

# INTERNATIONAL WATER RIDGE TO REEF PROJECT VANUATU REHABILITATION EFFORTS

A Progressive Report Update: Quarter 2, 2020



Report Produced by:

Ericksen Packett

IWR2R National Project Manager/TRMC Secretariat

The Department of Environmental Protection and  
Conservation

Date Issued: 17/07/2020





## Basic Data

Activity Name	Vanuatu IW R2R Project Rehabilitation Programme		
Project Site/Location	Tagabe River Catchment Area, Port, Vanuatu		
Contributing to/Achieving Project Objectives	Component 1	Strengthening coordination in support of the development and implementation of the Tagabe River Management Committee (TRMC)	
	Outcome 1.2	Replication of Best Practices and Lessons Learned from IWRM Sarakata Catchment Demo Project	
	Targets End of Project	Buffer and Protected Use areas established and adhered to.	
	Component 3	Establishing partnerships for sustainable coastal area development.	
	Outcome 3.1	A multi-sectoral partnership that should revive the Existing Botanical Garden providing environmental and educational benefits to the Tagabe River Catchment	
	Targets End of Project	Existing Botanical Garden preserving Vanuatu's floral biodiversity and operating as a self-sustaining entity for the national botanical garden. 30 hac established and planted with rare endemic species in Vanuatu.	
Financial Expenditures	Projects	VUV	USD
	Tagabe Riparian Restoration Project	94,700	809.82
	Blacksand Coastal Restoration Project	24,580	210.19
	Tagabe Catchment Restoration Project	141,900	1,213.44
	Co-financing	Department of Environmental Protection and Conservation	141.10
		Department of Forestry	42.76
		SPREP PEBACC Project	171.03
		Ifira Marine Management	42.76
	Total	307,680	2,631



## Contents

Basic Data.....	1
IWR2R Project Vanuatu Rehabilitation Programmes.....	3
1. Tagabe River Restoration Project .....	3
2. Tagabe Catchment Restoration Project.....	4
3. Blacksand Coastal Restoration Project.....	<b>Error! Bookmark not defined.</b>
IWR2R Vanuatu Rehabilitation Statistics .....	6
Rehabilitation Project: Field Count (2020) _Quarters 1 and 2 .....	6
Rehabilitation Project Stats (2020) _ Quarter 1 and 2 .....	6
Tagabe Catchment Restoration Project: Matnakara Water Protection Zone 1.....	7
Tagabe River Restoration Project .....	8
Tagabe River Restoration Project Nursery: DOF.....	8
Tagabe River Tree Planting: National Tree Planting Day.....	10
Table Summary of Livelihood Species Planted along Tagabe River .....	13
Blacksand Coastal Restoration Project.....	14
Field Monitoring and Maintenance Activities.....	15
Nursery Monitoring and Maintenance .....	19
Nursery Stock Count .....	21
DEPC IWR2R Project Nursery Count .....	21
DEPT. of Forestry Nursery Stock Count.....	21
Ongoing Activities for Quarter 3.....	22
Annexes.....	23
1. Tree Planting Activity Reports .....	23
2. Field Monitoring and Maintenance Activity Report .....	26
3. Tagabe River Restoration Project Nursery Activities by DOF.....	28

## IWR2R Project Vanuatu Rehabilitation Programmes

As per components 1 and 3 from the National Log Frame, the projects as in specific three (3) rehabilitation Projects Schedule to accomplish within its durations.

### 1. Tagabe River Restoration Project

This project will specifically will restore at least 30m buffer areas along Tagabe River with greater significant serving to stabilize the riverbanks from which buffer areas are to be restored and observed. Having to achieved accountable outcomes for the Tagabe River to minimize soil erosions, improve surface water quality, succession ally restore and maintain freshwater lifeforms, and hierarchically improving the quantity and quality of Tagabe River.

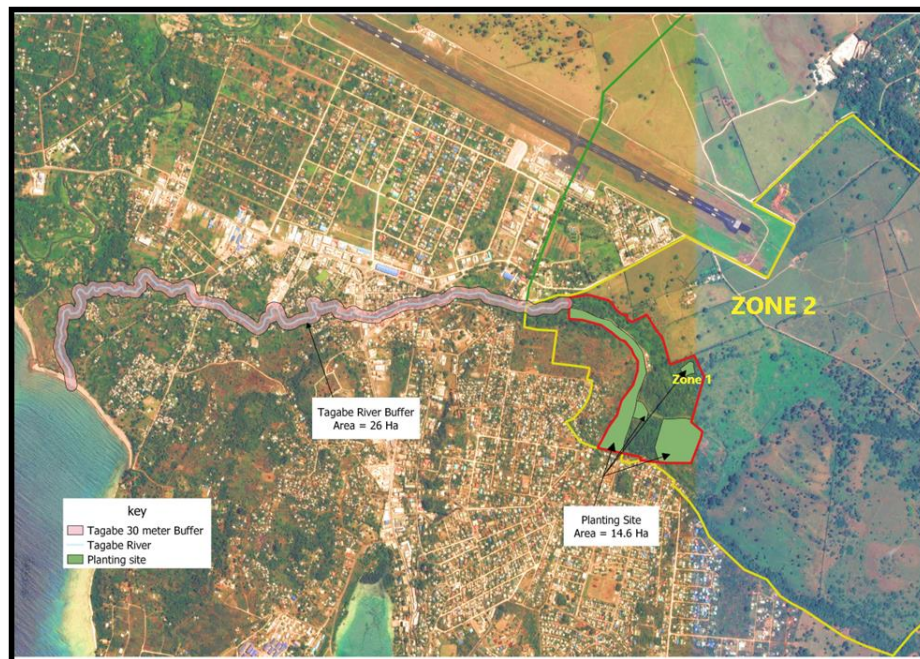
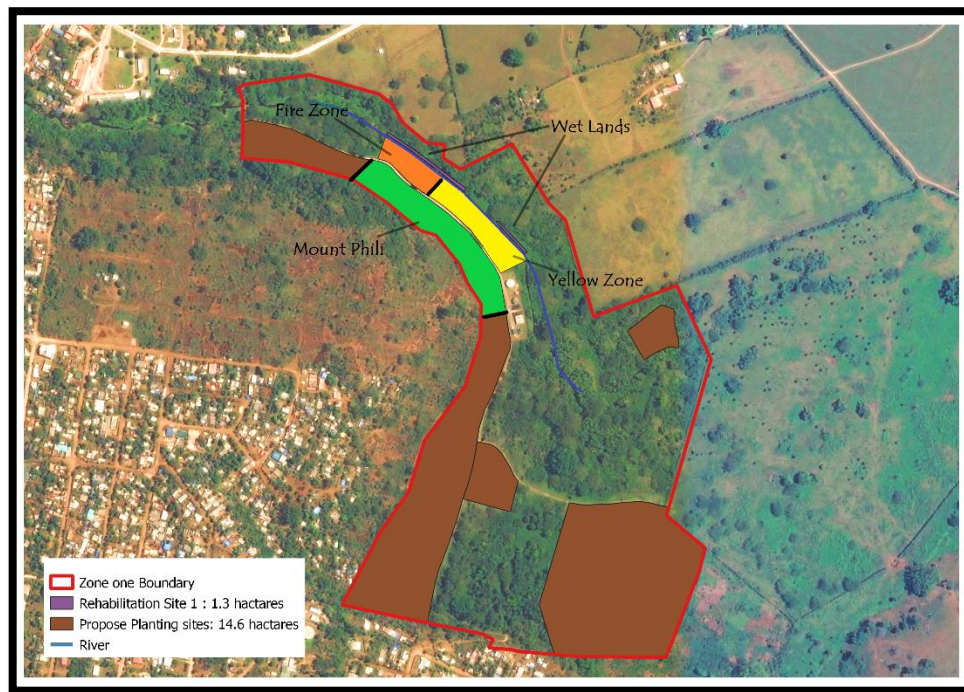


Figure 1 Tagabe River Restoration Project sites stretching along Tagabe River

The Map in Fig 1 indicates at least 26 Ha area of the river bank to be restored in coincide with standard buffer zoning standard.

## 2. Tagabe Catchment Restoration Project

Catchment reforestation project ensures to revive and maintain the existing Botanical Garden in Matanakra Water Protection Zone 1 (MWPZ1). The project aims to restore such designated area with a native forest, serving its purpose as botanical garden that will accommodate national species of significant importance such as a native, endemic, and threatened flora species. The native forest itself will be restored in Matnakara Water Protection Zone 1 (MWPZ1) with an estimation of 14.6 hectares hoping to establish functional ecosystem. Contributing to the quality and quantity for both surface and underground aquifer.



As shown in Fig 2 (Map) shaded in brown are the degraded areas within MWPZ 1 to be restored. Shaded in yellow, green, orange and purple are the restoration sites hereby refer to as zones named above.

### 3. Blacksand Coastal Restoration Project.

The project also propose to extend its rehabilitation efforts onto coastal areas of Blacksand. Its purpose serves to restore a native coastal forest on selective sites fragmented along the shorelines of Blacksands. Coastal species will contribute towards the resilient for the coast itself as well as the coastal communities against the impacts of climate change.

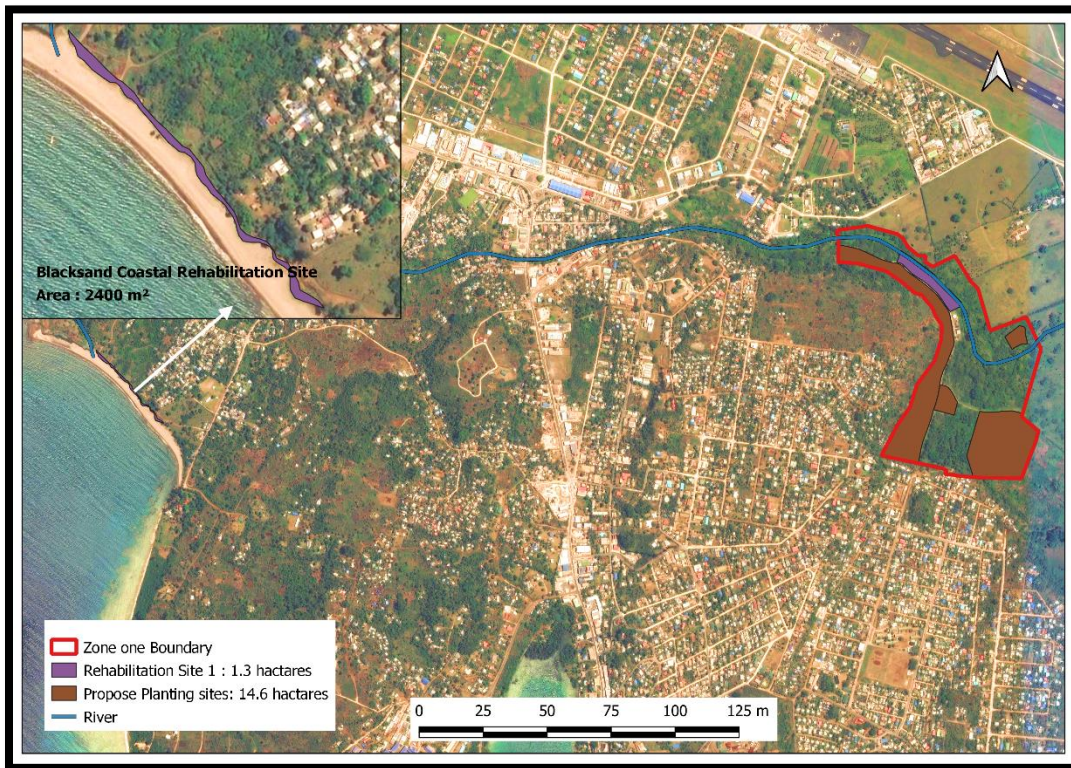


Figure 3 Rehabilitation Sites for Blacksand Coastal Restoration Project

The rehabilitation site as shown above (fig3) is compensated to restore an area of 2400m<sup>2</sup> outstretching the Blackand Coasts in Mele Bay. It is a new rehabilitation project intended to be established in this vulnerable area of the Catchment to mitigate climate changes impacts, especially sea level rise.



## IWR2R Vanuatu Rehabilitation Statistics

### Rehabilitation Project: Field Count (2020) \_Quarters 1 and 2

Rehabilitation Projects	No. of Trees Planted	Plants Survived	Mortality Rate Per Plants	No. of Replacement Plant
Blacksand Coastal Restoration Project	225	225	0	0
Tagabe Catchment Restoration Project	375	365	10	10
Tagabe River Restoration Project	330	330	0	0
<b>Total</b>	<b>930</b>	<b>920</b>	<b>10</b>	
<b>Total Survival Rate/Plants (Total No. of Trees Planted + No. of Replacement Plant)</b>				<b>940</b>

Table 1 2020 Field Statistic for the rehabilitation effort implemented by the R2R Project for each rehabilitation projects.

### Rehabilitation Project Stats (2020) \_ Quarter 1 and 2

<b>Tree Planting No.1</b>			
<b>Date</b>	<b>Rehabilitation Projects</b>	<b>Site/Zone Name</b>	<b>Total No. of Plants</b>
<b>7<sup>th</sup> &amp; 8<sup>th</sup> May</b>	<b>Tagabe Catchment Restoration Project</b>	<b>MWPZ 1-Mount Phili</b>	<b>375</b>
<b>22<sup>nd</sup> June (National Tree Planting Day)</b>	<b>Tagabe River Restoration Project</b>	<b>Tree Planting along Tagabe River</b>	<b>330</b>
<b>22<sup>nd</sup> June (National Tree Planting Day)</b>	<b>Blacksand Coastal Restoration Project</b>	<b>Blacksand Coastal Restoration Project</b>	<b>225</b>

Table 2 Rehabilitation Projects Field Count

## Tagabe Catchment Restoration Project: Matnakara Water Protection Zone 1

The Tagabe Catchment restoration project came into effective last year, 2019 with the establishment of a nursery house and having achieving three (3) mass wildling/tree collection and at least one major tree planting. It was by the interest of the the local management committee, Tagabe River Management Committee (TRMC) as reflected in the local catchment R2R management plan to rehabilitate Tagabe Catchment. This year, 2020, the project has continuously obliged in the consistent field (rehabilitation) monitoring and maintenance on the rehabilitated site. On the 7<sup>th</sup> and 8<sup>th</sup> March marks another major tree planting initiated by the project within the designated sites in Matnakara Water Protection Zone 1 (MWP1).

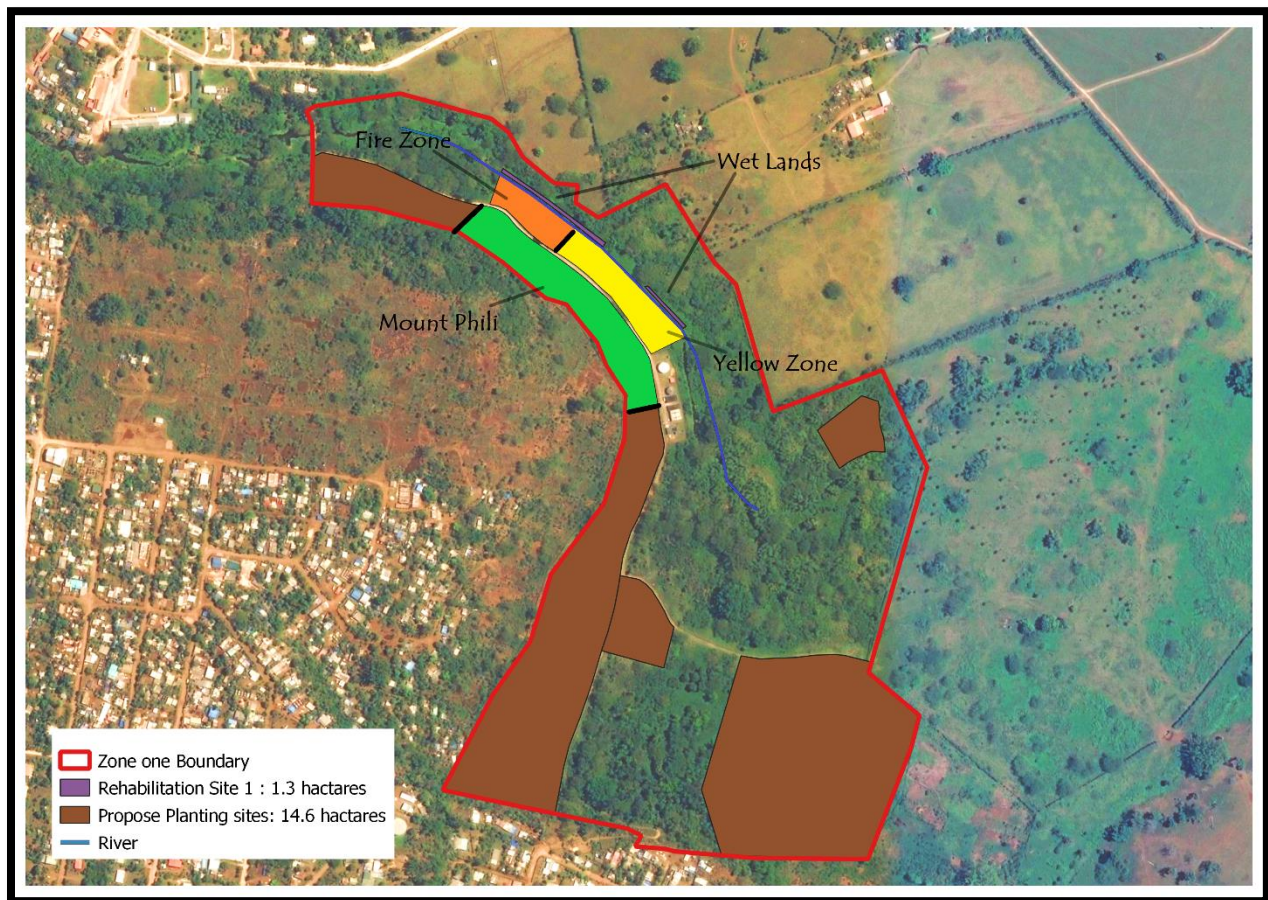


Figure 4 Shaded in yellow is the designated area restored during the major tree planting on the 7<sup>th</sup> and 8<sup>th</sup> May.

The area shaded yellow (Fig 6) was name Mount Phili after Vanuatu’s only national botanist, Late Philimon Ala. A total of 339 Plants were planted on this site. An additional of 38 plants were planted on the 10<sup>th</sup> of June.





Tree planting on the 7<sup>th</sup> and 8<sup>th</sup> May marks the first rehabilitation activity for this year, 2020. The selected site for this rehabilitation activity as shown in figure 5, with relatively higher altitude. Given the topography variation, only mountainous species are well suited and desired to restore this area. To support this restoration activity, only 339 mountainous plants species were supportively selected from nursery stock and harden in the hardening house in preparation for the field transplanting. Area of land allocated is also equivalent to the number of plants selectively ready in stock. The planting resume for 2 days exactly on the allocated site/zone named after Vanuatu's only national botanist (Philemon Ala), Mount Phili in memory for his devoted effort and partnership with the project's rehabilitation efforts.

## Tagabe River Restoration Project

The Ridge to Reef concept is integral to be incorporated in all the project related activities, therefore the project unravels to extent its rehabilitation efforts into the lower catchment. In particular, the restoration of Tagabe River riparian areas with livelihood plant species. Essential beginning from Tagabe River upstream towards Blacksand coastal waters. Contrarily the project deters with collaborative partners that most importantly embraced the progresses in the planning and implementation for the Tagabe River Riparian Project. These important stakeholders include- the Dept. of Forestry (DOF), and SPREP PEBACC Project. A Memorandum of Understanding (MoU) was the basic instrument that forges formally the collaborative partnership between IW R2R Project and the other key figures towards ensuring commitment and engagement which was signed on the 9<sup>th</sup> of April. These bilateral key stakeholders are the basic and essential partners processing priority agendas on the related activity course and wherefore contributing in terms of both technical services and financial commitment. The highlights outline below marks project progress through out each month.

### Tagabe River Restoration Project Nursery: DOF

The Tagabe River Restoration Project began in 2018 concord from an agreement between the DOF and SPREP PEBACC Project in 2018 to restore the riparian areas of Tagabe River. As part of this mutual understanding, nursery activities carried in DOF nursery with the assistant of PEBACC Project to establish nursery beds as well as meeting plant collections and nursey maintenance. Around a 2000 plants as a result of their collaborative works were restored back into designated riparian sites along Tagabe River. However, April 9<sup>th</sup> of this year, 2020, the IW R2R Project also commits to the original understanding and thus provides support by way of MOU with DOF to further strengthen this collaborative efforts fulfilling the Riparian Restoration Project.

The IW R2R Project came to support the original understanding by means of financial resources allocation towards nursery stock/activity maintenances for both the Tagabe Riparian Restoration Project and Blacksand Coastal Restoration Project. The project also is responsible to allocate supplementary budget for field activities as per quarterly planning proper for both projects which includes tree planting activities, monitoring and maintenance.



Figure 5 Tagabe River Restoration Project Nursery Stocks at Dept. of Forestry, Shefa Nursery

## Tagabe River Tree Planting: National Tree Planting Day

The 22<sup>nd</sup> June marks the National Tree Planting Day for Vanuatu. The IW R2R Project and its important partners take into close consideration to commemorate this event at Tagabe River alongside residing communities, schools and churches. Thus promoting community ownership towards restoring Tagabe River riparian areas with livelihood species providing livelihood products beneficial for provisional and recreational services back to the communities. Riparian restoration also stabilizes river bank during adverse flooding induced by various natural disaster. Therefore, on this day the organizing committee were stationed along the river to conduct tree planting with the communities and a total of 330 livelihood trees were planted along Tagabe River.



*Figure 6 Tree Planting along Tagabe River with Tagabe Anglican Church Youth during National Day of Tree Planting*

Educational Talks were also conducted in a form of awareness to participated communities, churches as well as residing schools. Talks were guided to provide understanding into the relevance of this national event, the importance of Tagabe River with much emphasis on communities' livelihoods, but also addressing the role of forest i.e. trees performance towards sustaining such fresh water bodies as Tagabe River. Teaming up with the International Day of Forest, this particular national event was commemorated this year with the theme, "Forest and Biodiversity Too Precious To Loss". The educational awareness was conducted before the actual tree planting.



*Figure 7 Educational Talk with the River Communities and Victory Hope School*

A rough estimation of 8000 plants raised in coincide with the purpose to serves as livelihood trees for the residing communities along Tagabe River. There is however, no clearly define buffer areas to be observed, yet while the process of establishing buffer areas is yet to happened, the project partners initiated the riparian restoration with the first ever riparian restoration tree planting this year to mark the national tree planting day for Vanuatu.



Figure 8 National Tree Planting Day, 22nd June towards restoring Tagabe River with proactive participations form Destination Communities

## Table Summary of Livelihood Species Planted along Tagabe River

22 <sup>nd</sup> JUNE 2020 - NATIONAL TREE PLANTING DAY - SEEDLING LIST			
Inocarpus fegiferra	Namambe	30	Destination
Terminalia catappa	Natapoa	60	Destination
Cycas spp	Natangura	30	Destination
		<b>120</b>	
Chrysopogon zizaniodes	Vetiver	16	Huarere
Inocarpus fegiferra	Namambe	20	Huarere
Fluggea flexuosa	Namamao	11	Huarere
Terminalia catappa	Natapoa	22	Huarere
Canarium indicum	nangae	20	Huarere
		<b>89</b>	
Barringtonia edulis	Navele	1	Sorovanga/Blacksand Bridge
Chrysopogon zizaniodes	Vetiver	20	Sorovanga/Blacksand Bridge
Inocarpus fegiferra	Namambe	30	Sorovanga/Blacksand Bridge
Terminalia catappa	Natapoa	30	Sorovanga/Blacksand Bridge
Canarium indicum	Nanagae	20	Sorovanga/Blacksand Bridge
Swietenia macrophylla	Mahogani	11	Sorovanga/Blacksand Bridge
		<b>112</b>	
	<b>Total Seedling:</b>	<b>321</b>	

Figure 3 Statistic Table showing livelihood plants planted during this national event along Tagabe River

Tree planting were schedule along Tagabe River which was dissected into three main planting stations; Destination Community, Huarere Anglican Church, and Sorovanga/Blacksand Bridge. A total of 321 livelihood plants were planted on this date.



## Blacksand Coastal Restoration Project

Further highlights, still on the 22<sup>nd</sup> June, National Tree Planting Day, core partners including Forestry Department, SPREP PEBACC and the IW R2R Project engaged the Victory Hope School to restore 225 coastal plants belonging to at least 6 different coastal species. This was a top up from last year (2019), mass planting of around 600 coastal plants which the result was a tremendous loss as analyzed in table 3. Lessons were learned and the approach taken in nursery raising were enhanced to guarantee and boost a much more successful growth on site.

22 <sup>nd</sup> JUNE 2020 -NATIONAL TREE PLANTING DAY -SEEDLING LIST			
SPECIES	LOCAL NAME	QUANTITY	LOCATION
Hernandia spp	Nabiriri	15	Black sands Coastline
Casuarina spp	Seak	40	Blacksands Coastline
Intsia bijuga	Natora(kohu)	60	Blacksands Coastline
Barringtonia asiatica	Posen tri	20	Blacksands Coastline
Calophyllum inophyllum	Nambagura	40	Blacksands Coastline
Terminalia catappa	Natapoa	50	Blacksands Coastline
		<b>225</b>	

Table 4 Statistic Table showing coastal tree species planted during the National Forest Day along Blacksand Coastal Shoreline

Blacksand Coastal Restoration Project site covers an area of 2400m<sup>2</sup> with few informal resident settlement located few meter away from the shoreline. Interior part of coast is crowded with resident settlements, including schools and churches. Victory Hope Primary School is placed in the heart of Blacksand where many school students reside around Blacksand and around Tagabe attend.

School students were engaged with last year mass tree planting and are now being part of this year tree planting. Necessarily, student are needed to be engaged in this activity as being part of their educational learning. Therefore we begin the program by running a 30min educational talk with students indoors on the importance of national tree planting day, the importance of forest and its crucial role to the Tagabe River, and extend to essentialities of restoring coastlines to provide greater benefits to coastal settlements.



Figure 9 National Tree Planting Day, 22nd June incorporating the participation of Victory Hope School and the implementing partners (DOF, and IW R2R Project)

School pikininis are intellectually regarded as individual knowledge hub and engaging them is strategical approach towards enhancing the mindsets and mentality of a wider, diverse and larger community in order to possess a different perspective on the surrounding landscape and the environment it brings with. Student are regarded as an individual knowledge hub and source of information that may also disseminate information from individual to individual and at household level and finally at community level being a basic example of achieving mindset enhancement from anthropocentrism to egocentrism notion perspectives.

## Field Monitoring and Maintenance Activities

In detail, the project major rehabilitation focus currently is the restoration of Matnakara Water Protection Zones (MWPZs) degraded sites. This is subject to rehabilitation activity 1, whereby degraded area is define as grasslands and generally creepers and vines (bush). The project intends to restore these areas with native, endemic and threatened flora species and thus should encourage establishment of a native forests.

Last year, 2019, the project has started of its rehabilitation exercise in MWPZ1. In early November, 357 wildlings collected through the year in the Islands of Pentecost and Efate mainland were transplanted onto allocated sites in MWPZ 1. As of then, the project now requires consistent monitoring and maintenance for rehabilitated sites. In such case, **“monitoring refers to inventory on survival rate of transplanted plants”**. Maintenance, however can be referred to as either **“ring weeding, mulching, clearing of undesired plants which includes trees, creepers around the plants to ensure conditions are right and survival rate is guaranteed”**.





**Field Monitoring and Maintenance No.1**

<i>Field Work Dates</i>	<i>18<sup>th</sup> and 25<sup>th</sup> February and the 13<sup>th</sup> March.</i>
<i>Field Activities</i>	<i>Ring Weeding, Field Inventory and Tree Planting (Replacement)</i>
<i>Rehabilitation Zone</i>	<i>Yellow Zone, Fire Zone and the Wetlands</i>
<i>Observation and Recommendation</i>	<ul style="list-style-type: none"> <li>• <i>The plants observed were precisely predicted as subjects to a very slow growth rate. Further observation from the NPM confirms the competition of essential resources such as sunlight, nutrients and air circulation are the due main cause reasons. There is strong competitive relationship exist between the plants and the surrounding vegetation i.e. bush.</i></li> <li>• <i>The extreme competition has not only led to reduction in growth rate, but also a slide increase in plant mortality.</i></li> <li>• <i>Therefore, next field maintenance should require slashing/clearing of bushes rather than ring weeding. Commonly referred to as “waetman bras”</i></li> <li>• <i>_____ Plants planted as replacement.</i></li> <li>• <i>Therefore, next field maintenance should require slashing/clearing of bushes rather than ring weeding. Commonly referred to as “waetman bras”.</i></li> </ul>

**Field Monitoring and Maintenance No.2**

<i>Field Work Dates</i>	<i>25<sup>th</sup> and 27<sup>th</sup> March</i>
<i>Field Activities</i>	<i>Slashing and clearing of bushes (waeteman bras)</i>
<i>Rehabilitation Zone</i>	<i>Yellow Zone</i>
<i>Post-observation and Recommendation</i>	<ul style="list-style-type: none"> <li>• <i>Clearing/slashing of bushes requires more time and human labor. However as recommendation from Field Monitoring and Maintenance, such was practiced. Noting for this practice does not exposed ground surface.</i></li> <li>• <i>Reduce competition between plants and undesired vegetation for sunlight and space. Effective air circulation since most of the bushes are slashed to the ground.</i></li> <li>• <i>This should increase the growth rate of plants.</i></li> </ul>
	<ul style="list-style-type: none"> <li>• <i>Needs replacement of 30 plants.</i></li> </ul>



### **Field Monitoring and Maintenance No.3**

<i>Field Work Dates</i>	23, 24 and 28 <sup>th</sup> April
<i>Field Activities</i>	<i>Slashing and clearing of bushes (waeteman bras), Ring Weeding</i>
<i>Rehabilitation Zone</i>	<i>Yellow Zone, Fire Zone and Wetlands</i>
<i>Post-observation and Recommendation</i>	<ul style="list-style-type: none"> <li>• <i>Clearing/slashing of bushes requires more time and human labor. However as recommendation from <b>Field Monitoring and Maintenance No. 1</b>, such was practiced. Noting for this practice does not exposed ground surface.</i></li> <li>• <i>Reduce competition between plants and undesired vegetation for sunlight and space. Effective air circulation since most of the bushes are slashed to ground level.</i></li> <li>• <i>This should increase the growth rate of plants.</i></li> </ul>

### **Field Monitoring and Maintenance No.4**

<i>Field Work Dates</i>	10 <sup>th</sup> May
<i>Field Activities</i>	<i>Slashing and clearing of bushes (waeteman bras), Ring Weeding</i>
<i>Rehabilitation Zone</i>	<i>Yellow Zone and Fire Zone</i>
<i>Post-observation and Recommendation</i>	<ul style="list-style-type: none"> <li>• <i>Clearing/slashing of bushes requires more time and human labor. However as recommendation from <b>Field Monitoring and Maintenance No. 1</b>, such was practiced. Note that for this practice the ground surface is exposed to sunlight.</i></li> <li>• <i>Reduce competition between plants and undesired vegetation for sunlight and space. Effective air circulation since most of the bushes are slashed to ground level.</i></li> <li>• <i>Bush slashing and clearing was observed (in yellow zone) to be effectively useful as it boost the growth rate of plants. Thus a subsequent as recommendation from <b>FMMI</b>.</i></li> <li>• <i>This should increase the growth rate of plants.</i></li> <li>• <i>Needs replacement of 30 plants.</i></li> </ul>



***Field Monitoring and Maintenance No.5***

<i>Field Work Dates</i>	<i>10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> June</i>
<i>Field Activities</i>	<i>Ring Weeding, Field Count and replacement of plants</i>
<i>Rehabilitation Zone</i>	<i>Yellow Zone, Fire Zone, Wetlands and Mount Phili</i>
<i>Post-observation</i>	<ul style="list-style-type: none"> <li>• <i>FMM 4 activities basically involves bush clearing (waet man bras) which of course requires more time and labor and thus more expansive. This FMM5, only requires ring weeding since the surrounding vegetation i.e. bushes are within minimum heights not necessarily a threat/disadvantage to the plants. Noting that the Yellow Zone, Fire Zone and Wetlands and Mount Phili are subjected only to ring weeding.</i></li> <li>• <i>Field counts were necessary to identify the mortality rate and determine the replacement No. of plant. FMM4 recommends 30 plants for replacement, however with 30 additional.</i></li> <li>• <i>A total of 61 plants were planted (Please refer to FMM5 i.e. Anexx1)</i></li> </ul>
<i>Recommendation</i>	<ul style="list-style-type: none"> <li>• <i>Should it be necessary as be field observation, FMM6 should require bush clearing on both yellow zone and fire zone.</i></li> <li>• <i>Wring Weeding be made on Mount Phili and Wetlands</i></li> </ul>

Additionally, a field monitoring plan has been compiled by the national project manager to ensure consistency on maintenance and monitoring plan. However, the growth rate at which the weed and undesired plant grow remains complex and unstable due to whether, especially in situ to precipitation rate. Therefore maintenance is not consistent and is conducted as requirement from field observation.



## Nursery Monitoring and Maintenance

The nursery monitoring whereby refers to inventory of stocks in both the nursery house and hardening house. Inventory usually occur once every quarters to determine the sustainability of stock. Maintenance on the other hand, refers to weeding around the nursery as well as polybags weeding and is conducted the same time with the monitoring progresses.

<b><i>Nursery Monitoring and Maintenance No.1</i></b>	
<i>Nursery Work Dates</i>	<i>27<sup>th</sup> February</i>
<i>Nursery Activities</i>	<i>Clearing and weeding around the Nursery House</i>
<i>Location</i>	<i>R2R Nursery House</i>
<i>Post-observation and Recommendation</i>	<ul style="list-style-type: none"> <li>• <i>Weeding were only done around the nursery house.</i></li> <li>• <i>Requires polybag weeding and nursery inventory of plants for the next NMM.</i></li> </ul>

<b><i>Nursery Monitoring and Maintenance No.2</i></b>	
<i>Nursery Work Dates</i>	<i>16<sup>th</sup> March</i>
<i>Nursery Activities</i>	<i>Weeding in polybags, Weeding on Nursery Floor, and Weeding Around Nursery House</i>
<i>Location</i>	<i>R2R Nursery House</i>
<i>Post-observation and Recommendation</i>	<i>4. Nursery stock count is necessary for the next NMM.</i>

<b><i>Nursery Monitoring and Maintenance No.3</i></b>	
<i>Nursery Work Dates</i>	<i>16<sup>th</sup> March</i>
<i>Nursery Activities</i>	<ul style="list-style-type: none"> <li>• <i>Clearing and weeding around the Nursery House</i></li> <li>• <i>Plant Inventory in Nursery</i></li> </ul>
<i>Location</i>	<i>R2R Nursery House</i>
<i>Post-observation and Recommendation</i>	<ul style="list-style-type: none"> <li>• <i>Weeding were only done around the nursery house.</i></li> <li>• <i>Requires polybag weeding and nursery inventory of plants for the next NMM.</i></li> <li>• <i>Nursery House 1220 plants</i></li> <li>• <i>Hardening House 376 plants</i></li> </ul>



***Nursery Monitoring and Maintenance No.4***

<i>Nursery Work Dates</i>	<i>28th April</i>
<i>Nursery Activities</i>	<ul style="list-style-type: none"> <li>• <i>Clearing and weeding around the Nursery House.</i></li> <li>• <i>Selection of plants for the next tree planting.</i></li> <li>• <i>Nursery Stock Count.</i></li> <li>• <i>Weeding of Polybags/Plant in the Nursery.</i></li> </ul>
<i>Location</i>	<i>R2R Nursery House</i>
<i>Post-observation and Recommendation</i>	<ul style="list-style-type: none"> <li>• <i>Weeding were only done around the nursery house.</i></li> <li>• <i>Selection of 312 Plants for the Next Tree Planting</i></li> <li>• <i>To maintain nursery stock requires another tree collection to be conducted.</i></li> </ul>

***Nursery Monitoring and Maintenance No.5***

<i>Nursery Work Dates</i>	<i>3<sup>rd</sup> July</i>
<i>Nursery Activities</i>	<ul style="list-style-type: none"> <li>• <i>Clearing and weeding around the Nursery House.</i></li> <li>• <i>Weeding of Polybags/Plant in the Nursery.</i></li> <li>• <i>Weeding the nursery house floor.</i></li> <li>• <i>Weeding done on the potting area.</i></li> </ul>
<i>Location</i>	<i>R2R Nursery House</i>
<i>Post-observation and Recommendation</i>	<ul style="list-style-type: none"> <li>• <i>Weeding were only done around the nursery house.</i></li> <li>• <i>Selection of 310 Plants for the Next Tree Planting</i></li> <li>• <i>To maintain nursery stock requires another tree collection to be conducted.</i></li> </ul>

## Nursery Stock Count

### DEPC IW R2R Project Nursery Count

Nursery Monitoring & Tree Planting					
<i>Period of Nursery Raising and Monitoring</i>	<i>Total Collection (as of 2019)</i>	<i>Mortality Rate</i>	<i>No. of Plants Survived</i>	<i>No. of Plants Planted</i>	<i>Remaining Nursery Stock</i>
<b>2020</b>	<b>2891</b>	<b>209</b>	<b>1596</b>	<b>382</b>	<b>1187</b>

Table 5 2020 Nursery Monitoring Statistics.

This year, 2020, no tree collection initiative was conducted for the project. The nursery stock was replenish with last year tree collection conducted all year around with a total of 2891 plant species. Another 209 plants from the stock were exposit to mortality as of this 2020 (Q1&Q2) and in subsequently total with last year's (2019) mortality rate of 1387. Therefore the remaining stock at the moment is 1187.

### DEPT. of Forestry Nursery Stock Count

Seedling Stock for Tagabe River Riparian Project-July 2020			
Species Type	Common Name	No. of Seedlings	Comments
Canarium indicum	Nanagae	1140	Fruit tree
Calophyllum inophyllum	Nambagura (Tamnau)	1000	Coastal species
Pedagodoxa Spp	Palms	94	Endemic Spp
	Avocado	8	Fruit tree
Zyzygium Speces	Nakafika	400	Fruit tree
Mangifera minor	Mango	53	Fruit tree
Swietenia macrophylla	Mahogany	750	Timber Specie
Terminalia catappa	Natapoa	500	Fruit tree
Baringtonia edulis	Navele	29	Fruit tree
Chrysopogon zizanoides	Vetifer	51	soil Control spp
	W/Pandanas	500	Coastal species
Citrus spp	Tiathian Lime	7	Fruit tree
Agathis macrophylla	Kauri	49	Timber Specie
Santalum austracalendonicum	Sandalwood	68	Commercial spp



<b>Segurinega flexuosa</b>	<b>Namamao</b>	<b>218</b>	<b>Livelihood spp</b>
<b>Acacia spp</b>	<b>Namariu</b>	<b>247</b>	<b>Coastal species</b>
<b>Pometia pinnata</b>	<b>Nandao</b>	<b>26</b>	<b>Fruit tree</b>
<b>Causuarina spp</b>	<b>Oak Ttree</b>	<b>7</b>	<b>Coastal species</b>
<b>Citrus spp</b>	<b>Lemon</b>	<b>46</b>	<b>Fruit tree</b>
	<b>Natangura</b>	<b>20</b>	<b>Livelihood spp</b>
	<b>Pigeon Peas</b>	<b>183</b>	<b>Food security&amp; legume</b>
<b>Inocarpus fegifera</b>	<b>Namambe</b>	<b>50</b>	<b>Food security</b>
	<b>Carasole</b>	<b>140</b>	<b>Fruit tree</b>
<b>Coconucifera spp</b>	<b>Coconuts</b>	<b>460</b>	<b>Food security</b>
<b>Atocarpus atilis</b>	<b>Breadfruits</b>	<b>50</b>	<b>Foodsecurity</b>
<b>Total Stock :</b>		<b>6096</b>	


## Ongoing Activities for Quarter 3

1. Tagabe Catchment Restoration Project- 2 Major Tree Planting and Interisland Collections
2. Tagabe River Restoration Project- 1 Major Tree planting
3. Blacksand Coastal Restoration Project- 1 Major Tree Planting

Note: Field monitoring and maintenance is a consistent through all three (3) Rehabilitation Projects

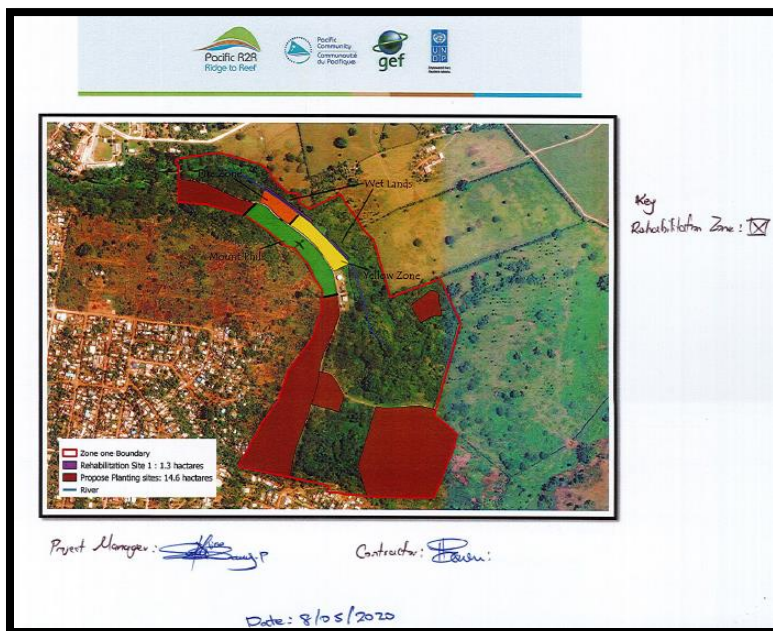
# Annexes

## 1. Tree Planting Activity Reports



IW R2R Project Vanuatu Rehabilitation\_ Tree Planting Activity No. 2 of 2020

Date	7 <sup>th</sup> - 8 <sup>th</sup> May 2020	
Location /Project	Matrekevu Water Protection Zone 1 - Tongkei Catchment Rehabilitation Project.	
Zones(s)	Mount Phil	
Activity	Bush Clearing (Wagui Man Bras)	✓
	Ring Weeding	✓
	Digging Hole	✓
	Tree Planting	✓
Observations /output.	<p>→ A total of 312 plants were planted on this Area. species selection was mainly mountainous species which suitable for such altitudes.</p> <p>→ Two SD trips of plants to the site</p> <p>→ Tree planting activity lasted about 2 days. Epitola Tachwata I youth group who were the contractors.</p>	
Recommendations	<p>→ Ring Weeding be done on the Mount PHIM</p> <p>→ Replacement should be needed if trees are unsuccessful in growth</p> <p>→ Field Count should be detail as much during the first Monitoring &amp; Maintenance for this zone.</p>	
Accountable Funds (To be filled out by National Project Managers.	Project Expenditure	Co-financing
	<p>Contractor - 80,000 vt</p> <p>Vehicle fuel - 21,000 vt</p> <p>Fuel for fuel - 4,250 vt</p>	







IW R2R Project Vanuatu Rehabilitation Tree Planting Activity No. II of 2020

Date	22 <sup>nd</sup> June, National Tree Planting Day (2020)	
Project	Beacond Coastal Rehabilitation Project	
Site	Blaco Sand Coast	
Activity	Bank Clearing (Waet Man Buss)	
	Ring Weeding	✓
	Digging Hole	✓
	Tree Planting	
Output/Observation	<ul style="list-style-type: none"> <li>→ Engaged Victory Hope School, Bess Six (C) on this event. The school was already engaged in similar event last year.</li> <li>→ Started off with educational talk in the classroom even before they can resume with the actual activity.</li> <li>→ Dept. of Forestry, Fire Marine Management were part of this event also.</li> <li>→ 225 plants planted from 7 different coastal species</li> <li>→ Lunch was provided.</li> </ul>	
Recommendations	→ Consistent Monitoring & Maintenance by community and project partners.	
Accountable Funds (To be filled out by National Project Managers)	Project Expenditure	Co-financing
	Lunch - 20,000 Water - 1080 vt Fuel - 2500 vt Field Assistant - 11000	DFRC vehicle - 5000vt

Peter Sewen  
Phone: 5279 890

National Project Manager: S. Ricard Bennett  
22/06/20

Implementing Partners: Dept. of Forestry  
STREP PEBAC Project



IW R2R Project Vanuatu Rehabilitation Tree Planting Activity No. 2

Date	22 <sup>nd</sup> June, National Tree Planting Day	
Location / Project	Togobu River Rehabilitation Project, Along Togobu River	
Zone(s)	Along Togobu River	
Activity	Bush Clearing (Waet Man Bras)	
	Ring Weeding	✓
	Digging Hole	✓
	Tree Planting	
Output/Observation	<ul style="list-style-type: none"> <li>Tree planting activity commencement on the National tree planting day. Activity was to complement the ongoing event with the river rehabilitation project along Togobu River.</li> <li>Three (3) stations along Togobu River to resume tree planting and stretching the active Togobu River. Result was as outline: Huarewa - 89 plants (35 livelihood species)</li> <li>Agreements were done with Communities Sorovaga / Bloungard Ridge - 172 plant (6 livelihood sp)</li> <li>Destruction - 120 plants (3 livelihood sp)</li> </ul>	
Recommendations	<ul style="list-style-type: none"> <li>Consistent Monitoring &amp; Maintenance by Communities local Rehabilitation project partners.</li> </ul>	
Accountable Funds (To be filled out by National Project Managers)	Project Expenditure	Co-financing
	Lunch -	DPC Vehicle - 5000 vt Lunch - 500 vt (SPREP PEBARC) Transportation - 5000 vt DPC

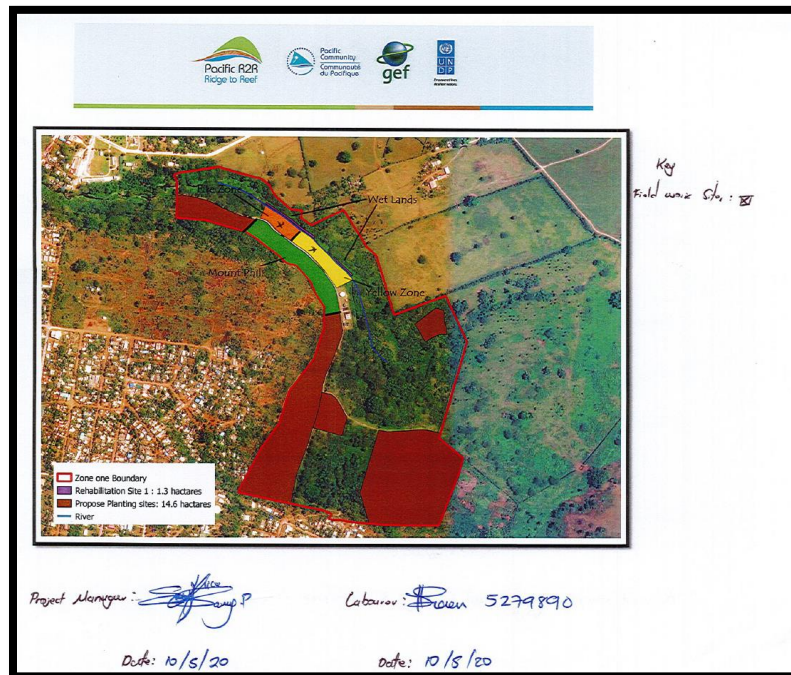


National Project Manager: Ericsson Robert  
22/06/20

Implementing Partners: Dept. of Forestry - SPREP PEBARC Project.

## 2. Field Monitoring and Maintenance Activity Report

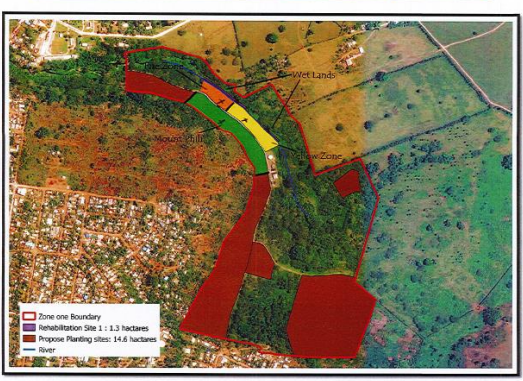
IW R2R Project Vanuatu Rehabilitation_ Field Monitoring and Maintenance No.4		
Date	10/05/20	
Location /Project	Matnankara Water Protection Zone I - Togebe Catchment Restoration Project	
Zone(s)	Yellow & Fire Zone	
Activity	Ring Weeding	✓
	Bush Clearing (Waet Man Bras)	✓
	Field Count	✓
	Replacement of Death trees	NO
Observations	<p>It was necessary for a bush clearing as the unwanted surrounding vegetation are growing out on an alarming rate. The height at which they reached can be a threat to growth of plants.</p> <p>→ Field Count requires at least 25 trees for replacement</p>	
Recommendations	<p>→ 25 Trees for Replacements for both Yellow &amp; Fire Zones</p> <p>→ Requires ring weeding after the next FMH</p>	
Accountable Funds	Project Expenditure	Co-financing
	Labour = 20,000 vt Transport = 66,000 vt	
Document attached: TOR for Field Monitoring & Maintenance NO.4		



IW R2R Project Vanuatu Rehabilitation\_ Field Monitoring and Maintenance No. 5


Date	10 <sup>th</sup> / 11 <sup>th</sup> / 12 <sup>th</sup> June 2020	
Location	Metrakura Water Protection Zones I	
Zone(s)	Yellow Zone, Fire Zone, Wetlands and Mount Phil.	
Activity	Ring Weeding	<input checked="" type="checkbox"/>
	Bush Clearing (Wast Man Bras)	ND
	Field Count	<input checked="" type="checkbox"/>
	Replacement of Death trees	<input checked="" type="checkbox"/>
Observations	<ul style="list-style-type: none"> <li>Field Count Confirms 41 trees/plants needed for Replacement</li> <li>Replacements; Yellow Zones - 8</li> <li>Fire Zone - 16</li> <li>Mount Phil. - 17</li> <li>Additional 20 plants were planted on Mount Phil.</li> <li>A total of 61 plants transplanted on Red shaded Sites</li> </ul>	
Recommendations	<ul style="list-style-type: none"> <li>Ring weeding was only necessary for this FMM5 as the weeds around the plants were needed to be removed. The unwanted vegetation, mainly the bushes, was still maintaining growth at a relevant minimum height.</li> <li>As the next FMM5 requires bush clearing.</li> </ul>	
Accountable Funds	Project Expenditure	Co-financing
	Transportation: 15000 vt Labour: 17000 vt	DEPE: 1500 vt (CAR Vehicle 1500)

Attached: TOR for Field Monitoring and Maintenance



Key  
Field work site:

Supervisor: 

Labourer:   
Peter Sevan 5279800

Date: 12/06/20

### 3. Tagabe River Restoration Project Nursery Activities by DOF

#### Activity Report from March- April

Date	Activity	Output	Comments
	1. Assist with cleaning of Namamau seeds	<ul style="list-style-type: none"> <li>Collected 42.1 kgs namamau seeds</li> </ul>	
	2. Weed the ground beds areas and remove the rubbish 3. Prepare the ground beds and sowing mediums 4. Sowing of the Natapoa seeds 5. Collect and separate cans, glasses, metals & plastics from leaves weeds and grasses 6. Pile all rubbish in bags and remove weeds/grasses to be burnt 7. Watering of seed beds and Seedlings	<ul style="list-style-type: none"> <li>Constructed 3 ground bed</li> <li>Sowed 58 kilos of Natapoa seeds</li> <li>6 plastic bags filled -for removal to Etas</li> <li>Proposed Area Cleared</li> </ul>	
<b>March - April 2020</b>	8. Weed the newly constructed standout beds ready for hardening 9. Remove seedlings from Concrete beds for Harding 10. Prepare ground beds and sowing mediums 11. Sow namamau seeds and thoroughly water the seed-beds 12. Assist & Judy to Re -stake pots on the new tables purchased from Wire Industry. 13. Prepare seedlings for Awareness at Olwe and Sorovoka Schools 14. Daily Watering of seedling 15. Pricking out weeds sprouting inside the polybags	<ul style="list-style-type: none"> <li>3 new standout beds weeded</li> <li>800 – kohu hardened</li> <li>1000 mix species – Sandalwood, Natapoa, Nambagura, Fruits &amp; livelihoodTrees</li> <li>1500 pots – new table bed</li> <li>100 seedlings for Olwe school &amp; 100 for Sorovanga School</li> <li>Sow 14.4 kilos of Namamau Seeds</li> <li>3 new standout beds parallel to the concrete standout bed</li> <li>First Table installed -1500 pots</li> </ul>	Ongoing Activities



	<p>16. Remove the timbers on the floor bed for the new tables (SPREP) from Wire Industry</p> <p>17. Assist with relocating of the new table into the nursery</p> <p>18. Collect new pots from the potting shed and restake onto the Table</p> <p>19. Transplant germinant on to the pots on the new Table (Bed)</p> <p>20. Assist with Cleaning of the soil /tool shed</p> <p>21.</p>	<ul style="list-style-type: none"> <li>• 700 Natapoa and other mix species transplanted</li> <li>• tool /soil room cleaned</li> </ul>	
	<p>22. Assist in Soil Preparing and Mounting and construction of ground beds</p> <p>23. Weeding of Vertifers and pandanas, Nambagura</p> <p>24. Recollection of soil from used pots and dispose in the soil shed for reuse purpose</p> <p>25. Salvaging late namage and Natapoa, sandalwood germinant and transplanting into pots</p> <p>26. Hardening of Kohu Seedlings</p> <p>27. Sieve Soil &amp; Sand potting 500</p> <p>28. Transplanting Nambagura, palms,</p>	<p>Nursery floor and concrete beds cleaned</p> <p>6- standout beds cleared and weeded clean –Tagabe River Seedlings</p> <p>Coconut seed nuts -3bed weeded and cleaned</p> <p>500 pots filled</p>	<p>Most tasks are ongoing</p>



## Activity Report from May to June

Date	ACTIVITY	Comment
4-8 <sup>th</sup> May	<ul style="list-style-type: none"> <li>Weed around Tagabe River Riparian Project Seedlings.</li> <li>Transplant 425 namamau and 23-navel</li> <li>Continue with weeding around coconut seedlings</li> <li>Continue with weeding around 3 beds each per species - Natapoa, Nangai and tamanu seedlings</li> <li>Continue with weeding around pandanus seedlings</li> </ul>	<ul style="list-style-type: none"> <li>448 Seedlings were Transplanted</li> <li>4 coconut seedbeds cleaned with 446-seedling</li> <li>A total of 10 seeds-beds cleaned</li> </ul>
11-15 <sup>th</sup> May	<ul style="list-style-type: none"> <li>Pot 242 small poly bags</li> </ul>	<ul style="list-style-type: none"> <li>Produce 120 pots</li> <li>Seedlings watered</li> <li>Seedlings cleaned</li> </ul>
		<ul style="list-style-type: none"> <li>Produce 121 pots</li> </ul>
	<ul style="list-style-type: none"> <li>Weeding continues and later watered the seedlings</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
	<ul style="list-style-type: none"> <li>Pot big 90 plastic and watered the seedlings</li> </ul>	<ul style="list-style-type: none"> <li>Produced 90 pots</li> </ul>
	<ul style="list-style-type: none"> <li>Clean up inside the DoF storage room and green house</li> </ul>	<ul style="list-style-type: none"> <li>Storage room and green shed cleaned</li> </ul>
18-22 <sup>nd</sup> May	<ul style="list-style-type: none"> <li>Not feeling well so did not turn up</li> </ul>	<ul style="list-style-type: none"> <li>Did not come to work-</li> <li>Feel ill</li> </ul>
	•	
<b>Date</b>	<b>Funny Charley</b>	<b>Comment</b>
25 <sup>th</sup> -29 <sup>th</sup> May	<ul style="list-style-type: none"> <li>Transplanting of namamau and weeding</li> </ul>	<ul style="list-style-type: none"> <li>466 coconut seedlings weeded</li> </ul>
	<ul style="list-style-type: none"> <li>Weed inside concrete beds</li> </ul>	<ul style="list-style-type: none"> <li>50 Acacia seedlings 5 butterfly tree weeded</li> </ul>
	<ul style="list-style-type: none"> <li>Weed around the coconut seedlings</li> </ul>	<ul style="list-style-type: none"> <li>Produce 50 small poly bags</li> </ul>
	<ul style="list-style-type: none"> <li>Transplanting of namamau continues</li> </ul>	
	<ul style="list-style-type: none"> <li>Potting with Tala</li> </ul>	