

## MID CYCLE PROJECT ACTIVITY REPORT

# Scaling up Ecosystem- based Adaptation Actions in Guadalcanal, Solomon Islands



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Pacific Engage – Solomon Islands

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## Proposed Project

The Vetiver Network International and Pacific Engage (local actor) were engaged to implement and roll out a project proposal funded by the South Pacific Community (SPC) under contract reference number GA 21/003. The project is a one year program to build capacity among residents of Honiara and the communities in Guadalcanal within their respective catchment areas to utilize Vetiver Grass Technology (VGT) for a wide range of community-led applications that both mitigate serious soil and water-related problems and enhance local communities' resilience to face climate changes' impacts.

This project is to develop the knowledge capital by providing training, technical and logistical support required to expand the use of VGT for a broad range of climate change adaptation/ environmental management needs.

*Specific project activity results include:*

### 1. Capacity built

Start-up meetings, trainings and awareness's were held with following: (1) Leaders from Pacific Engage, (2) Sape Farm management, (3) Milk Fish Resort staff, (4) Betikama Adventist College Principal, (5) Dukuna village community leaders, (6) Key staff members from the Honiara City Council (7) Lead Engineers from the Ministry of Infrastructure (8) Tina River Hydro project community leaders and, (8) and community leaders from the Marapa group of Islands in Marau (East Guadalcanal). These trainings and awareness were carried out so they can become proficient in Vetiver nursery establishment and production and VGT applications for sewage effluent treatment and disposal, landfill leachate treatment and disposal, river and stream bank stabilization, flash flood erosion control, soil and moisture conservation in agricultural systems and, design and construction of Vetiver Latrines.

Follow-up trainings were conducted on-site by Robinson Vanoh (Technical expert) where the actual projects were implemented. These trainings included care and maintenance, nursery management, applications and other uses. Trouble shooting was also done together with Pacific Engage lead staff and the users as part of our training. Problems identified were corrected and there and then.

Training materials which included posters, training manuals and pamphlets were handed to Pacific Engage to help them to be proficient in delivering their trainings to the users and those that maybe interested.





On-site training of lead members from Pacific Engage

## **2. Pilot VGT sites established**

Pilot VGT sites were established both in Honiara and Marau on selected sites from vetiver slips supplied by Pacific Engage. These sites were established as demonstration sites for both on-farm and off-farm applications. Small stock holding family nurseries were also established at the pilot sites to further up-scale their applications.

Off-farm pilot sites are for drain/river bank stabilization and point source erosion/effluent sites; and on-farm soil and moisture conservation and Vetiver Latrines. Refer (**Annex 1**) for pictures of these pilot demonstration sites.

In subsequent years, additional Participatory Demonstrations would be established to promote and extend VGT for sustainable agriculture as there is growing interest from family members where these sites were established. These would compare traditional practices alongside traditional practice with VGT incorporated.

## **3. Vetiver propagation capacity and supply developed**

Two medium-scale propagation facilities were established in Honiara and Marau to supply free Vetiver planting material to participating community partners and to sell planting material to public and agro/industrial sector actors. The nurseries would provide for the planting the growing demand among the Island communities for soil and water conservation in agriculture and coastal protection. Some 60% of the production would be provided to communities at no cost and the other 40% sold to interested users in the Forestry and infrastructure protection sector as there is demand. In addition to providing livelihood options for community and family members working in the nurseries, the sales would generate additional income. Funds generated from sales of the slips will help Pacific Engage to sustain the ongoing promotion of VGT in the Solomon Islands after the completion of the project.

## **4. “Vetiver Banks” established**

From the already established nursery (Vetiver Bank) by Pacific Engage, local communities and family farmers are being supported with planting material, training and technical support to

establish their own Vetiver nurseries. Initial planting materials were supplied free, which are then to be paid back in-kind to Pacific Engage after two years.

Family nurseries rather than community nurseries are proving to be a success as seen during my visit. Families units are taking direct ownership and all family members getting involved and increasing their nursery sizes from the limited supply of vetiver slips. This concept is recommended to be replicated on other new sites and in the future going forward.



Happy mothers in front of their family nurseries

##### **5. Public and private sector-led replication and expansion**

Pacific Engage has already collaborated with Honiara City Council (HCC), The Ministry of Infrastructure Development (MID) Tina River Hydro Project including some including private sector enterprises to promote VGT and provide information/training and plant material for applications such as landfill improvement, road/drain stabilization, forestry and mine land rehabilitation.

They have shown interest in the applications, however no positive response as yet. Follow-up meetings will be arranged going forward, to get them involved. Financing for the implementation of the VGT application will be borne by these entities.

## 6. The knowledge base for replication and expansion ensured

The approach used by PE in establishing the pilot VGT sites is the participatory and bottom up approaches using community and family units, the later proving to be a success. Feedbacks that we received from the participants during our visits are very encouraging. Participants are literally seeing conditions of their problems improving in comparison to conditions prior to installation of VGT. Participant interviews will be conducted and a short documentary video produced, including a booklet for our project close-up.

Vetiver Field Day is planned and will be organised at pilot sites to more broadly disseminate awareness and understanding among community, government and private sector actors of VGT and provide the opportunity for them to look at and discuss any issues of concern as well as learn about costs and benefits. Participatory evaluation processes would also be used to identify outstanding individuals, who would be recognized through awards in the form of cash prizes or in-kind inputs as a means of encouraging participation and healthy competition amongst participants during the close-up.

## 7. Project Summary Update

Following are tabulated summary on the status of our progress thus far, that is our actual activities measured against our planned activities.

### 7.1 Honiara VGT sites

STATUS UPDATE						
Project Site	Project	Scope	Activity	Progress	Status	Comments
<b>Okea Nursery</b>	Stock holding Nursery	Nursery establishment (Vetiver Bank)	Upkeep and maintenance	80 %	In progress 	Nursery was completed, Theft of Vetiver slips. Replanting in progress.
<b>Dukuna</b>	Vetiver Latrine	Site prep and Vetiver planting	Manual pit digging & construction	70%	Delayed 	Was delayed due to C19 restrictions and political riot
<b>Sape Farm</b>	Agricultural Applications	Site prep and Vetiver planting	Site prep done, planting of Vetiver slips	80%	In-progress 	Was delayed due to C19 & riot. Planting in progress now
<b>Betikama</b>	Riverbank Protection	Initial discussions with Principal done - agreed	Site prep and Vetiver grass planting	50%	In progress 	Was delayed due to C19 & riot. Planting in progress now.
<b>VST Technical Training</b>	Technical Training With Robinson	Technical training for PE team & respective communities.	2 X Virtual training done - Ongoing	50%	Ongoing 	Community trainings done during Robinson's visit, site visit, troubleshooting .

## 7.2 East Guadalcanal VGT Sites

<b>Milkfish Bay Resort</b>	Slope Protection, Wastewater treatment, Coastal erosion protection.	Site Prep, Vetiver grass planting	Planting done, upkeep & maintenance in progress	90%	Complete 	Establishment complete, monitoring & maintenance ongoing
<b>Tavanihu</b>	Slope Protection, Gully erosion control	Site Prep, Vetiver grass planting	Planting done, upkeep & maintenance in progress	90%	Complete 	Establishment complete, monitoring & maintenance ongoing
<b>RuaRua</b>	Point source erosion control to protect fish breeding ground, pollution control	Site Prep, Vetiver grass planting	Planting done, upkeep & maintenance in progress	70%	Complete 	Establishment complete, monitoring & maintenance ongoing.
<b>Tavaniarakau Nursery</b>	Nursery Expansion	New nursery establishment (Vetiver Bank)	Nursery established	90%	Complete 	Establishment complete, monitoring & maintenance ongoing.
<b>SuSu Nursery</b>	New Stock holding nursery	Under negotiation for site	Consultation First meeting done, follow-up	50%	Delayed 	Rescheduled to commence when land is available.
<b>Kaoka Nursery</b>	New Stock holding Nursery	Under negotiation for site	Consultation First meeting done, follow-up	50%	Delayed 	Rescheduled to commence when land is available.
<b>Booklet</b>	Publishing of project booklet	Initial work	Collection of notes, pictures ongoing	30%	On going 	Will be produced and presented during close-up.
<b>Video</b>	Video documentary	Initial work	Collection of notes, pictures ongoing	30%	Ongoing 	Will be produced and presented during close-up.

### KEY

<b>Work In Progress (Ongoing)</b> 	<b>Incomplete</b> 	<b>Complete</b> 
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## **8. Overview**

### **8.1 Financial Status**

- First Tranche received.
- Financial Report done (Refer SPC format).

### **8.2 Scheduling Status**

- Three (3) to six (6) months visit by Pacific Engage and technical trainings for respective sites with complete status happening now.
- Technical expert (Robinson Vanoh) is on site for site inspection, further training and troubleshooting of implemented sites.
- Incomplete sites in Honiara have re-commenced, site preparations done and planting in progress.
- Monitoring and final visits to be extended (pending approval for project extension).

### **8.3 Key Objectives, Mile Stones**

#### *Objectives as per project proposal*

- Completed four out of seven (57%) sites identified for initial pilot trail projects in various Vetiver System Technology (VST) applications as an adaption technology on Guadalcanal.
- Established one major nursery (Vetiver Bank) for Pacific Engage and 3 to 4 community nurseries that Pacific Engage can source Vetiver in the future.
- Establish working relationship with communities and business houses to further promote VST.
- Work is now in-progress on the project sites for Honiara that were affected.
- Vetiver booklet and documentary video production (on-going).
- Pacific Engage team is positive they will deliver to fulfill project objectives.

### **8.4 Issues (Refer Annex 2 for Risk Assessments)**

- Political unrest resulting in riots in the capital of Honiara.
- Covid-19 restrictions resulting in the capital under lock down.
- Three months of prolonged rainy season (towards the end of first quarter and first half of the second quarter).
- The prolonged absence of project team from our main nursery at Okea, with lack of security, and lack of maintenance resulted in suspected theft of Vetiver slips for sells to commercial entities.

Three of the sites in Honiara had initial site preparation works done in late November 2021 and were in the process of planting Vetiver slips, however did not continue due to the above mentioned risks.

Lack of Vetiver slips was another contributing factor as well to complete all the sites on time. The assumption was for the new nurseries to supply project sites such as Betikama Riverbank protection works and the Sape Farm agricultural applications, however did not.

Plan to commence project in Honiara was further delayed due to the Project Manager been bedridden for six months and was not able to retire funds and provide financials and mid cycle report to SPC.

### **8.5 Key decisions and steps taken going forward**

- Contacts were re-established by Robinson Vanoh and Paul Oana with concerned stakeholders (Betikama Adventist College and Sape Farm).
- Site preparation works have commenced after the stakeholder meetings at Sape Farm and Betikama.
- Vetiver slips were shipped in from Pacific Engage nursery from Marau, and planting of slips to site is now in progress.
- Planting of Vetiver slips on these sites will be completed whilst Robinson Vanoh is on site to provide technical advice.
- Re-organizing Pacific Engage to meet the challenges faced going forward.
- Whiles Robinson is in town we're working towards complete technical trainings and schedule visits which are also been delayed due to the disruptions stated earlier.
- Requesting extension of project completion date to complete the three sites, monitoring, production of booklet and documentary video.

### **9.0 Positive Observations/Outcomes**

Following are some positive observations and outcomes observed from the pilot VGT established sites:

- Improvement in ground conditions (surface water runoff). Slope area was an all year round wet area, noted that it has improved with no surface water runoff.
- Improvement in ground condition and crop yield at Milk Fish Bay resort. Before Vetiver was planted, participant advised that sweet potato bears little, yield, after planting it is bearing and also increase in yield and size.
- No more smell and improved conditions at the sewage discharge outlet since Vetiver was planted.
- Improve ground water taste at Tavanihu where Vetiver was planted to protect underground water stream.
- Effective control of soil erosion at Ruarua where sediments are trapped on land rather than washed into the sea.
- Effective management of nursery and planted sites by participants. Family units taking ownership of respective sites. Family ownership is highly recommended for future project upscale.
- Improve ground conditions on slopes where Vetiver was planted with no erosional activities.

### **10.0 Negative Observations/Setbacks**

- Vetiver planted under shade trees not growing well at Milk Fish Bay Resort and Ruarua.
- Plant spacing between the Vetiver slips at 30cm on all sites. Recommended spacing between plants is 12-15cm. Plant new slips in between them again.
- Nursery establishment on slopes. Nursery is not recommended for slopes.

## 11.0 Established pilot Vetiver Grass Technology sites

### 11.1 Milkfish Bay Resort

Trial	Scope	Activity	Status	Start Date	Comments
Slope Protection, Wastewater treatment, Coastal erosion protection.	Establishment	Site prep, Harvesting, planting	complete	Nov 21	On schedule
	3 to 6 months visit	Maintenance and repair, monitoring	In progress		
	1 yrs. Visit	Data collection and yrs. results	To be scheduled		
	Training	Community brief with milkfish team.	complete		
	Booklet & video	To be distributed on 1 yrs. visit	To be scheduled		

#### 11.1.1 Background of Project site

Milk Fish Bay Resort is an eco-tourism lodge on the Marapa Island at Marau, East Guadalcanal. This site was selected to be a pilot site to demonstrate vetiver applications for: (1) Slope Protection (2) Wastewater treatment from the septic (3) Coastal erosion protection and (4) Drain wall protection against storm water from upstream.

These are common problems that are found at most eco-tourism lodges, and in particular the wastewater from sewage systems where they are discharged direct into the environment without treating them.

#### 11.1.2 Pictures before and during project start-up



Training Session for Team Leaders organized by Pacific Engage





Drainage Trial Site



Soakhole management Trial Site



Beachfront Erosion Trial Site



Estuary Bank Erosion Trial Site

After 14 days (Two weeks)

The results after two weeks has been good with the different soil structure types.



Beachfront Site



Secondary defense behind mangrove site



Estuary Bank Site



Soakhole Site

## 11.2 Tavanihu

Trial	Scope	Activity	Status	Start Date	Comments
Slope Protection, Gully erosion control, Water well protection & Coastal Erosion Protection	Establishment	Site prep, harvesting, planting	Complete	Nov 21	On schedule
	3 to 6 months visit	Maintenance and repair, monitoring	In progress		
	1 yrs. Visit	Data collection and yrs. results	To be scheduled		
	Training	Community brief	Complete		
	Booklet & video	To be distributed on 1 yrs. visit	To be scheduled		

### 11.2.1 Background of Project site

This village is a coastal village located on the Island of Marauyapa at Marau, East Guadalcanal. This village sits below a hill with recent erosional activities which resulted in slope failure, almost causing fatality. The hill also has lots of regrowth trees which were posing treat to the residential houses. The family unit decided to cut the trees and clear the site to minimize the risk of further landslip and the trees falling on the houses damaging properties.

This site was chosen as the family were looking around for options on how best to protect the barren slope when PE offered them the choice to use vetiver to protect the exposed slope and the gully erosion on the slope that was beginning to erode due to a recent landslip. There is also a source of underground water well where it is vulnerable to dry out as a result of the trees being cut down. This family site is a model site which can be replicated to other sites in the future.

### 11.2.2 Pictures before and during project start-up





The pictures above were taken in January 2022 during the first visit (Pictures courtesy of Paul Oana)

### 11.3 RuaRua

Trial	Scope	Activity	Status	Start Date	Comments
Point source erosion control to protect marine life and fish breeding ground, pollution control	Establishment	Site prep, Harvesting, planting	complete	April 22	On schedule (new site chosen due to covid-19 lockdown)
	3 to 6 months visit	Maintenance and repair, monitoring	In progress		
	1 yrs. Visit	Data collection and yrs. results	To be scheduled		
	Training	Community brief with milkfish team. (Paul)	complete		
	Booklet & Video	To be distributed on 1 yrs. visit	To be scheduled		

#### 11.3.1 Background of Project site

This site is located on the Island of Marapa in Marau, East Guadalcanal. This site was chosen as the hill sits above the fish breeding ground for the coastal villages. This site is a pristine marine area where the fish breed and is also an important fishing ground for the Marau community.

Recent landslip on the hills and erosional activities were a treat to the marine life as sediments from the landslip area were washed down into the coral reef threatening the breeding ground. Vetiver were

planted from the coastline and up into the hills to control point source erosional activities and protect the failed slope from further landslips.

### 11.3.2 Pictures before and during project start-up



## 11.4 Tavaniarakau

Trial	Scope	Activity	Status	Start Date	Comments
Nursery expansion & family farm applications	Establishment	Site prep, Harvesting, planting	complete	Nov 21	On schedule
	3 to 6 months visit	Maintenance and repair, monitoring	In progress		
	1 yrs. Visit	Data collection and yrs. results	To be scheduled		
	Training	Community brief	complete		
	Booklet & video	To be distributed on 1 yrs. visit	To be scheduled		

### 11.4.1 Background of Project site

This site is located on the Island of Marapa in Marau, East Guadalcanal. This is the main nursery (Vetiver Bank) site for the PE Vetiver project. This nursery was initially set up to provide stock for other project sites. This site was the main nursery (Vetiver Bank) where it provided Vetiver slips for all the pilot current pilot VGT sites.

#### i. Pictures before and during project start-up





### 11.5 Okea

Trial	Scope	Activity	Status	Start Date	Comments
Nursery (Vetiver Bank)	Establishment	Site prep, Harvesting, planting	Complete	Sept 21	On Schedule
	3 to 6 months visit	Maintenance and repair, monitoring	In progress		
	1 yrs. Visit	Data collection and yrs. results	To be scheduled		
	Training		Complete		
	Booklet & video	To be distributed on 1 yrs. visit	To be scheduled		

### 11.5.1 Background of Project site

Okea is located in the Guadalcanal plains and is one of the main nursery sites, which will be the “Veiver Bank” for Honiara. It is ideally located as it is a central location. The land is owned by the Project Manager (Paul Oana).

### 11.5.2 Pictures before and during project start-up



## 11.6 Sape Farm

Trial	Scope	Activity	Status	Start Date	Comments
Soil and Water Conservation, Agricultural applications	Establishment	Site preparation Planting	Complete In progress	14/10/22 18/10/22	Delayed, but work in progress now
	3 to 6 months visit	Care & Maintenance Monitoring	In progress	To be scheduled	New planting
	1 yrs. Visit	Data collection and yrs. results	To be scheduled	To be scheduled	Evaluation after 6 months
	Training	Community brief	First training complete	Ongoing	Ongoing training to be done
	Booklet & video	To be distributed on 1 yrs. visit	To be scheduled	Ongoing	To be documented at closing.

### 11.6.1 Background of Project site

This site is located in the Guadalcanal plains East of Honiara. This is one of the small scale agricultural farms who are into Palm Oil, Cocoa, Fruit trees and Casava farming. This farm is located a few meters away from the Ngalimbiu river which occasional floods its banks during rainy season. On several occasions this farm has lost its cash crop in flash flooding. Recent drain works were done to divert water away from the cash crop.

As a pilot, Vetiver hedgerows are planted along all these drains to reduce flow velocity of flood waters and also to control soil erosion and conserve water on the farm.

### 11.6.2 Pictures before and during project start-up





The sites before clearing and planting



Erosion and flood control



## 11.7 Betikama Adventist College Riverbank

Trial	Scope	Activity	Status	Start Date	Comments
Riverbank Protection	Establishment	Site preparation Planting	Complete In progress	18/10/22 20/10/22	Delayed, but work in progress now
	3 to 6 months visit	Care & Maintenance Monitoring	In progress	To be scheduled	New planting
	1 yrs. Visit	Data collection and yrs. results	To be scheduled	To be scheduled	Evaluation after 6 months
	Training	Community brief	First training complete	Ongoing	Ongoing training to be done
	Booklet & video	To be distributed on 1 yrs. visit	To be scheduled	Ongoing	To be documented at closing.

### 11.7.1 Background of Project site

This site is located in Honiara along the mighty Lunga River. This institution is an Adventist college and sits along the Lunga river which is prone to riverbank erosion. Flash flooding over the years has been eroding the banks and encroaching into the school grounds. It remains a threat to the institution if no remedial works is done to stabilize and protect the riverbank.

This site was identified as one of VGT pilot sites for riverbank protection works using Vetiver grass.

### 11.7.2 Pictures before and during project start-up





Site preparation works



Demonstrating to PE team on the planting method for riverbank protection works



**Annex 1: Current pictures of Project sites during my visit**



TAVANIHU PROJECT SITE



Slope protection



Gully erosion protection (new planting)

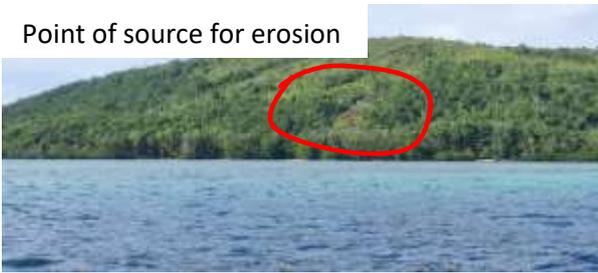


Mangroves, stonewall and Vetiver for coastal erosion (new planting)

**RUARUA POINT SOURE EROSION CONTROL SITE**



Point of source for erosion



**TAVANIARAKAU NURSERY & SMALL FARM APPLICATIONS SITE**



Nursery



Stream and drain wall protection



Farm applications



**ANNEX 2: Risk Assessment**

<b>Risk Description</b>	<b>Risk Assessment (remedial actions to mitigate the identified risk)</b>	<b>Category of Risk Level</b>
Civil Unrest and Lock Downs	Relocate project sites to outer Islands.	Medium
Rain and Flooding	All plantings/work to be done well before the raining season	Medium
Theft of Vetiver Slips	All nurseries to be family owned to take ownership. Nurseries to be near residential houses for security.	Low
High cost variations due to political and economical environment	Give service agreement to host site for labour based service, upkeep & and security.	Low
Sites spread across the Islands gave difficulty in access to sites given the many disruptions.	Improve management team and make changes to accommodate operation in high risk environment.	Medium
Illness to team staff	Train and delegate staff to take on responsibilities. Multi task team members so they can be able to fill in for those sick.	Low
Transportation amongst Islands during bad weathers	Travel only during good weather. Use reliable transport. Use reliable means of transportation.	Low

**ANNEX 3: Phase two Budget**

YEAR 1 BUDGET									
MONTH		Annual	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23
		Budget	Budget	Budget	Budget	Budget	Budget	Budget	Budget
<b>PERSONNEL (STAFF)</b>									
1	Team Leader	\$9,800	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400
2	Admin Officer	\$5,600	\$800	\$800	\$800	\$800	\$800	\$800	\$800
3	Field Officer 1	\$7,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
4	Field Officer 2	\$7,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
		\$29,400	\$4,200	\$4,200	\$4,200	\$4,200	\$4,200	\$4,200	\$4,200
<b>TRAVEL/PER DIEM</b>									
1	Tickets Lae/POM/Hon Return	\$8,000							\$8,000
2	Accommodation	\$3,000							\$3,000
3	Allowances	\$4,000							\$4,000
		\$15,000	\$0	\$0	\$0	\$0	\$0	\$0	\$15,000
<b>EQUIPMENTS</b>									
1	Laptop	\$0							
2	Printer	\$0							
3	Stationeries	\$4,500	\$1,000	\$500	\$1,000	\$500	\$500	\$500	\$500
4	Miscellaneous	\$900	\$200	\$200	\$100	\$100	\$100	\$100	\$100
		\$5,400	\$1,200	\$700	\$1,100	\$600	\$600	\$600	\$600
<b>CONSUMABLES</b>									
1	Vetiver Slips	\$0							
2	Work Tools	\$3,500	\$900	\$800		\$900		\$900	
3	Nursery Costs	\$9,000	\$1,500	\$1,500	\$1,500	\$1,500	\$1,000	\$1,000	\$1,000
4	Misc Cost	\$8,800	\$1,400	\$1,200	\$1,400	\$1,200	\$1,200	\$1,200	\$1,200
		\$21,300	\$3,800	\$3,500	\$2,900	\$3,600	\$2,200	\$3,100	\$2,200
<b>SUB-CONTRACTORS &amp; OUTSIDE SERVICE</b>									
1	Induction Training	\$4,200	\$1,050		\$1,050		\$1,050		\$1,050
2	Youths for site prep	\$0							
3	Women Groups for planting	\$4,600	\$1,050	\$1,050	\$1,450	\$1,050			
4	Transport Hire	\$8,000	\$2,000	\$2,000	\$2,000	\$2,000			
5	Misc Costs	\$9,000	\$1,500	\$1,500	\$1,500	\$1,500	\$1,000	\$1,000	\$1,000
		\$25,800	\$5,600	\$4,550	\$6,000	\$4,550	\$2,050	\$1,000	\$2,050
		\$0							
		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>SUB TOTAL</b>		\$96,900	\$14,800	\$12,950	\$14,200	\$12,950	\$9,050	\$8,900	\$24,050
<b>OTHER DIRECT COSTS</b>									
	TVNI Management Costs	\$3,200	\$450	\$450	\$500	\$450	\$450	\$450	\$450
	Local Transportation Costs	\$2,550	\$450	\$450	\$450	\$450	\$250	\$250	\$250
	Misc Cost	\$1,100	\$200	\$200	\$200	\$200	\$100	\$100	\$100
<b>SUB TOTAL</b>		\$6,850	\$1,100	\$1,100	\$1,150	\$1,100	\$800	\$800	\$800
<b>TOTAL COSTS</b>		\$103,750	\$15,900	\$14,050	\$15,350	\$14,050	\$9,850	\$9,700	\$24,850



**ANNEX 4: Phase 2 Work Plan and Timeline**

<b>Proposed Work Plan 2022/2023</b>								
<b>Task</b>	<b>Month</b>							
	<b>Oct-22</b>	<b>Nov-22</b>	<b>Dec-22</b>	<b>Jan-23</b>	<b>Feb-23</b>	<b>Mar-23</b>	<b>Apr-23</b>	<b>May-23</b>
Site Preparation Works (Hoiara Sites)								
Vetiver grass planting - Sape Farm								
Vetiver grass planting - Betikama Adventist								
Planting of vetiver grass at Ruarua - Extension								
Re-establishing new vetiver nursery - Okea								
Documentary video and booklet								
Maintenance & Monitoing								
Vetiver Field Day								
Project Closing								