



TRIP REPORT

FIJI AND THE SOLOMON ISLANDS

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1. INTRODUCTION

The Solomon Islands and most Small Island Developing Countries (SIDC) are facing a possible catastrophic future due to a perfect storm of climate change induced extreme weather events, an expanding, poor and marginalized population, and inadequate social and basic needs services from a limited funded and poor government administration resulting amongst others serious food security and health problems, compounded by degenerating soils, forest and inland and coastal water.

One part of the solution is the introduction of low cost and relatively simple technologies that can help build resilient “do it yourself” communities both in rural and urban areas.

After an evaluation visit by myself in March 2017, we saw the SI Initiative as a necessary, strategic initiative in support of the Island communities in SI whose water and land are under tremendous stress from both climate change and population growth. The team led by Richard Grimshaw, Jim Smyle, Dr. Paul Truong, Dale Rachmeler and Robinson Vanoh are putting together a project proposal to source and secure donor funding to fund these project in the Solomon Islands, which will be a three (3) years pilot project, which will then be upscaled to other small Pacific Island countries.

Initially, we have gone out and raised US\$35,000 to put toward making this initiative happen. The said funds will be primarily to cover costs for Robinson Vanoh as a volunteer to provide technical assistance and quality control in the preparation and implementation of these initiative. The total project will cost USD130,000.00 for the 3 years duration.

On a mission to source donor funding from within donor agencies in the region, TVNI sponsored a trip for Robinson Vanoh to Fiji and the Solomon Islands in November 2017 to: (i) Source donor funding from UNDP regional office in Fiji and other potential financiers, (ii) identify potential community based organizations who can use vetiver system in their projects, (iii) identify a potential CBO in the Solomon Islands to partner with to deliver the project.

2. FIJI REPORT

2.1 FIJI VISIT OBJECTIVE

2.2 MEET WITH KEY REGIONAL AID AGENCIES

2.2.1 UNDP

On appointment with the UNDP (IFAD) a scheduled meeting was held on Tuesday 21st November, with Mr. Sakiusi Tubuna at the UNDP regional office in Suva. Following were discussed during our meeting: The Vetiver System Technology and its applications, the proposed SI project proposal, VS in developing resilience to climate change as well as building resilient infrastructure.

After further discussions and deliberation on the project, following are outcome of our meeting: (i) No funds available immediately as all funds have been committed for other projects within the region. (ii) Will have options open to see them again should there be any funds available.

He also was helpful in linking me up with the following potential financiers and agencies who are basically involved in building community resilience against climate change in the Small Island Developing Countries. (i) South Pacific Community (SPC) (ii) Tuvalu Coastal Adaption Project (iii) Fiji Road Authority (FRA) (iv) University of South Pacific (USP) (v) RDP II in Solomon Islands (an IFAD funded project) (vi) International Union for Conservation of Nature (IUCN).

Whilst in discussion, he also outlined existing program (RDP II) in Solomon Islands which is currently funded by IFAD. He linked me up with Mr. Gabriel Hiele (Agribusiness Manager) for further discussions on what possibilities they have there to incorporate VS into their program.

2.2.2 South Pacific Community (SPC)

The Pacific Community (SPC) is the principle scientific and technical organization in the Pacific Region, supporting development since 1947. They are an international development organization owned and governed by 26 countries and territory members. Their mission is to work for the wellbeing of Pacific people through the effective and innovative application of science and knowledge.

A meeting was held with one of their technical directors in charge of Climate Change, Mr. Gibson Susumu on Wednesday, 22nd November and discussed on following: (i) The project proposal (ii) Possible linkages to promote the use of Vetiver System through their network in the region.

As they also depend of funding from the government and donor agencies from partner countries, they are not able to fund the project. However, he said there is possibility of TVNI linking up with them in terms of technical assistance in their programs.

As he was going away on duty travel the next day, he emailed to the SPC management team for us to have a team meeting and discuss further. However, the meeting did not eventuate as there was no response from the email circulated to them. A follow up email was sent to Mr. Susumu and I will follow through upon his return from duty travel.

2.2.3 Fiji Road Authority (FRA)

The Fiji Roads Authority (FRA) was established in January 2012 to effectively manage and develop Fiji's road network. FRA is responsible for all its valuable assets.

A meeting and presentation was done on Wednesday 23rd November with the newly established authority in Fiji. A presentation was done with the team on various applications of VS for Infrastructure Protection. The Authority being only 4 years old, were interested and very keen to implement the VS on their road systems in Fiji.

The team requested for Cost benefit analysis and pictorial presentations of the effectiveness of VS on similar projects elsewhere. Extracts from Dr. Paul Truong's report on R&D in Queensland was emailed to them for their review and consideration.

I also took pictures of recent slope failure at Veisari on the Queens Road to be used as a case which I also presented to them.



Picture 1 & 2: Landslip at Veisari on Queens road



Picture 3: Team photo with FRA (L-R) Michael J. Dale, Samuela Tawakedrau, Kamal Prasad, Robinson Vanoh and Apisai Ketenilagi

2.2.4 TUVALU COASTAL ADAPTATION PROJECT (TCAP)

The Tuvalu Coastal Adaption Project is a project set to run for seven years with project funding from the Green Climate Fund and the government of Tuvalu.

The project focuses on construction works to defend infrastructure including roads, schools, hospitals and government buildings. Tuvalu's vulnerability is acute: as the country has an average elevation of 1.83 meters resulting in sea levels are encroaching on homes, crops, roads and eroding fragile coastlines. The islands coastlines are also being battered by increasingly intense tropical storms, bringing with them heavy rainfall, strong winds and waves.

I was also to have a meeting with them, however, didn't have the opportunity to meet with them as the technical team were all in Tuvalu for duty travel during the week I was in Fiji. I have sent an email to Mr. Winifereti Naimoca who oversees the project. Since then, have not received any response from him. I will send another follow up email.

2.2.5 UNIVERSITY OF SOUTH PACIFIC (USP)

These University is the premier provider of tertiary education in the Pacific Region, and an international center of excellence for teaching and research. It is an intergovernmental organization and public research university with a number of locations spread throughout a dozen countries in Oceania.

A PowerPoint presentation on the various applications of the Vetiver System for Climate Change was done with the team. Despite the Vetiver Grass been in Fiji for some 100 years, little did they know of this unique grass. A lot of questions were asked, where we interacted and shared knowledge and information on VS and its applications. These clearly is an indicator that these Island nation lacks the technical know-how of the VS and its applications.

The team is very keen to see it introduced into two of their programs - The Coral to Reef program and the Tuvalu Coastal Adaption Project.

Mr. Viliamu Iese had further discussions with the Tuvalu technical team and they are keenly interested in the VS for the Coastal Erosion Protection and Wastewater treatment. They are currently working on their report and will take extra step to discuss with the Project team leaders to start a pilot to implement it. We will be involved in providing them the technical expertise for this project if all goes well.



Picture 4: USP Climate Change PHD students with Dr. Antoine de Ramon N'Yeurt (Marine Biologist – Algal Taxonomist) (L) and Mr. Viliamu Iese (Research Fellow – Climate Change, Food Security, Disaster Risk Management) (second from left)

2.2.6 FREEHOLD SUGAR FARMS

Due to time factor, I was not able to see Sugar farms and mills operated by companies. However, I had the opportunity to visit some smallholder farms on my way to Nadi from Suva on Saturday. I also had the opportunity to interact with three cane farmers on the importance of VS for controlling erosion and moisture retention in their farms.

When I interviewed them, they said they knew little about Vetiver, they said it was introduced to them initially for roof thatching.

These presented me with the opportunity to disseminate information on the Vetiver System to the concerned farmers. As shown in pictures below, vetiver was grown in patches basically for that and not for soil conservation. Fiji surely needs our technical input in terms of using VST.



Picture 5 & 6: Two of the sugar farms visited – lack of soil conservation practices are evident.



Picture 7 & 8: In the yellow circles are plantings of vetiver grass planted in patches and left to dry out by small holder farmers who knew little about Vetiver System.

2.3 FIND OUT FROM OTHERS IF VS IS BEING USED CORRECTLY

Apart from the meetings and presentations, some sites of interest were also visited to see how the VST was used in both countries.

2.3.1 Nabou Green Energy plant site (NADI)

Nabou Green Energy Ltd power plant is located along the Queens Road was also visited whilst travelling to Suva. Power is generated by steam produced from burning pine tree wood chips.

Vetiver planting to stabilize slope was done, however the concept not done correctly due to lack of technical expertise. Obviously, the idea is there but not the planting concept as noted in the following pictures.



Picture 20-24: The Nebou Green Energy plant and the vetiver plantings

2.3.2 Naboro Maximum Prison Center

Whilst travelling to Suva, some interesting plantings of Vetiver was sighted at Naboro Prison Compound located at Naboro on the Vunidoi Hill along the Queens road. I had no hesitation but to tell my Indian taxi driver to stop so I could take these pictures of vetiver planting. From the pictures you would obviously tell that there is limited and lack of technical know-how of the Vetiver System Technology in Fiji despite it being in Fiji for the last 100 years.



Picture 25 -29: Naboro Prison Centre along Queens Road

2.3.3 Nadi Freehold Sugar Farmers

Knowing too well vetiver has being in Fiji for the last 100 years, and effectively being used in the Sugar farms by CSR, I decided to take a tour of the farms in and around Nadi to see if vetiver were still planted on contours to control erosion. To my surprise, nearly all farm visited literally had no planting of such on the farms, apart from a few scatted plantings of vetiver in patches around the farms as shown in following pictures. These very vital system that had the production of sugar in Fiji at maximum yielding during the yester years was obviously not maintained or used. Few

patches as seen were probably there over the years. Three farmers when asked, responded by saying all they knew was it was used initially for roof thatching.



Picture 30 – 33: Smallholder sugar farms, with yellow circles are vetiver planting in patches.

3. SOLOMON ISLANDS REPORT

3.1 HONIARA VISIT OBJECTIVES

3.1.1 Identifying Replacement for KGA

DSE is the national umbrella body of Civil Society Organizations in the Solomon Islands. DSE is one of the longest serving CSOs in the Solomon Islands, established in 1984 to facilitate and coordinate development services for CSOs and their partners.

A meeting was held with Mrs. Jennifer Wate, the General Secretary of DSE where I outlined to her our project proposal and our request to them to identify a reputable CBO who we can partner with TVNI for the Solomon Islands Initiative.

Jennifer indicated there are a few reputable CBOs who can be able to partner with us, however lack the understanding of VS. She will also assist to link us up with possible financiers through their network. She will also bring it up at their next board meeting for further deliberation. She is keen on the proposal and will assist where possible for us to secure funding to implement the project.

She will also be attending a conference in Fiji during the week where all NGOs from throughout different nations will attend. She said to bring up the idea on the uses of Vetiver for various applications as they also have in one of their programs tree planting as revegetation.

I have however, followed on and identified Pacific Engage to be a good replacement for KGA. Despite the organization being new, its Directors have wealth of experience in running similar organizations. It is legally established, can cover its overhead costs and already has a commitment to and understanding of VS. They also have a vetiver nursery to start off their programs, which is a bonus for the initiative. Paul Oana (Director), was also helpful in facilitating my meeting with HCC and the Ministry of Mines Permanent Secretary. He is also prepared to seek donor funding from within the Country. He has also made an appointment to see the Permanent Secretary to the Ministry of Infrastructure Development as I was not able to meet him as he was out on holidays.

3.2 MEET WITH MUNICIPAL AUTHORITIES, MINES, LOGGING AND OTHERS

3.2.1 RDP II

My first meeting in Solomon Islands was with the IFAD funded project (RDP II) team leaders at the Ministry of Agriculture headquarters in Honiara. Present at the meeting were Dr. Mark Johnston (Advisor), Mr Gabriel Hiele (Agribusiness Manager RDP II), and Mr. William Okekiri (Consultant).

Following were discussed with them to get their support over to us for possible funding and or incorporate VS into their existing programs:

- Rural infrastructure disaster recovery
- Improving basic infrastructure and services in rural areas with VST, so people can have access to rural infrastructure or services.
- Water supply – improving underground water quality by use of VS as communities in Guadalcanal were mostly affected by the 2014 flash flood.

- Support smallholder farmers in improving crop and food production by sustainable land use management practices.

They said they have two components under this project, Component 1 Infrastructure Component 2 Agribusiness. Component 1 have been completed and now they are into Component 2. Their funds are committed for each scope of activities and as such, if we were to incorporate VS into their programs, they requested if we can request from UNDP to provide additional funding for the scope of VST. However, as per my meeting with Mr. Sakiusi Tubuna on possible funding, the answer was not favorable so highly unlikely with this option. However, this does not stop me from sending an email to him and brief him on the outcome of this meeting and request for such.

3.2.2 3MINISTRY OF MINES, ENERGY & RURAL ELECTRIFICATION

I visited the old Goldridge mine to see what problems they have there so I can be able to market the idea of using Vetiver for the tailings dam wall stabilization and the rehabilitation of the mined site. As Pacific Engage already have an established nursery, I wanted to sell the idea to the ministry so that we can be able to sell the slips to them and also provide consultation to raise funds from the sells to fund the initiative.

Thereafter, a meeting and presentation was held with Mr. Jeffrey Sade Deve (LLB, PDLP-usp/LLM-vuw), the Permanent Secretary to the Ministry and one of his Technical Directors in charge of mine waste, and Mr. Paul Oana (Team Leader Pacific Engage).

From our meeting, it looks positive they are likely to use Vetiver System for the tailings dam as they do currently have problem of over spilling of wastewater from the dam and a weakened wall structure which is likely to be eroded over time. The tailings dam is now filled up with storm water and over spills from time to time.

Mr. Deve requested for further information and data on R&D on the use of VS for Mines, which I have emailed to him for their deliberations. I will send a follow up email in the next couple of weeks on the status of their deliberation about the possible use of VST.



Picture 9: View of the tailings dam from the spillway



Picture 10: Top view of the tailings dam



Picture 11 & 12: Old mine pit site

3.2.3 HONIARA CITY COUNCIL

Honiara City Council (HCC) is a local government unit which administers the 22-square kilometer territory of Honiara capita. The council is mandated to provide wide range of services, these include waste collection, street cleaning, maintenance of access routes in settlements, town planning, protection of river waters, maintenance and landscaping etc.

The Ranadi Landfill Site is another of those that is managed by HCC. Currently it is under funding by JICA to improve the solid waste management system. It was noted during my site visit to the site, there is very good case for vetiver to be used to treat its leachate.

I had a meeting with Mr. Eddie Diko Gaza (Head of Division – Works) on the possibility of using Vetiver System for their Solid Waste Management and their wastewater treatment. He was generally supportive of new innovative ideas and technology in helping to solve existing problems they have.

Mr. Gaza requested for a proposal on solid waste and the wastewater so will put together a proposal through the local CBO for the supply and installation of the VS. This project will generate additional income to support the SI initiative as well.



Picture 13 & 14: Uncontrolled dumping of solid waste at the Ranadi Landfill



Picture 15: Pumping out of sewerage into an open area at the landfill site.



Picture 16 & 17: Sewerage as pumped out in picture 15 in pumped into these areas, note also residence below who are vulnerable.

3.2.4 PACIFIC ENGAGE (CBO)

Is a locally established non-government organization that engages with local actors, to encourage them to be creative and adopt innovative solutions to local issues. Their vision is to see Solomon Islander families and communities that are sustainable, self-sufficient and prepared to rise to meet environmental, economic and social challenges affecting them.

Their mission is to empower them to become proactive, self-reliant and resilient citizens. Their objectives are to also transform mindsets to be emergency prepared and emergency responsive, promote and model measures that help people to mitigate climate change and address development related environmental impacts.

They have over 20 registered groups with Pacific Engage and are based in Honiara and in the other outer Islands.

These group has and is beginning to use Vetiver Grass in some of their community projects. They also have an established vetiver nursery where they will use to distribute to their group members

and sell the surplus slips from their nursery to business houses such as Honiara City Council, Ministry of Infrastructure Development and the Ministry of Mines and Energy to generate additional income to support and sustain their project.



Picture 18 & 19: Pacific Engage nursery (top)two of the Board of Directors (Mesach and Paul Oana)

4. VETIVER GRASS IN SOLOMON ISLANDS

Following are pictures of a mini nursery set up by Pacific Engage to be used in their programs in Honiara and in the outer Islands where their members are living. They have a total of twenty registered groups within their organization.



Picture 34 & 35: Paul Oana and Robinson Vanoh in the Pacific Engage mini Vetiver Nursery. Mini Nursery (Top)



Picture 35-37: Mesach Boge clearing up his Vetiver Nursery at the palm oil plantation in the Guadalcanal plains where he supplied the slips for the Gizo Slope failure project.

5. CONCLUSION

Our expected outcome from the trip in terms of sourcing funding for the SI initiative from the region looks slim, however options remain open, in particular with UNDP. Project Proposal will be emailed to other potential financiers not approached within the region.

Other possible Financiers in the region not visited during my visit are already identified, I will be sending out emails for possible funding

General overview of the trip clearly indicates there is lack of knowledge and the technical know-how of the Vetiver system Technology both in Fiji and the Solomon Islands. Continuous awareness and information dissemination throughout the region is necessary to see the system effectively used and be accepted.

From the outcome of my meetings, there are potential users of the Vetiver System, such as Fiji Road Authority, Tuvalu Coastal Adaption Project, SPC, the Freehold Sugar farmers, Ministry of Mines, Ministry of Infrastructure Development and the Honiara City Council.

One of the potential CBO partners (Pacific Engage) is very much keen to promote the use of Vetiver System in Solomon Islands. One of the board Directors is Mr. Mesach Boge, our main supplier of Vetiver Grass for the Gizo slope remediation project. He also helped them to set up a

nursery for their program. These organization is set to promote and use the vetiver grass, even with no funding. All they require from us initially is our ongoing technical expertise.

Funds generated by way of selling vetiver slips to those identified users will them enable them to generate additional income to support the organization in its programs.

I had a meeting with the following board directors of Pacific Engage; Mr. Paul Oana (Chairman), Mesach Boge (V/Chairman), Ms Carol Qila Komala (Secretary), Mr. Andrew Dorman Tahisihaka (Treasurer). The meeting was basically to go through the project proposal and its expected outcomes.

I am confident that Vetiver System Technology will surely be widely accepted and used throughout the region as we continue to disseminate information and provide technical assistance (TA) to the users.

It is recommended that we adapt Plan B of Richard's outlined plan where we basically provide TVNI technical assistance (TA) program to community based NGOs, municipal authorities, mining company, Ministry of Infrastructure Development, Roads Authority and others. It will be a 3 years startup project setting the stage for a bigger scale up after the 3 years.