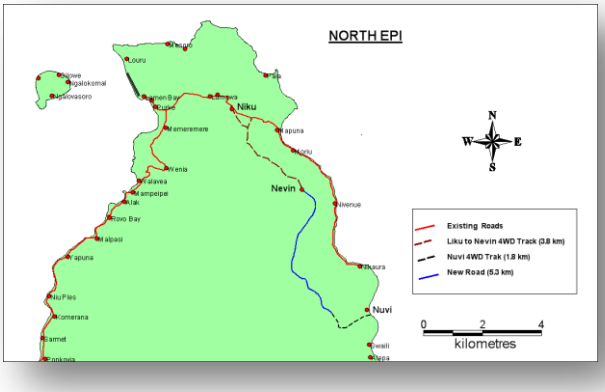
VANUATU CLIMATE CHANGE AND DISASTER RISK REDUCTION

LESSONS LEARNED AND BEST ADAPTATION PRACTICE PROFILE

COMMUNITY AND ECOLOGY RESILIENCE BUILDING | EPI ISLAND

Climate Proofing Infrastructure

Building Resilience to Climate Change in Coastal Communities



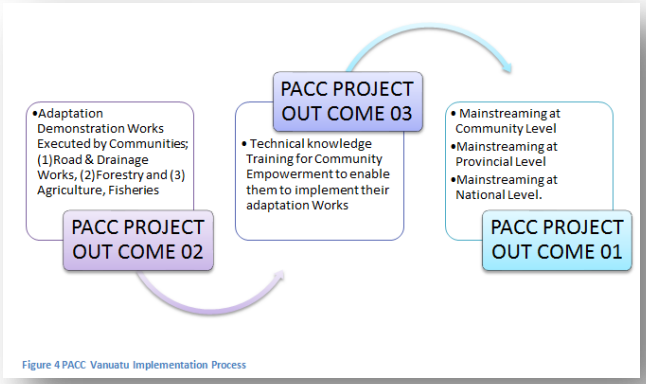


Figure 4 PACC Vanuatu Implementation Process

PROJECT BRIEF |

The Vanuatu PACC logically plan out the adaptation demonstration works to be executed in such a way that provides a conducive learning environment for all stakeholders that ensures project ownership, project sustainability and project up scaling in Epi Island.

The underlying philosophy is to build resilience at the community level by systematically and accurately build the communities' technical capacity on the right techniques that is suitable for their local context. These technical knowhow whether it be road construction, aqua culture or forestry and farming techniques should be designed and delivered in a way that empowers the communities to build or implement their own adaptation interventions delivered at a very high standard.

PROJECT DURATION |

2009 - 2014.

LOCATION(S) COVERED |

Varsu and Varmali area/ Rovo Bay, Epi Island, Shefa Province

FUNDING |

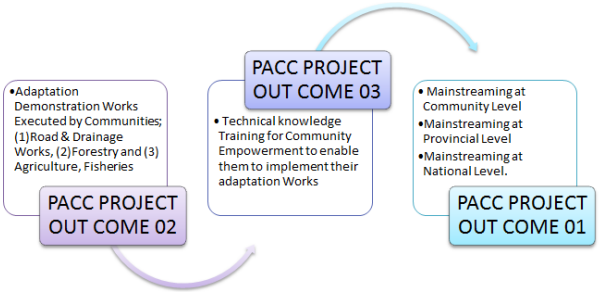
GEF, SPREP, UNDP

PARTNERS/COOPERATING ORGANIZATIONS |

Leading Agency: Public Works Department.

Implementing agencies"Vanuatu PACC" team - PACC PMU, Climate Change Meteorology, Environment, Lands Survey, Geology and Mines, Public Works, Fisheries, SHEFA Provincial Government and Vanuatu Broadcasting and Television Corporation

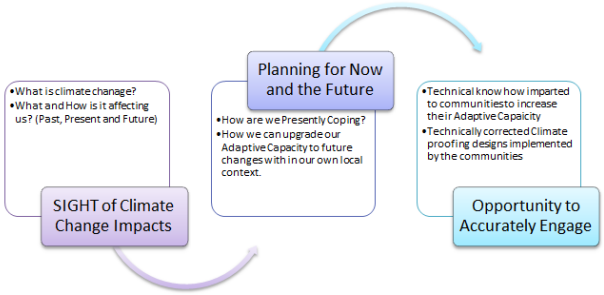
OBJECTIVES & GOALS |



PACC Vanuatu's Demonstration as stated in the Project document logical frame work aims to embark upon the following two areas;

1. to demonstrate the climate proofing product
2. to demonstrate the technical knowhow on building the above stated product at the level in a way that empowers the community to participate and own the Project.

STRATEGIES & PROCESSES/METHODS |



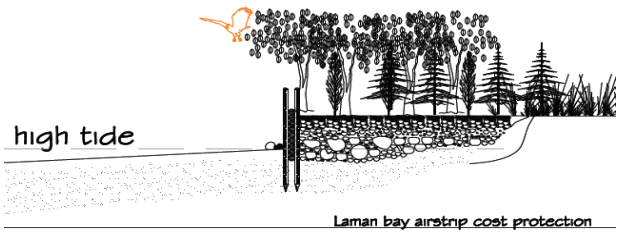
Community and Ecology Resilience Building
It is envisage that communities can engage in the climate change adaptation process if they are empowered. The Vanuatu PACC is taking the bottom up approach in implementing the physical works but strategically guided by top down.

- ✓ Labor Base Road and Drainage - Resilience building Activity type 01
- ✓ Forestry Nursery and Tree Planting - Resilience building Activity type 02
- ✓ Fisheries Aqua Culture - Resilience building Activity type 03

RESULTS |

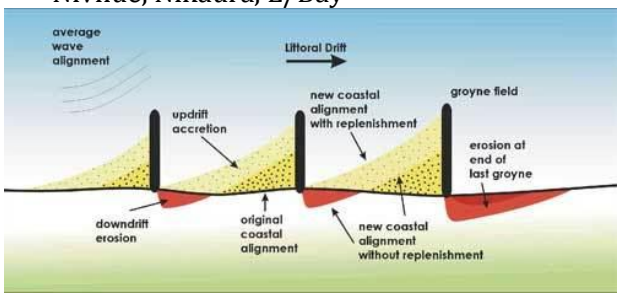
Soft adaptation measures

1. Re planting of mangroves and coastal vegetation and Steep Slopes by communities – L/Bay airport, Alak, Pokovio
2. Land reclamation works by communities – L/Bay



Laman bay airstrip cost protection

3. Croine construction by communities – Nivnue, Nikaura, L/Bay



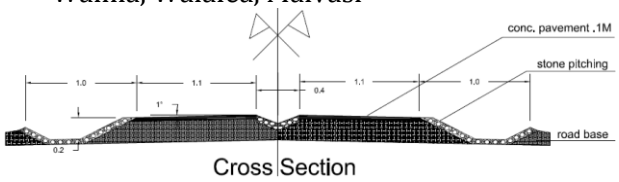
4. Biomass Assessment – Nikaura.

Village Sustainable Marine Resource Harvest Plans documented, Launched and Enforced by Communities, SHEFA Province and Fisheries Department.

Hard Adaptation Measures

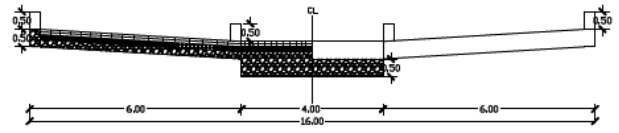
Type, locations and design

1. Concrete slap on steep hills including drainages – Mapuna, Foreland, Vaemali, Wainia, Walafea, Malvasi



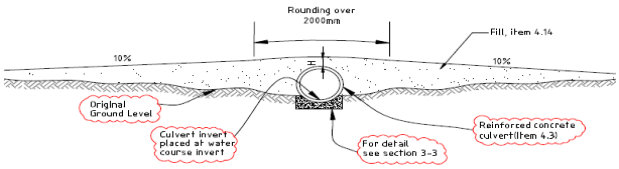
Cross Section

2. Causeway slap on river crossings including drainages – L/Bay, Walavea, Rovo Bay, Malvasi, Forland, Moriu, Nikaura, Nivenue

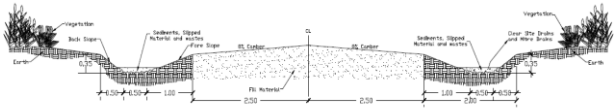


SPLASH/DRIFT SECTION B B

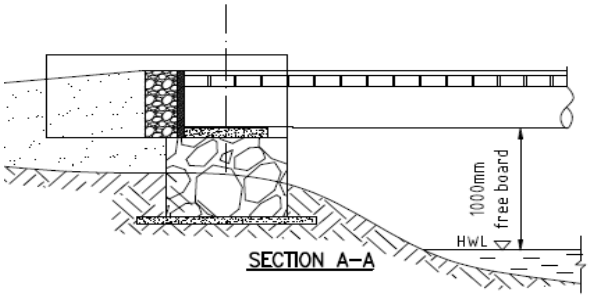
3. Culvert crossings including drainages – L/Bay, Wainia, Rovo Bay, Mapuna



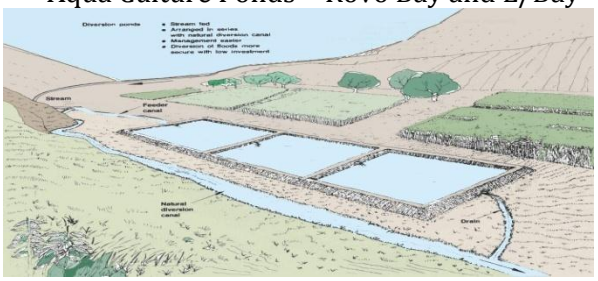
4. Road including drainages – New road realocation – L/Bay to Foreland


Longitudinal Road Section

5. Bridges –Yevali River



6. Sedimentation Ponds Transformed into Aqua Culture Ponds - Rovo Bay and L/Bay



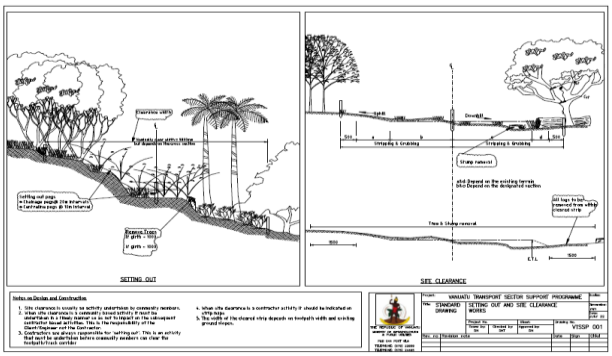
PLAN & SUSTAINABILITY |

PWD is currently working with PACSAP in producing a climate proofing infrastructure design guideline for Vanuatu.

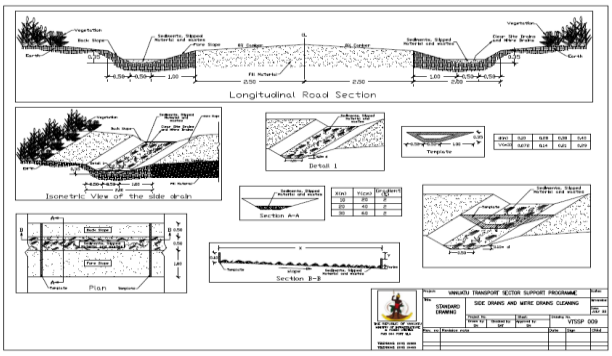
Communities involvement from its design, implementation and maintenance.

Design of works

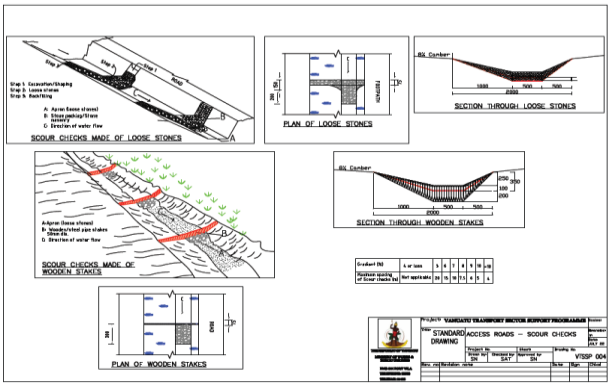
Road and drainage



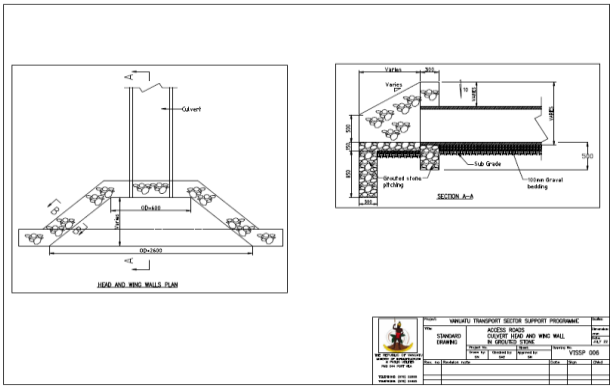
Road Clearance



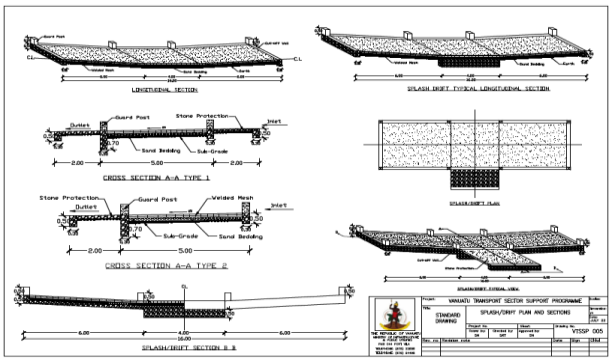
Road Cross Section & Side Drains



Erosion Control Scour Checks



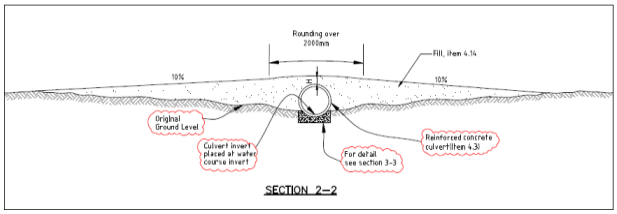
Culvert Headwall & Wing wall



Shows Slash & Drift Crossing

S/N	Culvert Diameter, O.D (mm)	Excavation Width, B (mm)	Excavation Depth, D (mm)	Space between multiple culverts, Min. (mm)	Minimum fill Cover, H (mm)	Bedding Material (mm)
1	450	OD + 600	Varries	150	300	Gravel (item 5.2), Sand (item 4.14) Class lean concrete (item 4.11.1)
2	600	OD + 600	Varries	300	400	Gravel (item 5.2), Sand (item 4.14) Class lean concrete (item 4.11.1)
3	900	OD + 600	Varries	450	500	Gravel (item 5.2), Sand (item 4.14) Class lean concrete (item 4.11.1)
4	1000	OD + 600	Varries	600	600	Gravel (item 5.2), Sand (item 4.14) Class lean concrete (item 4.11.1)
5	1200	OD + 600	Varries	600	700	Gravel (item 5.2), Sand (item 4.14) Class lean concrete (item 4.11.1)
6	1500	OD + 600	Varries	600	800	Gravel (item 5.2), Sand (item 4.14) Class lean concrete (item 4.11.1)

TABLE FOR VARIOUS CULVERT SIZES



Shows Culvert Crossing Specifications & Drawing

BEST PRACTICES |

PWD under the PACCAP project will mainstream climate change at the national level by developing infrastructural climate proofing designs and standards and incorporate climate change into the PWD Corporate and Annual work plans.

PACC Vanuatu envisaged that the demonstration guideline based on the documentation of the different implementation stages will focus on mainstreaming climate change at the community level and inform mainstreaming at national level on how to mainstream climate change in the area of roads and drainages and building resilience into coastal communities in Vanuatu.

The Community based adaptation approach blended by PACC Vanuatu with National technical guidance from the appropriate government departments to mainstreaming climate change at the community level through community empowerment has provided a platform in which to build community ownership, community participation, project sustainability, project up scaling and replication.

LESSONS LEARNED |

The Vanuatu PACC PMU through the different stages of the project over the years have learned a lot on how to implement a climate change adaptation project on the ground. Based on the experiences gained, it is now realized the following steps will be used by the PMU to implement another adaptation project;

1. Ground truthing
2. Setup Vanuatu Project technical team (necessary departments that needs to input into the project)
3. Preliminary Appropriate Adaptation Options Technical Designs
4. P3DM workshop, Community V&A assessment report , Socio economics report, Implementation plan report and Environmental Impact Assessment.

5. Implement physical works on the ground.
6. Handing Over

Following these steps will ensure that all the necessary community consultations and assessments are done and reports are completed within the first six months of the project and physical implementation phase follows immediately. This will save a lot of time and also cuts down on community consultation cost.

WAY FORWARD |

Following discussions between PACC coordinator and the Manager of PWD PMU and Manger PWD Operations it is now clear that PWD is currently working with PACSAP in producing a climate proofing infrastructure design guideline for Vanuatu. PWD stress that PACC Vanuatu should not duplicate this work and also PACSAP will continue to mainstream at the National level and that PACC to mainstream at Provincial and Community level.

PWD has made it clear that PACC will not produce any guideline on climate proofing road and drainage design and specifications as PACSAP and PWD are already in the process in procuring a climate change expert to execute this work and then mainstream it into the National level and also into the Ministry of Infrastructure and Public Utilities (MIPU) corporate plan and PWD's annual business plan. These also cover all the new projects that will be executed during the future.

PACC Vanuatu has noted that this matter might cause some minor alteration to the projects log frame especially on Outcome 01 mainstream therefore the team resolved that PACC Vanuatu to focus in mainstreaming at the community level by building resilience in coastal communities in the area of road, drainage and coastal ecology. PACC Vanuatu envisaged that technical or proper know how of building road and drainage using community labor based methods to be documented as the PACC demonstration guideline. The demonstration guide will also include soft adaptation measures that combat coastal erosion and landslides that use community labor and community aqua culture farming as means for food security and also as a commercial activity.

The PACC plus fund will be utilized to construct the proposed road relocation and the GEF fund will cover other road works, the soft adaptation measures and the community aqua culture demonstration works. The actual works that will be executed will be confirmed after the tender process when we receive cost from the contractors. The estimated duration to complete all these works will be not more than eight months and if work commences in quarter 3 2013, then completion should happen in quarter 1 2014. The contractor will submit a work program and we should be able to have and exact completion date.

For more information

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