LABASA, NAMARA RUBBISH DUMP PRACTICAL EXPERIENCE REPORT

Background information

The project is known as the improvement of the Labasa Town Dump to better cope with Climate Change Impacts. The project was funded by AusAid through SPREP for the upgrading of Labasa dumpsite to a level that can withstand natural disaster and climate change such as flooding and rising sea level.

Labasa dumpsite is located on a mangrove and much bigger than Ranadi (300mx100m at its wider end and 50m at its narrow and front end). With regards to Ranadi is smaller (aprox. 2020m x 1020 at its wider end and 100m at its front width.

The 10 days of work with Mr Fafetai Sagapolutele at the Labasa dump was purposely for a practical work experience. This means that after acquiring that knowledge it is expected that the officer to take initiatives along with the J-PRISM and Honiara counterparts to implement the improvement of Ranadi Landfill.

The trip was organised by J-PRISM Project and the JICA office in Honiara to enhance the capacity of landfill management especially while gearing towards the implementation of Ranadi Landfill Rehabilitation plan.

Improvement Work

a. Base Levelling

- Sampling
- Ground base levelling

b. Setting of cell base 1.5m above water table

- Cell 1, Cell 2 and Cell 3





c. Formation of embankments and Road access

- Cell embankments
- Covering of all embankment with gravel and clay soil
- Connection of all embankment



d. Leachate pond base set at 50cm

- Base levelling
- Formation of Pond embankment
- Base filling with clay soil
- Base compaction
- Completion of the leachate pond



e. Leachate system

- Leachate collection pipe(400mm diameter)
- Gas venting pipe(150mm diameter)













f. Road Access

- Main access road runs on all embankment
- One way road access
- Road is much higher than waste.
- Platform on embankments for vehicles to use during dispposal





g. Participation

SOLOMON ISLANDS – The participation of HCC Landfill supervisor has made only because of the need to improve the work at the Ranadi landfill. And also, the same method which was used in Labasa landfill has been proposed initially for Ranadi but fails to be implemented. However, since the JPRISM Project is finishing in 2016 it is expected that such participation will build confidence of JPRISM team Solomon to start doing some work especially Landfill management.

Also, there is one participant from Fiji, Labasa town council. The person is responsible to complete all remaining work and the continuous maintenance of the Namara Landfill.

h. Lesson Learn

1. Location of Labasa dumpsite is similar to Randi wetland. Therefore the same method should be used for Ranadi,
2. Labasa dumpsite only accept solid waste disposal and therefore it is easy to manage. Unlike Ranadi accept solid waste disposal, hazardous waste and sewage. In this regard Ranadi has a very limited space to accommodate such waste and also very challenging to properly manage. Separate facility area for such waste is important to properly manage before entering into the natural environment.
3. JPRISM deals with the rehabilitation of dumpsites focusing on solid waste disposal while sewage, healthcare waste and disposal of other hazardous waste are not covered. Therefore, there is a need to discuss with interest donors to fund the management of disposal such waste. It is important that responsible authority and government ministries to work collaboratively to address this issue
4. Ranadi waste disposal facility master development plan was develop after the Practical experience. This plan is yet to be confirming whether it is accepted or not. Currently the JPRISM project coordinator with the JICA experts and JICA office still having internal discussions for further recommendation to this Plan.
5. Also, I develop the improvement operation with hiring of Heavy equipment and construction materials need. It requires all counterparts input.
6. Ranadi is surrounded by private residences, industrial development, wetland ecosystem, estuary and waste pickers. Its surrounding environment has potential environmental, social and health impacts already and therefore good approaches are needed.
7. Ranadi is vulnerable to climate change impacts such as flooding and sea level rise. The structure for Ranadi must also address those impacts in order to maintain its operation.

RANADI REHABILITATION PLAN



Note.

The above Master Plan is still under discussion by the JICA office, JPRISM coordinator and Experts. Once they finalise their recommendations then we should be implementing the plan. It is inappropriate to have all these different waste types in the Landfill such as solid waste, sewage and hazardous together. However, there is no choice I can think of as urgently required. There could be alternative ways to have different management sites which may be possible in the future.

1. Administration and material recovery area)

1. Waste management office
2. Materials recovery area
3. Leachate pond

2. General solid waste disposal area

1. Cell 1(phase I.)
2. Cell 2(phase II.)

3. Other Waste development disposal

1. Sewage
2. Healthcare waste incineration
3. Expire goods/Asbestos burial

OPERATIONAL IMPROVEMENT WITH HIRING OF HEAVY EQUIPMENT AND MATERIALS FOR PHASE 1

	Items	Machinery	Covered by	item cost	Estimated cost	woking days	Work Detail
1	**Base Leveling**						
		Excavtor	Hiring	$1600.00 per/hr	$12,800.00	(8hrs)1days	Excation of waste for embankment & base leveling
		Bulldozer	Hiring	$1800.00 per/hr	$1,400.00	(8hrs)1 days	cuting and pushing of the waste for appropriate base
2	**Base compaction**						
	Compaction	compacter	Hiring	$1200.00 per/hr	$9,600.00	(8hrs) 1 day	compressing after cutting and leveling
	Clay soil filling	dump truck/loader	HCC equipment				clay soil covering
	Compaction	compacter	Hiring	$1200.00 per/hr	$9,600.00	(8hrs)1 day	compacption of clay soil to form a soild base
	Grading	Grader	HCC equipment				grading for finaly smoothing
3	**Embankment**						
	excavation	Excavator	Hiring	$1600.00 per/hr	$12,800.00	(8hrs) 1days	construction of embankments
	Clay soil filling	Loader/dump truck	HCC equipment			(8hrs) 1 days	covering embankment with clay soil before compaction
4	**Road access**						
	Clay soil filling	Loader/dump truck	HCC equipment				filling of clay soil after embankment compaction
	Graveling filling	Loader/dump truck	HCC equipment			(16 hrs) 2 days	river gravel or coral gravel to be used ontop of embankment for road
	Compaction	compacter	Hiring	$1200.00 per/hr	$9,600.00	(8hrs) 1 day	A compacter is useful for good compaction for the road access
	Grading	Grader	HCC equipment				cutting and grading of the road surface
5	**Leachate Pond**						
	Embankment	Excavator	Hiring	$1600.00 per/hr	$12,800.00	(8hrs) 1 day	construction of leachate pond with embankment
	Base leveling	Bulldozer	Hiring	$1800.00 per/hr	$14,400.00	(8hrs) 1 day	leveling of the base by the bulldozer
	Compaction	compacter	Hiring	$1200 .00 per/hr	$9,600.00	(8hrs) 1 day	compaction of eixsting waste surface after base leveling before applying clay soil
	Clay soil filling	dump truck	HCC equipment			(8hrs) 1 day	filling of the base with clay soil which is a very good material
	Compaction	compacter	Hiring	$1200.00 per/hr	$9,600.00	(8hrs) 1 day	final compaction of cell base to prevent leachate penetration
6	**Sewage pond**						
	Base leveling	Bulldozer	Hiring	$1800.00 per/hr	$14,400.00	(8hrs) 1 day	base leveling of the existing waste before compaction
	base Compaction	compacter	Hiring	$1200.00 per/hr	$9,600.00	(8hrs) 1 day	based compaction is very important before aplying clay soil
	base filling with clay soil	dump truck/loader	HCC equipment			(8hrs) 1 day	spreading of clay soil by wheel tire loader before final compaction
	Compaction	compacter	Hiring	$1200.00 per/hr	$9,600.00	(8hrs) 1 day	final compaction of the base
7	**Leachate Pipe**						
	laying of pipe	workers needed	HCC workers			(8hrs) 1 day	HCC workers to participate in this proccess
	gas venting pipes	workers needed	HCC workers			(8hrs) 1 day	HCC workers to participate in this proccess
8	**Rocks**						
	pipe covering with rocks	der/dump truck/work	HCC equipment			(8hrs) day	workers are needed to do this job with dump truck and Wheel tire loader
					$135,800.00	**13 days(104 hours)support?**	
						10 days(80 hours HCC)	
9	**Materials**	**Quantity**	**Covered by**	**unit cost**	**Estimated cost**	**supplier**	
	waste pipe						
	waste Pipe	19 (150mmx5.8m)	HCC	$800.00	$15,200.00	paid	
	drums	20		$50.00			
	culvert	30(1mx200mm)		$1,700.00			
	Screen Rocks	100 cu					
	clay soil	1000 cu					
	sand		Solfis				
	gravel	1000 cu					
	incoming /existing waste		free material				

Note:

The above cost of hiring heavy equipment as per hour for hiring of bulldozer, compacter and excavator are quoted from Hatanga Company. Also, where indicate hiring means require support? And in green it indicates HCC support in terms of machinery. However, for construction materials I would like to discuss it with the counterparts before finalising.