

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

Site visit report to Malekula

12 – 15 December 2006

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1.1 Dates and agenda

Mission with Toumet , project accountant.

- 12/12/2006 : landing Norsup at 12.00, working session with Kate Johnson
- 13/12/2006 : workshop, stores and land yard visit, site visit to Norsup area
- 14/12/2006 : meeting with SG, site visit to Atchin
- 15/12/2006 : working session with Harry Arivet, departure 3 pm

1.2 Persons met :

- Lambert Maltok : SG Malampa Province
- Jimmy Wil : project officer, Malampa Province
- Palan : provincial planner
- PW division's personnel

1.3 Program of work :

- see how to set up routine and labour based maintenance activities, starting with comprehensive inventory of all roads assets, on a small section, to be continued by division's staff on the whole network
 - work on unit cost and works definitions
 - look at computers, software used and way people are using them, looking for any training need.
 - see how demonstration works are prepared : surveys, cost estimates ... according to the training they had end 2005
 - propose some documentation for the division, most of it in French.
 - look at the workshop how to improve the management of tools, spare parts, consumables, fuel
 - look with the officer how to improve reporting and feeddatabases
-

2 Notes

2.1 Documentation

Documentation, on 5 CDROM, has been given to VSO Kate Johnson. These CDROM have to be made available to division's manager, engineer and foremen. CDs will be made available to Tafea division in January.

On the CDs :

- ILO CD1 and CD2 training modules, made by ILO (in French)
- OpenOffice software, and other useful software (7zip, ...)
- Labour intensive manual, made by ILO
- various documentation picked up on the internet, related to Vanuatu and / or road maintenance, including bibliography listed in the inception report

- Kubuntu operating system, LiveCD. Very useful to restart a faulty PC running under Windows and back up the files. Could be used to try Linux too.

2.2 PE 3 demonstration works

Up to now, no detailed survey has been made. Personnel has been trained in 2005 on how to survey such rehabilitation works, they have to be requested to do the survey according to the standard and according to what they learned during the training.

My advise would be to allow the demonstration works **only** when acceptable survey and dossier are made available to project manager: sketches, bill of quantities, cost estimate, planning.

Demonstration could start with the survey itself, inviting other division's personnel to participate and build up the dossier. Up to now, demonstration works planned are rehabilitation works only, and **not** maintenance works.

2.3 Office work and equipment

2.3.1 Training needs

Office training needs have been compiled by Kate Johnson.

Post	Name		Trainings ¹	Typewriting	Word processor	Spreadsheet	Presentation
Divisional manager	Jimmy	Johnson	A E	3	3	3	3
Sen. Workshop Foreman	Harry	Arivet	D	4	4	x	x
Sen. roads Foreman	Atis	Tessie	B E	3	3	4	x
Roads Foreman	Anthony	Yosef	B	3	3	3	3
Civil engineer	Fred	Siba		1	1	1	1
Finance officer	Dephne	Edwin		2	2	3	3
Administration officer	Bessie	Behini		2	2	3	3
Roads Foreman	George	Morris	A D	x	x	x	x
Qualified Operator	Thion	Abel		x	x	x	x
Qualified Operator	Boyde	Blue		x	x	x	x
Operator	Joseph	Bangus	A D	x	x	x	x
Operator	Jean	Tonny	A D	x	x	x	x
Workshop Foreman	Lansen	Rit	C	x	x	x	x
Mechanic	Alick	Lecky		x	x	x	x
Mechanic	Camille	Kilitier	C	x	x	x	x
Electrician	Mark	Basil	C	x	x	x	x
Carpenter	Jeptha	Ores		4	4	x	x
Plumber	Daniel	Albert		x	x	x	x

Table 1: Office Personnel Skills.

1 (Tysa) Trainings : A = Road, B = Quality, C = Fleet, D = new machines courses by supplier, E = Budgeting 2006. / 1 = Highly skilled, 2 = skilled, 3 = average, 4 = basic, x = no skill

Vacant posts : Senior Utilities Foreman, Operator, Auto electrician.

Not everybody needs to be good at office work. From table above, it could be seen that the situation is quite good : finance and administration officers are skilled, foremen can use the computers.

2.3.2 Software

Computers, software, documents formats, PWD databases issues will be dealt with in a separate report. Some comments hereunder.

It was not checked if every software has its licence or not.

All computers are running Microsoft operating system, with Microsoft suite. Should all the licences be paid for, this is a misuse of 300 USD per computer as Open Source software proved to be as efficient and at no cost. Licence management is also, by far, easier.

In PWD, server public documents are poisoned by viruses, it should be the same on all the division's computers as no internet access is available to update an anti-virus, if any.

The issue of the document format should also be brought to the front. The ISO committee has released a norm for office documents, ISO/IEC DIS 26300, this norm is a warranty for inter exchange of documents.

Even, the European Union is now shifting to Open Document format as stated in this page : <http://ec.europa.eu/idabc/en/document/3428/5644> .²

Promotion of Open Document Exchange Format

Did you ever receive a document you could not open? Chances are the sender used a different programme or version than yours to create it. Open document exchange formats avoid users being locked in to particular products or technologies. For administrations this offers greater accessibility to their public-sector information and improved interaction with citizens and business.

What is Open Document Exchange Format?

Most of today's electronic office documents have been created by a few commercial software programmes and more often than not each one of these programmes has its own format. To allow users to process a document they need in many instances to have the same programme (and corresponding versions) or a filter that allows the document to be opened and modified.

Open document exchange formats would do away with this need. They remove dependency on products and technologies by using standardised formats that promise interoperability of document processing. Information exchange via documents being at the heart of any public sector activity, document interoperability becomes a central issue in any eGovernment strategy.

It is proposed to introduce Open Document format in the divisions (and OpenOffice software running on Microsoft Windows operating system) as a first step towards independence versus software editors and freedom to choose the most appropriate tool for office documents.

This will be done with CDrom despatched to divisions : OpenOffice software, French and English dictionaries and tutorials.

² This report is not the right place to discuss the issue, reader should refer to , for example, http://opendocumentfellowship.org/files/odf_and_competition_21.pdf or <http://www.itbusiness.ca/it/client/en/TechGovernment/News.asp?id=40593>

2.3.3 Information flows

Beyond this office skills assessment, the information flows, both ways, between PWD in Vila and the division has to be improved.

This is a matter of having the information, formatting it the right way and a matter of how to transfer it.

- Electronic exchange between the Department and the divisions does not exist.
- Information to PWD is very basic.

Information flows are part of management and this could be included in the coming MCA project³. If not, or in any case, information flows have to be improved, even for EU project only.

At the division level, things have to be drastically improved, starting from information production :

- in November 2006, the division did rebuild the road between Norsup and Lakatoro. The only report available shows few figures on fuel consumption and length re-gravelled.
- PWD should be entitled to know how many cubic meter of gravel has been put in place, at which cost : compensation for quarrying, fuel, running hour of every equipment, This should be compared to the survey done before the works started.

At the PWD, compilation of monthly data and analysis should be made available to division's manager.

2.4 Maintenance unit costs and definition

A file exists (see annex) which gives unit rates and definitions for maintenance activities.

At least, the roads have to be surveyed with those definitions in mind, to build up bills of quantities and cost estimates according to the definition and rates.

Once demonstration works will have been done with these definition and rates, some tuning could be made.

Road inventories are still very basic and need to be improved in order to know what kind of maintenance is required, with which intensity

- for grass cutting : is it on a very fertile soil, what is the height of grass, how much effort does it need to cut it down , ...
- there are road sections or regions with lots of sediments, and other with very little cleaning needs.
- etc.

Assets inventories are in the divisional manager job description (see annex).

2.4.1 Routine and labour based maintenance activities

Road maintenance is very easy to define : keep the drainage system in good condition, cut the grass, patch the potholes. At a certain frequency, reshape the road (grader).

All persons met agreed that road maintenance is not done up to now, works done are either roads opening or road rehabilitation. Preventive and routine maintenance is not done. Works are done with a fire fighting strategy, going from an emergency to a urgent political request.

The starting point is to define the work, to quantify it. Then comes the tendering and the control of work.

³ MCA Compact summary : ... (ii) institutional strengthening efforts in Vanuatu's Public Works Department.

2.4.2 Works / tasks definition.

Every person involved in the works has to have the same understanding of the expectations.

When talking :

- of grass cutting, one as to define the height of the stems, if the cut parts have to be left in place or removed (and then define the place to dump them) or burned.
- of ditched, remove all material and restore the initial shape, where to dump the removed material,
- of culvert clearing, where to dump the removed material

This is particularly important if the work is labour based or done with equipment, like using a tractor driven grass slasher

2.4.3 Bill of quantities

Bill of quantities have to be precisely done and work has to be well identified :

- starting point – end point – total length, in meter
- grass cutting : how wide on each side, how many square meters

It's not only a matter of metering from a map, initial survey is really a field job, with a need to identify all the tasks which could be :

- on some place, the road could not be at the standard, with no drainage system for example. On such place, the need to clear the vegetation could be related to road safety only or keeping the road open with removal of all small tree, avoiding to spend lot of efforts in uprooting large trees.
- uprooting a tree at a specific place or pruning large branches
- kind of vegetation to cut : bush or grass

2.4.4 Tendering

According to SG, some people on Malekula are in demand for work and used to reply to tender. Let's try.

2.4.5 Control of work

Like surveys, control of work has to be performed by Public Works Officers, to check that the works are done according to the specifications and allow payment.

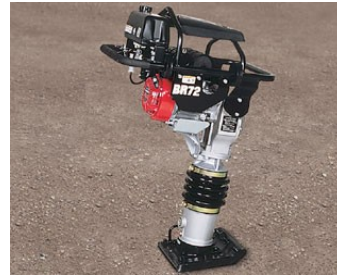
A written statement has to be made, joined to the invoice.

2.5 Maintenance equipment and procedures

Maintenance could be seen as labour based works.

This doesn't mean that no equipment is required specially for pothole patching.

It's still to be decided, in next steering committee for example, is the project could be reoriented towards maintenance and if some light equipment could be purchased : tractors with tipping trailer, dumper, small vibrating roller or vibrating hammer.



A target could be to set up 3 teams on Malekula, and 4 in Tanna, for example. Some works could still be contracted out, with equipment leased.

Procedures to contract out, with or without equipment lease, have to be checked.

2.6 Workshop improvements

2.6.1 Workshop

Presently, the workshop is in a bad condition : roof is leaking, walls are dirty, untidy look, ... In fact, people know where things are but the workshop badly need to be renovate/ refurbished and to benefit from tidy up activities. All scraped engines and iron stuff must be removed from the working area.

Mechanics are missing some handy tools, which could be purchased under PE3.

With the Senior Workshop Foreman, it has been agreed to start with the spare part store :

- repair the roof : buy new corrugated sheets and put them in place
- sort the spare parts : the ones which are no longer useful for Malampa division has to be tagged properly, packed and sent to Santo
- empty the store, repair the stair, wash the walls (high pressure), repair the cracks (cement), a fresh coat of paint in a light colour (white), put new neon lights
- repair or build new shelves : buy wood and nails, hire carpenter, ...

Senior Workshop foreman has to prepare a list of materials needed (corrugated iron sheets, wood, paint drums, brushes, ...) with quotations if the material could be purchased locally.

All works could be done by workshop staff, during working hours, in January, subject of material availability.

Once the store is renovated, it will be decided to shift to another section of the workshop.

2.6.2 Tools :

- set of tool box (although the New Holland yellow box and the two drive socket sets have to leave the store and be put in use !⁴) some small hand tools are required.
- electrical testing equipment
- valve remover, bearing extractor, piston ring clam and ring remover
- **good** hand tools for tyre repair
- protection equipment for arc welding

4 by the way, some new bolts, nuts and washer, rather large in size, are in a box and are not link with any equipment in Malampa's division. One has to check if they are the ones missing to fix the ripper on the bulldozer in Taféa's division ...

- small compressor (to be used on site)

There is no need to go for expensive tools (hose fitting press, injector tuner,...), as some could be available in other Malekula private workshops or work could be done in Santo (provided procedure allows and funds are available for shipment).

TA and procurement officer will look for quotations in Vila.

2.6.3 Consumables :

Oil and fuel storage is an issue in Malampa division.

- Fuel quality is very bad, mainly because fuel is stored in fuel and not allowed to settle, clogging up equipment filters. Handling is also a burden, no metering is possible.
- Oils are of only two qualities : for engines and for hydraulics, which is rather comfortable and reduces the risks of misuse. But storage is presently not good.

As a partial solution, for fuel

- the old 300 l tank on the D7 carcasse could be unbolt and fitted with a filter and a hose, to a stand in the workshop, to fill in the light vehicles.
- the trailer tank, which came from Santo, is not really practical ⁵. It could be fixed in a convenient place, shaded to avoid condensation, fitted with a filter and a meter, filled with drums and pump. It's is more convenient to use drums for mobile teams : easily loaded and unloaded from a truck, loader bucket, pick-up, ... , known capacity, ...

2.7 Visibility

According to a recent email received from NAO, EU stickers must be posted on new equipment.

TA will request stickers from EU delegation and send them to the divisions.

2.8 Meeting with Malampa S.G.

After a presentation on what maintenance is (please refer to inception report or notes below) discussion focussed on the way to involve local population and communities in roads maintenance activities.

After the discussion held with SG, it seems that some routine maintenance works could be carried out on a contract base, after local public notice and tendering process. Province's administration itself is contracting out, after tendering, maintenance of 10 administrative compounds : one year service contract.

So, at least for basic activities like culvert clearing and bush / grass cutting, the works can be tendered and contracted out.

⁵ No towing equipment, too big for daily maintenance of mobile team (so always ¼ or half full), ...

3 Annex : PWD Unit Rates for Small Works Contracts

Item no.	Description	Unit rate
1.0	Grass cutting (community) Grass cutting	16,000vt/km 4.0 vatu/m2
2.0	Pothole batching Seal road Earth road Gravel	1,500vt/m2 150vt/m2 200vt/m2
3.0	Bush clearance (including Tree cutting)	20,000vt/km
4.0	Landslide clearance	2,000vt/m3
5.0	Removal of boulders on river crossings to and create access for vehicles	1,000vt/m2
6.0	Clearing of blocked Culvert 400mm – 600mm dia culvert 600mm – 800mm dia culvert 800mm – 1000mm dia culvert 1000mm – 1200mm dia culvert	2,500vt/m 2,800vt/m 3,200vt/m 3,500vt/m
7.0	Clearing of Open drain 400mm – 600mm wide 600mm – 800mm wide 800mm – 1000mm wide 1000mm – 1200mm wide	100vt/m 120vt/m 140vt/m 160vt/m
8.0	Concrete works (Labor) Concrete works (labor + materials)	3,000vt/m3 21,000vt/m3
9.0	Gabion (install) 2mx1mx1m 2mx1mx0.5m 1mx1mx1m	2000vt per basket 1000vt per basket 1000vt per basket

NOTE:

1. The above rates were by the Operations section of PWD and effective on the 15th July 2004.
2. These rates will be reviewed on October 2004 (3rd Division Managers Meeting).
3. These rates are subjected to change by PWD Senior Management and according to inflation rates.

Approval of RATES..... Director – PWD
(Johnson Binaru IAUMA).

Date: 15th JULY 2004 at 4:00pm. – PWD Head Office.

4 Annex : PSC FORM 2-1 Divisional Manager job description

Public Service Commission JOB DESCRIPTION			
1	Job	Title	Divisional Manager
		Location	In the Provincial Head Quarter
2	Salary Level	P16- P17	
3	Post Numbers	6132 (Shefa) 6164 (Sanma) 6204 (Malampa) 6232 (Tafea) 6259 (Penama) 6282 (Torba)	
4	Ministry	Infrastructure and Public Utility	
5	Department	Public Works	
6	Purpose	Manage, Monitor and Control of works in the Division.	
7	DUTIES AND RESPONSIBILITIES		
7.1	Preparation and successfully implementation of work programs.		
7.2	To prepare cash activity plans and submits quarterly.		
7.3	To authorize purchase of stores required.		
7.4	To liaise with communities / contractors for small maintenance work.		
7.5	Supervise and monitor work of contractors.		
7.6	Send monthly report of the operation to Manager Operation or Director.		
7.7	To carry out inspection on contracted works. Certify completed works.		
7.8	To assist the Central Tender Board to carry out evaluation on depreciating plant and vehicle (Shefa)		
7.9	To carry out inventory on PWD assets every year.		
7.10	To carry out any other duties as required by the Director or the Director General.		