

**TECHNICAL ASSISTANCE TO THE  
PUBLIC WORKS DEPARTMENT  
EDF PROJECT # 9.ACP.VA.02 – PWD MAINTENANCE TRAINING PROJECT**

Site visit report to Malekula

19-21 March 2007

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# 1 Agenda.

Dates : from 19 to 21 March 2007

Purpose: organize 2007 activities.

Day 1 : arrival at Norsup 07.45, working session with staff

Day 2 : surveys

Day 3 : take off at 09.00

Mission of André Iatipu and Luc Grandjean

# 2 Meeting

Purpose of the meeting is to review the surveys and prepare the contracts

Attendance :

- Jimmy Johnson, head of division
- Fred Siba, engineer
- Attis , senior foreman roads:
- Kate Johnson, technical assistant (VSO)

Writing down contracts according to the site surveys :

- one cattle grid to be cleaned



*Illustration 2.1.: buried cattle grid*

- one river crossing
- one culvert with gabion works
- one culvert

- one culvert

### 3 Site visit to Bethel area

Visit of the sites surveyed and meeting with the communities.

After the presentation of the contract, some community representatives did sign the contracts and accepted to complete the works within 2 weeks.

### 4 Survey : Loop

A comprehensive survey using a metering wheel has to be done by Works Division staff. Here below, some findings.

#### Drainage MDC area

Water coming down from Works division loop accumulates and soils the shopping area. Water is also damaging the road surface when crossing the road.

So there is a need to find a way to drain the place.

#### Right side – towards Litslits

A drain could be open on the right side of the road (towards Litslits) , on 116 m, then, a culvert crossing could channel the water alongside the road to the fishery jetty.

The jetty is 540 m away from the main road. The drain could be opened on 350 m and that water could be diverted in a low land area.

Being on the jetty, we took the opportunity to look at it.

The jetty was built with 2 masonry walls, filled in between with stones. Time and bad weather did destroy quite everything, leaving one wall on 16 m, 1 m height. The damaged section is 41.6 m long, ending with 2 m height. Jetty width was 4 m.

All the stones are still in place. Rebuilding the jetty means rebuild the 2 walls on 57 m, average height 1.5 m, thickness 0.75 m, so 130 m<sup>3</sup> of masonry. Materials for same could be 20% of mortar, 26 m<sup>3</sup>, which means 260 bags of cement and 26 m<sup>3</sup> of sand.

#### Left side – market and Agricultural department

Water is stagnant alongside the road in front of the market and in front of the school / Agricultural department.

The only way to drain the road would be to open drain across the fields and reach the sea or the marsh lands. Drain could be 1 m wide for .5 m deep. One landowner has been informed and the Works Division will have to follow up the issue.

#### Senal Junction

Water coming down from the loop crosses the road, damaging the road surface and stagnates at the junction, on both sides.

There is a concrete structure crossing the road, 0.2m thick concrete walls spaced by 0.8m , covered with slabs (one reinforcement bar is out and bended over the road surface, threatening the tyres passing over).

Outlet doesn't seem to have been cleared and water is not drained off to the sea.

Inlet is completely buried under sediments.

It could be a good idea to clean and put back the crossing culvert in working condition, to manage for water coming from the left side of the loop. For the other side of the loop road, a new concrete crossing culvert could be necessary.

first thing to do is to check whether or not, opening a drain to the sea is feasible.

### Down from Province to PWD

Just before the Police residence, a thalweg<sup>1</sup> drains large amounts of water. This water, instead of running across the road, has to be channelled to the right side of the road. A concrete structure has to be build to cross the drain and access the provincial workshop.

## 5 Lambumbu

Grass has been cut 3 weeks ago on this road, using a slasher.

On some sections, there is a need to reshape the road and to bring new material (gravels). A detailed survey is required with estimation on the volume of gravel needed, by location / section.

Gabion works and culverts are cluttered with vegetation and have to be inspected for maintenance.

## 6 Office Works

### 6.1 Rates for works contracted to a community (reminder)

After the surveys and having discussed the acceptable daily yields for one man day, rate for earthworks has been revised.

Description	Unit	Rate (VT)
open drain	m	100
culvert cleaning 100% blocked	m	1000
culvert cleaning 50 % blocked	m	500
<b>earthworks</b>	<b>m<sup>3</sup></b>	<b>500</b>
bush clearing	m <sup>2</sup>	8
grass cutting	m <sup>2</sup>	4

*Table 1: rates for labour based works*

Works division is requested to get signature of communities leaders and then request formal commitment from MTP-PIA.

<sup>1</sup>Thalweg (From Wikipedia, the free encyclopedia)

Thalweg (IPA: /ˈtɑːlˌvɛk/; a German word compounded from Thal — nowadays spelled Tal — meaning valley, and Weg, meaning way) is a term adopted into English usage for geography and geomorphology. It signifies the line of greatest slope along the bottom of a valley, i.e. a line drawn through the lowest points of a valley in its downward slope. It thus marks the natural direction (the profile) of a watercourse. The thalweg is almost always the line of fastest flow in any river.

The thalweg principle is the principle of determining national boundaries at the thalweg of a river separating two states. The precise drawing of river borders has been important on countless occasions; notable examples include the Arvandrud/Shatt al-Arab between Iraq and Iran, and the Danube in central Europe.

A thalweg in geology is a line representing the profile of a land surface, drawn as a series of cross-sections that crosses all contour lines at right angles.

The word thalweg is also used in hydrology. It refers to a line drawn to join the lowest points along the entire length of a streambed or valley. This is occasionally called a valley line. The term is also sometimes used to refer to a subterranean stream that percolates under the surface and in the same general direction as the surface stream.

## **6.2 Small works contract revision**

Form has to be revised :

- no minimum completion period but starting date needed.
- Cancellation of contract if works are not completed in due time has to be clearer for communities, presently, it is only a reference to the annexed "general conditions for small works" , art. 10.
- application specification : ?
- "General conditions for small works" annex has to be tuned to better match communities capabilities : terms are referring to contractor's, tenders, progress payments, insurance, ...
- etc.

## **6.3 Workshop preparation**

The final report from Kate Johnson and the new orientation taken by the project towards maintenance give an opportunity to organise a high level workshop.

The organisation could be :

- Venue on the PWD conference room ... date ....
- Meeting not lasting more than 3 hours, from 9 to 12 with 15' coffee break.
- Attendance :
  - EU representative : if the participation is effectively of a high level, the workshop could be a think tank for a future project under 10<sup>th</sup> EDF. In any case, the first part of the meeting will bring information and actual experience on daily life in a division and on road maintenance.
  - Ministry of Foreign Affairs and National Authorising Office : natural counterpart of EU representative and institution channelling EU funds to MIPU / PWD
  - Ministry (minister) of Internal Affairs and his advisers to deal with on employment policies, integration with REDI project and the role of the Provinces in the provincial road network management. Province SGs should be invited to attend the workshop
  - PSC
  - MIPU
  - MCC /MCA project. MCA compact focuses on maintenance, with a budget to buy equipment for same.
  - PWD staff
  - VSO volunteers and MTP- TA , VSO Programme manager
- Agenda
  - first part :
    - presentation on maintenance concept, definitions, limits (TA),
    - presentation of Malampa and Tafea networks (Division managers) : explanations on roads, population, traffic counts, importance of each section, year round practicability, road inventories, ...

- case studies (VSO Malampa & Tafea) : Norsup – Lakatoro rehabilitation (12/2006) and grading (02/07) and pothole patching (03/07), surveys for maintenance : few cases with pictures,
- 2007 budget and work program : one network - one division, need for common procedure and practices. Available funds per km (TA)
- maintenance budget : comparison with other countries. Towards a Road Maintenance Fund ? (TA)
- coffee break
- second part : mid term objective (5 years) as regard maintenance and operation section. Participatory work on the steps to take to reach this objective : human resources, equipment, budget and funding,

Presentation material will be prepared for the Divisional Managers meeting and presented again in a high level meeting to be organised end April / early May 2007

## 7 Conclusions

Time taken – more than one month - to get 5 small surveys on a limited section of a very accessible road is not acceptable.

If the bottleneck is the typewriting and drawings with a computer, it would be better to hand write the surveys, with hand made sketches.

To survey, a division need a car, time, measuring equipment, the technical capacity. (It is not obvious that any of those requirements is missing). And to have the willingness to work.

Technical capacity could be deal with under PE3, with all small equipment procurements, if any.

**Surveys are not only required for PE3 works. We are about to end 2007 first quarter and no survey is available for the works planned under the recurrent budget. Including PE3, each division is having to spend more or less 40 000 000 VT on a 200 Km network, which is 200 000 VT per Km. this is not little money, PWD could expect some work from its staff.**