Coordinator	ioan_viji03@yahoo.com

Italics indicate participants appointed to the R-PP Drafting Committee.

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Prepare and disseminate a document summarizing all issues raised by participants in attendance, names affiliation of participants attending, and views on the next outreach steps. Information from these various meetings/workshops should be disclosed through existing public information channels

The participants who attended the National REDD+ Policy Workshop and who contributed to the drafting of this R-PP will all receive a copy of the draft R-PP prior to its finalisation. Several participants to this workshop formed the Vanuatu R-PP Drafting Committee, who will meet in December 2012, and again in January 2013 to review and approve the R-PP prior to submission to the FCPF.

Feed the most critical information distributed and comments received during the outreach session into the drafting process for relevant components of the R-PP

The National REDD+ Policy Workshop involved training and awareness raising for participants (days 1 and 2) followed by an R-PP drafting session (day 3). This session involved multistakeholder dialogue resulting in core elements for input into Components 1 and 2 of this R-PP.

Discuss the potential elements of a consultation and participation plan that would be drafted during the R-PP formulation phase and implemented during the R-PP implementation phase

First Draft R-PP – 6 August 2012

The first draft of the Vanuatu R-PP (Version 1) was collated by the Vanuatu REDD+ Policy Consultant immediately following recruitment of this consultant in late July 2012. The first draft of the Vanuatu R-PP was hastily put together using:

a. Elements that had been prepared by the Secretariat of the Pacific Community (SPC) and GIZ during late 2011 through to mid 2012 (Components 3 and 4a), and

b. Elements available from existing documents such as the Vanuatu R-PIN.

Because much of the work to generate the content for the policy elements of the R-PP was yet to be undertaken, the version of the R-PP submitted for the 6 August deadline was largely empty of policy content but submitted as a placeholder. Subsequent work for the completion of the R-PP was defined in an R-PP Formulation Roadmap as follows:

Vanuatu R-PP Formulation Roadmap

1. REDD+ MRV Standards Workshop: 17 September 2012

The Director and senior staff of the Vanuatu Forestry Department requested an in-house workshop focusing on REDD+ MRV standards. This is designed to help the Forestry Department come to a clearer understanding of the MRV standards required in national and sub-national scale REDD+ implementation. This training workshop also provided an opportunity to review the RED/RL, forest carbon monitoring and MRV elements of the current R-PP that have been drafted by GIZ.

2. National REDD+ Policy Workshop: 19-21 September 2012

The National REDD+ Policy Workshop involved training and awareness raising for participants (days 1 and 2) followed by an R-PP drafting session (day 3). This session involved multistakeholder dialogue resulting in core elements for input into Components 1 and 2 of this R-PP.

3. Submission of R-PP Version 2: 28 September 2012

R-PP Version 2 submitted to FCPF incorporating elements mandated at the National REDD+ Policy Workshop on 19-21 September 2012.

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4. Vanuatu Representation at FCPF Participants Committee Meeting, Brazzaville: 20-23 October 2012

Self explanatory.

5. R-PP Extension & Outreach: October – December 2012

A REDD+ Extension & Outreach Programme has been initiated for implementation during October – December 2012 (and possibly extending to the end of January 2013). This involves the following:

a. Training & Planning Workshop (15-16 October 2012)

b. Delivery of Extension & Outreach Programme to 4 of the 6 Provinces (October – December 2012).

6. R-PP Version 3 Drafting: October – December 2012

The Vanuatu REDD+ Policy Consultant will prepare R-PP Version 3 for review by the R-PP Drafting Committee.

7. R-PP Drafting Workshop 1: 11-12 December 2012

This will involve a meeting of the R-PP Drafting Committee to review the draft version of the R-PP available by that date. The outcome of this drafting committee meeting will include a) Drafting Committee approval for R-PP elements, b) Drafting Committee recommendations for changes to R-PP elements, and c) recommended inclusions in the R-PP arising from the Extension & Outreach consultations.

8. R-PP Version 4 Drafting: 13 December 2012 – 15 January 2013

The Vanuatu REDD+ Policy Consultant will prepare R-PP Version 3 for review by the R-PP Drafting Committee.

9. R-PP Drafting Workshop 2: 15-16 January 2013

This will involve a meeting of the R-PP Drafting Committee to review the final version of the R-PP. The outcome of this drafting committee meeting will include a) Drafting Committee approval for R-PP elements, and b) Drafting Committee recommendations for minor changes to R-PP elements.

10. R-PP Endorsement by NAB: 18 January 2013

11. Submission of R-PP to FCPF: 21 January 2013

Identify existing feedback and grievance redress mechanisms in place that allow disagreements to be elevated to a neutral authority, or discuss how such a mechanism could be put in place with stakeholders during discussions

The feedback mechanism during R-PP drafting is contained in the Roadmap presented above.

* * *

The budget for this component is yet to be developed.

Table 1b: Summary of Information Sharing and Early Dialogue with Key Stakeholder Groups Activities and Budget						
Main Activity	**Sub-Activity**	**Estimated Cost (in thousands)**				
		2011	**2012**	**2013**	**2014**	**Total**
		$	**$**	**$**	**$**	**$**
		$	**$**	**$**	**$**	**$**
		$	**$**	**$**	**$**	**$**

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		$	$	$	$	$
		$	$	$	$	$
		$	$	$	$	$
Total		$	$	$	$	$
Government		$	$	$	$	$
FCPF		$	$	$	$	$
UN-REDD Programme (if applicable)		$	$	$	$	$
Other Development Partner 1 (name)		$	$	$	$	$
Other Development Partner 2 (name)		$	$	$	$	$
Other Development Partner 3 (name)		$	$	$	$	$

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1c. Consultation and Participation Process

Standard 1c the R-PP text needs to meet for this component:
Consultation and Participation Process:

Ownership, transparency, and dissemination of the R-PP by the government and relevant stakeholders, and inclusiveness of effective and informed consultation and participation by relevant stakeholders, will be assessed by whether proposals and/ or documentation on the following are included in the R-PP (i) the consultation and participation process for R-PP development thus far (ii) the extent of ownership within government and national stakeholder community; (iii) the Consultation and Participation Plan for the R-PP implementation phase (iv) concerns expressed and recommendations of relevant stakeholders, and a process for their consideration, and/or expressions of their support for the R-PP; (v) and mechanisms for addressing grievances regarding consultation and participation in the REDD-plus process, and for conflict resolution and redress of grievances.

Consultations held so far in the development of the R-PP:

The national multistakeholder consultation and participation process for REDD-plus was hampered by a lack of funds to support a consultation process. This has been remedied to some extent by the FCPF R-PP grant, and accordingly, a multistakeholder consultation and participation process is currently under development for implementation through the third and fourth quarters of 2012. Vanuatu has been part of an international REDD-plus consultation process through the SPC/GIZ regional project entitled: "Climate Protection Through Forest Conservation in Pacific Island Countries". This has included Vanuatu participation at regional REDD-plus technical and policy workshops from 2009 – 2012.

Present the consultation and participation plan for engagement of stakeholders in the REDD-plus development process (required to be presented here), which should discuss how the existing consultations will be broadened during the R-PP implementation phase

Expanded consultation and participation plan for 2013 and 2014.

Enter additional text here

Explain how representative participation of forest-dependent indigenous peoples and other forest dwellers and forest-dependent communities and other civil society would be ensured. Present outreach mechanisms to reach different stakeholders, especially to those groups whose livelihoods will likely be negatively impacted by REDD-plus

The REDD+ Extension and Outreach Programme is still being designed (scheduled for completion by end of October 2012). It is being prepared by a CSO organization (Live & Learn Environmental Education) who will be responsible for implementing the Extension and Outreach component of the R-PP formulation phase.

Describe the methods used for consultations for the different components of the R-PP. Explain how publicly available summary reports of the consultation meetings, workshops, etc., e.g., dates and venues, list of attendees, issues raised will be ensured and made available. Describe how neutral facilitation of the consultations will be achieved

Enter text here

Explain how the feedback from stakeholders will be incorporated into the REDD-plus readiness process, including feedback on key environmental and social risks as perceived by the stakeholders

Enter text here

Explain how stakeholders will participate in:

(i) selection of environmental and social issues and priorities associated with the drivers of deforestation in components 2a and 2d,

(ii) (ii) scoping of key environmental and social risks associated with REDD-plus strategy options in component 2b;

(iii) (iii) validation of the legal, institutional, regulatory and capacity building recommendations to address existing gaps or issues in managing environmental and social priorities in components 2c and 2d; and, (iv) validation of mitigation and compensation measures developed to address any potential environmental and social impacts of REDD-plus strategy options in component 2d.

Enter text here

Describe procedures for disclosure of information in the preparation and implementation of the R-PP and specify the procedures for disclosure of information on environmental and social issues

Enter text here

Development of the plan should be informed by the consultation guidelines note in Annex B developed by FCPF and the UN-REDD programme, and guidelines in component 2d. This guidelines note identifies eight practical steps for effectively conducting consultations:

a. Define the desired outcomes of consultations
b. Identify stakeholders that have a stake/interest in the forest and those that will be affected by REDD-plus activities
c. Select the consultation and outreach methods
d. Define the issues to consult on that broadly correspond to the Readiness Preparation Proposal components
e. Develop a Consultation and Participation Plan and request endorsement through a national stakeholder workshop
f. Establish a grievance redress mechanism
g. Conduct the consultations with relevant stakeholders at different levels within community and organizations
h. Analyze and disseminate results

Enter text here

* * *

The budget for this component is yet to be developed

Table 1c: Summary of Consultation and Participation Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2011	2012	2013	2014	Total
		$	$	$	$	$

		$	$	$	$	$
		$	$	$	$	$
		$	$	$	$	$
		$	$	$	$	$
		$	$	$	$	$
Total		$	$	$	$	$
Government		$	$	$	$	$
FCPF		$	$	$	$	$
UN-REDD Programme (if applicable)		$	$	$	$	$
Other Development Partner 1 (name)		$	$	$	$	$
Other Development Partner 2 (name)		$	$	$	$	$
Other Development Partner 3 (name)		$	$	$	$	$

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Component 2: Prepare the REDD-plus Strategy

2a. Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance

Standard 2a the R-PP text needs to meet for this component:
Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance:

A completed assessment is presented that: identifies major land use trends; assesses direct and indirect deforestation and degradation drivers in the most relevant sectors in the context of REDD-plus; recognizes major land tenure and natural resource rights and relevant governance issues and shortcomings; documents past successes and failures in implementing policies or measures for addressing drivers of deforestation and forest degradation; identifies significant gaps, challenges, and opportunities to address REDD-plus; and sets the stage for development of a national REDD-plus strategy to directly address key land use change drivers.

Identify the underlying causes of deforestation and forest degradation, considering implications for REDD-plus of direct and indirect drivers and factors both within and outside the forest sector, major land use trends and forest policy and governance issues.

Assessment Of Land Use, And Land Use Change Drivers

There is no full and comprehensive assessment of Vanuatu's deforestation and forest degradation history and related processes. However, Vanuatu has undertaken the first steps for national Forest Area Change Assessment as part of the Vanuatu Carbon Credits Project. Using satellite data, areas experiencing deforestation for 1990-2000 have been mapped and identified. A significant threat to forest carbon stocks in Vanuatu is forest degradation through high intensity selective logging followed by subsequent forest degradation caused by slash and burn agriculture and the effects of invasive weeds. Forest degradation occurs throughout the Vanuatu island group but is more prevalent on the larger islands such as Santo, Malekula, Efate, Pentecost, Erromango, Tanna, and Ambrym.

The current stage of knowledge emphasizes rather low rates of historical forest loss compared to other nations in the region (e.g. Solomon Islands and Papua New Guinea). There is a clear threat of increasing international pressure and drivers for Vanuatu, i.e. following the loss of timber resources in the Solomon Islands in coming years.

There is some deforestation caused by naturally occurring events such as cyclones and active volcanoes. Human-induced forest degradation often is the precursor to extensive damage amplifying the effects from natural hazards.

There is some level of deforestation caused through timber harvesting with the use of portable sawmills but is classified as being minor issue mostly in areas close to the main centers like Port Vila, Luganville and Lakatoro. Other main causes of degradation of land close to the main centers is mostly related to settlements taking up arable agricultural land.

The drivers and amount of deforestation and degradation of forest vary for the different islands with most deforestation happing on the islands of Santo, Efate, Tanna and Erromango. Preliminary analyses on the national level suggest that about 50% of all deforestation is due to subsistence land use. Conversion to agriculture and subdivisions have been the most prominent causes of deforestation in recent years. The activities of international logging companies (particularly Malaysian companies) has played an important role in the reduction of forest carbon stocks in Vanuatu in the last 20 years, mainly forest degradation through high intensity selective logging. Currently there are no Malaysian logging companies in Vanuatu (they were expelled from the country in the late 1990s), but there is a chance they will seek to return once the economically available timber resource in the Solomon Islands is exhausted following 2014.

In addition, there is an expectation that economic development in the land sectors is going to increase in the coming years. For example, roads on the major islands will be paved in coming years and further land based development is planned and expected following improved road access to areas with potential for commercial agriculture. Urban and peri-urban development is expected to continue, and this is likely to be associated with some degree of deforestation as was observed with urban development between 2000 and 2005 on Efate (particularly near the capital Port Vila),

Strategically, this is an ideal time to redesign the Vanuatu forest sector development strategy to take current and future economic pressure off indigenous forests by setting up alternative forms of productive activities in the forest sector that can satisfy demand for forest sector economic development. Furthermore, a strategy that emphasized a stronger link between forestry and agriculture, through agroforestry would help to meet the demand for land-based production, timber as a raw material, whilst taking pressure off the natural forest resource. In addition to agroforestry, we see afforestation and reforestation to play an important role in helping to meeting the development needs of the forest sector whilst allowing natural forests to remain protected where possible and appropriate.

Enter additional text here

Overview of the country situation in relation to deforestation and forest degradation, and forest enhancement activities.

Enter text here

Identify key laws, policies, strategies, and programs relev*a*nt to REDD-plus.

Forest Law

Vanuatu forest law and forest carbon law was reviewed by the VCCP in 2007 (Holt, Sullivan and Weaver 2007). The following sections summarize the findings of this review.

Vanuatu forestry law governed by statute is limited to commercial forestry operations. The major piece of legislation is the Forestry Act, which sets out the full process from approval to negotiate, to applying for timber permits. One of the principles of forestry administration found in the Forestry Act is that 'the rights of custom owners and other Ni-Vanuatu with customary interests in forests must be recognized'[1] and the ownership of timber rights on land is determined in accordance with custom. This is much the same as all land rights and indeed ownership of the land itself. The Forestry Act requires non-custom owners or commercial forestry operators to obtain licenses and permits in order to have timber rights for commercial forestry operations.[2]

[1] Forestry Act 2001, s4.

[2] Forestry Act 2001, s31.

The process for acquiring timber rights is set out in the Forestry Act. Consent may be given by the owners for either a 75 year Forestry Lease or a 10 year Timber Rights Agreement (TRA). A Forestry Lease gives the leaseholder rights to the forest with the purpose: 'to establish, maintain and harvest timber from a crop of trees.'[3] The final step is to obtain a license, which can be one of four types granted under the Forestry Act: timber license, mobile sawmill license, sandalwood license and special license. The special license allows the Director of Forestry to authorize forestry operations that do not fit under any of the other license types. This would allow commercial forestry operations to take place on the land but without the requirement for a TRA that is needed for a timber license.

The Forestry Rights Registration and Timber Harvest Guarantee Act (FRRTHG Act) defines a 'forestry right' in relation to land to include 'a carbon sequestration right in respect of the land'. A 'carbon sequestration right' is defined as follows:

> 'in relation to land, means a right conferred by agreement or otherwise to the legal, commercial or other benefit (whether present or future) of carbon sequestration by any existing or future tree or forest on the land;'[4]

These rights vest with the customary owners of the land, and with individuals that hold leases over land.

The FRRTHG Act allows that a carbon sequestration right could be considered a *profit a prendre*[5] or a legal right to enter and take from the land. The scope of the carbon sequestration right is very broad, and extends beyond strict legal rights associated with the carbon to also include commercial interests as well as any other types of beneficial rights that may be associated with the carbon. By allowing for rights with respect to existing and future trees, the carbon sequestration rights are also applicable to regeneration and reforestation projects as well as those projects that involve the protection of existing forest.

The Forestry Act does not refer to carbon sequestration rights. A 'forest product' is defined as 'timber and any other material yielded by a forest' and it is unclear whether or not carbon sequestration rights (as well as emission reduction rights) fall within the catch all of 'any other material yielded by a forest'. If carbon credits are considered a 'forest product' under this definition, the sale of carbon credits would be considered a 'commercial forestry operation'[6] that must go through the negotiating and license process in the Forestry Act.[7]

In summary, Vanuatu legislation defines carbon sequestration rights as a forestry right under the FRRTHG Act, but also opens up the avenue that it could be considered a *profit a pendre*. It may also be possible to consider carbon rights within the definition of a 'forest product' under the Forest Act, which would place it in the same category as timber and require the same process of consents. In either

[3] Forestry Act 2001, s30.

[4] Forestry Rights Registration and Timber Harvest Guarantee Act 2000, s1.

[5] Forestry Rights Registration and Timber Harvest Guarantee Act 2000, s6. 'Forestry right deemed to be a profit for certain purposes

6. (1) A forestry right is taken to be a profit for the purposes of section 70 of the Land Leases Act [CAP. 163].

(2) A forestry right is taken to be a profit for the purposes of paragraph 71(1)(a) of the Land Leases Act [CAP. 163] and that paragraph applies in relation to a forestry right as if a reference to 'obsolete' were a reference to 'abandoned'. To avoid doubt, paragraphs 71(1)(b) and (c) do not apply in relation to a forestry right.'

[6] Forestry Act 2001, s3 states **'commercial forestry operations** means: (b) the removal of timber or other forest products from a forest for the purpose of its sale, or the sale of its products;'

[7] Forestry Act 2001, s15. 'Commercial forestry operations may be conducted only in accordance with an agreement made under this Part.'

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instance, the customary owners of the land would be the prima facie owners of any carbon rights and have the ability to assign these rights to third parties unless decided otherwise by the government.

Forest Policy

The Government of Vanuatu released the Vanuatu Forest Policy 2011-2020 in June 2011. This forest policy builds upon existing forest policies and legislations. In 1991, the Government of Vanuatu established the National Forestry Program, which had the Vanuatu National Forest Policy Statement of 1997 as an important outcome. In 2001 the Forestry Act was promulgated, which superseded the Forest Act of 1982. The implementation of the forest policy was further supported by a number of other laws, such as the International Trade (of flora and fauna) Act (1989); the National Parks Act (1993); the Forestry Rights Registration and Timber Harvesting Act (also called Plantation Act, 2000) and the Environmental Management and Conservation Act (2007).

The vision statement of this policy states: "*Trees and forests of Vanuatu are equitably, sustainably and profitably managed and conserved, contributing to development for the on going well-being of all people in Vanuatu in the context of global change*." This is accompanied by the following goal: "*The nation's forest resources are managed in an integrated and sustainable manner and provide wood and non-wood forest products as well as environmental and social services to contribute profitably to income generation, employment opportunities, and social well-being for all people in Vanuatu, and thus to sustainable economic growth*." The delivery of this goal is by means of the following objectives:

- Vanuatu's forests are sustainably developed and managed.
- Deforested areas are rehabilitated and reforested.
- Stakeholders and communities actively participate in sustainable forest management and utilization.
- The forestry sector contributes increasingly and equitably to the welfare and livelihoods of landowners, farmers, industry and communities.
- Forests with high biological, cultural, spiritual, and historical values are conserved and protected.
- The forestry sector proactively incorporates climate change adaptation and mitigation challenges and opportunities.
- The forestry sector embraces climate change mitigation and GHG emission reduction through reducing deforestation and degradation, and increasing afforestation and reforestation.
- Forest industries are modernized and utilize appropriate technologies.
- Forests are managed in an integrated manner to provide economic, social and environmental services.
- Forest products and services are marketable and tradable.
- Prices for forest products and services are nationally and internationally competitive.
- Forest production is sufficient for local consumption and export of surplus.
- Forest industries are increasingly Ni–Vanuatu owned and operated.
- The forestry sector is efficient, well organized and resourced (both financial and human).
- The forestry sector is a primary source of income generation.
- The forestry sector is well governed and guided by effective legislation and strong compliance.
- The forestry sector is well coordinated and collaborates with other sectors.

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- Forestry stakeholders are competent and qualified.
- The public is well-informed and educated on all forestry issues.
- The forestry sector is well guided by collaborative research and abides by internationally recognized standards.

The Vanuatu Forest Policy has specific objectives relating to climate change mitigation:

K. Climate Change Mitigation

22. Integrate climate change mitigation issues into forestry sector planning and activities.

- Develop a national REDD+ initiative (DoF, NACCC & NGOs), 1;
- Develop national REDD+ Policies, Strategies and Legislations including governance structures (DNA, NACC), 1;
- Conduct national forest carbon stock assessments in accordance with IPCC guidelines as part of the new forest inventory (DoF, NACCC), 1;
- Entrust the "Designated National Authority" (DNA) as the formal entry-point and responsible party for forest carbon projects (NACCC), 1;
- Monitor the international negotiation process on forests and climate change (NACCC, DNA), 1;
- Establish and manage community and forest conservation areas for carbon storage (DEPC, Communities, Province, NGO, DOF), 2;
- Reduce forest degradation and related emissions from natural forests by applying the principles of SFM (DoF, Forest users, Licensees, Province), 2;
- Undertake socio economic assessments to identify most cost effective REDD+ projects with co-benefit provisions (NACCC, DNA), 2;
- Consolidate the assessment of historical carbon emissions from deforestation and forest degradation (land-use change assessment), started under the Vanuatu Carbon Credits Project (VKSP), and establish the national Reference Emission Levels and Reference Levels for REDD+ (NACCC), 2;
- Establish a national forest carbon monitoring system for monitoring, reporting and verification of forest carbon stock changes according to the IPCC Good Practice Guidance for Land- Use , Land-Use Change and Forestry (LULUCF-2003) and the Guidelines for National Green- house Gas Inventories for Agriculture, Forestry and other Land Use (AFOLU, 2006) (NACCC, DoF), 2;
- Apply REDD+ approaches including incentive schemes on the ground in pilot projects (Aid Coordination Unit (DESPPAC), NACCC, NGOs), 2;
- Formalize procedures for national and international forest projects in Vanuatu under the compliance and voluntary carbon markets (NACCC, VIPA, DoF, DNA, NGOs), 2;
- Introduce compliance with the "Voluntary Carbon Standard" as one of the conditions for such projects (NACCC, DoF, DNA), 2;
- Prescribe the involvement of respective line departments in scrutinizing forest carbon projects (PSC, NACCC, DoF), 2;
- Enable the private sector to investigate carbon storage and carbon emission reducing project opportunities (Gov); 1

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- Strengthen the DNA and build the necessary institutional capacity to deal with REDD+(NACCC, Gov), 2;
- Regulate the establishment of forest plantations for the generation of carbon credits (DoF, NACCC); 2.
- Prioritize the REDD+ mechanisms and approaches that will be used in Vanuatu, specifically those where additionality can be verified, and economic returns are maximized (DoF NACCC); 1

Vanuatu Policy Framework for REDD+

Vanuatu is yet to develop its REDD+ Policy, but has begun to scope out the broad architecture of a policy by developing a draft Policy Framework for REDD+ modelled on the Pacific Regional Policy Framework on REDD+. Version 1 of the Vanuatu Policy Framework for REDD+ is presented in Annex 2a.

Identify major relevant knowledge gaps and capacity constraints that play a role in deforestation, forest degradation and the other REDD-plus activities that need to be analyzed in more detail. Considerations in this assessment include:

a. Whether policies and laws provide positive or perverse incentives that drive deforestation;
b. Pertinent laws, policies, and issues surrounding land tenure and resource rights, and traditional land use of indigenous people,
c. Extent of titled and untitled indigenous lands, indigenous claims for additional land "extensions;" and process of land title demarcations;
d. How accountability in existing revenue distribution systems is addressed or planned to be addressed; the effectiveness of law enforcement systems; and
e. How coordination of existing policy processes occurs, especially relating to land use decisions.

Enter text here

Analysis of performance of past efforts to reduce deforestation or forest degradation and promote conservation and sustainable management of forests.

Enter text here

Analysis of past governance and enforcement challenges, and lessons learned, potential opportunities, and key barriers.

Enter text here

Major potential deforestation reduction approaches, by major cause and driver of deforestation and degradation.

Enter text here

Identify forest governance assessment framework for REDD-plus.

Governance

Unlike many other ex-colonies, the land and all associated rights were not vested in the Crown or Government, but in the native people as customary owners. This was entrenched in the 1980 Constitution, Chapter 12. The main sections of Chapter 12 set out that the land belongs to indigenous

custom owners and that only indigenous citizens who have acquired their land in accordance with a recognized system of land tenure can own it in perpetuity.

It is worth noting that Vanuatu is also governed by its indigenous people with the parliament and the civil service overwhelming dominated by indigenous ni-Vanuatu.

All forest areas in Vanuatu are owned by indigenous people living in villages either in the forest or near the forest. All REDD activities will need to involve these people in decisions about the future management of their forest resources as an integral part of any future management regime for Vanuatu's forests.

National Government

The responsibility for the regulation and administration of the forestry sector throughout Vanuatu rests with the National Government. It enacts forestry legislation It ensures the provision of adequate resources (i.e. trained staff, funds) to implement the National Forest Policy. The National Government consults with Provincial Governments on relevant forestry matters. Forestry falls into the domain of the Ministry of Agriculture, Forestry and Fisheries (MAFF). A forestry board provides advice to the Minister and the Prime Minister on forestry issues, particularly forest use negotiations and forest policy. The Forestry Board consists of the Directors of Forestry, Environment, and Lands.

Department of Forests

The Department of Forests (DoF) has the administrative responsibility to manage the forestry sector throughout Vanuatu. It leads the implementation of the National Forest Policy and implements and enforces the forestry legislation. The Department of Forests issues licenses and permits for forestry enterprises. It promotes the integral and sustainable management of all forest resources for the supply of products and services. It approves utilization operation agreements and ensures that all forest-related orders and codes are implemented. It collects information about forest resources, conducts forest research and facilitates the development of commercial plantations and agro-forestry systems. It provides advice on forest conservation, protected areas and National Parks. The DoF provides forest policy advice to the Government and ensures the sustainable management and conservation of Vanuatu's forests.

Other National Government Institutions

The DoF cooperates with other national government agencies such as the Department of Lands (DoL), Department of Agriculture and Rural Development (DARD), Department of Environmental Protection and Conservation (DEPC) and the National Advisory Committee on Climate Change (NACCC) to implement and support the various strategies under this National Forest Policy. The Departments of Finance (DoFi), Customs (DoC), and Industry, Trade and Commerce cooperate with the Department of Forestry to strengthen the forest industry.

Provincial Governments

The Provincial Governments (PG) issue Business Licenses, assist with the development and implementation of provincial land use plans, and facilitate the development of forest industries and plantations as well as the necessary supporting infrastructure. They facilitate the protection of conservation areas identified by landowners and assist in the resolution of landowner disputes. The Provincial Governments assist the DoF in providing advice to communities and in monitoring forestry operations. The DoF consults the Provincial Governments about forestry operations, including the issue of timber licenses and annual logging plans.

Customary Chiefs

The DoF recognizes the role of customary chiefs and cooperates with them in matters such as notification of logging plans, identification of tabu sites, and resolution of disputes.

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Landowners and Communities

Landowners decide how their forest resources are managed. They identify land boundaries and assist the DoF in monitoring forestry operations. They are involved in harvesting, mobile sawmilling and tree planting on their land. Communities assist landowners in decisions on forest resources management and are encouraged to actively participate in forest development.

Forest Industry

The forest industry negotiates with landowners on areas for timber harvesting and tree planting. The industry prepares logging plans and implements these in accordance with the Code of Logging Practice. The industry cooperates with the government in developing rural infrastructure as well as a skilled rural workforce. It develops value-adding timber processing facilities that provide competitive forest products for domestic and export markets. It finances the implementation of afforestation and reforestation efforts and assists the DoF in research.

Non-Government Organizations

NGOs with clearly defined objectives and strategies are encouraged to closely cooperate with the DoF to promote sustainable forest management at the commercial and community levels, as well as the conservation of forest resources.

Enter additional text here

Using forest governance assessment framework (tailored to the scope of the REDD-plus program)

a. Analyze governance systems and structures
b. Formulate a governance reform strategy based on the diagnosis
c. Select indicators relevant to stakeholders through a qualitative and participatory process
d. Monitor whether the reform strategy is being implemented properly and with the right kinds of impacts and outcomes.

Enter text here

Key environmental and social issues leading to deforestation and forest degradation

Enter text here

Information sharing and consultation which has occurred in the development of this assessment

Enter text here

Information sharing and consultation planned as part the Consultation and Participation Plan.

Enter text here

* * *

The budget for this component is yet to be developed.

Table 2a: Summary of Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance Activities and Budget (Follow-up Activities Needed)		
Main Activity	**Sub-Activity**	**Estimated Cost (in thousands)**

		2011	2012	2013	2014	Total
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
Total		**$**	**$**	**$**	**$**	**$**
Government		$	$	$	$	**$**
FCPF		**$**	**$**	**$**	**$**	**$**
UN-REDD Programme (if applicable)		$	$	$	$	**$**
Other Development Partner 1 (name)		$	$	$	$	**$**
Other Development Partner 2 (name)		$	$	$	$	**$**
Other Development Partner 3 (name)		$	$	$	$	**$**

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2b. REDD-plus Strategy Options

Standard 2b the R-PP text needs to meet for this component: REDD-plus strategy Options

The R-PP should include: an alignment of the proposed REDD-plus strategy with the identified drivers of deforestation and forest degradation, and with existing national and sectoral strategies, and a summary of the emerging REDD-plus strategy to the extent known presently, and/or of proposed analytic work (and, optionally, ToR) for assessment of the various REDD-plus strategy options. This summary should state: how the country proposes to address deforestation and degradation drivers in the design of its REDD-plus strategy; a plan of how to estimate cost and benefits of the emerging REDD-plus strategy, including benefits in terms of rural livelihoods, biodiversity conservation and other developmental aspects; socioeconomic, political and institutional feasibility of the emerging REDD-plus strategy; consideration of environmental and social issues and risks; major potential synergies or inconsistencies of country sector strategies in the forest, agriculture, transport, or other sectors with the envisioned REDD-plus strategy; and a plan of how to assess the risk of domestic leakage of greenhouse benefits. The assessments included in the R-PP eventually should result in an elaboration of a fuller, more complete and adequately vetted REDD-plus strategy over time.

Produce a workplan for developing, assessing, and prioritizing various REDD-plus strategy options that will address the drivers of deforestation and/or forest degradation outlined in Component 2a. Include a sequence and schedule of activities, and the consultation aspects (included in the Consultation and Participation Plan).

Summary Of Preliminary REDD-Plus Strategy Options

The completion of Phase 1 of the Vanuatu REDD+ Programme was marked by a national REDD+ Roadmap Workshop held in February 2008. Outcomes of the Workshop included the following priorities for capacity building and seeking international support for REDD readiness and implementation:

Forest priorities	**Carbon management dimension / REDD issues and opportunities**
National forest inventory: ➢ Some useful existing data and experiences ➢ Goal: full national inventory of forest resources	• Capacity building • Improve REDD readiness with full carbon stock assessment • Include remote sensing area change for historical emissions estimates (See below on "Vanuatu REDD Monitoring System Proposal")
Conservation activities: ➢ Some existing, some to be initiated, some proposed ➢ Guidelines for monitoring and management	• Demonstration activities on "avoiding deforestation", e.g. for medium risk/concession areas e.g. Erromango Kauri/Sandalwood tree conservation area • Evolve national monitoring system • Inventory of existing and proposed of conservation areas
Production forestry/plantations: ➢ Focus on indigenous/local tree species ➢ Production of biofuels	• AR activities to increase forestry/carbon sequestration/biofuel production capacities • Reuse invasive species plantations: *Cordia alliodora* plantations / link to bioenergy

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	• Monitoring/quantification of forest "sink" capacities
Research on Agroforestry	• Establish an Agroforestry unit and boost agroforestry capabilities in the Department of Forests • Sustainable land use activities (of degraded forest area) with link to energy production i.e. Butmas case of Agro-silvopastural activities and potential link with avoiding deforestation
Institutional capacity to engage in climate change issues	• REDD national monitoring capacity • Capacity building, support and participate in national/international policy development • Multiple benefits of improved forest monitoring
National forest policy to accommodate climate change issues	• Option for climate change mitigation masterplan for Vanuatu • Role of forests/forestry in nationwide land use planning

Agroforestry is an area that has great potential to enable the forest sector to shift to a more climate friendly format. This is because agroforestry is an activity that is capable of combining carbon sequestration with food production – particularly when producing nuts from tall canopy tree crops. The Pacific island countries of Papua New Guinea, the Solomon Islands and Vanuatu are well endowed with indigenous tree crop species with food production potential - especially nut species (e.g. 'Galip', 'Ngali' or 'Nangae' nut (*Canarium indicum*); 'Karuka' *(Pandanus julianattii),* 'Okari nut' (*Terminalia kaernbachii*), 'Pau' or 'Cutnut' (*Barringtonia procera* and *B. edulis*) and 'Aila' (*Inocarpus fagifer*); 'Finschia nut' (*Finschia waterhousiana*). Other opportunities include linking REDD with A/R and bioenergy in an integrated cross-sectoral approach to the issue.

Since 2008 Vanuatu has observed developments in REDD-plus policy and strategy in Fiji, and participated in Pacific Regional REDD-plus policy and strategy development that has informed its current thinking on REDD-plus strategy.

SPC/GIZ Contribution 2011:

REDD+ readiness

Based on the opportunities that the SPC/GIZ project can offer and after a brief review of the draft Vanuatu Forest Policy concerning REDD+, a discussion ensued to determine which would be the priorities for future collaboration between Vanuatu and the SPC/GIZ Project. It was stressed that the Project is not capable or mandated to use its funds to invest in specific forestry projects in terms of planting or such. The Project is intended as an "enabler" so that the stakeholders can properly fulfil the preparatory work for REDD+ and then implement those activities that are necessary to satisfy the requirements for successful REDD+ projects. (The other big area where the Project will be active is in supporting individual pilot or demonstration sites but this was to be treated in a further step, see below). The following details emerged and found consensus:

1. Policy process for REDD+
2. Advisory body needs to be established and proper institution building done (technical committee under NAB)
3. Strategy design process; One option stated was to take the existing draft Forest Policy as the point of departure and to establish expert groups to design a specific REDD+ policy and strategy. This option takes into account that the Forest Policy is based on an intensive consultation process that need not be repeated so early afterwards. The validation of the REDD+ policy and strategy would then also involve a decision made by Government.

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4. MRV system development:
    a. Forest area change
    b. Carbon stock assessment
    c. Forest inventory
    d. Greenhouse gas (GHG) inventory
    e. Set up a monitoring system for continued implementation of the MRV system (methodology, institutional arrangements, financing)
    f. Training on MRV system to be done very soon in order to kick start the process

    The degree to which assistance is needed from the Project varies, e.g. the Vanuatu DoF seems to have the manpower and expertise to undertake a full forest inventory. Further discussions will sort out the details.
5. Assistance to amend laws and regulations as necessary after policy validation
6. Elaborate guidelines at national level that will give clear orientation and standards on how participatory processes should be run in future pilot projects funded by actors entering the REDD+ sector.

As a guiding principle it was stated that all activities must be carried out with direct involvement of Vanuatu staff. If consultants are hired to deliver expertise that is unavailable in Vanuatu, the consultant will be required to involve relevant staff in his/her work, to explain in detail how for example calculations were done, why certain choices were made and to train staff in order to enable them to better master the entire REDD+ subject matter even if not always to an extent that they would be capable of doing the work themselves. The terms of reference of such consultancies must include clear requirements concerning this type of capacity enhancement.

Pilot Sites

Pilot site selection criteria were developed as followed:

Obligatory criteria (must be satisfied):

1. The representative structure of land owners must be locally-based and generally accepted by its members.
2. There must be no recent or existing violent disputes within the project requesting group or with outsiders concerning the proposed pilot site.
3. The request for the pilot site must be discussed with and approved in principle by the representative structure.
4. There must be no recent history of conflict with the forest administration/authority.
5. There must be a minimum total area for a pilot site however, it is not yet possible to give a number for this.
6. The project must be in alignment with the country's policy and strategy concerning REDD+.
7. The site must be accessible with reasonable effort and the community must not be geographically fractured so that communication is made practically impossible for a normal consultation process.

Criteria that serve to rank potential pilot sites that fulfil above criteria:

1. The extent to which the representative structure has the capacity to manage finances and to govern a REDD project (makes pilots less complex and demanding, saves money)

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2. The extent to which a threat exists to existing forests (an imminent threat would count for more than a vague potential threat)
3. The availability of data on the current situation (forest data, carbon data, etc. for reference.
4. Importance of potential co-benefits.

These criteria will be incorporated into the Vanuatu REDD+ Preliminary Site Selection Tool presented in Annex 2b.

Regional REDD Issues

A web-based regional REDD+ information portal is currently under development as part of the SPC/GIZ project: "Climate protection through forest conservation in Pacific Island countries".

As for what such a tool should include, the following priorities were stated and agreed upon:

1. A repository of all relevant documents pertaining to REDD+ policies, strategies, tools, initiatives, consultancies, etc. This is something that is needed at national level in every country. Whether the regional level should just give access to every participating country's own repository or whether there should be a screening done to include only regionally relevant documents requires further discussion as the latter would increase cost and might not always capture everything needed.
2. The availability of a calendar of events was thought to help in planning events and travel.
3. SPC already has a help desk that takes in requests for information or assistance and refers these to the proper personnel. This should also be set up specifically for REDD+. It became clear that this service provided by SPC was not well known and that the establishment of a REDD+ window in the existing help desk would need to be well communicated to potential users.
4. It was felt that a rating system for documents as well as a brief summary would be beneficial in order to avoid having to read through every document in order to find the information needed.
5. Finally, a directory of resources was thought to be beneficial. This directory should contain a listing of staff and consultants with a description of their expertise as "go-to people" for specific questions or when searching for specific expertise. It is important that information is vetted in order to avoid bloating the system with expertise claims that are not real.

It was thought that it is too early to start activities such as identifying best-practices and setting up systems of knowledge management.

Process Proposed For Developing And Assessing Strategy Options

The overall strategy for REDD-plus in Vanuatu is one of learning-by-doing and building a strong basis for implementation based on experienced gained from demonstration activities. A key feature of REDD-plus activity in Vanuatu is the inherent low capacity of the government, built on a population base of a little over 200,000 people. Our current thinking is to proceed with national scale monitoring, REL/RL, and forest carbon inventory, and use this as a data backdrop to nested sub-national activities targeting different activity types that represent the key opportunities for performance-based payments for REDD-plus ecosystem services.

The Vanuatu REDD+ Programme intends to learn from experience utilizing existing REDD+ financing instruments, and based on international best practice, with implementation activities coordinated and facilitated by government and implemented by a potential range of implementing agencies (e.g. landowners, government agencies, private sector, CSOs, research institutions).

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The Pacific Regional Policy Framework for REDD+ guides the Pacific Island countries in their approach to REDD+ implementation with the following options for consideration:

Scale	Comment
National approach	Involves national carbon accounting and the distribution of financial benefits to nations from the financing instrument. Nations then need to develop sub-national financial benefits distribution systems. May be required under the UNFCCC; currently an option outside UNFCCC.
Jurisdictional and nested approach	A jurisdiction is either a national or sub-national government. This approach involves jurisdiction-scale carbon accounting in combination with jurisdictional-scale and/or project-scale activities. Currently an option outside the UNFCCC; may be an option under the UNFCCC.
Project scale approach	Involves project-scale carbon accounting and the distribution of financial benefits from financing instruments directly to forest-owning communities. A valuable approach for early action prior to the availability of a UNFCCC instrument or if the UNFCCC does not produce a financing instrument, or if a country elects to not undertake the UNFCCC approach. Individual projects can operate over areas between tens of hectares to tens of thousands of hectares depending on the financing instrument.
Grouped project approach	Enables the replication of projects in a 'programme of activities'. This approach can be used to: • Operate national crediting schemes without the need for national scale REDD+ engagement, • Generate economies of scale, • Run activities across national boundaries (e.g. with the Plan Vivo Standard).

Of particular interest to the Vanuatu REDD+ Program is the development of the Jurisdictional and Nested REDD+ approach. This approach presents an opportunity to remain flexible and to enable different implementation modalities to operate depending on the availability of REDD-plus financing instruments, and the particular preferences of landowners – which is still to be determined. By supporting a JNRI approach (but not necessarily restricting it to the VCS), Vanuatu would keep its options open to taking advantage of existing project-scale financing instruments through the international carbon markets, whilst remaining open to a larger scale jurisdictional or national instrument that may become available through the UNFCCC or other entity in the future. Furthermore, by gaining experience using existing smaller scale instruments, Vanuatu can gain valuable experience in the practicalities of REDD-plus implementation and the full activity cycle from readiness through activity development, to implementation and receipt of performance-based payments for ecosystem services.

Determining the REDD+ strategy for Vanuatu will require a consultative process both at the national level and also in terms of extension and outreach to rural communities throughout the 6 provinces. The strategy development process is also best coupled with demonstration activities in the near term with the opportunity to modify the strategy as we gain more experience and as the international policy and financing environment becomes clearer.

Of fundamental importance to the design of the approach to REDD+ reporting and implementation is the need to fit this approach to the realities of Vanuatu government capacity, both now and into the future.

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Scoping A Jurisdictional and Nested Approach [This section is likely better suited to an annex but we felt it important to signal strategic analysis that has gone into the implementation framework]

In its Readiness Preparation Proposal (R-PP) Vanuatu outlines a subnational REDD+ implementation mode anticipating forthcoming VCS JNR requirements. This concept note frames the options to implement a nested approach in Vanuatu following the JNRI draft requirements. Starting with a short introduction to the state of the UNFCCC negotiations on subnational REDD+ implementation and Vanuatu's particular conditions for REDD+ implementation (Section 1), the concept note flags the decisions to be taken regarding the scope and design of an accounting framework nesting project-based into jurisdictional, and jurisdictional into national REDD+ accounting (Section 2). Based on these decisions key aspects of REDD+ accounting, e.g. the jurisdictional baseline design, leakage accounting, additionality, and risk management are being discussed (Section 3). Finally, the concept note provides recommendations how to implement these options at the national level identifying next steps to consolidate Vanuatu's accounting framework.

The Relevance Of Jurisdictional And Nested REDD+ Accounting

Subnational Implementation In UNFCCC Negotiations On REDD+

Subnational REDD+ implementation is one of the controversial topics in UNFCCC negotiations on REDD+. While some parties like Colombia or the Central African Republic strongly support the idea of implementing REDD+ in parallel modes (national and subnational), others are opposing the idea for different reasons. However, even amongst the opponents, Brazil being one of the most outspoken, subnational REDD+ implementation is on its way, driven by federal state governments[8], NGOs, or private sector.

Establishing the modalities for Reference Levels and Reference Emission Levels (REL), COP 17 acknowledged,

> *"… that subnational forest reference emission levels and/or forest reference levels may be elaborated as an interim measure, while transitioning to a national forest reference emission level and/or forest reference level, and that interim forest reference emission levels and/or forest reference levels of a Party may cover less than its entire national territory of forest area;"* (Decision 12/CP.17 in FCCC/CP/2011/9/Add.2).

Along this line, SBSTA's latest draft on modalities for national forest monitoring systems (FCCC/SBSTA/2012/L.9/Rev.1) considers subnational monitoring and reporting as an interim measure, eventually to be implemented within the phased-approach as referred to in decision 1/CP.16, paragraphs 73 and 74.

The Verified Carbon Standard's (VCS) Jurisdictional and Nested REDD+ Initiative (JNRI) responds to the need "… to integrate individual project activities into national and sub-national (eg, state or provincial) REDD accounting ensuring environmental integrity and the incentives needed to attract private investment (VCS 2011)." It is important to note, that the VCS shares the vision with the UNFCCC, that "[ultimately,] individual REDD projects must be integrated into larger-scale accounting frameworks, both to ensure that emissions reductions "add-up" across jurisdictions and to ensure that carbon credits issued to projects are recognized by jurisdictional governments" (ibid). However, different development paths towards full national integration do exist depending on national circumstances and policies. Thus, it is important to be clear about the underlying objectives when selecting a particular JNRI scenario and corresponding implementation options (see below). Considering

[8] In June 2012, the Brazilian state of Acre signed an MOU with the VCS to collaborate on the application of the JNR framework to the Acre State REDD+ program.

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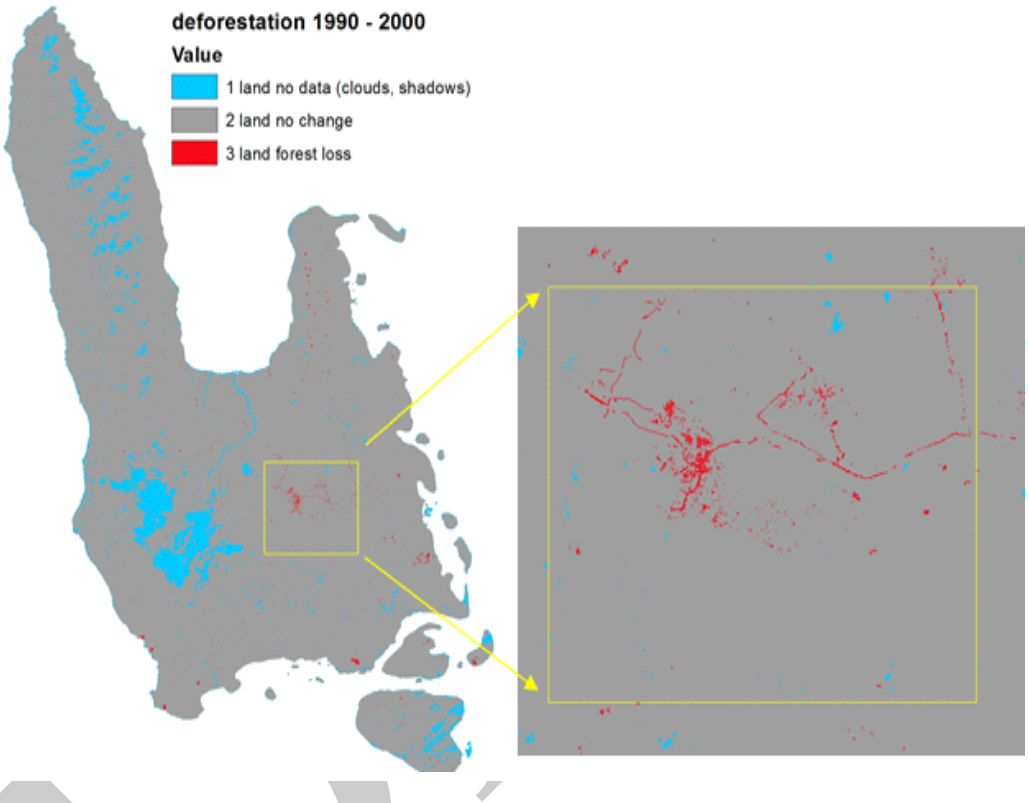
the broad interest of various tropical countries in applying the JNR approach9, the technical and financial challenges in setting up a national REDD+ scheme, and the high quality of operational guidance provided by the recently published JNR AFOLU Requirements (VCS 2012c), it can reasonably be expected that the JNR user community will grow in the upcoming months.

Figure 1: Deforestation 1990 – 2000 on Santo Island



The REDD+ Policy Environment Of Vanuatu

As in many other countries in Oceania and Asia, island geography, culture, economy, and history are framing a set of conditions, which constrain REDD+ implementation options:

- Vanuatu is composed of a few big and several small islands. Its spatial constellation shaped an unevenly distribution of settlements and population. Consequently, the deforestation rate varies substantially from 200 ha/yr on smaller islands up to more than 800ha/yr on the bigger islands (Herold et al. 2007). Compared to other pacific island states, this deforestation rates appears to be low[10] limiting the options of implementing stand-alone REDD+ projects as market based REDD+ projects require a certain scale due to the high level of transaction costs, particularly in project related measurement, reporting, and verification (MRV).

[9] Several Parties around the globe have already opted for starting with a subnational approach (e.g. Peru, Guatemala, Central African Republic, the Philippines, and Indonesia).

[10] The 1990 – 2000 deforestation rates provided by Herold et al. 2007 have to be considered preliminary, as cloud coverage impedes full wall-to-wall detection (cf. figure 1).

- The deforestation pattern itself is shaped by site-specific drivers changing over time. In case of Santo this pattern seems to follows road development (Figure 1), while on Efate, cattle ranching and logging drove past deforestation events. Again, the patchy character of the pattern limits the options of having market focused project REDD+ pilot projects on the ground.
- Although Vanuatu already counts with a processed national deforestation coverage for 1990-2000 (Herold et al. 2007), some technical challenges remain. The poor coverage of the South Pacific by optical satellite systems during the last decades and the cloud coverage of some mountainous island areas require the use of radar imagery to close past and recent data gaps. The small-scale patchy deforestation pattern and the mixture of coco nut and natural forest stands complicate forest cover mapping and change detection, additionally.
- Land tenure constrains the scope and outreach of forest governance. Ownership on land, land rights, and timber is determined in accordance with custom. All forest areas in Vanuatu are owned by indigenous people. Ultimately, it is the customary owner, and individual or the community, who decides on land use, while governmental entities can advise or provide incentives for sustainable use of natural resources. This setting increases the transaction costs of implementing land-use schemes, which require cooperation or coordination of various landowners.
- Vanuatu has been divided into six autonomous provinces with elected parliaments (provincial councils) mandated to collect taxes and to make by-laws in local matters. While in case of Sanma Province, the provincial boundaries coincide with the boundary of one island (Santo), the other provinces group several bigger and smaller islands. This aspect has to be considered when defining suitable operational boundaries for subnational implementation.
- The future development perspectives of Vanuatu's AFOLU sector in general and forestry in particular are difficult to foresee. Agricultural products make up for 73% of Vanuatu's exports and 17% of its gross domestic product (Vanuatu National Statistics Office 2008). While Cobra accounts for almost half of total exports in the 90ies, kava, coffee, and beef dominate the exports during the last decade. Since 1993, a general ban on the export of logs and flitches from natural forests other than sandalwood and tree species that cannot be in Vanuatu is effective, while timber demand from surrounding South Pacific countries is increasing. The questions if and how to anticipate external demand for timber and agricultural commodities are key for determining national or subnational reference (emission) levels.
- Besides small-scale logging, invasive vines (*Merremia peltata, Mikania micrantha, Passiflora*) are considered a main degradation driver impeding national forest regrowth. Only limited experience with successful prevention and control mechanisms is available[11] limiting the options to address this driver.
- With its new National Forest Policy (2011 -2020) the Government of Vanuatu is committed to continue and intensify the promotion of afforestation and reforestation focusing on key species like sandalwood, white wood, and canarium. Probably, landowners perceive these options as economically more attractive than long-term financial benefits from avoiding deforestation and forest degradation. Any REDD+ program will have to consider how to anticipate these preferences within an operation scheme.

Keeping these constraints in mind, Vanuatu offers a promising potential for subnational REDD+ implementation, which will be explored further in the following sections. The small number of inhabitants provides a favorable environment for direct interaction with landowners willing to participate in REDD+ related activities. As people are aware about the importance of forest ecosystems for their

[11] http://www.plantwise.org/?dsid=34095&loadmodule=plantwisedatasheet&page=4270&site=234

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livelihoods, REDD+ related incentive schemes fit into their preferences and customs. And as tourism is one of the main national income sources, there is a strong interest in maintaining the integrity of landscapes and forest ecosystems.

JNRI's Concepts And Design Options

The Choice Of The Jurisdictional Level

VCS's JNRI has been launched in 2011 to develop a regulatory framework for accounting and crediting REDD activities at sub-national or national scales. On May, 3 2012 VCS released the JNRI Draft requirements Document for public consultation (VCS 2012c). Although the approach might change afterwards it can be considered mature as it has been balanced with existing AFOLU rules and requirements as well as with VCS's procedural framework.

Cornerstone of a jurisdictional and/or nested REDD+ implementation is the concept of a jurisdiction. According to the Merriam-Webster Online Dictionary[12] the term jurisdiction refers to "*1: the power, right, or authority to interpret and apply the law, 2a: the authority of a sovereign power to govern or legislate b: the power or right to exercise authority … [or] 3: the limits or territory within which authority may be exercised.*" The JNRI recommendations do not refer to a specific definition. Instead they frame the concept as an "area defined as such for the purposes of the VCS jurisdictional and nested REDD+ rules and requirements" (VCS 2012b). Within this perspective, it is the national government which decides on the contiguous[13] non-overlapping boundaries of subnational jurisdictions. These boundaries can either follow existing administrative boundaries (default) down to the second administrative level below the national level, ecosystems or other forest type designations. A jurisdiction can encompass multiple administrative subdivisions. Only one level of jurisdictional nesting is allowed. The jurisdiction is a the spatial domain of a subnational Reference Emission Level or Reference Level (REL/RL), an MRV framework, and a jurisdictional pooled buffer, crediting, or allocation scheme.

Before choosing a jurisdictional architecture it is essential to decide on the REDD+ implementation levels. In case of Vanuatu, a subnational scheme could be either based on administrative boundaries (provinces) or physical boundaries (islands). An important aspect to consider in defining the boundaries is the JNR requirement to account for (and consequently minimize) inter-jurisdictional leakage (cf. section 3.4, p. 48). Apart, any subnational scheme has to be designed considering technical and financial feasibility in terms of its potential to be covered by a consistent baseline approach. On the other hand, it isn't mandatory to provide subnational accounting frameworks for all subdivisions. Instead, only a few jurisdictions might figure as operational subnational REDD+ accounting entities within a national approach, while most of the forest-based emissions and removals might be accounted for within the national REDD+ scheme.

As Vanuatu's provincial boundaries encompass several islands differing in size, deforestation and degradation dynamics, drivers, and underlying causes, this concept note proposes a subnational design based on island topography. Such a design would allow for constructing consistent subnational RELs along boundaries minimizing eventual leakage between jurisdictions. However, this approach comes with the potential disadvantage of lacking the institutional framework to manage such a scheme at the subnational level. As the design will be field tested on Santo Island, its implications and potential for a nested provincial approach can be assessed before ultimately concluding on the design criteria. In any event, the national government will have to create the institutional framework to facilitate REDD+ implementation, either at the national or complementarily on the subnational level.

[12] http://www.merriam-webster.com/dictionary/jurisdiction

[1313] In section 3.5.4 the draft Requirements establish exceptional conditions (e.g. existing legal disputes over jurisdictional boundaries) under which jurisdictional accounting may cover non-contiguous areas.

Jurisdictional Design Scenarios

The JNRI offers three different jurisdictional design options, the so-called crediting scenarios (VCS 2012c Section 2.1). The choice of the appropriate scenario depends on country-specific circumstances and expectations regarding REDD+. Their implications will be discussed in the following section. All scenarios share the feature that a baseline has to be developed at the jurisdictional level and registered under VCS which can be used to cookie-cut project specific baseline at the lower level (scenario 1 and 2) and/or allocate financial incentives (scenario1, 2 and 3).

Within ***Scenario 1: Jurisdictional baseline with standalone project crediting*** a subnational baseline would have to be developed at the jurisdictional level, which can be used by lower-level project activities. Within this scenario, a jurisdiction doesn't claim carbon credits, but aims at providing a consistent baseline, which project activities shall use to achieve VCS compliance. Within this scenario, projects would have to conduct their own MRV and leakage assessment following VCS rules and requirements. Operating a jurisdiction-wide MRV system is not required.

Scenario 2: Jurisdictional crediting scheme with direct crediting of nested activities is the most complex option. Here, both levels, projects nested into the jurisdictional level and jurisdictions, would register their activities under VCS expecting credits to be issued[14]. While the registered jurisdictional baseline is being shared with the project(s), the jurisdiction itself would have to develop procedures and rules for leakage accounting, policy measures, MRV, safeguards management, project approval procedures, a registry and risk buffer mechanism to address non permanence risks[15]. Projects will be issued credits based on their complementary MRV activities and leakage accounting. Non-permanence risks at the project level are to be covered by the jurisdictional pool buffer.

Scenario 3: Jurisdictional REDD+ program with internal allocation scheme differs in so far from Scenario 2 as direct issuance of credits to the project level is not possible. Instead, the jurisdiction would have to develop and register a jurisdictional baseline, crediting scheme, and internal allocation program defining eligible activities, which will not have to comply with VCS rules. The jurisdiction will have to conduct MRV across the whole jurisdiction. A safeguards management scheme and internal allocation program would have to be implemented, too.

At the first glance, scenario 2 seems to be the most attractive for governmental and private actors, but it appears to be the most demanding, too. Scenario 1 appears to be implemented easily, but only projects will benefit from credit issuance. Scenario 3 anticipates a policy mode of emerging national REDD+ schemes, where higher level policy adjustments should encourage improved forest and natural resources management secured by an array of different direct and indirect financial incentive mechanisms.

In case of Vanuatu, scenario 2 doesn't appear to be feasible, as there is only a limited potential for project-based REDD+ implementation. Covering the few spots exposed to past or future deforestation risks would leave almost no lands with deforestation risks for jurisdictional accounting limiting its attractiveness. Apart, it is still uncertain whether there are any sites or project-based proposals which would achieve technical and financial feasibility under a VCS scheme. Vanuatu's Readiness Project Idea Note (R-PIN) flags certain options for project-based implementation and a few ideas proposed for Santo are currently being assessed. But even, if one or two proposals would pass a thorough feasibility test, a complementary jurisdictional crediting scheme would not achieve financial sustainability as potential carbon benefits will remain low on the jurisdictional side.

[14] However, under scenario 2, jurisdictions could opt to not be issued VCS credits. In this case, streamlined non-permanence risk management requirements to be developed do apply (3.16.3).

[15] Under scenario 2, JNRI provides the option that a jurisdiction might opt for not being issued credits aiming at accounting and environmental consistency between project and jurisdictional level, only.

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In case, project-based approaches proof to be viable and attract private investment, Scenario 1 (Jurisdictional baseline with standalone project crediting) could become an option. However, the complicated set of land tenure might constrain projects in achieving a homogenous coverage at a relevant scale allowing them to shelter the costs of operating a full-blown MRV system. Scenario 3 (Jurisdictional REDD+ program with internal allocation scheme) offers more flexibility in assigning financial incentives to mitigation activities, which might not be viable as a stand-alone project. But it comes with the disadvantage of setting up higher administrative requirements for the jurisdictional scheme (MRV, safeguards monitoring, incentive allocation scheme). However, these burdens could be sheltered by a national REDD+ framework operating subnational accounts.

Besides the choice of the subnational entity and the corresponding design scenario several technical aspects have to be considered. The following sections discuss these aspects framing subnational implementation further.

Key Aspects Of A Potential JNR Approach

Eligible Pools And Activities Under The JNRI

The JNRI establishes particular requirements for the exclusion of certain carbon pools (Section 3.9). As a general rule, all significant sources of GHG emissions shall be included, except where a source is deemed *de minimis (*all omitted decreases in carbon stocks and increases in GHG emissions collectively amount to less than 10 percent*)*. While this rule applies to jurisdictional accounting, nested project still have to apply the 5% *de minimis* threshold (VCS 2012d section 4.3.3)

Within the already existing VCS framework each eligible Agriculture, Forestry, and Other Land Use (AFOLU) category requires a specific baseline. JNRI follows this line (VCS 2012c, section 3.8), but limits its scope to three broader activities (deforestation, degradation, enhancement of forest carbon stocks). As within the common VCS AFOLU framework, activities avoiding unplanned and planed deforestation require separate baselines. While the requirements allow that projects may include activities not accounted for at the higher jurisdictional level (e.g. degradation), the transitions between certain activities (e.g. degradation as a precursor for deforestation) are still not properly addressed as areas subject to different eligible activities shall not overlap (section 3.8.3).

One particular challenge is the combination of a sector-based afforestation/reforestation (A/R) mechanism with other eligible activities within one nested project or jurisdiction. Either the A/R activity would remain eligible under the national scheme and would have to be cut out of the project area. In this case, the project would have to account for potential leakage caused by the A/R activity (e.g. displacement of agriculture). Or the A/R activity would remain a project-based activity requiring a CDM type baseline and accounting framework[16]. The draft JNRI requirements demand contiguity of the jurisdictional area (VCS 2012c, Section 3.5.4). This is requirement can hardly be fulfilled if a sectorial national program accounts for forest related activities within a JNRI jurisdiction. Section 3.6.1 establishes a rule how to deal with emission reductions and GHG removals occurring within the same jurisdictional boundary accounted for under different GHG programs. A successful sectorial A/R activity operating within the same boundary of jurisdictional program avoiding deforestation would basically require discounting GHG removals (achieved by the A/R activity) from avoided deforestation emissions accounted for under the jurisdictional program. The example illustrates that the JNRI rules require further refinements.

Considering the size of potential A/R sites in Vanuatu which might vary between 0.5 and a few hectares, a CDM-type project based A/R approach barely appears feasible. Site-specific monitoring costs would

[16] Currently, VCS doesn't provide for approved methodologies for afforestation, reforestation, or revegetation (ARR) activities. Instead, CDM A/R methodologies are fully recognized. Currently, 25 of 36 certified VCS AFOLU projects are A/R activities using either small or large-scale CDM methodologies.

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drive the activities beyond financial viability. Instead, a sectoral mechanism has to be developed which should be based on standardized grouped A/R activities nested into and operated within a (sub)national framework. Such an approach should provide incentives to cluster smaller A/R sites to reach sizes of more than 5 hectares. It should provide standardized plantations schemes fitting to different site conditions which facilitate monitoring and accounting and it should create synergies with efforts avoiding deforestation and forest degradation minimizing leakage to the extent possible.

The Jurisdictional Baseline

As with project-based activities, a jurisdictional baseline has to be established for each targeted eligible activity. While deforestation has to be covered comprehensively[17], certain degradation avoidance or enhancement of forest carbon stock activities (e.g. enrichment planting, charcoal production) can be selected (section 3.10.1). Singular forest loss events larger than 1,000 ha caused by infrastructure projects or disturbance events have to be excluded from the baseline (section 3.10.2), which has to be established for a fixed period of 10 years (3.10.5).

Regarding the technical baseline design, JNRI offers two alternative approaches: In countries where a UNFCCC or other non-VCS jurisdictional baseline already exists at the national level, the subnational jurisdictional baseline (if developed) has to be compared with the higher level baseline to select the more conservative one (3.10.7). Synchronicity with the temporal boundaries of the higher level baseline and consistency regarding input data on eligible activities, drivers, causes, activity rates, pools and emission factors has to be secured. The second approach provides technical recommendations for those cases, where no baseline has been established under the UNFCCC (3.10.6). It anticipates possible adjustments to reflect national circumstances and provides three alternative options (historical average, historical trend, modeling) and selection criteria for choosing the appropriate option. Within this approach, large-scale planed deforestation exceeding 1,000 ha can be included if the activity already started or counts with at least 80% of the required finance.

Distinguishing activity-based accounting from landscape accounting[18], JNRI provides guidelines for spatial modeling (3.12.3) and detailed standards for remote sensing based activity data processing (3.12.4) for the activity-based approached. Guidance focusing on landscape accounting refers to the precision of the GHG inventory design under scenario 3 only (3.12.7). Nesting, transition, and consistency rules are being provided for situations, where a higher-level baseline is being developed after the lower level baseline(s) (3.12.8: so called "grandparenting") and the reverse case (higher-level baseline already exists, before a lower-level activities starts, 3.12.9). Particular jurisdictional baseline update rules are being provided to achieve the consistence with the emerging UNFCCC REDD+ framework within a grace period of 18 month for the transitional validity of the lower-level baseline (3.12.10 and 3.12.14).

With its R-PP, Vanuatu is aiming at an activity-based subnational approach to be aggregated to a national reference level. At the subnational and national level, deforestation emission reductions and removals by enhancement of forest carbon stocks will be accounted for. Eventually, site-specific activities avoiding emissions from degradation, e.g. improving natural regrowth by combatting invasive wines, can be included if spatially tracked and accounted separately. While the reference emission level for reducing emissions from deforestation will be determined anticipating national and subnational

[17] Planned and unplanned deforestation have to be included. Under scenario 1 (jurisdictional baseline with standalone project crediting) jurisdictions can associate planned deforestation events with unplanned deforestation, if such an event causes less than 200ha deforestation (section 3.10.3). Section 3.10.3 establishes further criteria how to frame planned deforestation.

[18] This distinction remains vague. It originates in IPCC 2000 LULUCF Good Practice Guidance introducing land-based vs. activity-based accounting, but has been given up in the recent IPCC guidance and guidelines. VCS 2012b provided some explanation of the two principles. But the definitions haven't been anticipated by the current Requirements document.

circumstances as well as past and future development perspectives, the reference level for enhancement of forest carbon stocks will be based in standardized recommended A/R practices and site conditions.

Additionality

Regardless, which scenario and which mitigation activities will be chosen, a deforestation baseline has to be established at the jurisdictional level. Although not mandatory, the JNRI rules recommend a spatially explicit modeling approach ("location analysis"). As the JNRI expects jurisdictional baselines to be rigorous in accounting for all existing constraints and feasible lands, they are not subject to any particular additionality requirements (3.11.1). However, projects nested into a jurisdictional scheme (scenario 1 or 2) have to apply the approved VCS AFOLU additionality tool (VCS 2012e) or steps established by approved methodologies (3.11.2). The lower implicit additionality requirement for jurisdictional baselines favors the implementation of those project activities under scenario 3 (jurisdictional REDD+ program with internal allocation scheme), which might not fulfill rigorous additionality requirements, but could be considered a relevant mitigation effort.

Leakage

The JNRI establishes leakage accounting rules for nested projects, subnational, and (!) national jurisdictions[19]. JNRI's subnational jurisdictional leakage accounting framework follows to a great extent VCS's project rational accounting for activity shifting, market leakage and ecological leakage (3.13.1-5). As a general rule, leakage between subnational jurisdictions has to be quantified, mitigated, and accounted for.

The way, immitigable leakage between jurisdictions has to be accounted for (scenario 2 and 3) depends on the state of the affected jurisdictions. If, in the rare case, all affected jurisdictions are registered under the VCS or another GHG program, shared leakage accounting or compensation mechanisms can be established by appropriate leakage sharing agreements to be submitted to the VCS registry (3.13.8). In the more likely case, a participating jurisdiction might cause immitigable leakage in a neighboring jurisdiction not (yet) participating in any REDD+ scheme. In this case, the jurisdiction has to develop and implement a leakage monitoring framework following the VCS project approach, either determining a leakage belt, or using the new VCS leakage deduction tool (to be developed), and (!) account for any internal leakage (emission shifts within the jurisdiction from one activity to another, e.g. reducing slash and burn agriculture causing an increase in illegal logging).

Although not yet fully established[20], the leakage management requirements for the subnational level appear quite demanding. In case of Vanuatu, complex subnational leakage regulations can be avoided if subnational schemes for major islands are set up simultaneously. Current readiness planning foresees that Santo will pilot a subnational approach nested into a national REDD+ scheme while 4 other islands shall follow with a delay of approximately one year depending on the approval of the R-PP. Thus, Vanuatu has a chance to establish shared leakage accounting or compensation mechanisms based on appropriate leakage sharing agreements. If a synchronized implementation of subnational schemes across major islands wouldn't work, interim leakage accounting rules would have to be developed based on the fully established VCS JNR leakage framework.

The accounting rules for project leakage depend on the chosen design scenario. Within scenario 1 (jurisdictional baseline without jurisdictional crediting) adjacent projects have to apply the VCS AFOLU leakage requirements and the specific JNRI rules for situations, where their leakage belts and/or project

[19] In case of national jurisdictions, JNRI requires assessing and mitigation international leakage where practicable, but not monitoring nor accounting for it (3.13.6). This requirement anticipates the current views in the UNFCCC discussion on international leakage.

[20] According to recent VCS communications (June, 25 2012), a JNR leakage and permanence working group is about to be established for a period of 9 months. Thus, approved tools can be expected for the end of the 2nd semester in 2013.

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areas overlap (3.13.12-14). Nested projects operating in a jurisdictional framework eligible for crediting (scenario 2) are subject to policies and procedures for leakage withholding from projects to be established by the jurisdiction (3.13.9-11).

In case of scenario 1, the burden of leakage monitoring, mitigation, and accounting lies on the projects' shoulders and appears the same as for stand-alone projects[21]. Leakage accounting under scenario 2 offers more flexibility at the project level as the (sub)national jurisdiction defines the accountability rules for projects. However, the jurisdiction has to assess, mitigate, and account for jurisdictional leakage outside its boundary, which becomes a technically challenging endeavor[22], where only selected jurisdictions participate in a GHG program. In scenario 3, non-crediting project activities do not have to account for project leakage, while the subnational jurisdiction would have to account for immitigable inter-jurisdictional leakage. If this jurisdiction already operates within a national REDD+ program *"that includes countrywide leakage monitoring and a framework for determining and assigning leakage impacts, subnational jurisdictions shall use the leakage estimates attributed to them according to the national framework"* (3.13.8 3) a) iv)). This is a strong incentive to synchronize the jurisdictional approach with the implementation of the national REDD+ policy framework. As the potential for project-based implement seems to be limited in Vanuatu, project leakage requirements are a minor concern.

Measurement, Reporting, And Verification

In general, JNRI's MRV approach follows VCS's project-based rationale. The JNRI requests jurisdictions to follow IPCC's approach 3 (spatially explicit and comprehensive tracking of transitions between land-use categories over multiple periods) expecting it to become a requirement under UNFCCC REDD+ process, too (3.15.4 1)). Emission factors shall be determined using tier 2 or higher methods (3.15.4 5)). Leakage and drivers are subject to monitoring, too. Monitoring and verification shall be conducted at least every five years (3.15.3), but ultimately have to be synchronized with the UNFCCC REDD+ reporting requirements (3.15.7 and 3.15.10).

Quantification of GHG emissions reductions and removals (3.14) follows a common procedure where net GHG emission reductions and/or removals are determined as the difference between the baseline emissions and removals and the jurisdictional REDD+ program scenario adjusted for leakage. The quantity of issued credits depends on the non-permanence risk buffer discounts applied to net GHG emission reductions and/or removals to be determined by the forthcoming *Jurisdictional and Nested REDD+ Non-Permanence Risk Tool* (3.14.3). Particular reporting formats (*VCS Jurisdictional Monitoring Report Template*) will be provided, too.

The JNRI introduces accuracy requirements (3.15.6), which build on the VCS Standard (VCS 2012a section 4.1.4[23]), but go partially beyond IPCC introducing a minimum accuracy requirement of 75% for the determination of the forest boundary and indirect approaches estimating emissions and/or removals (3.15.6). If the requirement is not met, discounting procedures following the conservativeness principle apply (3.15.6 3)). Remarkably, the JNRI lowered the accuracy requirements for jurisdictional accounting

[21] However, JNRI provides further clarity and rules for spatial constellations where neighboring projects struggle with overlapping areas.

[22] In this case, which is probably the default, leakage has to be quantified and attributed to different jurisdictions. In a situation, where all potential jurisdictions affected by inter-jurisdictional leakage operate within a GHG program, leakage compensating discounts could be negotiated and agreed without the need to assess and attribute them for each jurisdiction.

[23] The VCS Standard establishes that where "… a methodology applies a 90 percent confidence interval and the width of the confidence interval exceeds 20 percent of the estimated value or where a methodology applies a 95 percent confidence interval and the width of the confidence interval exceeds 30 percent of the estimated value, an appropriate confidence deduction shall be applied." (VCS 2012a, section 4.1.4)

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compared to requirements established by approved VCS REDD methodologies[24] assuming that project-based MRV can achieve a higher accuracy than higher-level MRV (3.15.2).

The JNRI MRV requirements can be considered moderate facilitating subnational implementation. In fact, internal allocation under scenario 3 might open an alternative path for activities, which might not fulfill the rigorous MRV standards for project-based activities. Generally, jurisdictions targeting scenario 1 or 2 might want to consider following higher (project-based) MRV standards to increase the consistency between project-based and jurisdictional accounting and to reduce the discounting risks for projects using the jurisdictional baseline[25].

The JNR MRV requirements are far more advanced than the current SBSTA draft. They provide technical guidance and performance standards for MRV design and implementation. The deforestation MRV approach framed in Vanuatu's R-PP will fulfill the JNR requirements. The same holds true for the outlined degradation MRV as it follows strictly IPCC's key categories framework accounting for carbon stock changes in forest land remaining forest land[26]. However, degradation MRV guidance can't be considered consolidated, neither under JNR nor under UNFCCC. Accounting rules for silvicultural management of invasive species are missing as well as technical guidance how to factor-out impacts caused by natural disturbances (cf. the following section). Both are important aspects in Vanuatu's forest management. Consequently, Vanuatu would have to develop or adopt complementary monitoring frameworks to anticipate these challenges.

Non-Permanence Risk Management

Similar to VCS project requirements, a jurisdictional non-permanence risk pool buffer is required for scenario 2 and 3. If the jurisdiction doesn't intend to be issued credits (one option under scenario 2), a "streamlined version of the Jurisdictional Non-Permanence and Crediting Shortfall Risk Tool" to be developed shall apply (3.16.3). The buffer-requirements provide distinct conservative rules for loss events and natural disturbances (3.16.6)[27] which aim at maintaining buffer solvency. Significant[28] gross emissions caused by natural disturbances have to be accounted for by cancelling the same number of buffer credits from the jurisdictional pooled buffer account (3.16.6 3)b)).

Mechanisms balancing non-permanence risks between multiple crediting levels aim at avoiding crediting shortfalls due to underperformance of one or more levels and at strengthening the credibility of the jurisdictional approach. While the balancing mechanisms can be considered consolidated, the risk accounting rules at the jurisdictional level are not yet established. Ultimately, financial viability of jurisdictional accounting can only be assessed once the risk accounting rules are known.

[24] The approved VCS methodology VM00015 establishes a minimum overall accuracy of the forest cover benchmark map of 90%.

[25] Under scenario 1 and 2, there is an inherent risk, that projects using a jurisdictional baseline built on forest benchmark maps with an accuracy of less than 90% can't fulfill the requirements established by project-based methodologies (such as VM00015). As consequence, they would have to accept credit discounts or, worst case, fail during verification. This risk has to be addressed properly in the JNRI requirements.

[26] It is still not clear, whether degradation accounting will be mandatory under UNFCCC. In case of Vanuatu, IPCC compliant degradation accounting is framed as an option. Given the current logging practices in Vanuatu, it is reasonable to assume that the potential to achieve carbon benefits by avoiding degradation emissions will be rather limited.

[27] According to VCS Program Definitions, "any event that results in a loss of more than 5% of carbon stocks in pools included in the project boundary that is not planned for in the project description" is considered a loss event (VCS 2012f). Natural disturbances are not yet defined under VCS. The category itself is currently under consideration in LULUCF negotiations in the AWG-KP and not yet consolidated.

[28] Disturbance emissions are considered significant when accounting for more than five percent of total emission reductions and/or removals generated within the jurisdiction during a given monitoring period (3.16.6 3)b)).

In case of natural disturbances, JNRI's non-permanence risk management goes beyond what is currently being discussed by UNFCCC Parties regarding LULUCF. Non-anthropogenic emissions caused by natural disturbances with a return interval of less than 10 years affecting less than 1000ha per event would have to be anticipated in the baseline (which is technically challenging) and shall be monitored (sections 3.15 and 3.16.6 3) a)). Pacific Island countries struggling with changing frequencies of extreme weather events will assume higher risks when accounting for those disturbances.

If Vanuatu would opt for scenario 3 (Jurisdictional REDD+ program with internal allocation scheme), it would have to set up a risk management scheme. This scheme doesn't have to be operated at the subnational level. Instead, it could be established at the national level to provide risk management to different subnational schemes. In the near future, it might be even possible to externalize certain risk management functions to financial services' providers.

JNRI Conclusions And Recommendations

The discussion of JNRI's technical rules shows that the JNRI framework can be considered mature. While the requirements regarding eligible activities, carbon pools, baseline, additionality and (to a certain extent regarding MRV) can be considered conclusive, operational guidance for jurisdictional leakage and non-permanence risk assessment is still missing[29]. These gaps make it still difficult to assess the financial viability of applying the three scenarios to potential jurisdictions. In case of the MRV requirements some uncertainties remain, as UNFCCC parties haven't yet concluded on MRV modalities. And while VCS has opted for a rigorous accounting of non-anthropogenic disturbance risks, UNFCCC parties didn't address this issue in REDD+ negotiations, yet.

The complexity of the JNR leakage rules might hamper the acceptance of subnational jurisdictional REDD+ implementation, in particular, as the details of the forthcoming VCS leakage deduction tool are not yet known. Establishing interim jurisdictional leakage compensation mechanisms (fees, or a "leakage tax" targeting projects or jurisdictions) at the national level in highly synchronized jurisdictional and national implementation modes could be one way to bypass leakage monitoring and accounting between jurisdictions.

Vanuatu is considering following a scenario 3 in implementing a jurisdictional REDD+ program with an internal allocation scheme. Such a scheme doesn't have to operate in all potential jurisdictions. It could be fully implemented on a few islands, while others would be covered by the national REDD+ framework. Each jurisdiction or defined subnational domain would require its own activity-specific reference (emission) level. To keep things simple it is advisable to start building subnational deforestation baselines. As outlined in the R-PP, these subnational baselines will be developed at the national level to assure consistency between the baselines and the national MRV system.

In an ideal world, a jurisdictional entity would fully operate a subnational REDD+ scheme. However, such an approach would require a certain institutional setting and capacity which can't be expected from the provincial level in Vanuatu. Thus, certain tasks and responsibilities have to be assigned to the national level converting JNR application in Vanuatu into a hybrid approach. REL development has already been flagged as an issue to be conducted at the national level. The MRV framework will be operated at the national level, too. On the other hand, certain tasks of the forest monitoring, although designed as a national system, can be conducted at the provincial or island level. This might include the registry of land owners participating in the subnational REDD+ scheme, A/R on-site monitoring and verification, and other tasks to be defined. Subnational risk buffer management requires a solid institutional framework, particular financial and technical skills which might not be available at the

[29] The draft JNRI requirements flag the following tools and guidelines as forthcoming: Leakage deduction tool, Jurisdictional and Nested REDD+ Non-Permanence Risk Tool, Jurisdictional Non-Permanence and Crediting Shortfall Risk Tool, Jurisdictional and Nested REDD+ Registration and Issuance Process, and an update of the VCS Standard to include the validation and verification process for jurisdictions.

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provincial level either. Incentive allocation to land owners will be a cornerstone of scenario 3 which requires backing from the national and the subnational level. At the central level, eligibility criteria, reporting and registry standards will have to be standardized to assure performance of the nested system as a whole. The subnational level might define political priorities, land uses, or areas to focus on. Consequently, different interests have to be balanced to assure national integrity and subnational ownership of the scheme.

At the current stage it remains unclear how A/R activities could be implemented in a non-CDM type project-based mode. Neither VCS JNR nor UNFCCC REDD+ negotiations have addressed this issue, yet. Of course, it is possible to nest project-based A/R activities into (sub)national accounting. However, site-specific CDM small- or large scale methodologies can't be converted directly into a sectoral, subnational, or national mechanism. Consequently, an operational framework has to be developed how to stimulate, standardize, cluster, administrate, support, and monitor A/R activities of individual landowners at different scales to make them consistent and eligible within a subnational REDD+ framework. Vanuatu's Department of Forestry has already developed concise technical elements of such a sectoral A/R program. Apart, it counts with the scientific support to develop technical guidance to improve silvicultural and product chain management. The R-PP can be used to develop the ToRs for designing and field–testing such an enhancement of carbon stocks mechanism at the subnational level. Such a mechanism would bridge the gap between ongoing and starting A/R activities on the ground, available silvicultural extension services, and REDD+ design efforts at the national level.

Demonstration/Pilot Activities

A high priority for the Vanuatu REDD+ Programme is to engage in learning-by-doing as early as possible in the course of REDD Readiness. This learning-by-doing is best served when the activity being undertaken demonstrates the entire cycle of specific REDD+ activity planning, implementation, monitoring, reporting, verification, and performance-based payments for ecosystem services. To this end Vanuatu will pursue pilot activities including pilot projects using financing instruments currently available to support such activities – both in terms of project development and performance-based payments. Such pilot project activity does not pre-empt a national approach to REDD+, but instead is designed to assist the Government of Vanuatu "get its head around" the practicalities of implementing REDD+. Furthermore, pilot activities can assist the Vanuatu REDD+ programme in the design of a jurisdictional and nested approach to national implementation by testing exactly how to integrate community based REDD+ forest management activities into a national approach. This is relevant from an implementation logistics point of view, as well as a governance, financing and carbon accounting perspective.

Pilot sites were scoped during the June 2011 National Planning Meeting for REDD+ and generated the following preliminary pilot site assessment:

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Preliminary pilot site assessment

Description of potential pilot sites and application of selection criteria, workshop results

As can be seen, much information still needs to be obtained and/or verified.

	Erromango Island	**ELMA**	**Anietyum**	**Big Bay**	**Vatthe**	**Penoroy**	**Wiawi**	**Crab Bay**	**East, South Santo,**
Short description	Threat: Feral cattle are eating young growth Sandalwood. Cattle to be rounded up and/or eliminated.	Activities: rehabilitation of degraded forest Management of water catchment area Forest resource assessment	Request: Afforestation, Reforestation of grassland	Threat: vines and logging, exploration Request: Carbon stock assessment, capacity building, economic assessment, register as community conservation area	Officially registered conservation area Threat: vines and logging by small scale portable mills. Request: Reforestation, vine management, Carbon stock assessment, capacity building, economic analysis	West coast Santo Existing conservation area Threat: vines Reforestation, expansion	Threats: logging, invasive species, not legally recognised, potential land dispute Request: legally register as CCA Rehabilitation of degraded forest Forest resource assessment	Mangrove forest conservation area Threat: sedimentation	Rehabilitation of old coconut plantations
Necessary Criteria									
1. rep structure	Council of Chiefs	booklet	Island Council and Council of Chiefs, community organisations,	Committee exists	Committee exists, problems for functioning		Conservation committee in place	Management committee since 2002	yes

	Erromango Island	ELMA	Anietyum	Big Bay	Vatthe	Penoroy	Wiawi	Crab Bay	East, South Santo,
			timber committees						
2. violence	None, some land disputes	None, some land disputes	None				None, some land disputes		None
3. request by rep struct.	In process	Discussions and meetings completed	In process				Discussed with committee		Structure in place
4. conflict DoF	None, some with Lands Dep over boundaries, tribal disputes.	none	Successful timber project with DoF, Potential conflict with Lands				None		None
5. size	600 km^2	19,246 ha	3,000 ha	140 km^2	2,800 ha	1,000 ha	>1,000 ha	> 1,000 ha of which 92 ha are mangrove	10,000 ha
6. alignment	SFM		Yes afforestation, reforestation	Reforestation, new conservation area	??	Reforestation, new conservation (expansion of existing one)	Yes	Afforestation, reforestation (expansion of CCA?)	Rehabilitation
7. accessibility	Difficult, mountainous, impossible in wet season, no roads	Some parts only accessible by air	On foot, no roads				good		Easy access

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	Erromango Island	ELMA	Anietyum	Big Bay	Vatthe	Penoroy	Wiawi	Crab Bay	East, South Santo,
Ranking Criteria									
1. mgt capacity	Financial management weak	Ran previous projects						At individual level management capacity exists, farmers for many years	
2. extent of threat	Significant to bio-div and forest, especially Sandalwood overaging	Bush fires, soil erosion		Vines, logging	Vines, logging			Harvest of mangroves	Forest is gone
3. data availability	No data on cattle	Forestry data exists, timber project data							Data with Dep Agric, Vanris
4. co-benefits	Access to beef Increase in commercial and total timber	Increased bio-diversity, timber supplies, reduced soil erosion						Bio-diversity Increased fishing harvest in adjacent waters	Bio-diversity, timber, jobs

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The Vanuatu REDD+ Programme has also adopted a preliminary pilot site selection tool (Annex 2b).

Enter additional text here

Provide an assessment of the various REDD+ strategy options from the following standpoints:

a. How the proposed activity would address the specific drivers of deforestation and/or forest degradation, for given land uses and socioeconomic contexts.

b. How cost benefit analysis of REDD+ strategy options is being considered

c. Sustainability and integration with other sector policies and strategies

Enter text here

Develop a simple risk analysis framework that summarizes major types of risks, and how significant they are (e.g., low, medium, high) for the major REDD+ strategy activities.

Enter text here

Assess the feasibility of the options through analysis of risks and opportunities for the proposed options. Include an analysis of:

a) Institutional capacity and in the case of weak institutions, how they will be strengthened to enforce forest laws.

b) Governance issues

c) Viability in terms of political and economic context

d) Livelihood impacts and sustainable alternate livelihood opportunities

Enter text here

Provide an assessment of environmental and social risks, and of potential impacts (both positive and negative) associated with the specific REDD+ strategy options being considered, in the context of the SESA process.

Enter text here

Key gender concerns should be analyzed to manage potential gender-based risks and/or unequal benefits that can hamper the welfare of different social groups

Enter text here

* * *

The budget for this component is yet to be developed.

Table 2b: Summary of REDD+ Strategy Activities and Budget (or Results Framework)

Output (major activity)	Organizations involved	Activities or Sub-activities	Budget allocation in thousand (estimated cost in thousands)				
			2011	2012	2013	2014	Total
Outcome 1:							
Output 1.1		1.1.1 main activity	$	$	$	$	$

		Sub activity 1	$	$	$	$	**$**
		Sub activity 2	$	$	$	$	**$**
Output 1.2		1.2.1 Main activity	$	$	$	$	**$**
		Sub activity 1	$	$	$	$	**$**
			$	$	$	$	**$**
Total			**$**	**$**	**$**	**$**	**$**
Government			$	$	$	$	**$**
FCPF			**$**	**$**	**$**	**$**	**$**
UN-REDD Programme (if applicable)			$	$	$	$	**$**
Other Development Partner 1 (name)			$	$	$	$	**$**
Other Development Partner 2 (name)							
Other Development Partner 3 (name)							

Notes: 1. Countries are encouraged to include outcomes, outputs, and organizations involved in this table for this component, for consistency with normal program outcomes and indicator procedures. If identifying outcomes and outputs is difficult at this stage, include your tentative early ideas and then revisit them during Readiness Preparation.

2. Outcome: Actual or intended change in development condition that project interventions are seeking to support. Outcome includes key results such as governance reforms functioning national inter-ministry coordination, national or regional policy or legal reforms, etc.

3. Output: The direct result of project inputs, achieved through the completion of project activities, including tangible products for services necessary to achieve the outcomes of a program or project. E.g. workshop reports, studies, new training courses, etc.

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2c. REDD+ Implementation Framework

Standard 2c the R-PP text needs to meet for this component:
REDD-plus implementation framework:

Describes activities (and optionally provides ToR in an annex) and a work plan to further elaborate institutional arrangements and issues relevant to REDD-plus in the country setting. Identifies key issues involved in REDD-plus implementation, and explores potential arrangements to address them; offers a work plan that seems likely to allow their full evaluation and adequate incorporation into the eventual Readiness Package. Key issues are likely to include: assessing land ownership and carbon rights for potential REDD-plus strategy activities and lands; addressing key governance concerns related to REDD-plus; and institutional arrangements needed to engage in and track REDD-plus activities and transactions.

The Vanuatu REDD+ Programme is considering a jurisdictional and nested approach to REDD+ implementation, but is yet to decide on the most suitable of the three JNRI design scenarios presented by the VCS, and yet to finalise its position. This section of this R-PP will be completed during October – December 2012.

Identify which forest areas, of what type of forests and of what size, are considered for involvement in the REDD+ strategy in each major region

Enter text here

Identify who owns or uses the forest under statutory or customary law

Enter text here

Determine whether there is regulatory or legal clarity on and who owns carbon benefits generated by REDD+ activities

Enter text here

Determine whether there is a relationship between carbon ownership and land tenure

Enter text here

Determine how any land tenure, or carbon ownership, issues that arise [would] be resolved or mediated

Enter text here

Identify the government or other institutions that have capacity and authority to plan, implement and monitor REDD+ activities

Enter text here

Determine who is authorized to participate in domestic and/or international transactions based on GHG emissions reductions following reductions in deforestation and/or forest degradation

Enter text here

Determine the role of the national government in these transactions

Enter text here

Determine whether the respective roles of government, landowner and other participants in potential REDD+ transactions spelled out in regulations or law?

Enter text here

Identify potential financing mechanisms for REDD+ activities and transactions in the country

Enter text here

Explain how REDD+ revenues generated by these transactions [would] be assigned and/or shared

Enter text here

Describe the methodology (studies, workshops, pilots etc) the country intend[s] to follow to design a benefit sharing system

Enter text here

Determine whether the REDD+ strategy options involve interventions at the sub-national level

Enter text here

Determine how the carbon, land use, and emissions accounting of these interventions be reconciled with the national monitoring system

Enter text here

State whether the country considering development of a national carbon tracking system or registry for REDD+ activities and transactions

Enter text here

Describe the arrangements for such a system or registry, and [whether it] would [~~it~~] be integrated with the monitoring system design

Enter text here

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Determine how the performance of the implementation framework be monitored and reported, and who will be responsible for it

Enter text here

Identify any independent institutions with the capacity to monitor and verify information

Enter text here

Explain how the envisaged arrangements enable the country to comply with possible obligations under a future UNFCCC REDD+ mechanism

Enter text here

Identify what checks and balances could be included in the implementation framework to ensure transparency, accountability and equity

Enter text here

Determine whether there is a need for development of capacity to operationalize accountability

Enter text here

Determine how stakeholders [can] be engaged in the implementation framework and the establishment of robust mechanisms for independent monitoring, assessment and review

Enter text here

Identify what other institutional and governance reforms might be needed

Enter text here

Present a work program to address these questions and issues over the next few years of implementation of the R-PP studies

* * *

The budget for this component is yet to be determined.

Table 2c: Summary of REDD+ Implementation Framework Activities and Budget						
Main Activity	**Sub-Activity**	**Estimated Cost (in thousands)**				
		2011	**2012**	**2013**	**2014**	**Total**
		$	$	$	$	**$**

		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
Total		**$**	**$**	**$**	**$**	**$**
Government		$	$	$	$	**$**
FCPF		$	$	$	$	**$**
UN-REDD Programme (if applicable)		$	$	$	$	**$**
Other Development Partner 1 (name)		$	$	$	$	**$**
Other Development Partner 2 (name)		$	$	$	$	**$**
Other Development Partner 3 (name)		$	$	$	$	**$**

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2d. Social and Environmental Impacts during Readiness Preparation and REDD+ Implementation

Standard 2d the R-PP text needs to meet for this component:
Social and environmental impacts during readiness preparation and REDD-plus implementation:

The proposal includes a program of work for due diligence to assess strategic environmental and social risks and impacts in the context of the SESA process. It also provides a simple description of how and when assessment is in compliance with the World Bank's or UN-REDD-plus Programme's safeguard policies, including methods to evaluate how to address those impacts via studies, consultations, and specific mitigation measures aimed at preventing or minimizing adverse effects. For FCPF countries, a simple work plan is presented for how the SESA process will be followed, and for preparation of the ESMF.

Describe approach For Ensuring Compliance With Relevant Safeguard Policies

Enter text here

How The ESMF Will Draw On Other Components Of The R-PP As Needed

Enter text here

Develop a mechanism for monitoring implementation of the Framework so that the public can participate in the monitoring processes.

Enter text here

Notes for Component 2d:

The FCPF Guidelines and Generic ToR for SESA and ESMF state that the "preparation of the initial draft of the ESMF "as early as possible" means that said preparation will take place during the readiness preparation phase but only after decisions stemming from an inclusive public dialogue are taken, and the country's REDD+ strategy begins to take concrete shape on the basis of these decisions."

"Before the ESMF is disseminated to the public for the first time, it should contain 1) relevant information for stakeholders regarding risks and potential impacts that could affect them as a result of the implementation of the emerging REDD+ strategy; and 2) useful descriptions of principles to be adopted and procedures to be followed by the lead agencies to comply with the World Bank's safeguard policies, based on an assessment of which policies are most likely to apply."

See: GUIDELINES FOR THE DEVELOPMENT OF TERMS OF REFERENCE (TORS) FOR AN ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

* * *

The budget for Component 2d is yet to be developed.

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Table 2d: Summary of Social and Environmental Impacts during Readiness Preparation and REDD+ Implementation Activities and Budget						
Main Activity	**Sub-Activity**	**Estimated Cost (in thousands)**				
		2011	**2012**	**2013**	**2014**	**Total**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
Total		**$**	**$**	**$**	**$**	**$**
Government		$	$	$	$	**$**
FCPF		**$**	**$**	**$**	**$**	**$**
UN-REDD Programme (if applicable)		$	$	$	$	**$**
Other Development Partner 1 (name)		$	$	$	$	**$**
Other Development Partner 2 (name)		$	$	$	$	**$**
Other Development Partner 3 (name)		$	$	$	$	**$**

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Component 3: Develop a National Forest Reference Emission Level and/or a Forest Reference Level

Standard 3 the R-PP text needs to meet for this component: Develop a National Forest Reference Emission Level and/or a Forest Reference Level:

Present work plan for how the reference level for deforestation, forest degradation (if desired), conservation, sustainable management of forest, and enhancement of carbon stocks will be developed. Include early ideas on a process for determining which approach and methods to use (e.g., forest cover change and GHG emissions based on historical trends, and/or projections into the future of historical trend data; combination of inventory and/or remote sensing, and/or GIS or modeling), major data requirements, and current capacity and capacity requirements. Assess linkages to components 2a (assessment of deforestation drivers), 2b (REDD-plus strategy activities), and 4 (monitoring system design).

(FCPF and UN-REDD recognize that key international policy decisions may affect this component, so a stepwise approach may be useful. This component states what early activities are proposed.)

Progress has been made on the content of this component but this content has yet to be organised according to the formatting sequencing required by the FCPF. The required sequencing is presented in the yellow boxes below, and this is followed by the draft material prepared to date.

Review historical data available on drivers of deforestation and/or degradation and other REDD+ activities

Enter text here

Identify data gaps that need to be filled to estimate past and recent land use change and GHG emissions/removals from deforestation and/or forest degradation and any of the other REDD+ activities

Enter text here

Review "national circumstances" that might adjust the reference level proposed

Enter text here

Assess the feasibility of the country being able to implement potential approaches to developing a national forest reference level and/or forest reference level:

- Historical: Developing a REL/ RL based on historical trends in emissions/removals over the last decade or so, using various data sources
- Projections: Projections involve quantifying forest land uses and carbon stock under current conditions, and then introducing a set of assumptions about how land cover change drivers and macroeconomic trends (e.g., increased demand for biofuels) and national development plans could change land uses and carbon stock over the next few decades

Enter text here

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Determine what government or other institutions will be involved in this activity

Enter text here

Determine what capacity currently exists

Enter text here

Determine what additional data or capacity building is required for each of the options

Enter text here

Determine the availability of technical support

Enter text here

Determine what type of technological capacity is needed

Enter text here

Identify the scope for collaborating with national and international organizations

Enter text here

Develop a work plan identifying the major steps and studies envisioned, in a stepwise manner, moving from current capabilities towards more sophisticated capacity in the years ahead

Enter text here

Consider how to integrate REL/RL development with:

a) Component 2a assessment of deforestation drivers
b) Components 2b REDD+ strategy activities, and 4a national forest monitoring systems
c) National GHG inventory and reporting process

Enter text here

Consider the potential benefits of preparing to establish REL/RL for each major eco-region or political unit like a province, linked up into a national REL/RL

Enter text here

Explain how this approach would be organized, implemented, and be consistent with the national REL/RL

Enter text here

Some countries have expressed interest in cooperating on analytic work on REL/RL (and national forest monitoring

system design) at a multi-country regional scale, and then having each country select its own level, building on this common work. If this approach is relevant to your country, please explain how you expect this to work, what role your country would play, and how your country would eventually select its own REL/RL

Enter text here

Incorporate spatial disaggregation of changes in forest cover, via use of GIS or other spatial techniques, production of baseline carbon maps, etc

Enter text here

Consider linkages to the national forest monitoring system design

Enter text here

Use the most recent IPCC guidelines and guidelines, as adopted or encouraged by the Conference of the Parties, as appropriate, as a basis for estimating anthropogenic forest-related greenhouse gas emissions by sources or removals by sinks

Enter text here

Undertake consultations on proposed options for development of a RL with relevant stakeholders, including indigenous peoples and other forest dwellers, and possible choice of adoption of a national RL with the relevant stakeholders

Enter text here

Disseminate information when a draft and final REL/RL are made public.

Enter text here

Progress on this component:

Definitions

According to the decisions of COP 17 in Durban Forest Reference Emission Levels and Forest Reference Levels (REL/RLs) are considered as benchmarks for assessing a country's performance in reducing total emissions and increasing removals associated with eligible REDD+ activities (see Component 4a and Annex 4 for further details) . Here, Forest Reference Emission Level (REL) refers to the amount of gross emissions from deforestation and degradation, and forest management from a defined geographical area and within an agreed period under an approved business-as-usual (BAU) scenario against which actual emissions are compared. The BAU scenario refers to the development path a system would follow if it were not subject to any external program or policy intervention; that is, it is the scenario in which historical and current practices continue. While the REL includes gross emissions only, the Forest Reference Level includes additionally the removals from sustainable management of forest and enhancement of forest carbon stocks.

1. Modalities

The decisions of COP 17 provide limited guidance on REL/RL modalities. Beyond, Vanuatu's REDD+ REL/RL will anticipate the following modalities:

Activity specific REL/RL approach: Due to different drivers, agents, underlying causes (Comp 2a) specific REL/RLs approaches and will be developed for each of the 5 eligible REDD+ activities. The choice of the approach depends on data availability, resources requirements, and the technical capacities available. While some approaches might be simple in terms of data requirements and can be easily implemented, others might require additional efforts. Defining a REL for degradation might require determining and combining different BAUs for illegal logging, charcoal production, and fuelwood collection. Approved methodological elements of the VCS will be screened and tested to assess their potential to be used at different levels.

Subnational accounting on 5 islands and nesting: As the emission and removal dynamics of Vanuatu's bigger islands[30] depends on specific sets of drivers, agents, and underlying causes, the REL approaches will be fit and calibrated to these specifics conditions. Each REL approach will be tested within a given domain. The rest of the national territory will be treated as one region, as the islands show similar deforestation rates and patterns. National activity specific R(E)Ls will be build following VCS's Jurisdictional and Nested REDD+ (JNR) Requirements.

Activity specific temporal boundaries: While Vanuatu's historic deforestation patterns can be reconstructed for the past 30 years to calibrate the BAU scenario; it is difficult to generate similar activity data for historic degradation or enhancement of carbon stock activities. Thus, activity based R(E)Ls will be developed using different temporal boundaries concepts. While a reference year might be selected for the partial RL for enhancement or conservation of forest carbon stocks, the deforestation and degradation RELs will be based on historic periods.

Anticipating national circumstances: The development of future deforestation and degradation patterns will depend on the dynamics drivers, underlying causes, and agents. In case of Vanuatu, the demand for land use change is particularly driven agricultural production which has to meet the demand driven by demographic change, urbanization, and growth of the tourism sector. Vanuatu approved certain sector strategies to achieve the Millennium Development Goals (cf. Comp 2a) which will be anticipated in developing activity specific RELs for 5 pilot islands.

Stepwise development of activity-specific RELs: The development of the deforestation REL will be start with a construction and projection of the historic deforestation pattern evolving over the last 30 years. At a second stage, the historic change patters (activity data and emission factors) and their relation to explanatory parameters representing the dynamics of drivers, causes, and agents will be assessed. Within a third step, alternative sector specific policy and development scenarios will be tested to analyze corresponding emission and removal pathways.

Modeling: The potential of spatial and non-spatial models for certain activities will be explored and all relevant parameters, assumptions, methods, and procedures will be comprehensively documented. Common scientific standards (sensitivity analysis, verification and validation of models) and good practices will be followed in developing models.

Spatiotemporal integration: A national RL will be constructed by spatially and temporally integrating activity specific RELs and RLs. The national RL will be based on an approved macroeconomic development scenario.

[30] The regional GIZ-SPC program has selected Efate, Erromango, Malekula, and Santo as pilot islands. Tanna should be included as a particular domain, as it shows one of the highest deforestation rates in the past (Herzog et al. 2007).

Factoring out non-anthropogenic emissions: According to the Decision of COP 17 in Durban consistency shall be achieved with anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks as contained in each country's greenhouse gas inventories. This requirement implies that parties have to factor out non-anthropogenic emissions and removals, e.g. caused by natural disturbances.

Piloting on Santo Island: The REL and MRV approach will be tested upfront on Santo Island with financial support from GIZ.

2. Methodological framework

Different tools and methods will be applied to establish and integrate activity specific RELs:

Focal groups and scenario development: To identify and explore Vanuatu's sector specific development pathways (e.g. for tourism, forestry, and agriculture) focal groups interviews involving different stakeholders and experts will be conducted at the national level and on 5 pilot islands. These interviews will be based on national sector policies and development plans and will lead to the development of the BAU case and alternative land-use change scenarios. Complementary, the potential of Delphi-methods can be explored to balance the view of policy leaders with expert opinions from academe and other stakeholders.

Surveys will play a crucial role in assessing the dynamics and impacts of particular degradation activities. VCS provides modules to quantify fuelwood extraction and charcoal making (VCS VMD0008). Apart, they will be used to understand the behavior of deforestation and degradation agents in a changing policy environment. Vanuatu will explore the potential of these methodological elements on selected pilot sites.

Statistical regression and trend analysis: Vanuatu has comprehensive demographic and agricultural census data (see next section), which has to be explored to assess the statistical correlation between certain trends (e.g. demographics, agricultural production, timber extraction) and historic deforestation and degradation patterns.

Spatial modeling: The DinamicaEGO 1.8.9 will be used to assess the explanatory power of certain drivers (e.g. access to forest, site specific environmental conditions, and settlement patterns) and to project the historic deforestation pattern into the future under different scenario assumptions. Spatial models will be linked to quantitative assumptions about the future deforestation, and if feasible degradation rates. A spatial deforestation model will be developed and specifically calibrated for each of the 5 pilot islands.

Projecting removal by enhancing forest carbon stocks will use methodological tools developed under the CDM such as TARAM 1.4. It is expected that similar tools will be developed for NAMAs, soon and shall be tested as soon as they become available.

Different approaches exist to anticipate national circumstances in developing the national REL/RL. Within a direct approach the results of a BAU based on appropriate data, approved policy scenarios, and sound modelling[31] approaches, for example a projected deforestation pattern for the period 2014-2017 can be directly combined with strata specific emission factors to determine the REL. Within an indirect approach a derived BAU can be adjusted to factor in future development needs, resources policies, or other factors considered relevant. While parties haven't yet agreed on specific modalities how to determine or adjust the REL/RL, Vanuatu will stepwise develop and test different modelling options within both approaches.

[31] Here, modeling is used as a generic term covering simple statistical models (averages, trends), uni-or multivariate statistics, linear or non-linear dynamic models.

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The explanatory power and quality of higher-order modelling approaches such as optimization in agricultural modelling and System Dynamics shall be tested in cooperation with national and international research institutions. However, these tests shall be used as opportunities to enhance national REDD+ research opportunities.

3. Data requirements and availability

The REL/RL development will build on inputs from several other components to be implemented during the Readiness phase:

> Component 2a: The assessment of land use, land-use change drivers, forest law, policy and governance has to provide quantitative inputs to assess the weight of different drivers in developing the BAU and alternative scenarios.
>
> Component 4a: The forest monitoring system has to provide the spatial deforestation and forest degradation patterns as well as rates to estimate emissions and removal over time.
>
> Component 2b: The methodological REL/RL framework can be used to assess the performance of selected REDD+ strategy options.

Within its efforts to implement a national forest monitoring system Vanuatu will process historic deforestation patterns and rates for the periods 1990-2000-2007-2010 (cf. Annex 4a). Degradation reporting will be based on the stratification of the new vegetation map (MAQFF 2011) reflecting the state of 2010 – 2014 and eventually 2007-2010. The high-resolution topographic derived from NEXTMap® 2003 TopoSAR orthorectified radar images serves as a comprehensive and highly accurate spatial data source for roads, settlements, hydrography, and mining, and other infrastructure features.

Besides the spatial MRV data the Government of Vanuatu is conducting different surveys on a regular basis, of which the following are of high relevance for the REL/RL development:

Table 1: Available statistical data for REL/RL development

Type	Year(s)	Coverage	Source
Census of Agriculture	2007	• Structure and characteristics of agricultural activities of households; • Number and distribution of household engaged; • Data on the farm/holding/sub-holding area, quantity of the crops grown/sold, number of cattle and other livestock kept, quantity of fisheries species gathered/caught, etc.	VNSO 2008
5th National Census of Population and Housing 2009	2009 (1967, 1979, 1989, 1999)	• Population size and growth 1999 – 2009 by province and island • Various demographic indicators	VNSO 2009b
Household Income and Expenditure Survey	2006, 2010	• Demographic, income and expenditure data at the household level as well as relative standard errors for the data	VNSO 2009a, 2010
Tourism statistics	Monthly	• Origin, visitor arrivals, purpose of visit, length of stay, means of transport	VNSO

Current data availability and structure can be considered satisfactory for REL/RL development. Combining available statistical and forest monitoring data robust spatially explicit model can be constructed and calibrated which will link the performance of key drivers and underlying causes to the evolving historic deforestation pattern. The correlation between the degradation pattern 2007-2010 (if detectable) and certain agricultural, demographic, and socioeconomic parameters has to be investigated further. Additional data needs might arise when higher-order modelling approaches will be tested. These needs would have to be addressed by complementary funding sources.

4. Key activities and work plan

BAU and policy scenarios development: An international consultant (natural resources economist or policy analyst) will elaborate the BAU and alternative development scenarios. The consultant will develop a policy survey design which has to be approved by the National REDD+ Steering Committee (Cf. Component 1a. National Readiness Management Arrangements). Based on the design the consultant will scope relevant sector policies to derive alternative development scenarios and their impacts in terms of land-use change. Once the Steering Committee has reviewed and approved these scenarios, the international consultant will conduct a 3-step Delphi questionnaire sent to a panel of national and international experts to identify the BAU to validate the approved scenarios. The preselected policy scenarios will be adjusted based on the Delphi survey results and presented to the Steering Committee. Together with the spatial projections of the BAU (see below), they will be validated by local stakeholders in 5 regional outreach workshops on the five pilot islands. The Workshop results will be documented, the BAU and alternative scenarios adjusted and submitted to the Steering Committee for final approval.

Spatiotemporal deforestation modeling: Spatiotemporal deforestation models will be developed and calibrated for 5 pilot islands. An international consultant (GIS specialist) will compile a Geodatabase using available spatial (Component 4a) and statistical data. The consultant will conduct a spatial regression analysis to identify statistical correlations between spatial deforestation patterns, deforestation rates, key parameters and proxies capturing the drivers', causes', and agents' dynamics. Based on the results of the statistical analysis the consultant will develop and calibrate a spatiotemporal model in DinamicaEgo using historical data to project the future deforestation pattern for each pilot island based on the past trend. Once the policy scenarios have been developed, their land-use change impacts will be simulated and assessed using the calibrated model. Together with the policy scenarios the spatial simulations will be presented to the National Steering Committee. Having been analyzed during the 5 regional outreach workshops they will be adjusted for final approval and documented.

EFCS Database development: Enhancement of forest carbon stocks (EFCS) activities will be implemented within the national forest plantation program focusing on site-specific forest plantation concepts, in particular for degraded areas, and compensatory tree planting (Government of the Republic of Vanuatu 2011). These activities will have to be registered (location, stand characteristics), monitored, and measured. Thus, an IPCC 2006 approach 3 compliant database will have to be developed which maintains spatial consistency in reporting emissions and removals across the national domain. A geodatabase has to be developed which support the national EFCS registry reporting tasks. The geodatabase has to be designed in consistency with the reporting requirement established by the IPCC 2006 inventory guidelines and reporting formats, the forest monitoring system (Component 4a) as well as with future COP decisions.

REL/RL integration: The spatiotemporal deforestation model, the forest monitoring system and the EFCS database will be integrated within a common GIS framework. This framework will support IPCC 2006 approach 3 compliant reporting on emissions and removals. The integration of subnational REL/RLs will follow the Technical Recommendations version 2 and the forthcoming Technical Requirements of the VCS Jurisdictional and Nested REDD Initiative (JNRI). JNRI compliance will be validated by an UNFCCC and VCS accredited certifier.

Stakeholder coordination and outreach: The National REDD+ Steering Committee will accompany the process, review and approve milestone products (policy survey design, policy survey, BAU and policy scenarios, and integrated national REL/RL framework). Local stakeholders will validate the subnational REL/RLs components (BAU, policy scenarios, and spatiotemporal modeling results) at regional outreach workshops to be held on the 5 pilot islands.

Annex 3a presents the work plan and the tentative schedule.

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5. Institutional Framework

The development of activity specific subnational REL/RLs integrated into a national RL requires support and backstopping from different governmental agencies as well as local stakeholders. The following governmental institutions will be requested to actively participate in backstopping, data sharing and framing at the level of the REDD+ Steering Committee:

- Ministry of Agriculture, Quarantine, Forestry and Fisheries
- Vanuatu National Statistics Office
- Departments of Agriculture
- Department of Forest
- Department of Land Surveys
- Department of Provincial Affairs

The national REDD+ coordinator will manage the REL development, supervise the work of the consultants and liaise with provincial offices. Complementary research in the field of REL development will be coordinated and approved by the Steering Committee.

6. Summary budget

Table 3: Summary of Reference Level Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2011	2012	2013	2014	Total
BAU and policy scenarios development	Policy survey design			3.0		3.0
	Policy survey			18.0		18.0
	Delphi survey			24.0		24.0
	Policy scenario development			12.0		12.0
	Documentation			6.0		6.0
Spatial deforestation modeling	Geodatabase compilation			10.0		10.0
	Statistical analysis			10.0		10.0
	Model calibration			12.5		12.5
	Scenario tests			12.5		12.5
	Scenario adjustment			7.5		7.5
	Documentation			5.0		5.0
EFCS Database development	GeoDatabase design			10.0		10.0
	Geodatabase implementation and training			17.2		17.2
	Documentation			5.0		5.0
REL/RL integration	Accounting framework design			11.0		11.0
	Spatial REL/RL integration			5.0		5.0
	Reporting				8.0	8.0
Stakeholder	Steering Committee			2.5		2.5

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coordination and outreach	Regional outreach workshops			87.3		87.3
External REL/RL validation					61.0	61.0
Total				**258.5**	**69.0**	**327.5**
Government						
FCPF						
UN-REDD Programme (if applicable)						
Other Development Partner 1 (name)						
Other Development Partner 2 (name)						
Other Development Partner 3 (name)						

References

Achard F., et al. 2007: Accounting for avoided conversion of intact and non-intact forests Technical options and a proposal for a policy tool Institute for Environment and Sustainability, Joint Research Centre of the European Commission.

Almeida-Filho, R. et al. 2009: Using dual-polarized ALOS PALSAR data for detecting new fronts of deforestation in the Brazilian Amazonia, International Journal of Remote Sensing Vol. 30, No. 14, 20 July 2009, 3735–3743.

Asner, G. et al. 2010: High-resolution forest carbon stocks and emissions in the Amazon, PNAS September 21, 2010 vol. 107 no. 38, p. 16738-16742

Bellamy, J.A. ed. 1993: Vanuatu Resource Information System. VANRIS Handbook. Prepared by the CSIRO Brisbane and the Department of Primary Industries Forest Service for the Australian International Development Assistance Bureau.

Brown, S. 1997: Estimating Biomass and Biomass Change of Tropical Forests: a Primer. FAO Forestry Paper - 134.

Chagas, Thiago, Jacob Olander, Charlotte Streck, Robert O'Sullivan, and Joerg Seifert-Granzin 2011: Nested Approaches to REDD+: An Overview of Issues and Options. Washington, DC: Forest Trends and Climate Focus.

Chave, J. et al. 2005: Tree allometry and improved estimation of carbon stocks and balance in tropical forests, Oecologia 145: 87–99

Feldpausch, T.R. 2011: Height-diameter allometry of tropical forest trees, in: Biogeosciences, 8, 1081–1106, 2011.

Geist, H. and Lambin E.F. 2002: Proximate causes and underlying driving forces of tropical deforestation, Bioscience; Feb 2002; 52, 2; ProQuest Biology Journals, pg. 143

GOFC-GOLD 2011: A sourcebook of methods and procedures for monitoring and reporting anthropogenic greenhouse gas emissions and removals caused by deforestation, gains and losses of carbon stocks in forests remaining forests, and forestation. GOFC-GOLD Report version COP17-1, (GOFC-GOLD Project Office, Natural Resources Canada, Alberta, Canada)

Herold, M., Sambale, J. , Lindner, M., Urban, M. and Weaver, S. 2007: Satellite based monitoring of the national forest resources in the pacific island state of Vanuatu, DGPF Tagungsband 16 / 2007 – Dreiländertagung SGPBF, DGPF und OVG.

IPCC 2003: Report on Definitions and Methodological Options to Inventory Emissions from Direct Human-induced Degradation of Forests and Devegetation of Other Vegetation Types.

Draft

IPCC 2006: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). Published: IGES, Japan.

IPCC GPG LULUCF 2003: Good Practice Guidance on Land Use, Land-Use Change and Forestry.

Lafortezza, R. et al. 2010: Assessing the impacts of fragmentation on plant communities in New Zealand: scaling from survey plots to landscapes, Global Ecology and Biogeography, 19, 741–754.

Meridian Institute 2011: Modalities for REDD+ Reference Levels: Technical and Procedural Issues. Prepared for the Government of Norway, by Arild Angelsen, Doug Boucher, Sandra Brown, Valérie Merckx, Charlotte Streck, and Daniel Zarin.

Ministry of Agriculture, Quarantine, Forestry and Fisheries 2011: Elaboration of a Vegetation and Land Cover Map of Vanuatu" under the FAO Program "Strengthening of the Monitoring, Assessment and Reporting (MAR) on Sustainable Forest Management (SFM)", elaborated by Martin Schweter.

Mitchard, E.T.A. et al. 2011: Measuring biomass changes due to woody encroachment and deforestation/degradation in a forest–savanna boundary region of central Africa using multi-temporal L-band radar backscatter, Remote Sensing of Environment (2011), doi:10.1016/j.rse.2010.02.022

Olander, J. and Ebeling, J. 2011: Building Forest Carbon Projects: Step-by-Step Overview and Guide. In Building Forest Carbon Projects, Johannes Ebeling and Jacob Olander (eds.). Washington, DC: Forest Trends.

Pearson, T., Walker, S. and Brown, S. 2005: Sourcebook for Land Use, Land-Use Change an Forestry Projects, BioCarbon Fund /Winrock International.

Potapov, P. et al. 2008: Mapping the World's Intact Forest Landscapes by Remote Sensing. Ecology and Society, 13

Saatchi, S. et al. 2011: Benchmark map of forest carbon stocks in tropical regions across three continents, PNAS May 2011, www.pnas.org/cgi/doi/10.1073/pnas.1019576108.

Seifert-Granzin, J. 2011: REDD Guidance: Technical Project Design. In Building Forest Carbon Projects, Johannes Ebeling and Jacob Olander (eds.). Washington, DC: Forest Trends.

Smith, E.P. 2002: BACI Design, in: El-Shaarawi, A.H. and Piegorsch, W.W. 2002: Encyclopedia of Environmetrics, Chichester: Wiley & Sons.

The Climate, Community & Biodiversity Alliance (CCBA) 2008: Climate, Community and Biodiversity Project Design Standards, Second Edition – December 2008

The Climate, Community & Biodiversity Alliance and CARE International (CCBA and CARE international) 2010: REDD Social & Environmental Standards Version 1 June 2010

Thiele, T., Mussong, M. and Mateboto, J. 2010: MAR-SFM. Monitoring, Assessment and Reporting for Sustainable Forest Management in Pacific Island Countries, SPC.

The Vanuatu National Statistics Office (VNSO) 2008: Census of Agriculture 2007—Vanuatu

The Vanuatu National Statistics Office (VNSO) 2009a: Vanuatu Household Income and Expenditure Survey 2006

The Vanuatu National Statistics Office (VNSO) 2009b: 2009 National Census of Population and Housing, Summary Release.

The Vanuatu National Statistics Office (VNSO) 2010: 2010 Household Income and Expenditure Survey (HIES) Survey Operations Report.

Government of the Republic of Vanuatu 2011: Vanuatu Forest Policy 2011 – 2020, June 2011.

VCS 2012a: VCS Standard. VCS Version 3.2 Requirements Document, Washington, DC: Verified Carbon Standard.

VCS2012b: Agriculture, Forestry and Other Land Use (AFOLU) Requirements. VCS Version 3.2 Requirements Document, Washington, DC: Verified Carbon Standard.

VCS 2012c: Jurisdictional and Nested REDD Initiative: Summary of Technical Recommendations – Version 2.0, February, 22 2012, Washington, DC: Verified Carbon Standard.

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Component 4: Design Systems for National Forest Monitoring and Information on Safeguards

4a. National Forest Monitoring System

Standard 4a the R-PP text needs to meet for this component:
National Forest Monitoring System

The R-PP provides a proposal and workplan for the initial design, on a stepwise basis, of an integrated monitoring system of measurement, reporting and verification of changes in deforestation and/or forest degradation, and forest enhancement activities. The system design should include early ideas on enhancing country capability (either within an integrated system, or in coordinated activities) to monitor emissions reductions and enhancement of forest carbon stocks, and to assess the impacts of the REDD-plus strategy in the forest sector.

The R-PP should describe major data requirements, capacity requirements, how transparency of the monitoring system and data will be addressed, early ideas on which methods to use, and how the system would engage participatory approaches to monitoring by forest–dependent indigenous peoples and other forest dwellers. The R-PP should also address the potential for independent monitoring and review, involving civil society and other stakeholders, and how findings would be fed back to improve REDD-plus implementation. The proposal should present early ideas on how the system could evolve into a mature REDD-plus monitoring system with the full set of capabilities.

(FCPF and UN-REDD recognize that key international policy decisions may affect this component, so a staged approach may be useful. The R-PP states what early activities are proposed.)

Progress has been made on the content of this component but this content has yet to be organised according to the formatting sequencing required by the FCPF. The required sequencing is presented in the yellow boxes below, and this is followed by the draft material prepared to date.

Indicate what the monitoring system will be designed for, i.e., deforestation, and degradation, and other 'REDD plus' elements

Enter text here

Clearly state the objectives of the monitoring system that you wish to propose, providing clear objectives to achieve in order to become REDD+ ready

Enter text here

Propose how the system will address forest land use change, carbon stock change assessment, and which carbon pools will be included

Enter text here

State the proposed frequency for performing the respective activities (inventory, etc.)

Enter text here

Describe the criteria and processes to be used for designing the monitoring system. Please identify your targeted IPCC tier level, and intended level of precision for the system, if known at present, both in the: (a) near term (roughly next 3 years), and (b) longer term (say 3-10 years).

Enter text here

Assess technological options and choice of methods to be used for measuring, reporting and verifying carbon stock changes

Enter text here

Assess existing capacities and future capacities required for the monitoring system

Enter text here

Define the roles and responsibilities for design and implementation of measuring, reporting and verifying, including those for national institutions

Enter text here

Identify capacity building, training, and hardware and software needs, including possibility of scaling up existing initiatives and collaborations, and renewing previous agreements with relevant institutions

Enter text here

Encourage participation of local communities, NGOs, various government agencies or institutes, and the private sector in designing the monitoring system, in identifying opportunities for stakeholder participation in implementing the monitoring system; and in the verification process

Enter text here

Assess systems/structures required for monitoring and review, transparency, accessibility and sharing of data both nationally and internationally

Enter text here

Assess the financial support required and the sources of funding

Enter text here

Consider the potential benefits of designing the system to be built around logical subnational political or ecological regions, e.g., provinces, islands or ecoregions

Enter text here

Consider how to integrate monitoring system design with:

- component 2a assessment of deforestation drivers
- component 2b REDD+ strategy activities, and component 3 reference level development
- national GHG inventory and reporting process

Enter text here

Countries should indicate in this R-PP component how they propose to conduct analytic or other activities to determine how to address displacement in their monitoring system, and consider it in their selection of REDD+ strategy options

Enter text here

Prepare an overview of how they plan to report and have verification occur.

Enter text here

Progress on this component so far:

Guiding principles

The proposed National Forest Monitoring Systems is based on the latest decisions of the 17. Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) held in Durban in 2011 and the Cancun Agreements (FCCC/CP/2010/7/Add.1). It will also anticipate the forthcoming decisions of the Subsidiary Body of Scientific and Technological Advice (SBSTA) and of the Ad-hoc Working Group on Long-term Cooperative Action (AWG-LCA) on REDD+.

Being a small island state composed of 83 islands and island groups, Vanuatu is showing a comparatively low deforestation rate (Herold et al. 2007). Besides, governmental agencies and ministries count with very limited human, technical, and financial resources to manage natural resources. Currently, no forest concessions are operating in Vanuatu and timber harvesting is operating at a small scale level (Vanuatu Forest Policy 2011 - 2020). Consequently, Vanuatu has to aim at a cost-effective forest monitoring system focusing on core greenhouse gas (GHG) measurement, reporting and verification (MRV) activities. It will build existing imagery and mapping products focusing its efforts on closing information gaps minimizing the MRV implementation costs without scarifying its accuracy. Such an information system can be extended over time to serve multiple purposes in managing lands, forests, and property rights.

While activity data will be generated in a wall-to-wall mode, , Vanuatu will focus its GHG inventory efforts during the first and second phase on the 4 bigger islands Santo, Malekula, Efate and Erromango. However, a sampling scheme will be developed that supports the processing of emission factors which can be attributed to land use and land use change on all islands. In the third phase, the sampling scheme can be intensified to cover all relevant geographical entities.

Along this line, Vanuatu's REDD MRV framework is integrating building blocks developed at the regional level to reduce the national implementation costs. Particularly, it will anticipate MAR-SFM, the Monitoring, Assessment and Reporting for Sustainable Forest Management Framework (Thiele et al. 2010), a forest inventory approach adjusting FAO's inventory framework to the specific conditions of small islands in the South Pacific. While the country will focus its REDD efforts during the readiness phase on developing its capacities in the managing geodata, the Applied Geoscience and Technology Division (SOPAC) of the Secretariat of the Pacific Community (SPC) will generate relevant activity data to account for forest related GHG emission and removals.

Although the UNFCCC Parties haven't yet agreed to what extend the IPCC guidance and guidelines will be used in accounting for emissions and removals in REDD+, Vanuatu is committed to base its REDD+ MRV on the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC 2006). In its initial phase, it is aiming at a tier 2 compliant GHG inventory approach gradually improving the accuracy of emission factors over time to reach tier 3 for selected carbon pools. In the same way, the spatial resolution, accuracy, and precision of forest cover monitoring shall improve over time. While the detection of historic land use land use change has to be based on medium resolution optical (Landsat, Aster, Spot) and radar imagery (ALOS Palsar), the design of the future system will anticipate new improved sensor technologies (e.g ESA's Sentinel 2 sensor) and new processing methodologies.

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While Vanuatu aims at implementing a comprehensive national REDD+ approach covering all the 5 eligible activities, it will focus its efforts on geographic areas, policy approaches, and eligible activities which show the highest potential to achieve emission reductions and GHG removals on short to medium term. Besides monitoring deforestation and forest degradation, the MRV system shall be capable of tracking GHG removals enhancing forest carbon stocks at different scales (e.g. community forestry, ecosystem restoration) and in different ways (e.g. reforestation using timber species, agroforestry).

Eligible REDD+ activities

Vanuatu is committed develop a cost-effective MRV System, which will be implemented step by step. It will build on available terrestrial inventory and remote sensing data and anticipate new emerging technologies to be provided by different space agencies during the Readiness phase. At its mature stature this system will cover all the 5 eligible REDD+ activities. Table 1 summarizes the initial scope of the MRV system to be implemented during the Readiness phase. Annex 4.A describes the available and required data sources, processing methodologies, and scope for each of the 5 eligible activities.

Table 1: Key systems characteristics of Vanuatu's initial REDD+ MRV system

REDD+ activity	Activity data (AD) and Emission factors (ED)	Spatial domain	Temporal boundaries
Deforestation	AD: Optical and radar data ED: IPCC 2006 tier 2 compliant forest inventory	AD: wall-to-wall processing (83 islands) ED: terrestrial inventory on 4 biggest islands	AD: 1990-2000-2007-2010-2014 -2017 ED: 2012, 2017
Degradation	AD: detected managed/non-intact forest land remaining forest land ED: IPCC 2006 tier 2 compliant forest inventory	AD: hot spot monitoring on 4 biggest islands ED: Terrestrial inventory on 4 biggest islands	AD: (2007 –)2010 – 2014 – 2017 ED: 2012, 2017
Sustainable Management of forests	AD: Management plans ED: site specific inventories	Registered pilot sites	2012 - 2017
Enhancement of forest carbon stocks	AD: National registry of AR activities ED: species specific default values	Registered pilot sites	2012 - 2017
Conservation of forest carbon stocks	AD: residual areas (intact unmanaged forest land) ED: IPCC 2006 tier 2 compliant forest inventory	AD: wall-to-wall processing (83 islands) ED: terrestrial inventory on 4 biggest islands	AD: 1990-2000-2007-2010-2014 -2017 ED: 2012, 2017

The National Forest Inventory Approach

For REDD+ reporting purposes the following forest definition will be applied in accordance with the National Forest Policy 2011 - 2020:

Forest is a minimum area of land of 0.81 hectare with tree crown cover (or equivalent stocking level) of more than 10 percent with trees with the potential to reach a minimum height of 3 meters at maturity in situ.

The Stratification of the National Forest Inventory will be based on the Government of Vanuatu's recently released new vegetation and land cover map of Vanuatu (Ministry of Agriculture, Quarantine, Forestry and Fisheries MAQFF 2011). Eight forest classes open and closed high forests, low forests, thickets, mangroves as well as tree crops will be covered by the forest inventory, while GHG removals by forest plantations will be monitored for specific sites. The inventory design will follow the Protocols

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of the Monitoring, Assessment and Reporting for Sustainable Forest Management (MAR-SFM) developed by the Secretariat of the Pacific Community (SPC). Plots including subplots, units, and subunits will be established following a cross-shaped plot design (s. Annex 4.A). While aboveground biomass, deadwood, litter, and soil-carbon will be measured in the field, belowground biomass will be estimated using IPCC default values for root-to-shoot ratios.

Aiming at a precision of ±10 per cent of the true value of the mean at the 95 per cent confidence level for aboveground biomass in each stratum, it is estimated that 180 plots will be required to cover the relevant strata. The final plot number will be calculated after a pre-test of the inventory approach on Santo Island in 2012-2013. Aboveground biomass will be calculated using new pantropical allometric equations (Chave et al. 2005).

The Forest Inventory will be conducted under the lead of SPC and VDoF during 2012 - 2014. In accordance with the MAR-SFM protocol (Thiele et al. 2010) key biodiversity parameters will be assessed, too. All plots will be installed involving local communities and land owners. The results will be presented, discussed and validated by landowners and other stakeholders on each island during the Readiness phase.

Deforestation Monitoring

Vanuatu will cover the periods 1990-2000-2007-2011-2014-2017 in reporting on emissions from deforestation and forest degradation. It will use the methodology developed by Herold et al. 2007 to the periods 2000 – 2007 and 2007 – 2011 complementing it applying radar-based methodologies to reduce the clouds coverage. Seven major tasks will be conducted during the Readiness phase:

(1) Deforestation processing 2007 – 2010
(2) Cloud correction 1990- 2000
(3) Deforestation processing 2000 – 2007 – 2010
(4) Deforestation processing 2010 – 2014
(5) Deforestation processing 2014 – 2017
(6) Vegetation map 2010 and 2017 updates

Annex 4.A identifies the data requirements, methods to be used, and resources required.

During an initial phase (2012 – 2015) all remote sensing tasks shall be conducted at the regional level with the support of the Applied Geoscience and Technology Division of the Secretariat of the Pacific Community (SOPAC). In this phase, relevant governmental units in Vanuatu will be trained to verify and use the products. Local stakeholders will be involved in all activities in validating the products of each task before completion. All products will be made available to Vanuatu's REDD+ stakeholders applying a disclosure policy to be elaborated.

Degradation Monitoring

Vanuatu will test GOFC-GOLD's indirect approach in combination with IPCC 2006 reporting requirements. It will consider the strata open medium-high forest, open low forest, and open thicket as degraded. Other forest classes will be sub-stratified in intact and non-intact, and complementary in managed and unmanaged, if appropriate, applying GOFC-GOLD's 6 criteria to report emissions from degradation. Reporting will anticipate the periods 2010-2014-2017. Backward reporting for the period 2007-2011 will be tested within a research project to be funded complementarily.

Enhancement Of Forest Carbon Stocks

The Department of Forestry will establish a registry for enhancement of carbon stock activities eligible under a REDD+ compensation scheme. It will monitor removals on registered sites, account and report corresponding GHG removals using formats and rules to be agreed under UNFCCC for REDD+

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reporting. It will analyze the option to implement a national plantation and replanting program as a National Appropriate Mitigation Action (NAMA) and decide about an appropriate reporting period.

Conservation Of Forest Carbon Stocks

Vanuatu is committed to create and extend protected areas to be managed by communities and landowners. It will report on conservation of carbon stocks in those areas.

Sustainable Management Of Forests

The Department of Forests will analyze the potential of promoting pilot activities reducing logging impacts. It considers the available VCS methodologies for Reduced Impact Logging (RIL) as an option for nested project-based approaches.

Common Geodata Infrastructure And Standards In Terrestrial Monitoring

To improve consistency in data management, geo services, and ultimately the quality of the REDD+ monitoring and reporting the Department of Lands, Department of Agriculture and Rural Development, Department of Environmental Protection and Conservation, and the Department of Forests have to agree on common Geodata standards, formats, and official datasets.

Capacity Building: GIS And Remote Sensing

During the Readiness phase GIS routines and geo-databases have to be consolidated first, before the remote sensing capacities can be improved. To facilitate the proliferation of common Geodata standards and procedures, GIS staff of different Departments dedicated to terrestrial monitoring shall be involved in GIS training and remote sensing technology transfer. A long-term capacity building concept will be developed during the initial Readiness phase to guide this process.

Independent Review And Certification

Vanuatu will follow the Technical Recommendations of the Jurisdictional and Nested REDD Initiative (JNRI) of the Verified Carbon Standard (VCS) version 3.2 (VCS 2012a-c). It aims at certifying its REDD+ MRV system by an UNFCCC accredited certifier. The validation can be initiated once the integrated REL/RL framework has been established (Component 3). Verification can be conducted as soon as the National Forest Inventory has been implemented and the activity data for the periods 1990-2014 have been processed.

Table 4-1: Summary of Monitoring Activities and Budget (USD)

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2012	2013	2014	2015	Total
National Forest Inventory	Inventory preparation	49.34				**49.34**
	Inventory piloting	101.65	238.90			**340.55**
	Inventory roll-out		203.25	78.98		**282.23**
	Data processing and reporting			36.75		**36.75**
Deforestation monitoring	Deforestation processing 2000–2010	124.30	79.30			**203.60**
	Cloud correction 1990-2000		125.64	7.61		**133.25**
	Deforestation analysis 2000-2007-2010			43.40		**43.40**

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	Deforestation analysis 2010 – 2014				119.51	**119.51**
	External verification				70.00	**70.00**
GeoData management			40.00	60.00		**100.00**
GIS/RS Training			50.00	50.00	80.00	**180.00**
Total		**275.29**	**737.01**	**276.73**	**269.51**	**1,558.63**
Government						
FCPF		**4.22**	**461.67**	**276.73**	**269.51**	**1,169.27**
UN-REDD Programme (if applicable)						
GIZ		288.87	257.60			**546.49**
Other Development Partner 2 (name)						
Other Development Partner 3 (name)						

Acronyms

A/R	Afforestation and reforestation
AWG-KP	Ad-hoc Working Group on Further Commitments of Annex I Parties under the Kyoto-Protocol
AWG-LCA	Ad-hoc Working Group on Long-term Cooperative Action
BACI	'Before-After-Control-Intervention' model
BAU	Business as usual scenario
BMU	German Federal Ministry for the Environment
CCBA	Climate, Community and Biodiversity Alliance
CCBS	Climate, Community and Biodiversity Standards
CDM	Clean Development Mechanism
COP	Conference of the Parties
DoL	Department of Lands
DARD	Department of Agriculture and Rural Development
DEPC	Department of Environmental Protection and Conservation
DoF	Department of Forests
EFCS	Enhancement of Forest Carbon Stocks
EO	Earth Observation
GHG	Greenhouse gases
FRA	Forest Resources Assessment
FPIC	Free, prior, and informed consent
GOFC-GOLD	Global Observation of Forest and Land Cover Dynamics
IPCC	Intergovernmental Panel on Climate Change

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JNRI	Jurisdictional and Nested REDD Initiative
LULUCF	Land Use, Land-Use Change, and Forestry
MAQFF	Ministry of Agriculture, Quarantine, Forestry and Fisheries
MAR-SFM	Monitoring, Assessment and Reporting for Sustainable Forest Management
MMU	Minimum mapping unit
MRV	Measurement, reporting, and verification
NACCC	National Advisory Committee on Climate Change
NAMA	National Appropriate Mitigation Action
NTFPs	Non-timber forest products
ORI	Orthorectified radar image
REDD+	Reducing emissions form deforestation, forest degradation, conservation, sustainable management of forests and enhancement of carbon stocks
RIL	Reduced Impact Logging
RMU	Resources Management Units
RS	Remote sensing
SAR	Synthetic Aperture Radar
SBSTA	Subsidiary Body on Scientific and Technological Advice
SOPAC	Applied Geoscience and Technology Division of the Secretariat of the Pacific Community
SPC	Secretariat of the Pacific Community
UNFCCC	United Nations Framework Convention on Climate Change
VANRIS	Vanuatu Resource Information System
VCS	Verified Carbon Standard
VDoF	Vanuatu Department of Forests
VNSO	Vanuatu National Statistics Office

References

Achard F., et al. 2007: Accounting for avoided conversion of intact and non-intact forests Technical options and a proposal for a policy tool Institute for Environment and Sustainability, Joint Research Centre of the European Commission.

Almeida-Filho, R. et al. 2009: Using dual-polarized ALOS PALSAR data for detecting new fronts of deforestation in the Brazilian Amazonia, International Journal of Remote Sensing Vol. 30, No. 14, 20 July 2009, 3735–3743.

Asner, G. et al. 2010: High-resolution forest carbon stocks and emissions in the Amazon, PNAS September 21, 2010 vol. 107 no. 38, p. 16738-16742

Bellamy, J.A. ed. 1993: Vanuatu Resource Information System. VANRIS Handbook. Prepared by the CSIRO Brisbane and the Department of Primary Industries Forest Service for the Australian International Development Assistance Bureau.

Draft

Brown, S. 1997: Estimating Biomass and Biomass Change of Tropical Forests: a Primer. FAO Forestry Paper - 134.

Chagas, Thiago, Jacob Olander, Charlotte Streck, Robert O'Sullivan, and Joerg Seifert-Granzin 2011: Nested Approaches to REDD+: An Overview of Issues and Options. Washington, DC: Forest Trends and Climate Focus.

Chave, J. et al. 2005: Tree allometry and improved estimation of carbon stocks and balance in tropical forests, Oecologia 145: 87–99

Feldpausch, T.R. 2011: Height-diameter allometry of tropical forest trees, in: Biogeosciences, 8, 1081–1106, 2011.

Geist, H. and Lambin E.F. 2002: Proximate causes and underlying driving forces of tropical deforestation, Bioscience; Feb 2002; 52, 2; ProQuest Biology Journals, pg. 143

GOFC-GOLD 2011: A sourcebook of methods and procedures for monitoring and reporting anthropogenic greenhouse gas emissions and removals caused by deforestation, gains and losses of carbon stocks in forests remaining forests, and forestation. GOFC-GOLD Report version COP17-1, (GOFC-GOLD Project Office, Natural Resources Canada, Alberta, Canada)

Herold, M., Sambale, J. , Lindner, M., Urban, M. and Weaver, S. 2007: Satellite based monitoring of the national forest resources in the pacific island state of Vanuatu, DGPF Tagungsband 16 / 2007 – Dreiländertagung SGPBF, DGPF und OVG.

IPCC 2003: Report on Definitions and Methodological Options to Inventory Emissions from Direct Human-induced Degradation of Forests and Devegetation of Other Vegetation Types.

IPCC 2006: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). Published: IGES, Japan.

IPCC GPG LULUCF 2003: Good Practice Guidance on Land Use, Land-Use Change and Forestry.

Lafortezza, R. et al. 2010: Assessing the impacts of fragmentation on plant communities in New Zealand: scaling from survey plots to landscapes, Global Ecology and Biogeography, 19, 741–754.

Meridian Institute 2011: Modalities for REDD+ Reference Levels: Technical and Procedural Issues. Prepared for the Government of Norway, by Arild Angelsen, Doug Boucher, Sandra Brown, Valérie Merckx, Charlotte Streck, and Daniel Zarin.

Ministry of Agriculture, Quarantine, Forestry and Fisheries 2011: Elaboration of a Vegetation and Land Cover Map of Vanuatu" under the FAO Program "Strengthening of the Monitoring, Assessment and Reporting (MAR) on Sustainable Forest Management (SFM)", elaborated by Martin Schweter.

Mitchard, E.T.A. et al. 2011: Measuring biomass changes due to woody encroachment and deforestation/degradation in a forest–savanna boundary region of central Africa using multi-temporal L-band radar backscatter, Remote Sensing of Environment (2011), doi:10.1016/j.rse.2010.02.022

Olander, J. and Ebeling, J. 2011: Building Forest Carbon Projects: Step-by-Step Overview and Guide. In Building Forest Carbon Projects, Johannes Ebeling and Jacob Olander (eds.). Washington, DC: Forest Trends.

Pearson, T., Walker, S. and Brown, S. 2005: Sourcebook for Land Use, Land-Use Change an Forestry Projects, BioCarbon Fund /Winrock International.

Draft

Potapov, P. et al. 2008: Mapping the World's Intact Forest Landscapes by Remote Sensing. Ecology and Society, 13

Saatchi, S. et al. 2011: Benchmark map of forest carbon stocks in tropical regions across three continents, PNAS May 2011, www.pnas.org/cgi/doi/10.1073/pnas.1019576108.

Seifert-Granzin, J. 2011: REDD Guidance: Technical Project Design. In Building Forest Carbon Projects, Johannes Ebeling and Jacob Olander (eds.). Washington, DC: Forest Trends.

Smith, E.P. 2002: BACI Design, in: El-Shaarawi, A.H. and Piegorsch, W.W. 2002: Encyclopedia of Environmetrics, Chichester: Wiley & Sons.

The Climate, Community & Biodiversity Alliance (CCBA) 2008: Climate, Community and Biodiversity Project Design Standards, Second Edition – December 2008

The Climate, Community & Biodiversity Alliance and CARE International (CCBA and CARE international) 2010: REDD Social & Environmental Standards Version 1 June 2010

Thiele, T., Mussong, M. and Mateboto, J. 2010: MAR-SFM. Monitoring, Assessment and Reporting for Sustainable Forest Management in Pacific Island Countries, SPC.

The Vanuatu National Statistics Office (VNSO) 2008: Census of Agriculture 2007—Vanuatu

The Vanuatu National Statistics Office (VNSO) 2009a: Vanuatu Household Income and Expenditure Survey 2006

The Vanuatu National Statistics Office (VNSO) 2009b: 2009 National Census of Population and Housing, Summary Release.

The Vanuatu National Statistics Office (VNSO) 2010: 2010 Household Income and Expenditure Survey (HIES) Survey Operations Report.

Government of the Republic of Vanuatu 2011: Vanuatu Forest Policy 2011 – 2020, June 2011.

VCS 2012a: VCS Standard. VCS Version 3.2 Requirements Document, Washington, DC: Verified Carbon Standard.

VCS2012b: Agriculture, Forestry and Other Land Use (AFOLU) Requirements. VCS Version 3.2 Requirements Document, Washington, DC: Verified Carbon Standard.

VCS 2012c: Jurisdictional and Nested REDD Initiative: Summary of Technical Recommendations – Version 2.0, February, 22 2012, Washington, DC: Verified Carbon Standard.

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4b. Designing an Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards

Standard 4b the R-PP text needs to meet for this component: Designing an Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards:

The R-PP provides a proposal for the initial design and a workplan, including early ideas on capability (either within an integrated system, or in coordinated activities), for an integrated monitoring system that includes addressing other multiple benefits, impacts, and governance. Such benefits may include, e.g., rural livelihoods, conservation of biodiversity, key governance factors directly pertinent to REDD-plus implementation in the country.

(The FCPF and UN-REDD recognize that key international policy decisions may affect this component, so a staged approach may be useful. The R-PP states what early activities are proposed.)

Assess and review any existing monitoring systems of multiple benefits

Enter text here

Identify existing national data gathering systems that could be used to obtain data on water, biodiversity, socio-economic indicators, and infrastructure

Enter text here

Conduct a process to select which multiple benefits to include in the monitoring system

Enter text here

Describe how the monitoring and information system will address key governance issues pertinent to REDD+ implementation (e.g. land tenure, law enforcement), and what will be the role of relevant stakeholders in this process

Enter text here

Determine how it will monitor social and environmental impacts and other multiple benefits, and how it could build on or complement the existing environmental and social monitoring systems of the country, as well as the proposed national forest monitoring system for REDD+

Enter text here

Provide mechanisms for establishing independent monitoring and review that allows the effective and appropriate participation of civil society, indigenous peoples and other forest dwellers, and other stakeholders

Enter text here

If a stepwise approach is envisioned, describe the timeframe in which the phases will be developed and the key outcomes expected

Enter text here

Assess existing capacities and future capacities required: define the roles and responsibilities for design and implementation of measuring, reporting and verifying of safeguards, including those for national institutions

Enter text here

Define capacity building, training, and hardware and software needed, including possibility of scaling up existing initiatives and collaborations

Enter text here

Identify the scope and role for local communities, NGOs, various government agencies or institutes, and the private sector in the 4b monitoring system

Enter text here

Assess systems/structures required for monitoring and review, transparency, accessibility and sharing of data both nationally and internationally

Enter text here

Assess the financial support required and the sources of funding

Enter text here

Consider the potential benefits of designing the system to integrate across subnational regions; or at a multi-country regional level, if either of these is relevant, based on your ecological, institutional and economic context

Enter text here

Proposed Approach To Designing The Information System

Components of the information system

Table 4-1: Summary of Monitoring Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2011	2012	2013	2014	Total
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
Total		**$**	**$**	**$**	**$**	**$**
Government		$	$	$	$	**$**
FCPF		**$**	**$**	**$**	**$**	**$**
UN-REDD Programme (if applicable)		$	$	$	$	**$**
Other Development Partner 1 (name)		$	$	$	$	**$**
Other Development Partner 2 (name)		$	$	$	$	**$**
Other Development Partner 3 (name)		$	$	$	$	**$**

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Component 5: Schedule and Budget

Standard 5 the R-PP text needs to meet for this component:
Completeness of information and resource requirements

The R-PP proposes a full suite of activities to achieve REDD-plus readiness, and identifies capacity building and financial resources needed to accomplish these activities. A budget and schedule for funding and technical support requested from the FCPF and/or UN-REDD, as well as from other international sources (e.g., bilateral assistance), are summarized by year and by potential donor. The information presented reflects the priorities in the R-PP, and is sufficient to meet the costs associated with REDD-plus readiness activities identified in the R-PP. Any gaps in funding, or sources of funding, are clearly noted.

Devise a schedule to fulfil the activities planned in this R-PP

Enter text here

Prepare a budget table and brief description summarizing the financial requirements to support this set of activities

Enter text here

Detail requested donor contributions to cover these financial requirements (highlighting your request from FCPF and/or UN-REDD)

Enter text here

Please propose your detailed schedule, budget and allocation across donors in Table 5.

Table 5: Schedule and Budget

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2011	2012	2013	2014	Total
[Add lines as needed, to provide sufficient detail]		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
Total		**$**	**$**	**$**	**$**	**$**
Government		$	$	$	$	**$**

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FCPF	**$**	**$**	**$**	**$**	**$**
UN-REDD Programme (if applicable)	$	$	$	$	**$**
Other Development Partner 1 (name)	$	$	$	$	**$**
Other Development Partner 2 (name)	$	$	$	$	**$**
Other Development Partner 3 (name)	$	$	$	$	**$**

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Component 6: Design a Program Monitoring and Evaluation Framework

Standard 6 the R-PP text needs to meet for this component:
Design a Program Monitoring and Evaluation Framework

The R-PP adequately describes the indicators that will be used to monitor program performance of the Readiness process and R-PP activities, and to identify in a timely manner any shortfalls in performance timing or quality. The R-PP demonstrates that the framework will assist in transparent management of financial and other resources, to meet the activity schedule.

For each major activity within R-PP component define the outputs (major products or accomplishments)

Enter text here

Develop quantitative and qualitative indicators of relative progress on given output.

Enter text here

Develop a single M&E framework for [~~their own~~] domestic REDD+ program management, and for reporting to FCPF, UN-REDD, or other programs.

Enter text here

Proposed Program Monitoring And Evaluation Framework

Vanuatu is in the process of considering options for a Program Monitoring and Evaluation Framework. We are currently making enquiries with Det Norske Veritas (DNV) for the determination of possible Monitoring and Evaluation Framework elements, reporting requirements, audit procedures and costs.

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Table 6: Summary of Program M&E Activities and Budget						
Main Activity	**Sub-Activity**	**Estimated Cost (in thousands)**				
		2011	**2012**	**2013**	**2014**	**Total**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
		$	$	$	$	**$**
Total		**$**	**$**	**$**	**$**	**$**
Government		$	$	$	$	**$**
FCPF		**$**	**$**	**$**	**$**	**$**
UN-REDD Programme (if applicable)		$	$	$	$	**$**
Other Development Partner 1 (name)		$	$	$	$	**$**
Other Development Partner 2 (name)		$	$	$	$	**$**
Other Development Partner 3 (name)		$	$	$	$	**$**

Table 6-2: UN-REDD National Programme Monitoring Framework : Potential tool for all countries, and required for UN-REDD countries

Expected Results (Outcomes and Outputs)	**Indicators (with baselines and indicative timeframe)**	**Means of Verification**	**Collection methods (with indicative timeframe and frequency)**	**Responsibilities**	**Risks and assumptions**
From country Results Framework or R-PP components	From Results Framework or R-PP components. Baselines are an indicator at the start of the joint programme	From indentified data and information sources	How is it to be obtained?	Specific responsibilities of participating UN organizations (including shared results)	Summary of assumptions and risks for each result

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Suggested Annexes for the R-PP (Optional)

Annex 1a: National Readiness Management Arrangements

Please present your early ideas and/or draft input to ToR.

Annex 1b: Information Sharing and Early Dialogue with Key Stakeholder Groups

Please present any relevant additional material not included in the body of the R-PP (component 1b).

Annex 1c: Consultation and Participation Process

Please present any relevant additional material not included in the body of the R-PP (component 1c).

Preliminary Dispute Resolution Framework

A Dispute Resolution Framework is a requirement of the FCPF R-PP.

1. Principles

This Dispute Resolution Framework is based on the following principles:

- Technical and social balance
- Conflict resolution
- Collaborative approach
- Non-violent communication
- Principled negotiation
- Mutual respect
- Vanuatu Kastom

1.1 Technical and Social Balance

The parties acknowledge that:

- The success of the Vanuatu REDD+ Programme and any specific activities contained therein are dependent upon both technical and social (including cultural and economic) inputs applied in an appropriate balance.

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- Each party to the dispute shares the responsibility for making a contribution to the resolution of the dispute.

1.2 Conflict Resolution

The parties assume that a conflict can be resolved in a manner that is agreeable to all parties. The parties will approach conflict in a manner that is open to the mutual co-design of a resolution to the conflict, rather than the assumption that one party will dominate any conflict resolution process. The parties will establish a partnership atmosphere when addressing conflicts or disputes. The parties will actively listen to each other's views and evidence. The aggrieved party will present their issue to the other party or parties. The party/ies receiving a complaint will actively listen to the complaint with the purpose of coming to a full understanding of the substance of the complaint.

1.2.1 Conflict Dynamic

The parties acknowledge that a conflict dynamic should it arise, can follow either:

a. Provocation and reaction/counter provocation, which will lead to an escalation of a conflict increasing the likelihood of a zero-sum game (win/lose), and the need for recourse to legal remedy.
b. Open and active listening and dialogue by all parties, which will enhance the opportunity to resolve the dispute or conflict in a constructive manner that is beneficial to both the project and the relationship between the parties and is more likely to lead to a non-zero sum game (win/win).

1.2.2 Problem Solving Sequence

The Parties will follow the following problem solving sequence to any dispute:

1. Problem Identification
2. Cause Analysis
3. Solution Design
4. Implementation Strategy

Each of the four components of the problem solving sequence will involve a process where each party presents a considered view supported by facts and understanding.

Each stage of the problem solving sequence will involve each party

- Presenting their perspective to the other party.
- Actively listening to the other party and seeking clarifications to arrive at a full understanding of the other party's view and position.
- Preparing a list of points of agreement.
- Preparing a list of points of disagreement.
- Agreeing a proposed solution to each point of disagreement.
- Where a solution to a point of disagreement cannot be reached between the parties those points are noted for further treatment.
- Agreeing with the other party to a record of the outcome of each stage.
- Agreeing to move to the next stage in the problem solving sequence.

1.3 Collaborative Approach

The parties will adopt a collaborative approach to dispute resolution. The goal of a collaborative approach is to find a way to meet the needs of all stakeholders, by each party being assertive but cooperative, and acknowledging the importance of each party and their role in the project.

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1.4 Non-Violent Communication

The parties understand and acknowledge that the conflict dynamic can escalate in the direction of further conflict when communication uses expressions that are divisive. The parties also understand and acknowledge that dispute and conflict resolution is enhanced with the use of expressions that are inclusive.

Divisive Increase Conflict	Inclusive Enhance Resolution
Divisive	Inclusive
Anger	Equanimity
Selfishness	Generosity
Divisiveness	Inclusiveness
Provocation	Responsiveness
Manipulation	Openness
Dishonesty	Honesty
Negative	Positive

The parties understand and acknowledge that underlying issues that need to be aired, understood and acknowledged commonly accompany disputes and conflict. It is, therefore, important to provide an opportunity to discover these underlying issues if they present a barrier to the resolution of the dispute or conflict.

1.5 Principled Negotiation

The parties will use principled negotiation to any negotiation concerning a dispute or conflict. The parties understand and acknowledge that principled negotiation[32] is a more effective and constructive approach compared with positional bargaining, and involves the following attributes:

Positional Bargaining		Principled Negotiation
Soft	Hard	Principled
Participants are friends	Participants are adversaries	Participants are problem solvers
Goal = agreement	Goal = victory	Goal = wise outcome
Make concessions to cultivate relationship	Make demands as a condition of relationship	Assume collaborative but mutually assertive relationship
Trust other party	Distrust other party	Proceed independent of trust
Change position readily	Dig into fixed position	Focus on interests not positions
Make offers	Make threats	Explore interests
Disclose bottom line	Mislead on bottom line	Avoid having a bottom line
Seek a solution agreeable to other party	Seek own solution	Insist on objective criteria
Try to avoid a contest of will	Try to win a contest of will	Results based on objective criteria
Yield under pressure	Apply pressure	Yield to principle not pressure

[32] See Fisher, R., and Ury, W. 1991. Getting to yes. Negotiating agreement without giving in. Second edition. Penguin Books, New York.

1.6 Vanuatu Kastom

The parties acknowledge that Vanuatu Kastom provides a framework for dealing with disputes and conflicts and that kastom will be used wherever this is sought by any of the parties. The kastom methods used will be consistent with those described in Sections 1.1 to 1.5 above.

2. Procedure

When a dispute arises the following procedure is required:

1. Step 1: Early Identification And Action
2. Step 2: Informal Communication
3. Step 3: Formal Communication

2.1 Step 1 Early Identification And Action

The parties acknowledge that disputes and conflicts can be resolved at least cost if issues are addressed as soon as possible and preferably in the form of prevention rather than cure. The longer issues are left the greater the likely time and financial cost of resolution to all parties.

2.2 Step 2 Informal Communication

Informal communication involves the communication of disputed themes and topics between a representative of the parties by means of telephone, email, or personal contact, where the issue is raised for remedy without recourse to formal procedure.

When informal communication fails to resolve the dispute one or other or both of the parties to the informal communication moves the process to the formal communication.

Each informal communication in the dispute resolution process is evaluated by all parties to the dispute by recording the outcome using the Informal Communication template (Appendix 1), and providing a copy to the REDD+ Steering Committee.

2.3 Step 3 Formal Communication

Formal Communication in this Dispute Resolution Framework involves a formal process of two parties coming together to institute a process to resolve a dispute or conflict that could not be resolved by means of Informal Communication. Formal Communication will involve the following process:

1. Process Agreement
2. Criteria Agreement
3. Implement Process
4. Evaluation and Reporting

Each stage in the process must be agreed to between the parties to the dispute with this agreement recorded and included in a Dispute Resolution Report.

2.3.1 Process Agreement

The Process Agreement has the following elements: Scope, Process, and Criteria.

Scope

A Scope Agreement determines the scope of the dispute by agreeing the entities that are party to the dispute and naming any relevant stakeholders (including third parties).

Process

The Process Agreement determines the process for addressing the dispute. All parties to the dispute as recorded in the Scope Agreement must agree the Process Agreement. This Process Agreement will include the following:

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1. Process Location (e.g. where face-to-face meeting/s will occur)
2. Dialogue Procedure (the sequence of events in the resolution process)
3. Dialogue Method (how communication between the parties will be undertaken)

2.3.2 Criteria Agreement

The Criteria Agreement involves defining objective criteria to use as the basis for evaluating progress and outcomes in the dispute resolution process.

2.3.3 Implement Process

The process of Formal Communication takes place only after the parties to the dispute have completed the Process Agreement. Evidence of the completion of these three agreements is lodged in the form of a Dispute Process Agreement Memo. This memo is included as an appendix to the annual Project Management Report, but is also lodged with the Programme Operator as soon as possible. This is to enable the Programme Operator to keep track of any disputes occurring in the programme and to have an opportunity to offer support if need be. Where the Programme Operator is a party to the dispute then the Dispute Process Agreement Memo is lodged with a mutually agreed third party until the dispute is resolved.

2.3.4 Evaluation and Reporting

Each Formal Communication in the dispute resolution process is evaluated by all parties to the dispute by recording the outcome in the Formal Communication template (Appendix 2), and providing a copy to the REDD+ Steering Committee.

Informal Communication Report Template

Dispute Resolution Report	
Informal Communication	
Report Name and Number	*
Date	*
1. Party 1 (initiator)	*
2. Representative/s	*
3. Party 2 (respondent)	*
4. Representative/s	*
5. Means of communication	Telephone, email, letter, personal contact *
6. Issue resolved?	Yes / No * (If "Yes" describe solution in 7. below. (If "No" proceed to either next steps or Formal Communication process)
7. Resolution	State resolution reached *
8. Next steps	State agreed next steps if not moving to formal communication *
9. How dispute was resolved	*
10. Unresolved issues	Insert list (if none state "none") *
11. Further action if not resolved	E.g. Repeat Informal Communication but with altered scope; move to Formal Communication; or separate proposals by the parties.
a. Party 1 Proposal	
b. Party 2 Proposal	
12. Signature of parties	
a. Party 1 Signature	*
b. Party 2 Signature	*

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* = Obligatory Fields

Formal Communication Report Template

Dispute Resolution Record			
Formal Communication			
Report Name and Number	*		
Date	*		
1. Party 1 (initiator)	*		
2. Party 1 representative/s	*		
3. Party 2 (respondent)	*		
4. Party 2 representative/s	*		
5. Process Agreement Completed?		Yes/No *	
6. Describe Process Agreement		*	
7. Did actual process follow the Process Agreement?		Yes / No *	
8. Justify deviations from Process Agreement (if any)		*	
9. How dispute was resolved		*	
	Issue 1 (repeat for each issue)		
	a. Problem Analysis		
	(i) Present perspective	Party 1 Yes/No	Party 2 Yes/No
	(ii) Active Listening	Party 1 Yes/No	Party 2 Yes/No
	(iii) Agreement Points	Insert list	
	(iv) Disagreement Points	Insert list	
	(v) Method for addressing disagreement points		
	(vi) Further Treatment		
	(vii) Agree to proceed	Party 1 Yes/No	Party 2 Yes/No
	b. Cause Identification		
	(i) Present perspective	Party 1 Yes/No	Party 2 Yes/No
	(ii) Active Listening	Party 1 Yes/No	Party 2 Yes/No
	(iii) Agreement Points	Insert list	
	(iv) Disagreement Points	Insert list	
	(v) Method for addressing disagreement points		
	(vi) Further Treatment		
	(vii) Agree to proceed	Party 1 Yes/No	Party 2 Yes/No
	c. Solution Design		
	(i) Present perspective	Party 1 Yes/No	Party 2 Yes/No
	(ii) Active Listening	Party 1 Yes/No	Party 2 Yes/No
	(iii) Agreement Points	Insert list	
	(iv) Disagreement Points	Insert list	
	(v) Method for addressing disagreement points		
	(vi) Further Treatment		
	(vii) Agree to proceed	Party 1 Yes/No	Party 2 Yes/No
	d. Implementation Strategy		
	(i) Present perspective	Party 1 Yes/No	Party 2 Yes/No

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	(ii) Active Listening	Party 1 Yes/No	Party 2 Yes/No
	(iii) Agreement Points	Insert list	
	(iv) Disagreement Points	Insert list	
	(v) Method for addressing disagreement points		
	(vi) Further Treatment		
	(vii) Agree to implement	Party 1 Yes/No	Party 2 Yes/No
10. Summary of outcome		*	
12. Unresolved issues		Insert list *	
13. Further action if not resolved		E.g. progress to higher level remedy such as formal mediation. *	
	a. Party 1 Proposal		
	b. Party 2 Proposal		
12. Next steps		*	
14. Signature of parties			
	a. Party 1 Signature	*	
	b. Party 2 Signature	*	

* = Obligatory fields

Annex 2a: Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance

Please present any relevant additional material not included in the body of the R-PP (component 2a).

Vanuatu Policy Framework For REDD+ Version 1

V1.0, September 2012

Introduction

This Vanuatu Policy Framework for REDD+ is derived from the Pacific Regional Policy Framework for REDD+ developed by SPC/GIZ in 2012. This Vanuatu Policy Framework for REDD+ is designed to provide policy options to guide REDD+ policy and programme development at the national scale.

Background

Global Framework

REDD+ arose in response to the lack of a UNFCCC (United Nations Framework Convention on Climate Change) instrument for developing countries to gain access to incentive payments for reducing GHG emissions from the forest sector. The UNFCCC defines REDD+ as – "Reducing Emissions from Deforestation and forest Degradation (REDD), the conservation of forest carbon stocks, sustainable management of forest, and the enhancement of forest carbon stocks (+)".

REDD+ involves performance-based payments for greenhouse gas (GHG) emission reductions and/or enhanced removals in the forest sector.

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The Intergovernmental Panel on Climate Change (IPCC) developed three principal categories for forest carbon accounting relevant to the framing of REDD+ as follows:

1. Forest land converted to non-forest land (deforestation or avoiding deforestation).
2. Forest land remaining forest land (degradation or avoiding degradation, conservation of forest carbon stocks, or enhancement of forest carbon stocks).
3. Land converted to forest land (afforestation/reforestation).

This policy framework incorporates both the UNFCCC decisions and the IPCC good practice guidance for determining the implementation of REDD+ activities.

Relevance to Vanuatu Circumstances

Forest sector GHG emission reductions and removals in Vanuatu, although small on a global scale, can still form an important component of national climate change mitigation actions such as low emissions development strategies and nationally appropriate mitigation actions (NAMAs).

REDD+ activities provide an opportunity to create and sell (export) carbon assets instead of, or along side, timber assets. Accordingly, REDD+ activities in Vanuatu encompass an opportunity to access a significant source of foreign exchange earnings.

There are many parts of Vanuatu that support relatively small areas of forest cover but with high local importance for supporting the well-being of local communities who can still benefit from REDD+ activities for protecting and enhancing these areas (like management of watersheds, coastal protection, flood mitigation). These forest ecosystem services are commonly underestimated in the Vanuatu national accounts.

A Vanuatu Policy Framework for REDD+ can guide technical and financial support for "no-regrets" forest sector developments that have not yet been implemented due to lack of resources. REDD+ activities will also help to deliver (and co-finance) beneficial outcomes for climate change adaptation, disaster risk reduction, sustainable land management, and biodiversity conservation benefits.

Objectives of the Vanuatu Policy Framework for REDD+

The objectives of the Vanuatu Policy Framework for REDD+ are to:

1. Inform and support REDD+ programme development in Vanuatu.
2. Support a "no-regrets" approach to REDD+ in Vanuatu.
3. Guide the development of structures to support the forestry sector.
4. Provide a basis for donor contributions to REDD+ activities.

Guiding Principles

The Vanuatu Policy Framework for REDD+ is guided by the following principles:

1. Acknowledge that the global REDD+ sector includes a potential future UNFCCC instrument, and current and future REDD+ mechanisms outside the UNFCCC.
2. Support a "no regrets" approach to REDD+ that keeps options open to engage with possible future global instruments currently in development whilst taking advantage of mechanisms currently available.
3. Ensure that any REDD+ initiatives are compatible with existing national policies, programmes and frameworks for action.
4. Contribute to poverty alleviation and enhance livelihoods in rural communities.

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Policy Framework

Scope of Activity Types

'Scope' refers to the type of activity that can be undertaken and how the emission reductions and removals will be accounted. The financing instrument determines eligible activities. UNFCCC decisions and non-UNFCC REDD+ financing mechanisms support the following activity options:

1. The reduction or avoidance of emissions from deforestation.
2. The reduction or avoidance of emissions from forest degradation.
3. Conservation of forest carbon stocks
4. Sustainable management of forests
5. The enhancement of forest carbon stocks, and afforestation / reforestation.

4.1a Vanuatu will need to identify its priorities for REDD+ activities. This should take into account national and local circumstances.

4.1.2 Performance-based payments for REDD+ activities require defining activities in terms of the difference between a baseline/reference scenario and the implementation scenario.

Baseline/reference scenarios can include:

a. Deforestation is occurring or is likely to occur in the future.
b. Forest degradation is occurring or is likely to occur in the future.
c. A forest is already degraded and remaining degraded.
d. There is potential for a forest land use to replace a non-forest land use.

Implementation scenarios can involve:

1. Avoidance of current or future deforestation by protecting a forest.
2. Avoidance of current or future deforestation by implementing sustainable forest management.
3. Avoidance of current or future degradation by implementing sustainable forest management
4. Conversion of a low carbon (degraded) forest to a high carbon forest.
5. Conversion of non-forest land to forest land (including re-establishment of indigenous forest, plantation establishment, and agroforestry).

4.1.2a Vanuatu will need to identify baseline/reference level situations and potential implementation opportunities.

4.1.3 The greatest per hectare financial returns from REDD+ activities are where the carbon stock difference between the "without-payment" and the "with-payment" scenario is largest. The positive difference between the "without-payment" and "with-payment" carbon stock can be understood as 'carbon benefits'.

4.1.3a In order to prioritise which activity types to pursue, Vanuatu should estimate the approximate per hectare carbon benefits associated with different activity types. Non-carbon co-benefits and alignment with existing national priorities should also be considered.

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Scale of Activities

4.2.1. The scale of REDD+ engagement in Vanuatu will depend on what financing instruments are available, and will need to be compatible with existing capacity.

4.2.1a Vanuatu will consider the following options:

National approach	Involves national carbon accounting and the distribution of financial benefits to nations from the financing instrument. Nations then need to develop sub-national financial benefits distribution systems. May be required under the UNFCCC; currently an option outside UNFCCC.
Jurisdictional and nested approach	A jurisdiction is either a national or sub-national entity. This approach involves jurisdiction-scale carbon accounting in combination with jurisdictional-scale and/or project-scale activities. Currently an option outside the UNFCCC; may be an option under the UNFCCC.
Project scale approach	Involves project-scale carbon accounting and the distribution of financial benefits from financing instruments directly to forest-owning communities. A potentially valuable approach: - for early action prior to the availability of a UNFCCC mechanism; - if the UNFCCC does not produce a financing instrument; - if a country elects to not undertake the UNFCCC approach. Individual projects can operate over areas between tens of hectares to tens of thousands of hectares depending on the financing instrument.
Grouped project approach	Enables the bundling and replication of projects in a 'programme of activities'. This approach can be used to: a. Generate economies of scale for several small project sites b. Operate national crediting schemes without the need for national scale REDD+ engagement, c. Bundle projects from different islands within a country and/or between countries

4.2.1b Vanuatu will develop national scale REDD+ reporting, in combination with national and/or subnational REDD+ implementation modalities.

REDD+ Readiness

4.3.1 Development of REDD+ programmes and projects commonly require capacity that may not yet exist in Vanuatu. As such, capacity building for REDD+ implementation will need to be undertaken.

4.3.2 National scale REDD+ readiness activities include the development of:

i. REDD+ policies, strategies, action plans, guidelines, and legislation to define forest carbon rights, forest carbon financing and benefit sharing arrangements, governance structures, and linkage with other policies and programmes.

ii. National reference levels (RLs)/reference emissions levels (RELs) and MRV (measurement, reporting, and verification) systems for forest area change monitoring, forest carbon stock and stock change assessments, forest research for the determination of national default values, allometric equations and conversion factors for forest carbon accounting parameters.

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iii. Demonstration activities (e.g. pilot projects).

iv. Multi-stakeholder awareness-raising, training and consultation.

4.3.2a *Vanuatu will pursue national REDD+ readiness.*

4.3.3 Project-scale preparation activities are defined by:

i. The administrative and methodological requirements of internationally recognised forest carbon standards for the design, development, implementation and monitoring of project activities.

ii. The measurement and reporting requirements of validation and verification entities.

iii. The administrative requirements of carbon registries.

iv. The consultative and financial management requirements of project owners.

4.3.3a Vanuatu supports community-based, project-scale REDD+ as part of its REDD+ implementation strategy.

4.3.3b Vanuatu will regulate project-scale activities to ensure that sufficient safeguards are incorporated into project-scale REDD+ implementation.

4.3.4 Demonstration activities are an extremely valuable means of scoping and testing of readiness requirements and have the potential to deliver tangible benefits on the ground without delay.

4.3.4a Vanuatu places a high priority on the need for pilot projects to enable key REDD+ stakeholders to come to a more rapid understanding of the practical readiness requirements for REDD+ implementation.

4.3.4b Pilot projects will be used in Vanuatu to test the local feasibility of priority activity types with the option to scale up successful pilot projects as grouped projects.

4.3.4c Pilot projects should be carefully designed and planned to ensure they are commercially viable, maximize the return to landowner communities and donor investments, minimize risk of project failure and avoid disillusionment among key stakeholders.

<u>REDD+ Implementation</u>

4.4.1 The implementation of REDD+ activities constitutes the annual and on-going delivery of real, measurable and additional GHG emission reductions and/or enhanced removals, sufficient to justify performance-based payments for REDD+ ecosystem services.

4.4.2 REDD+ implementation financing mechanisms currently available include *ex ante* (a promise to deliver in future) and *ex post* (already delivered) payment structures. *Ex ante* payment structures frequently involve long-term delivery contract obligations which do not allow for sufficient flexibility to transition to a possible future UNFCCC (or other international) financing instrument.

4.4.2a Vanuatu will regulate project-scale implementation activities by requiring ex post crediting instruments that enable the transition to a future UNFCCC financing instrument.

4.4.2b Vanuatu would benefit from engaging with existing financing instruments for REDD+ implementation (for example, the carbon markets), rather than waiting for the availability of a UNFCCC instrument, because this will enable Vanuatu to:

i. Scope out detailed requirements for national or sub-national REDD+ programme design.

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ii. Build REDD+ capacity through 'learning-by-doing'.

iii. Reduce the risk of over-investing in forms of REDD+ readiness that become redundant.

4.4.3 REDD+ implementation activities can generate co-benefits that are relevant to other forms of strategic sustainable development.

4.4.3a Vanuatu will link REDD+ implementation with other national programmes such as Nationally Appropriate Mitigation Actions (NAMAs), Low Emissions Development Strategies, climate change adaptation and disaster risk reduction, National Biodiversity Strategies and Action Plans (NBSAP), and Sustainable Land Management (SLM) Strategies.

4.4.4 Various forest carbon standards now exist in the carbon market that quality assure REDD+ activities equivalent to the requirements of the UNFCCC and IPCC. Such standards enable strict quality controls without the need for additional capability or resources in government regulatory agencies.

4.4.4a Vanuatu will regulate project-based REDD+ implementation by requiring activities to be validated and verified to internationally recognised forest carbon market standards to ensure that such activities will be in line with international best practice.

Approaches to MRV

4.5.1 Payments for performance-based REDD+ activities are dependent upon proof that emission reductions have been delivered. This proof is provided in the form of measurement, reporting and verification (MRV) systems. REDD+ monitoring systems involve remote sensing to determine forest area change, and forest inventory systems to determine forest carbon stocks per unit area.

4.5.1a National REDD+ MRV systems should contribute to the national greenhouse gas inventory and emissions reporting as required under commitments to the UNFCCC (national communication).

4.5.2 Any future UNFCCC REDD+ financing mechanism and any credible non-UNFCCC REDD+ financing instrument requires MRV with technical specifications consistent with the Land Use, Land Use Change and Forestry (LULUCF) guidance and guidelines of the Intergovernmental Panel on Climate Change (IPCC).

IPCC (2006) guidelines provide guidance on the three tiers that may be used for obtaining and representing information on area and area changes for national GHG inventories.

Tier 1 Simplest to use with equations and default parameter values applied

Tier 2 Use the same methodological approach as Tier 1 but applies emission and stock change factors based on country- or region-specific data

Tier 3 Higher order methods are used, including models and inventory measurement systems tailored to address national circumstances repeated over time. These higher order methods provide estimates of greater certainty than lower tiers.

4.5.2a Vanuatu will expand existing forest monitoring systems to MRV approaches that are consistent with the LULUCF guidance and guidelines of the IPCC.

4.5.2b Vanuatu will develop its REDD+ MRV systems based on the data currently available and make a commitment to improve this through time.

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4.5.2c Vanuatu will work to enhance its REDD+ MRV capabilities by engaging in REDD+ demonstration activities in pilot sites.

4.5.3 REDD+ MRV systems need to match the scale of REDD+ engagement.

4.5.3a Vanuatu will adopt an approach to MRV that involves:

i. Undertaking an MRV gap analysis of existing data sets and capability, followed by gap filling to strengthen MRV systems and capabilities through time to a point at which these systems are ready for engagement in REDD+ implementation.

ii. Developing national MRV readiness in parallel with project scale REDD+ implementation, and using experience gained in project scale implementation to strengthen policy and MRV aspects of the Vanuatu REDD+ programme.

4.5.3c Project-scale REDD+ engagement in Vanuatu in the form of early action, will enable MRV capability built at a project scale to inform, support and integrate with national scale REDD+ reporting and possible REDD+ implementation engagement in the future.

4.5.5 National forest carbon RL/RELs provide the benchmark for historical GHG emissions and future GHG emission reductions and removals.

4.5.5a Vanuatu will set national forest carbon RL/RELs as a core component of its national REDD+ programme.

Safeguards

4.6.1 The UNFCCC has developed a set of REDD+ safeguard principles that cover: REDD+ compatibility with existing national programmes, transparent governance, the rights of indigenous peoples, multi-stakeholder engagement, biodiversity conservation, permanence, and leakage.

4.6.1a Vanuatu will ensure that safeguards will be considered in all national REDD+ readiness and implementation activities.

4.6.1b Project-based approaches can comply with safeguard requirements by verifying activities through established international standards.

4.6.2 The success of REDD+ implementation is dependent upon transparent governance and financial discipline in REDD+ programmes and projects.

4.6.2a Vanuatu will consider the integration of its REDD+ Programme with other forest governance and integrity programmes such as:

- *Forest Law Enforcement Governance and Trade (FLEGT) voluntary partnership agreements*
- *Forest Governance Integrity in Asia Pacific*
- *Transparency International*
- *Forest certification*

4.6.3 Performance-based payments for REDD+ activities will depend upon clear delineation of land tenure, carbon tenure arrangements, as well as effective, equitable, and transparent benefit sharing arrangements for REDD+ implementation activities.

4.6.3a The Vanuatu REDD+ Programme will need to clarify land and forest carbon tenure arrangements as a key condition of REDD+ implementation.

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4.6.3b Vanuatu already possesses laws and regulations guiding the production, distribution and sale of commodities (e.g. timber, minerals) derived from natural resources. These laws and regulations will be used as a starting point for the development of laws and regulations (including taxation) guiding the production, distribution and sale of carbon assets.

4.6.3c The Vanuatu REDD+ Programme will require effective, equitable and transparent distribution of benefits arising from REDD+ implementation. Benefit distribution and benefit sharing systems will address gender equality.

4.6.4 REDD+ implementation activities must be in line with international instruments to protect the rights of indigenous people. These instruments include the United Nations Declaration on the Rights of Indigenous People (UNDRIP) and United Nations Convention on the Safeguarding of Intangible Cultural Heritage (UNCSICH). Almost 90% of land in the Pacific Islands is under customary ownership making the indigenous people of the Pacific major resource owners.

4.6.4a The Vanuatu REDD+ Programme should ensure that the knowledge and rights of indigenous people are respected and protected and constitutional rights of customary landowners are not violated by REDD+ activities.

4.6.4b The Vanuatu REDD+ Programme should recognise that the integrity and durability of REDD+ implementation will depend upon definition and adherence to the principle of free, prior, informed consent (FPIC) of resource owners.

4.6.5 There are different key stakeholder groups relevant to REDD+ activities in Vanuatu whose involvement is either necessary or will strengthen the quality and durability of the Vanuatu REDD+ Programme. The stakeholder groups include government agencies, landowners, local communities, education and research institutions, civil society organisations, and the private sector.

4.6.5a The Vanuatu REDD+ Programme should consider the inclusion of all relevant expertise and experience to REDD+ in the design, operation and governance of this programmes.

4.6.5b Project developers should encourage the active participation of women in the development of REDD+ activities and the distribution of benefits arising from such activities.

4.6.5c REDD+ stakeholders should identify and address risks to the equitable socio-economic benefits of men, women, youth and people living with special needs.

4.6.6 The UNFCCC decisions on safeguards focus also on the conservation of biological diversity and ecosystem services in line with the decisions of the CBD on the conservation and restoration of ecosystems.

4.6.6a The Vanuatu REDD+ Programme should ensure REDD+ activities are consistent with the conservation of natural forests and biological diversity and that REDD+ programmes and projects are not used for the conversion of natural forests.

4.6.7 The continued flow of performance-based payments for REDD+ activities depends on the permanence of the GHG emission reductions and/or removal enhancements.

4.6.7a To ensure permanence, The Vanuatu REDD+ Programme and/or project proponents should:

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i. Define legal instruments and enforce their application for safeguarding the permanence of GHG emission reductions and/or removal enhancements.

ii. Address the drivers of deforestation and forest degradation.

iii. Ensure equitable distribution of benefits to secure ongoing resource owner support and participation.

iv. Require minimum timeframes for implementation activities (e.g. multi-decadal forest protection).

4.6.8 Leakage (the displacement of emissions) occurs when REDD+ activities cause a reduction of emissions at one location, and an increase of emissions in another (i.e. no net benefit to the atmosphere). Local leakage can be reduced by addressing local drivers, and is usually a requirement of project-scale financing instruments. Leakage within one country is eliminated if a national-scale approach to REDD+ is used.

4.6.8a The Vanuatu REDD+ Programme will need to address leakage as an integral component of REDD+ implementation.

Information, Training and Education

4.7.1 Reporting and verification of REDD+ activities require document management, data management and reporting systems sufficient to meet the requirements of REDD+ standards imposed by the financing instruments.

4.7.1a The Vanuatu REDD+ Programme will require the development of national information, document management, data management and reporting systems for REDD+.

4.7.1b Project-scale REDD+ engagement in Vanuatu should be required to ensure that information and data gathered at a project scale is made available at the national level.

4.7.2 REDD+ information, data, and reports generated in one country will benefit other countries.

4.7.2a The Vanuatu REDD+ Programme will share its national REDD+ data set, policy, regulations, strategy and lessons learned with other countries in the Pacific Island Region through the regional information platform for REDD+.

4.7.3 Many different components of REDD+ readiness and implementation require the production of new information by means of socio-economic and technical research.

4.7.3a The Vanuatu REDD+ Programme should encourage cooperation and strategic partnerships with research institutions both nationally and internationally.

4.7.4 REDD+ activities require skill-sets that are not always fully available among implementing national agencies.

4.7.4a The Vanuatu REDD+ Programme should build and enhance REDD+ technical capability by:

i. Utilising in-country capability where possible.

ii. Outsourcing international capability where necessary.

iii. Training in-country capability to higher specifications where practicable, to lower reliance on international outsourcing through time.

iv. Identifying requirements that are more efficient to permanently outsource internationally.

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v. *Supporting technical capabilities at a regional level that can be utilised by all Pacific Island countries.*

vi. *Supporting the development and use of regional training facilities for officers and staff from all relevant sectors including non-governmental organisations, community-based organisations and the private sector.*

vii. *Including study tours of demonstration sites.*

viii. *Integrating capability transfer from international experts to local staff.*

4.7.5 Future REDD+ programmes and projects in Vanuatu will require qualified and specialised graduates or personnel.

4.7.5a The Vanuatu REDD+ Programme should support:

i. *The integration of REDD+ themes into existing national and regional tertiary educational institutions.*
ii. *Postgraduate research in applied REDD+ themes though the inclusion of graduate students in REDD+ readiness and implementation activities where possible.*

4.7.6 The public and stakeholders involved in REDD+ activities need to understand the opportunities, responsibilities, costs and benefits associated with their engagement with REDD+ implementation.

4.7.6a REDD+ activities in Vanuatu will benefit from timely communication of significant international REDD+ negotiation decisions.

4.7.6b Public awareness information concerning REDD+ should simplify the issues as much as possible in a way that is accessible for local communities and other stakeholder groups.

Regional Support

4.8.1 The Vanuatu REDD+ Programme will benefit from regional REDD+ support entities.

4.8.1a The Vanuatu REDD+ Programme should support and promote a regional REDD+ supporting function to be incorporated into SPC to:

i. *Provide strategic advisory services.*

ii. *Coordinate activities undertaken on a regional scale.*

iii. *Act as an implementation partner and host of donor funding for regional REDD+ initiatives.*

iv. *Host the Regional REDD+ Information and Support Platform (at the SPC Land Resources Division) including effective sourcing and exchange of technical expertise.*

v. *Operate a regional centre (at the Applied Geoscience and Technology Division of SPC – SOPAC) for generating and storing geo-spatial information and training in remote sensing and GIS for REDD+.*

4.8.2 Controlling leakage across the Pacific Island region will require regional cooperation. Pacific Island countries can help control leakage drivers that move across national boundaries (e.g. international logging companies) by establishing a regional registry of logging concessions, logging licences and REDD+ projects.

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4.8.1a The Vanuatu REDD+ Programme should support any regional cooperation initiatives aimed at reducing leakage at a regional scale.

International Engagement

4.9.1 REDD+ is being developed as part of a global policy, technical, and financing process through the UNFCCC, multilateral development banks, multilateral programmes, and bilateral agreements.

4.9.1a The Vanuatu REDD+ Programme can improve its representation in global REDD+ negotiations by ensuring active participation of forestry and REDD+ interests at all international climate change negotiations and preparatory meetings including those organized by CROP (Council of Regional Organisations of the Pacific) agencies.

4.9.2 Multilateral environmental agreements (MEAs) each impose national reporting requirements that present a significant resourcing challenge to the ratifying countries.

4.9.2a The Vanuatu REDD+ Programme should endeavour to streamline REDD+ reporting systems with existing national MEA reporting requirements in Vanuatu.

Annex 2b: REDD+ Strategy Options

Please present the early ideas and/or draft input to ToR for work to be carried out. Please also present the strategy options themselves if they are available.

Preliminary Pilot Site Selection Tool

Vanuatu REDD+ Preliminary Pilot Site Selection Tool					
Record Activity Type:					
Record Potential Site Name:					
Selection Criteria		**Rating**			
Obligatory criteria are highlighted in *bold italics* text and must be green. Optional criteria are highlighted in normal text and can be green, amber, red, or white.		**Green:** Meets criteria **Amber:** Partly meets criteria **Red:** Does not meet criteria White: Non -applicable			
1	**Requirements Of Financing Instrument**				
	This section covers the different activity types and the corresponding obligatory site selection criteria for those activity types (in bold font).				
1.1	***Able to be undertaken as an inception project for a programme of activities to be rolled out nationally for this activity type***				
1.2	**IFM-RIL Activity Type**				
1.2.1	***Reference Scenario: High intensity selective logging is currently occurring or is***				

	planned to occur				
1.2.2	***Reference activity of planned timber harvest must be legally sanctioned under Fiji forestry law and regulation***				
1.3	**IFM-LtPF Activity Type**				
1.3.1	***Forest where high intensity selective logging is currently occurring or is planned to occur***				
1.4	**IFM-LCtHC Activity Type**				
1.4.1	***Forests where there is an opportunity to increase the rate of carbon sequestration by means of some additional management activity (e.g. removing grazing animals, ceasing periodic burning, wood removal, or clearing)***				
1.4.2	***Forests where the standing carbon stocks are either:*** • ***Degrading, or*** • ***Remaining relatively constant, or*** • ***Increasing at a slow rate that is lower than the rate of carbon stock increment if better carbon management practices were applied***				
1.5	**RED-DtPF Activity Type**				
1.5.1	***Forest where deforestation is occurring or where deforestation is planned (deforestation is the clearance of over 90% of the forest canopy and a permanent change in land use to non-forest activity)***				
1.5.2	**RED-DtSFM Activity Type**				
1.5.3	***Forest where deforestation is occurring or where deforestation is planned (deforestation is the clearance of over 90% of the forest canopy and a permanent change in land use to non-forest activity)***				
1.5.4	***Forest where sustainable forest management is possible and practicable***				
1.6	**AR-NFtPF Activity Type**				
1.6.1	***Non-forest area where it is possible to establish permanent forest***				
1.6.2	***If CDM Standard:*** ***a. Vegetation cover on the land eligible for project must have been below the forest threshold for at least 50 years prior to project start (for afforestation projects) or on 31 December 1989 (for reforestation projects). These criteria need to be proven (e.g. satellite image analysis);*** ***b. No tree vegetation is expected to form a forest on the project land in the absence of the project;*** ***c. Project start must be January 1, 2000 or later.*** ***d. In absence of the project, carbon stocks of the carbon pools not considered in the project are expected to decrease or increase less relative to the project scenario***				
1.6.3	***If Carbon Fix Standard:*** ***a. Description of the historical and the current situation of the project area must be available for the last 50 years AND*** ***b. Land not been forest within 10 years prior to the project start OR*** ***c. Has been forest within 10 years prior to the project start and evidence is given that absolutely no relation between the project participants and the cause of deforestation exists*** **d.** ***Criteria b. and c. must be proven by the interpretation of satellite images, aerial photographs, official maps or land-use records.***				
1.6.4	***If VER+ Standard: Same as CDM Standard criteria.***				
1.7	**AR-NFtTH Activity Type**				
1.7.1	***Non-forest area where it is possible to establish permanent forest***				

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1.7.2	***Land is able to support on-going plantation forestry***				
1.7.3	***If CDM, Carbon Fix, Plan Vivo, or VER+ Standard: same as 1.6 above***				
2	**Favourable Preconditions**				
	This section covers generic site selection criteria for all activity types unless otherwise specified				
2.1	**Favourable conditions among the landowner community**				
2.1.1	***Unified landowner community that is free from internal land tenure or land use disputes***				
2.1.2	***Willingness and/or enthusiasm of landowners to participate in the pilot project activity***				
2.1.3	The key stakeholders have a history of working constructively with the Department of Forestry				
2.1.4	Small to medium sized group (allowing face-to-face interactions with project developers and facilitators)				
2.1.5	Capacity for communication within the group – e.g. transport, telephone				
2.1.6	Interdependent community (people are reliant on one another)				
2.1.7	Relatively well-off (not extremely poor)				
2.1.8	Forests are valued culturally				
2.1.9	Community members likely to be motivated by incentive payments (it is something they would normally seek)				
2.1.10	Community has capacity to manage finances and benefits arising from the project or has access to capacity building in financial management and benefit distribution				
2.1.11	Community has capacity to govern a REDD+ project within existing governance structures, or has access to capacity building in project governance				
2.1.12	Capacity to design and enforce 'rules' locally				
2.1.13	Rules can be set locally that help deal with conflicts				
2.1.14	Forest tenure is not overly complex (e.g. such as overlapping or contested forest rights)				
2.1.15	Capacity to exclude outsiders (exclusion rights)				
2.2	**Absence of competing land uses in relation to the project scenario**				
2.2.1	AR-NFtPF Project: No existing income from reference scenario activities (e.g. where the land is currently unproductive or fallow)				
2.2.2	AR-NFtTH Project: No existing income from reference scenario activities (e.g. where the land is currently unproductive or fallow)				
2.3	**Availability of pre-existing data**				
2.3.1	IFM-RIL Project: Timber harvesting data available in reference scenario (high intensity selective logging) and/or project scenario (sustainable forest management) in the project area or nearby reference area				
2.3.2	IFM-LtPF Project: Timber harvesting data available in reference scenario (e.g. high intensity selective logging) in the project area or nearby reference area				
2.3.3	IFM-LCtHC Project: Data available from the project area or reference area on rates of biomass increment either • In the reference activity (e.g. weedy areas that are subject to fuel wood extraction, grazing, and occasional burning), or • In the project activity (e.g. where forest growth data exist in a control area that				

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	has been managed in the past to control reference activities)				
2.3.4	RED-DtSFM Project: Data on deforestation rates available from the project area or reference area, and/or data on SFM harvest rates from the project area or reference area				
2.3.5	RED-DtPF Project: Data on deforestation rates available from the project area or reference area				
2.3.6	AR-NFtPF Project: Data on the rate of biomass increment in forest succession in a reference area near to the project area				
2.3.7	AR-NFtTH Project: Data on the rate of biomass increment in plantation forest equivalent to the project activity in a reference area near to the project area				
3	**Generic Success Criteria**				
	This section covers generic site selection criteria for all activity types unless otherwise specified				
3.1	**Physical characteristics more likely to contribute to success**				
3.1.1	***Minimum total area of several hundred hectares (including aggregation of smaller land parcels of equivalent character)***				
3.1.2	***Well defined, easily monitored boundaries***				
3.1.3	High value of co-benefits in the project scenario (e.g. biodiversity, timber, ecosystem services)				
3.5	**Other considerations for REDD+**				
3.5.1	Project scenario will pass additionality test (i.e. insufficient economic conditions to change the reference activity to the project activity without carbon finance)				
3.5.2	Ability to control displacement of emissions to other areas controlled by the landowner group (activity shifting / leakage)				
4	**Total Score**				
4.1	Obligatory criteria required				
4.2	Obligatory criteria met				
4.3	Optional criteria subtotal				
4.4	Weighting Scores (multiply optional criteria totals by numbers indicated)	X5	X3	X3	
4.5	Total Weightings (record result of calculation 4.3 and 4.4)				
4.6	Total Score (add first two columns and subtract the third to get total)				

Minimum Requirements List For This Activity Type:

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Pilot Site Selection Tool Instructions	
Step 1: Minimum Requirements	
1.1	Print out a copy of the Pilot Site Selection Tool Check-list from Appendix 1 for each activity type (7 copies to match the seven activity types). If printing, use double-sided printing to generate four sides of paper for the Check-List, or if double sided printing is not available print an additional page so that there are four pages to work with.
1.2	Record the code for the pilot site at the top of the Check-List.
1.3	For each activity type place a tick in the coloured right hand columns of the Check-List for all obligatory site selection criteria from Section 1 only (Requirements of the Financing Instrument) (highlighted in ***bold italics*** font in Section 1 of the Check-List). This will determine the Minimum Requirements for the selection of potential sites for this activity type.
1.4	Record the Minimum Requirements for each activity type in the Minimum Requirements List below the Check-List (and continue onto the next page if necessary – assuming double sided printing).
1.5	Use these Minimum Requirements to select a number of potential pilot sites from lands available from around the country where each potential site meets the obligatory criteria.
Step 2: Optional Requirements	
2.1	Print out copies of the marked (ticked) Check-List for each activity type (complete with Minimum Requirements List) matching the number of Potential Pilot Sites where obligatory criteria have already been met.
2.2	Record the name of each Potential Pilot Site on the copy of the Check-List.
2.3	Evaluate each Potential Pilot Site according to the site selection criteria listed in Section 2 (Favourable Preconditions) and Section 3 (Generic Success Criteria) of the Check-List.
2.4	Record the results of each Potential Pilot Site evaluation by placing a tick in the boxes in the coloured right hand columns of the Check-List.
2.5	For each Potential Pilot Site count the number of obligatory criteria required (from Sections 1-3 of the Check-List) for this activity type and record in line 4.1
2.6	For each Potential Pilot Site count the number of obligatory criteria met by that site.
2.7	If the number of obligatory criteria required is greater than the number of obligatory criteria met the Potential Pilot Site fails and the process can go no further.
2.8	If (and only if) the Potential Pilot Site passes the First Decision Test count the number of ticks in each of the columns for each of the optional criteria. Record the total number of ticks for each of the columns in line 4.3.
2.9	Multiply each optional criteria subtotal by the numbers indicated for each column (green = x5; amber = x3; red x3) and record each in line 4.5.
2.10	Add the green and amber totals and then subtract the red total to get the final score and record in line 4.6.
2.11	Compare total scores for each of the Potential Pilot Sites and use this as the basis for making a transparent criteria-based decision.

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Annex 2c: REDD+ Implementation Framework

Please present the early ideas or draft input to ToR for work to be carried out. If you decided to merge Components 2b and 2c, you may also wish to merge Annexes 2b and 2c.

Annex 2d: Social and Environmental Impact during Readiness Preparation and REDD+ Implementation

Please present the early ideas or draft input to ToR for work to be carried out.

Annex 3: Develop a National Forest Reference Emission Level and/or a Forest Reference Level

Table 1: Resources costs REL/RL development

Resource Name	Work	Standard Rate	Cost
Policy analyst	155 days	600.00/day	93,000.00
GIS specialist	225 days	500.00/day	112,500.00
Steering Committee meeting	5	500.00	2,500.00
Workshop	2	500.00	1,000.00
Outreach workshop	5	5,000.00	25,000.00
Int. flight	3	5,000.00	15,000.00
Nat. flight	20	500.00	10,000.00
Int. per diem	71	200.00	14,200.00
Nat. per diem	40	100.00	4,000.00
MS Access license	1	300.00	300.00
External validator	1	50,000.00	50,000.00
TOTAL			**327,500.00**

Table 2: Activity schedule REL/RL development

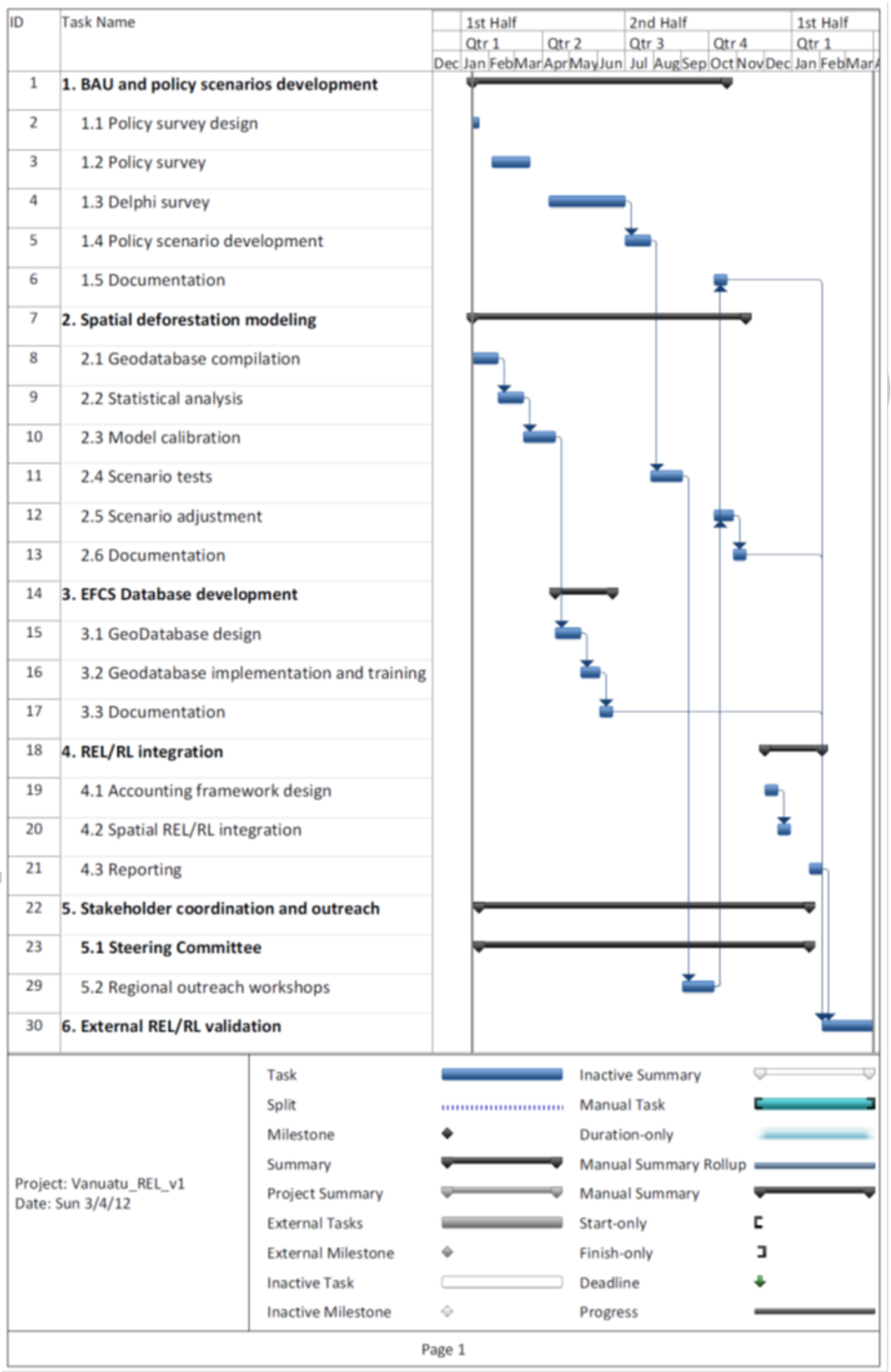

Table 3: Activity costs REL/RL development

Task Name	Duration	Cost
1. BAU and policy scenarios development	**200 days**	**63,000.00**
1.1 Policy survey design	5 days	3,000.00
1.2 Policy survey	30 days	18,000.00
1.3 Delphi survey	60 days	24,000.00
1.4 Policy scenario development	20 days	12,000.00
1.5 Documentation	10 days	6,000.00
2. Spatial deforestation modeling	**215 days**	**57,500.00**
2.1 Geodatabase compilation	20 days	10,000.00
2.2 Statistical analysis	20 days	10,000.00
2.3 Model calibration	25 days	12,500.00
2.4 Scenario tests	25 days	12,500.00
2.5 Scenario adjustment	15 days	7,500.00
2.6 Documentation	10 days	5,000.00
3. EFCS Database development	**45 days**	**32,200.00**
3.1 GeoDatabase design	20 days	10,000.00
3.2 Geodatabase implementation and training	15 days	17,200.00
3.3 Documentation	10 days	5,000.00
4. REL/RL integration	**45 days**	**24,000.00**
4.1 Accounting framework design	10 days	11,000.00
4.2 Spatial REL/RL integration	10 days	5,000.00
4.3 Reporting	10 days	8,000.00
5. Stakeholder coordination and outreach	**260 days**	**89,800.00**
5.1 Steering Committee	260 days	2,500.00
5.1.1 Policy survey design approval	10 days	500.00
5.1.2 Policy survey approval	15 days	500.00
5.1.3 Policy scenario validation	15 days	500.00
5.1.4 BAU and policy scenario approval	15 days	500.00
5.1.5 Approval REL/RL framework	15 days	500.00
5.2 Regional outreach workshops	25 days	87,300.00
6. External REL/RL validation	**40 days**	**61,000.00**
TOTAL		**327,500.00**

Annex 4: Design Systems for National Forest Monitoring and Information on Safeguards

Annex 4: Design Systems for National Forest Monitoring and Information on Safeguards

A. National Forest Monitoring Design

1. The National Forest Inventory Approach

Current state: Vanuatu's last national forest inventory has been concluded in 1993. Financed by the Australian development cooperation it provided the data for the Vanuatu Resource Information System (VANRIS). Based on a wall-to-wall aerial photo coverage from 1986, reconnaissance mapping (soil, geology, climate), the national census 1989 and a comprehensive national forest resources assessment (Bellamy 1993), VANRIS provided the basis for forest management over the last twenty years. It included a comprehensive MapInfo GIS containing the graphical representation of all Resources Management Units (RMUs) and the inventory database. VANRIS is still being used to provide landowners with information on the available commercial forest resources and has been used to develop a new national vegetation map (see below). However, VANRIS can only partially be used for future REDD+ activities, as the land use and land cover have changed during the last two decades, new national data set have been made available, and certain data bases are outdated. Thus, it requires a complete revision and update. Several new potential inputs are available, which can be used within a new National Forest Inventory approach focusing on accounting of GHG emissions and removals[33].

Forest Definition: Depending on the objectives of past forest inventories, different forest definitions have been used in Vanuatu. In consistency with Vanuatu's Forest Policy 2011 – 2020 the following definition for the term 'forest" is proposed for REDD+ reporting purposes during the readiness phase:

Minimum area of land of 0.81 hectare with tree crown cover (or equivalent stocking level) of more than 10 percent with trees with the potential to reach a minimum height of 3 meters at maturity in situ.

The definition includes tree stands in agricultural production systems (e.g. fruit plantations and agroforestry) as authorized by the Vanuatu Government and future UNFCCC COP decisions. It shall also include areas with bamboo and palms provided that height and canopy cover criteria are met; forest roads, fire breaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of scientific, historical, cultural or spiritual interest; windbreaks,

[33] VANRIS distinguishes 5.808 Resources Management Units of which 1.936 were considered in the forest inventory. After regrouping by forest types 229 forest strata have been used for reporting purposes. Islands groups have been stratified separately to preserve regional differences in species' composition and timber volumes (Bellamy 1993). However, VANRIS' stratification can't be used for GHG accounting, as the stratification is far too detailed. Apart, several forested areas have been excluded as "non-forested", e.g. mangroves, thicket, and tree crop systems.

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shelterbelts and corridors of trees with an area of more than 0.81 hectares and width of more than 20 meters; plantations primarily used for forestry or protected purposes; such as rubber wood plantations and cork oak stands.

Stratification: In 2011, the Government of Vanuatu released a new vegetation and land cover map of Vanuatu (Ministry of Agriculture, Quarantine, Forestry and Fisheries MAQFF 2011). The vegetation map simplifies VANRIS' forest stratification. It anticipates national wall-to-wall 2003 NEXTMap® orthorectified radar image (ORI) and 1999- 2003 Landsat, as well as selected ASTER scenes for the year 2000 (see below). Anticipating this stratification, the following strata will be used in the inventory design:

Table 2: Forest cover categories to be used in the National Forest Inventory

Type	Description	VANRIS code
Fm1	Medium height forest (> 20m), mostly closed canopy	Fme*, Fmm*
Fm2	Medium height forest (> 20m), open canopy, degraded or logged over	Fmo*, Fms, FmW
Fl1	Low forest (< 20m), mostly closed canopy	Fl*
Fl2	Low forest (< 20m), open canopy, degraded or logged over	Flo*, Fls*
Fp	Forest plantation	N/A
T1	Thickets (3-8m), dense structure	T*
T2	Thickets (3-8m), open structure	T*
M	Mangroves[34]	M
LU2	Cultivated area, plantations, i.e. coconut plantations or crop area dominated by coconut	N/A

Source: MAQFF 2011

The proposed stratification is based on 2003 satellite data and has to be updated during the readiness phase anticipating the field observation during the initial inventory, detected deforestation and degradation patterns, and new sensor products. Thus, a new refined release could be envisaged for the period 2015-2017. Eight forest classes open and closed high forests, low forests, thickets, mangroves as well as tree crops will be covered by the forest inventory, while GHG removals by forest plantations will be monitored for specific sites. Eventually, the stratification has to be refined to distinguish degraded from non-degraded stands using suitable proxies (e.g. minimum distance to roads and settlements) and categories (IPCC: managed and unmanaged lands).

Plot design and carbon pools: As a small island state with a comparatively low deforestation rate Vanuatu aims at a cost-effective implementation of REDD+ anticipating technical and financial support, both from the subnational and the regional level. The Secretariat of the Pacific Community (SPC) has developed an inventory approach specifically adapted to the conditions of small Pacific island states (Thiele et al. 2010), which will be used in Vanuatu's forest inventory. The Monitoring, Assessment and Reporting for Sustainable Forest Management (MAR-SFM) system has been designed based on FAO's Forest Resources Assessment (FRA) guidelines and its National Forest Inventory approach. Plots

[34] MAQFF 2011 merges mangroves and marshes into one single class. For REDD+ reporting purposes they have to be split into two. Most of the mangrove stands can be found on Efate and Malekula and are easy to detect using multispectral optical imagery.

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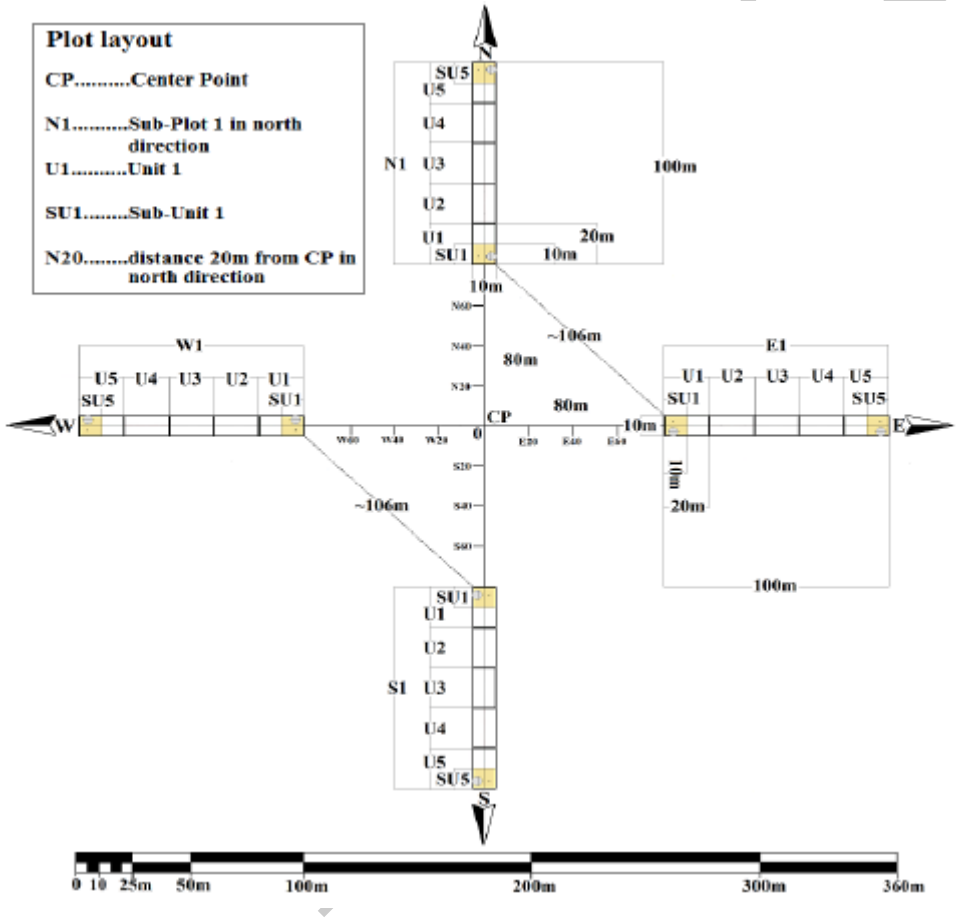
including subplots, units, and subunits will be established following a cross-shaped plot design (figure 1). While aboveground biomass, deadwood, litter, and soil-carbon will be measured in the field, belowground biomass will be estimated using IPCC default values for root-to-shoot ratios. However, in case of mangrove forests the plot design has to be adjusted to the stand characteristics and particular measurement conditions.

Sampling: The number of plots shall be determined aiming at a precision of ±10 per cent of the true value of the mean at the 95 per cent confidence level for aboveground biomass in each stratum. Within each stratum plots will be selected randomly from a predefined population evenly spatially distributed across the stratum according to a map grid with geographic projection (stratified systematic random sampling). To estimate the variance on aboveground biomass and to determine the required plot number for each stratum an initial pretest will be conducted.

Figure 1: MAR-SFM Plot design



Source: Thiele et al. 2010

Allometrics: Aboveground biomass (AGB) will be calculated using recently published pan-tropical allometric equations (Chave et al. 2005) anticipating two different climate domains:

Dry forests: $AGB = \exp\{-2.187+0.916*\ln(RD^2H)\} \equiv 0.112 * (RD^2H)^{0.916}$

Moist forests: $AGB = \exp(-2.977 + \ln(RD^2H)) \equiv 0.0509 * RD^2H$

Where D: dbh [cm]; R: wood specific gravity [g/cm^3], H: height [m]; wood specific gravity default values from the Global Wood Density Database[35] will be used. AGB of coconut and other palm species will be estimated based on the allometric equations referenced in Thiele et al. 2010. Emissions from the dead wood pool will be estimated applying IPCC default values for the decay rate.

Implementation mode and steps: The forest inventory will be conducted in 2012 with technical support from SPC and financial support from GIZ. SPC will train dedicated staff of Vanuatu's Department of Forests (VDoF) in designing and implementing the inventory, as well as in data analysis and processing. The following work packages and activities have to be conducted:

(1) ***Inventory preparation:*** GIS data compilation, data base modelling, sampling design and plot allocation.

(2) ***Inventory piloting on Santo Island:*** installation of 97 plots in 8 strata, variance estimation and plot number calculation for each stratum, mission planning and mapping.

(3) ***Inventory roll-out:*** field measurements and biodiversity assessment on 3 islands.

(4) ***Database compilation and analysis:*** Data base consolidation and statistical analysis, calculation of 5 carbon pools (AGB, belowground biomass, litter, deadwood, soil carbon), reporting QA/QC, and external review

For planning purposes it is assumed that 180 plots are required to cover 8 strata (Table 2). In a first step, 20 plots will be installed on Santo Island to estimate the variance in each stratum in the mode of a pre-test to determine the final plot number per stratum and their location. It is expected, that tree crops will be substratified into two or three strata according to the distribution of different agroforestry systems.

Table 2: Size of relevant forest strata and number of allocated plots on the 4 pilot islands

Stratum	Efate			Malekula			Santo			Erromango			Total	Plots allocated
	ha	%	Plots	ha	%	Plots	ha	%	Plots	ha	%	Plots	ha	
Closed medium height forest	10,737	11	4	27,414	28	7	30,701	32	8	27,414	28	7	96,266	25
Open medium height forest	12,684	10	4	14,347	11	3	85,465	67	17	14,347	11	3	126,843	25
Closed low forest	20,755	14	4	17,624	12	3	87,172	61	15	17,624	12	3	143,175	25
Open low forest	11,102	20	4	82	0	0	32,959	61	12	10,166	19	4	54,309	20
Closed thicket	5,263	7	3	3,082	4	1	66,090	85	17	3,082	4	1	77,517	25
Open thicket	4,746	15	3	10,487	32	6	6,866	21	4	10,487	32	6	32,586	20
Mangroves	152	12	2	1,092	88	8	-	-	-	-	-	-	1,244	10
Tree crops	3,414	16	5	578	3	1	16,243	78	23	578	3	1	20,813	30
Total			29			29			97			25		180

[35] http://datadryad.org/handle/10255/dryad.235

The Forest Inventory will be conducted under the lead of SPC and VDoF during 2012 - 2013. Appendix 3 provides the activity schedule. In accordance with the MAR-SFM protocol (Thiele et al. 2010) key biodiversity parameters will be assessed, too. All plots will be installed involving local communities and land owners. The results will be presented, discussed and validated by landowners and other stakeholders on each island during the Readiness phase. Depending on the availability of additional funds the sampling of the Forest Inventory can be intensified during the Readiness phase by installing additional plots on smaller islands. The protocols will be validated, its report independently reviewed and its results verified by a certifier accredited under the UNFCCC.

2. Deforestation monitoring

Current state: Vanuatu doesn't count with an operational deforestation monitoring system. Recently, a consortium of international scientists started the processing of the historic deforestation pattern and presented first results for the period 1990 – 2000 (Herold et al. 2007), which have been anticipated in Vanuatu's R-PIN. According to this analysis the gross deforestation for all islands of Vanuatu between 1990 and 2000 is estimated with 4.678 ha or 468 ha/a. Although the processing included different sensor products (Landsat, ASTER, SPOT) 20% of the Vanuatu land area could not be included in the change detection because of persistent cloud cover. Consequently, the analysis has to be complemented anticipating additional multispectral optical and radar imagery. Table 3 presents the currently available data sets relevant for deforestation monitoring[36].

Table 3: Currently available data sets for deforestation monitoring

Sensor	Type	Spatial resolution	Spatial Coverage	Temporal coverage	Corresponding mapping product and remarks
Landsat TM, ETM	Multispectral optical	30m	Wall-to-wall	GLC 1990, 2000	Vanuatu forest cover and deforestation map 1990 – 2000 (Herold et al. 2007)
SPOT	Multispectral optical	20m	16 scenes	1992 - 1993	
ASTER	Multispectral optical	15m	14 scenes	2000	
NEXTMap® TopoSAR ORI	Orthorectified radar image	1.25m	Wall-to-wall	2003	Vanuatu Department of Lands and Survey: Topographic map of Vanuatu
ALOS Palsar	L-Band radar dual-pol FBD	25m	Wall-to-wall	2007, 2008, 2009, 2010	Acquired by GIZ under the ALOS Science Program Phase 3
WorldView 2	Pan/8 multispectral	0.5/2m	Santo	2010/2011	Acquired by GIZ: Accuracy assessment source for forest mask 2010 and Palm stand delineation

Taking into account the current limitations in medium to high resolution non-commercial data availability (e.g. Landsat 7 SLC error, CBERS 2 and ALOS failure) and the forthcoming new sensors (Landsat 8 DCM, Sentinel 2, CBERS 3, ALOS 2) announced for 2013 onwards, Vanuatu will structure the

[36] Freely available data sets like SRTM, ASTER GDEM, and medium-resolution data (MODIS, ENVISTA, etc.) are not explicitly referenced.

processing of national deforestation coverages along the temporal boundaries outlined in Table 4. It will use the methodology developed by Herold et al. 2007 to the periods 2000 – 2007 and 2007 – 2011 complementing it applying radar-based methodologies to reduce the clouds coverage.

To establish an operation REDD+ deforestation monitoring framework the following tasks have to be conducted:

Deforestation processing 2007 – 2010: A 2010 forest mask will be processed using SPOT 5 and ASTER data. ALOS Palsar data will be used to reduce cloud cover in optical data.

Palm stand delineation 2010: Coconut palm stands will be delineated applying a methodology developed by SOPAC to very-high resolution optical data (WorldView 2). The methodology will be piloted on Santo Island.

Cloud correction 1990- 2000: The correction of the 1990-deforestation analysis requires the processing of radar imagery as almost all available optical imagery has been included by Herold et al. 2007. Although expensive, Radarsat-1 shows a promising potential. Data availability has to be verified by submitting a request to MDA[37]. If no suitable radar-data can be acquired, the coverage would have to be complemented by medium-resolution data (MODIS, available for 2001 onwards) or younger optical imagery would have to be processed to verify, that areas under clouds in 2000 do not appear as deforested in the recent past. Both alternatives would lead to higher uncertainties and should only considered if no suitable radar data can be acquired for the year 2000.

Deforestation processing 2000 – 2007 – 2010: Once the deforestation detection between 2000 and 2010 has been consolidated, the period can be split into two by processing the forest mask 2007. Additional data on emerging deforestation patterns in the recent past will improve the understanding of the drivers and underlying causes of deforestation and improve the calibration of the Reference Emission Level (REL). The forest mask will be processed using ALOS Palsar 2007 data. Thematic accuracy will be assessed applying the methodology developed by GOFC-GOLD (Strahler et al. 2006) to very-high resolution data. Apart, direct biomass assessment methods (Mitchard et al. 2011) for low-biomass forest stands (thickets, open low forest) will be tested. It is expected that these methods could reduce the costs of future terrestrial inventory work.

Deforestation processing 2010 – 2014: 2011 to 2014 will be the most difficult period for forest monitoring in terms of data availability as several sensors have ceased operations (ALOS, CBERS) or already operate far beyond their operational lifetime (Landsat 5). As the next generation of publicly financed satellites is expected to become operational in 2014, interim solutions have to be identified which fit into the periodicity of a future REDD+ mechanism under the UNFCCC and the pace of Readiness activity implementation. It is assumed, that data from ESA's Sentinel 2 satellite will be available from 2014 onwards and freely accessible for national REDD+ activities. To reduce cloud coverage Cosmo SkyMed L-band radar data can be used. 2014 might become a critical milestone, as sensor technologies for operational forest monitoring will change. Thus, it is foreseen to conduct an in-situ verification mission in 2015 complementary to the desk accuracy assessment based on high-resolution optical data to achieve a high accuracy for the 2014 data set which will open the door to wall-to-wall

[37] http://gs.mdacorporation.com/SatelliteData/Radarsat1/Radarsat1.aspx

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deforestation monitoring at 10m spatial resolution and a corresponding minimum mapping units (MMU) smaller than 0.5ha.

Deforestation processing 2014 – 2017: As neither the technical specifications of the new sensor generation nor the future reporting periodicity of a UNFCCC REDD+ mechanism are currently clear, it is difficult to plan or budget future forest monitoring efforts. Here, it is assumed that the after 3-5 years a new national deforestation monitoring will be conducted.

Vegetation map 2010 and 2017: Once the Forest inventory has been completed and the forest mask 2011 has been processed and verified the currently used vegetation map (MAQFF) will be updated to anticipate the current land use. A next update can scheduled once the REDD+ reporting periods are defined.

Table 4: Temporal structure of the national REDD+ deforestation monitoring

Period	Data sources	Targeted spatial resolution / MMU	Processing methodology	Remarks
1990 - 2000	Landsat TM/ETM, SPOT, ASTER, Radarsat-1 wide	30m / 0.81ha	Herold et al. 2007	Cloud cover in the original product will be reduced using Radarsat-1 data.
2000 - 2007	Landsat TM, SPOT, ASTER, ALOS Palsar	30m / 0.81ha	Herold et al. 2007 Almeidha-Filho et al. 2009	2007 forest mask will be derived from ALOS Palsar imagery.
2007 - 2010	ALOS Palsar, SPOT 5, ASTER	25m / 0.56ha	Almeidha-Filho et al. 2009 Mitchard et al. 2011	Radar-based direct biomass assessment for 2011 will be tested for open forests and thickets.
2010 - 2014	SPOT 5, ASTER Cosmo SkyMed	25m / 0.56ha	To be defined	Suitability of Cosmo SkyMed L-Band radar data for cloud processing has to be tested.
2014 - 2017	Sentinel 2, ALOS Palsar 2	10 - 15m / < 0.5ha	To be defined	

Appendix 4 introduces the budget for deforestation detection and monitoring covering the periods between 1990 and2014. Appendix 5 provides the human, technical and financial resources required. Appendix 6 outlines the tentative schedule to conduct these activities.

During an initial phase (2012 – 2015) all remote sensing tasks shall be conducted at the regional level with the support of the Applied Geoscience and Technology Division of the Secretariat of the Pacific Community (SOPAC). In this phase, relevant governmental units in Vanuatu will be trained to verify and use the products. In parallel, remote sensing training of dedicated staff members in different departments (VoDF, Department of Lands, Department of Environmental Protection and Conservation, amongst others) will be conducted to generate the remote sensing processing capacity in the country until 2017 (see the capacity training section below).

Local stakeholders will be involved in all activities in validating the products of each task before completion. All products will be made available to Vanuatu's REDD+ stakeholders applying a disclosure policy to be elaborated.

3. Degradation monitoring

Vanuatu's first forest inventory VANRIS already considered forest degradation in its forest stratification introducing the open forest category. Some of Vanuatu's forest area are already heavily degraded and over logged while other on remote islands remained intact. Estimating emissions from forest degradation in the tropical domain is still considered a challenge (GOFC-GOLD 2011), mostly on the site of generating suitable activity data. Regrowth dynamics in tropical forests requires the high temporal frequency acquisition of imagery at the beginning and the end of a harvesting season, as logging gaps might close within a couple of months. Some degradation activities like charcoal production, animal grazing and fuel wood extractions can't be assessed using RS approaches. Furthermore, effects of natural degradation (storm damage, natural fires, and droughts) have to be factored out from anthropogenic impacts. Although direct degradation detection approaches have successfully being tested at the project level, they are not yet operational and sufficiently cost-effective to become part of national forest monitoring, particularly considering budget restriction in smaller developing countries.

As an alternative path GOFC-GOLD 2011 proposes an indirect approach to assess emissions from forest degradation. This approach bypasses the need to directly generate activity data on area change caused by forest degradation. Instead, it distinguishes intact forest from non-intact forest, applying 6 criteria to spatial ancillary data. To operationalize this concept, GOFC-GOLD proposes to first delineate non-intact forest recognizing that those criteria need to be adapted to country or ecosystem level. As consequence, non-intact forest would either remain non-intact, or could be converted to non- forest. Financial benefits from reducing emissions from degradation could still be achieved if the area of non-intact forest remains the same and the carbon stocks increase during a given reporting period. Thus, this approach shifts the operational efforts from the RS component focusing on activity data to the inventory component determining corresponding carbon densities and emission factors. Following the recommendation of GOFC-GOLD to adjust the concept to national circumstances the following criteria for intact forest will be tested:

1) situated within the forest land according to the approved national forest definition;
2) larger than 500 ha;
3) containing a contiguous mosaic of natural forest ecosystems;
4) not fragmented by infrastructure (1km buffer around roads, navigable rivers, pipelines, settlements);
5) without signs of significant human transformation;
6) and without burnt lands and young tree sites adjacent to infrastructure objects.

IPCC 2006 requests to distinguish between managed and unmanaged land. Combining this concept with the indirect approach proposed by GOFC-GOLD would require further sub-stratification of each forest stratum, if appropriate.

Vanuatu will test GOFC-GOLD's indirect approach in combination with IPCC 2006 reporting requirements. It will consider the strata open medium-high forest, open low forest, and open thicket as degraded. Other forest classes will be sub-stratified in intact and non-intact, and complementary in managed and unmanaged, if appropriate, applying GOFC-GOLD's 6 criteria to report emissions from degradation.

Regarding the temporal reporting boundaries a compromise hat to be found between the different input data. The stratification will be based on the vegetation map (MAQFF 2011) which reflects the state of 2003. Changes in forest cover will be detected for the periods 1990-2000-2007-2011-2014, while the forest inventory will provide emission factors for 2012-2013. Thus, degradation reporting

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combining emission factors and activity data could report for 2011 onwards. A test will be conducted to discount carbon stocks of degraded strata backwards in time aiming at the 2007 forest mask. Based on Mitchard et al. 2011 and other ongoing research in Cameroon and the Philippines regrowth rates will be estimated deriving aboveground biomass of low-carbon stands from ALOS Palsar data. As this effort will be based on an experimental, not an operational approach, it won't be budgeted within the RPP framework. Instead, it will be conducted as a research project to be funded externally.

4. Enhancement of forest carbon stocks

Vanuatu's Forest Policy 2011 – 2020 sees planted forests as the basis for Vanuatu's forest resources and timber supply and identifies several enhancement of carbon stock activities:

10. Establish 20,000 ha of planted forests by 2020 by way of large-scale plantations, community forestry plantations and woodlots.

- *Develop a national forest plantation program to ensure sufficient supply for forest industry and contribute to climate change mitigation;*
- *Develop site-specific forest plantation concepts, in particular for degraded areas, with clear production objectives and preference for local fast growing commercial species;*
- *Establish and strengthen a system of priority species seed orchards and nurseries to provide appropriate planting material for afforestation and reforestation;*
- *Plant high-value, locally adapted and cyclone and climate resistant wood and non-wood species;*
- *Establish plantations for the sustainable production of fuel-wood, charcoal and other forest products.*

11. Undertake compensatory replanting.

- *Strictly balance the GHG emissions resulting from any forest conversion to non-forest use by compensatory replanting;*
- *Promote compensatory tree planting when a farmer or landowner needs to convert forest for food production;*
- *Achieve "zero" net-deforestation in Vanuatu by 2020 to balance deforestation-related emissions.*

The Department of Forestry will establish a registry for enhancement of carbon stock activities eligible under a REDD+ compensation scheme. It will monitor removals on registered sites, account and report corresponding GHG removals using formats and rules to be agreed under UNFCCC for REDD+ reporting. Vanuatu will test existing reporting tools (e.g. TARAM) developed under the CDM to analyze their potential to be used at the national level of a small islands country. It will analyze the option to implement a national plantation and replanting program as a National Appropriate Mitigation Action (NAMA) and decide about an appropriate reporting period.

5. Conservation of forest carbon stocks

Vanuatu is committed to create and extend protected areas to be managed by communities and landowners. It will report on conservation of carbon stocks in those areas.

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6. Sustainable management of forests

As of now, no logging concessions are operating in the country. Timber harvesting is mostly done on a small scale with the help of mobile sawmills, while sustainable forest management is being promoted at the community level. Vanuatu's new forest Policy 2011 – 2020 aims at promoting sustainable management using internationally accepted mechanisms and tools and incorporating traditional and cultural practices. While logging impacts will be monitored and reported as degradation, improved harvesting techniques and corresponding reduced logging impacts and biomasses losses can be assessed at the level of timber permits or concessions. The Department of Forests will analyze the potential of promoting pilot activities reducing logging impacts. It considers the available VCS methodologies for Reduced Impact Logging (RIL) as an option for nested project-based approaches.

7. Common GeoData Infrastructure

To improve the consistency in geodata management of different governmental entities mandated to regulate land-based natural resources management it is necessary to develop common Geodata standards and an infrastructure to effectively share Geodata amongst stakeholders while protecting those assets. Past experience shows, that VANRIS data got damaged and lost. Departments are working with different imagery, GIS software and inconsistent geodata and maps. To improve consistency in data management, geo services, and ultimately the quality of the REDD+ monitoring and reporting the Department of Lands, Department of Agriculture and Rural Development, Department of Environmental Protection and Conservation, and the Department of Forests have to agree on common Geodata standards, formats, and official datasets.

8. Capacity building: GIS and Remote Sensing

At present, the Department of Forestry doesn't count with technical capacities or dedicated staff members in advanced image processing. One staff member is processing VANRIS based maps on request of landowners. To implement and operate REDD+ forest monitoring additional dedicated staff and long-term training is required. During the Readiness phase GIS routines and geo-databases have to be consolidated first, before the remote sensing capacities can be improved. To facilitate the proliferation of common Geodata standards and procedures, GIS staff of different Departments dedicated to terrestrial monitoring shall be involved in GIS training and remote sensing technology transfer. A long-term capacity building concept will be developed during the initial Readiness phase to guide this process.

9. Independent review and certification

Vanuatu will provide the opportunity to nest project-based pilot activities into the subnational and national REDD+ accounting framework. It will follow the AFOLU Technical Requirements of the Jurisdictional and Nested REDD Initiative (JNRI) of the Verified Carbon Standard (VCS) version 3.2 (VCS 2012a-c). To reduce the transaction costs of project based implementation and to encourage private sector investment in REDD+ Vanuatu aims at certifying its REDD+ MRV system by an UNFCCC accredited certifier. The validation and verification can be initiated once the National Forest Inventory has been implemented and the activity data for the periods 1990-2014 have been processed.

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Appendix 1: National Forest Inventory - Activity Costs in USD

Task Name	Duration	Cost
1. Inventory preparation	**20 days**	**49,340.00**
1.1 GIS data compilation	5 days	3,250.00
1.2 Sampling design	3 days	1,500.00
1.3 Mapping	3 days	450
1.4 Database modelling	5 days	3,250.00
1.5 Tools and materials procurement	20 days	34,390.00
1.6 Field sheet preparation	3 days	6,500.00
2. Inventory piloting Santos	**380 days**	**340,550.00**
2.1 Mission preparation Santos	5 days	4,000.00
2.2 Inventory pretest Santo: 20 plots	50 days	75,750.00
2.3 Encoding and inventory planning	20 days	13,000.00
2.4 External backstopping	5 days	8,900.00
2.5 Inventory roll-out Santos 77 plots	144 days	215,520.00
2.6 Data processing Santos	30 days	23,380.00
3. Inventory roll-out	**365 days**	**282,230.00**
3.1 Mid-term backstopping	7 days	16,500.00
3.2 Efate	**66 days**	**98,890.00**
3.2.1 Mission preparation	5 days	4,000.00
3.2.2 Data collection 29 plots	51 days	83,680.00
3.2.3 Statistical analysis	10 days	11,210.00
3.3 Malekula	**66 days**	**87,865.00**
3.3.1 Mission preparation Malekula	5 days	4,000.00
3.3.2 Data collection Malekula 29 plots	51 days	76,205.00
3.3.3 Data preprocessing Malekula	10 days	7,660.00
3.4 Erromango	**60 days**	**78,975.00**
3.4.1 Mission preparation Erromango	5 days	4,000.00
3.4.2 Data collection Erromango 25 plots	45 days	67,475.00
3.4.3 Data preprocessing Erromango	10 days	7,500.00
4. Database compilation and analysis	**50 days**	**36,750.00**
4.1 Data base consolidation	10 days	6,500.00

4.2 Statistical analysis	15 days	11,250.00
4.3 Report drafting	15 days	10,500.00
4.4 QA/QC and external review	10 days	8,500.00
TOTAL ACTVITY COSTS		**708,870.00**

Appendix 2: National Forest Inventory – Resources' Costs in USD

Resource Name	Quantity	unit	Standard Rate	Cost
A. Personnel				**405,270.00**
Lead scientist (intSc)	73.25	days	500.00	36,625.00
Botanist	428	days	150.00	64,200.00
SPC Field manager (FM)	513	days	200.00	102,600.00
VDoF forester (height)	465.5	days	150.00	69,825.00
VDoF forester (dbh)	465.5	days	150.00	69,825.00
Driver	341	days	90.00	30,690.00
Field assistant 1 FA1	341	days	20.00	6,820.00
Field assistant 2 FA2	341	days	20.00	6,820.00
Local guide	341	days	15.00	5,115.00
GIS technician	85	days	150.00	12,750.00
B. Equipment				**35,390.00**
Trimble Juno GPS	2		1,000.00	2,000.00
ArcPad 10	2		800.00	1,600.00
GPS Otter Box	2		100.00	200.00
Clinometer	2		200.00	400.00
Survery compass	4		200.00	800.00
Laser range finder	2		1,000.00	2,000.00
Camping gear	1		3,990.00	3,990.00
Digital camera	2		500.00	1,000.00
External hard drive	2		200.00	400.00
Field tools	1		5,000.00	5,000.00
Field material	1		5,000.00	5,000.00
Office material	1		5,000.00	5,000.00
Laptop	1		2,000.00	2,000.00

MS Access	1		400.00	400.00
MapInfo 11 Prof	1		4,500.00	4,500.00
GoogleEarth Pro	1		500.00	500.00
dbh tape	6		100.00	600.00
C. Services				268,210.00
fuel	341	days	20.00	6,820.00
per diem FA	682		30.00	20,460.00
per diem VoDF	682		115.00	78,430.00
per diem int Sc	27		200.00	5,400.00
per diem FM	348		150.00	52,200.00
Int. flight	2		5,000.00	10,000.00
Nat. flight	27		500.00	13,500.00
Workshop	1		1,000.00	1,000.00
Pickup	341	days	200.00	68,200.00
Soil lab analysis	720	sample	10.00	7,200.00
External review	1		5,000.00	5,000.00
TOTAL				**708,870.00**

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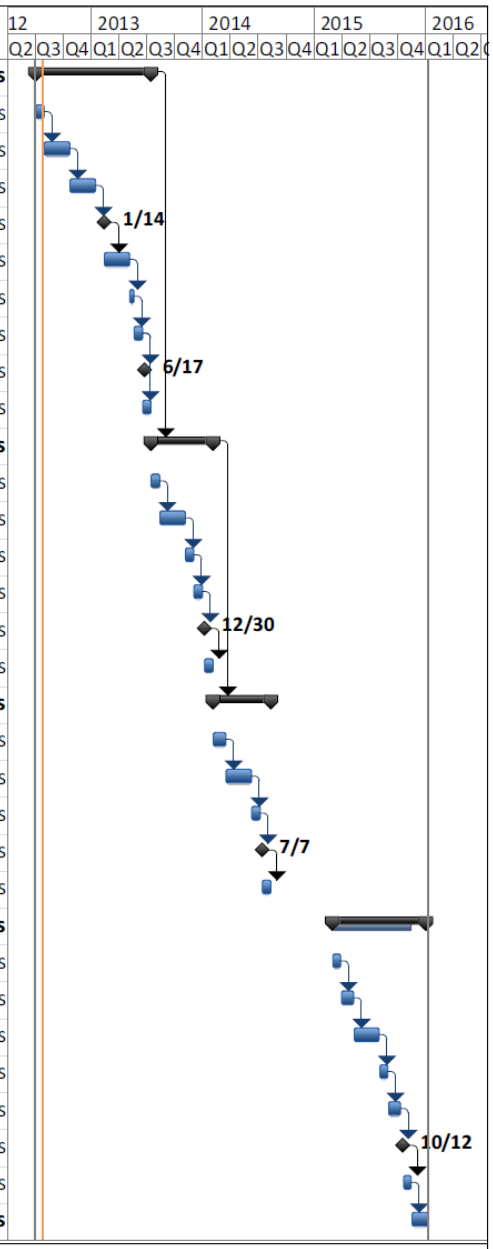
Appendix 3: Activity schedule National Forest Inventory

ID	Task Name	Duration
1	**1. Deforestation processing 2000–2010**	**270 days**
2	1.1 Procurement and data acquisition	20 days
3	1.2 Preprocessing	60 days
4	1.3 Forest detection	60 days
5	1.4 ALOS Palsar radar training	20 days
6	1.5 ALOS Palsar cloud mask processing	60 days
7	1.6 Forest mask 2010	10 days
8	1.7 Product verification	20 days
9	1.8 Stakeholder validation workshop	5 days
10	1.9 Reporting	20 days
11	**2. Cloud correction 1990-2000**	**145 days**
12	2.1 Data acquisition	20 days
13	2.2 Cloud mask 2000 processing	60 days
14	2.3 deforestation mapping	20 days
15	2.4 Product verification	20 days
16	2.5 Stakeholder validation workshop	5 days
17	2.6 Reporting	20 days
18	**3. Deforestation analysis 2000-2007-2010**	**135 days**
19	3.1 ALOS Palsar 2007 preprocessing	30 days
20	3.2 Forest mask 2007 processing	60 days
21	3.3 Deforestation analysis 2000-2007-2010	20 days
22	3.4 Stakeholder validation workshop	5 days
23	3.5 Reporting	20 days
24	**4. Deforestation analysis 2010 – 2014**	**220 days**
25	4.1 Data acquisition	20 days
26	4.2 Cosmo SkyMed 2014 preprocessing	30 days
27	4.3 Forest mask 2014 processing	60 days
28	4.4 Deforestation analysis 2010-2014	20 days
29	4.5 In-situ verification	30 days
30	4.6 Stakeholder validation workshop	5 days
31	4.7 Reporting	20 days
32	**5. External validation & verification**	**40 days**



Project: Vanuatu_defor_monitori
Date: Thu 7/26/12

Task		Inactive Summary	
Split		Manual Task	
Milestone		Duration-only	
Summary		Manual Summary Rollup	
Project Summary		Manual Summary	
External Tasks		Start-only	
External Milestone		Finish-only	
Inactive Task		Deadline	
Inactive Milestone		Progress	

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Appendix 4: Deforestation detection and monitoring - Activity Costs in USD

Task Name	Duration	Cost
1. Deforestation processing 2000–2011	**270 days**	**203,600.00**
1.1 Procurement and data acquisition	20 days	98,200.00
1.2 Preprocessing	60 days	14,100.00
1.3 Forest detection	60 days	14,100.00
1.4 ALOS Palsar radar training	20 days	38,500.00
1.5 ALOS Palsar cloud mask processing	60 days	14,100.00
1.6 Forest mask 2011	10 days	2,350.00
1.7 Product verification	20 days	4,700.00
1.8 Stakeholder validation workshop	5 days	11,350.00
1.9 Reporting	20 days	6,200.00
2. Cloud correction 1990-2000	**145 days**	**133,250.00**
2.1 Data acquisition	20 days	92,600.00
2.2 Cloud mask 2000 processing	60 days	13,800.00
2.3 deforestation mapping	20 days	4,600.00
2.4 Product verification	20 days	4,700.00
2.5 Stakeholder validation workshop	5 days	11,350.00
2.6 Reporting	20 days	6,200.00
3. Deforestation analysis 2000-2007-2011	**135 days**	**43,400.00**
3.1 ALOS Palsar 2007 preprocessing	30 days	7,050.00
3.2 Forest mask 2007 processing	60 days	14,100.00
3.3 Deforestation analyis 2000-2007-2011	20 days	4,700.00
3.4 Stakeholder validation workshop	5 days	11,350.00
3.5 Reporting	20 days	6,200.00
4. Deforestation analysis 2011 – 2014	**220.13 days**	**119,512.50**
4.1 Data acquisition	20 days	63,000.00
4.2 Cosmo SkyMed 2014 preprocessing	30 days	7,050.00
4.3 Forest mask 2014 processing	60 days	14,100.00
4.4 Deforestation analyis 2011-2014	20 days	4,700.00
4.5 In-situ verification	30 days	13,112.50
4.6 Stakeholder validation workshop	5 days	11,350.00
4.7 Reporting	20 days	6,200.00
5. External validation & verification	**40 days**	**70,000.00**
Total		**569,762.50**

Appendix 5: Deforestation detection and monitoring 1990 – 2014 – Resources' Costs in USD

Resource Name	Work	Standard Rate	Cost
A. Personnel			**184,912.50**
Senior scientist	240	300	72,000.00
RS technician	740	150	111,000.00
VDoF forester	7.5	150	1,125.00

Local guide	7.5	15	112.50
Driver	7.5	90	675.00
B. Equipment			**238,400.00**
Radarsat1	24	3,600.00	86,400.00
SPOT 5 L2A	20	2,500.00	50,000.00
ASTER L1B	20	400	8,000.00
Cosmo SkyMed ScanSAR wide	20	2,200.00	44,000.00
RapidEye L3A	8	3,200.00	25,600.00
Workstation	1	5,000.00	5,000.00
Office equipment	1	2,000.00	2,000.00
Office material	640	5	3,200.00
Envi 4.8 license	1	8,000.00	8,000.00
MS Office Prof license	1	700	700.00
MapInfo 11 Prof	1	4,500.00	4,500.00
Backup	1	1,000.00	1,000.00
C. Services			**146,450.00**
External trainer	1	20,000.00	20,000.00
Int flight SP	12	1,000.00	12,000.00
Int flight	1	4,000.00	4,000.00
per diem SP	78	150	11,700.00
per diem int	14	250	3,500.00
Internet phone	720	5	3,600.00
Workshop	20	1,000.00	20,000.00
Pickup	7.5	200	1,500.00
External verification	1	70,000.00	70,000.00
fuel	7.5	20	150.00
TOTAL			**569,762.50**

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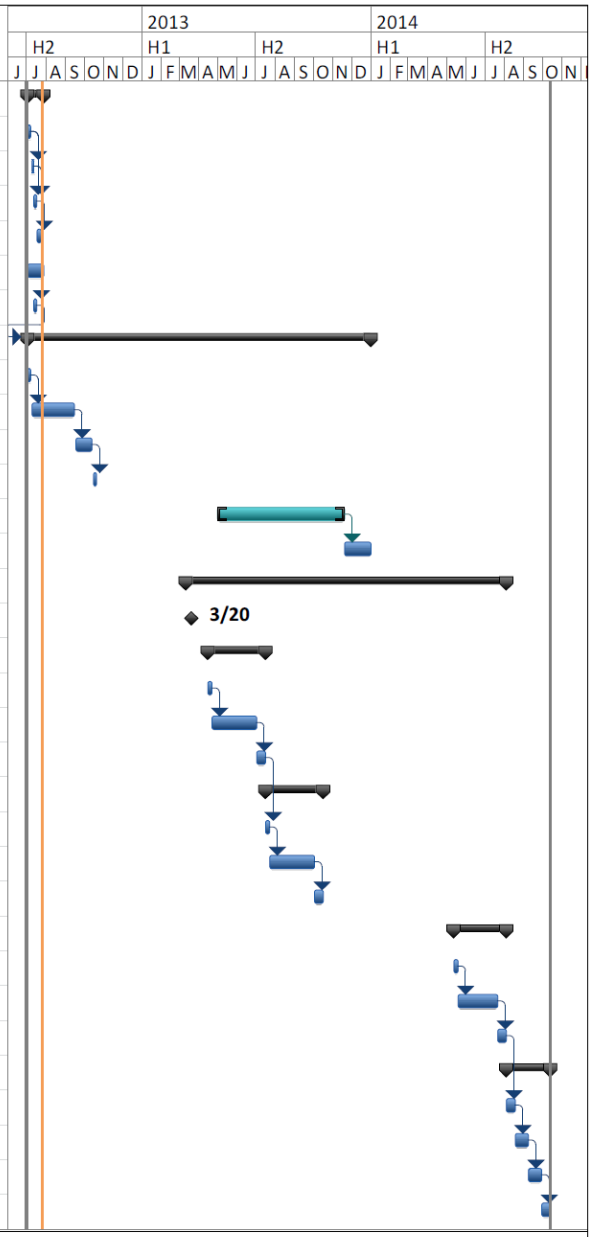
Appendix 6: Activity schedule Deforestation detection and monitoring 1990 – 2014

ID	Task Name
1	**1. Inventory preparation**
2	1.1 GIS data compilation
3	1.2 Sampling design
4	1.3 Mapping
5	1.4 Database modelling
6	1.5 Tools and materials procurement
7	1.6 Field sheet preparation
8	**2. Inventory piloting Santos**
9	2.1 Mission preparation Santos
10	2.2 Inventory pretest Santo: 20 plots
11	2.3 Encoding and inventory planing
12	2.4 External backstopping
13	2.5 Inventory roll-out Santos 77 plots
14	2.6 Data processing Santos
15	**3. Inventory roll-out**
16	**3.1 Mid-term backstopping**
17	**3.2 Efate**
18	3.2.1 Mission preparation
19	3.2.2 Data collection 29 plots
20	3.2.3 Statistical analysis
21	**3.3 Malekula**
22	3.3.1 Mission preparation Malekula
23	3.3.2 Data collection Malekula 29 plots
24	3.3.3 Data preprocessing Malekula
25	**3.4 Erromango**
26	3.4.1 Mission preparation Erromango
27	3.4.2 Data collection Erromango 25 plots
28	3.4.3 Data preprocessing Erromango
29	**4. Database compilation and analysis**
30	4.1 Data base consolidation
31	4.2 Statistical analysis
32	4.3 Report drafting
33	4.4 QA/QC and external review



Project: Vanuatu_NFI_Inventory_
Date: Thu 7/26/12

Task		Inactive Summary	
Split		Manual Task	
Milestone		Duration-only	
Summary		Manual Summary Rollup	
Project Summary		Manual Summary	
External Tasks		Start-only	
External Milestone		Finish-only	
Inactive Task		Deadline	
Inactive Milestone		Progress	

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Annex 5: Schedule and Budget

Please present any additional details of your proposed Schedule and Budget.

Annex 6: Design a Program Monitoring and Evaluation Framework

Please present any additional details of your proposed Monitoring and Evaluation.

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