Resettlement Planning Document

Resettlement Plan (NR 56 and NR 68-B) Appendix 2
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Cambodia: Greater Mekong Subregion: Northwestern Provincial Road Improvement Project

Appendix 2

PREPARING THE TRANSPORT INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE PROJECT

REPORT:

REPLACEMENT COST UPDATING

(NATIONAL ROAD 68 AND 56)

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Updating Replacement Cost Study
Transport Infrastructure Development and Maintenance
National Road 68 and 56

1. Objective

The updating study is to ensure full restoration value of the affected/expropriated assets by national road development project (NR56 and NR68).

2. Methodology

The updating was conducted from March 01-08, 2009 with following methodologies:

- Do a canvass survey of construction materials in the project area;
- Interview contractors and builders to determine the current cost of labor in the construction sector;
- Discuss with government officials involved in resettlement preparation and implementation (IRC);
- Interview local (commune and village) officials, including residents, to find out the current market rate of fixed assets, especially land, in the project area as per record of recent sale transactions.

3. Availability of Construction Material in the Project Area

Construction materials were updated to reflect current market value. Below is table of construction material price with comparison of last year rate.

Main Construction Material Suppliers in the Project Area

Item	Description	Qty	Unit	Price (US$)	Price (US$)	Price (US$)	Average price	Average for RCS	Average for RCS
				Kralagn	Samroung	BMChey		2008	2009
	CEMENT								
1	Elephant cement	1	ton	84.00		79.00	81.50		
2	Mountain cement	1	ton		83.00	77.00	80.00		
3	Diamond cement	1	ton		84.00	77.00	80.50		
4	Camel cement	1	ton	82.00	83.00	77.00	80.67	80.25	80.67
	STEEL								
5	Vietnam brand name Ø6,8	1	ton	660.00	720.00	630.00	670.00		
6	Vietnam brand name Ø10	1	ton	650.00	660.00	640.00	650.00		
7	Vietnam Ø12, 14, 16 or 18mm	1	ton	650.00	660.00	640.00	650.00	1,141.11	656.67
	PLYWOOD	1							
8	Paper plywood	1	piece	4.47	5.00	4.86	4.78		
9	5mm plywood	1	piece	6.94	8.50	7.78	7.74		
10	10mm plywood	1	piece	17.22	15.00	10.56	14.26	9.40	8.93
	FLOORING								
11	Chinese floor tile with low quality	1	m2	6.50	4.80	4.03	5.11		
12	Chinese floor tile with medium quality	1	m2	8.00	7.00	6.70	7.23	7.67	6.17
	DOOR and WINDOW								
13	Wooden door 800x2000	1	set	65.00	64.00	100.00	76.33	66.60	76.33
14	Plastic door	1	set	30.00	32.00	30.00	30.67	31.19	30.67
15	Wood window, Duong Chem: 80x1200	1	set	24.00	25.00	22.22	23.74	36.23	23.74
	ROOF COVER								
16	Tile	1	pice	0.45	0.45	0.42	0.44	0.45	0.44
17	Thatch/palm leaves	1	piece	0.15	0.13	0.17	0.15	0.14	0.15
18	Steel sheet (2meters long)	1	sheet	3.00	3.50	2.36	2.95	3.46	2.95
19	Fiber cement	1	sheet	1.70	2.00	2.22	1.97	1.84	1.97
	OTHERS								
20	Clay brick	1	piece	0.05	0.05	0.06	0.05	0.10	0.05
21	Gravel 1x2	1	m3	18.00	25.00	18.00	20.33	34.31	20.33
22	Gravel 4x6	1	m3	12.00	20.00	10.00	14.00	27.75	14.00
23	Sand	1	m3	10.00	9.72	10.00	9.91	20.35	9.91
24	Stone for fencing 20x20	1	m3	12.00	18.00	8.33	12.78	8.43	12.78
25	Concrete pipe for well	1	pipe	12.50	15.00	15.00	14.17	14.50	14.17
26	Concrete pipe for drainage d.800	1	pipe	40.00	48.00	40.00	42.67	45.33	42.67
27	Soil filling	1	m3	1.50	1.80	1.50	1.60	1.63	1.60
28	Concrete fence column L=2000	1	post	4.50	5.00	4.00	4.50	4.83	4.50
	WOOD AND BAMBOO								
29	Wood for column and roofing structure	1	m3	420.00	420.00	430.00	423.33	468.56	423.33
30	Wood for other structure	1	m3	420.00	420.00	430.00	423.33	422.00	423.33
31	Bamboo L=3000mm	20	pieces	2.00	2.00	1.50	1.83	2.10	1.83

4. Cost of Existing Structure and Non-structure

4.1. Land Market

Last year property market is notably booming. However, this booming is now burst because of world economic downturn. It is estimated that property market in city center (Phnom Penh) is dropped by about 25% and 30% in the outskirts (Tim Sturrock, Boom to bust in Cambodia, http://www.atimes.com/atimes/Southeast_Asia/KC07Ae01.html).

From interviewed with village heads it is noted that no buyer come to buy land since world economic crisis and border conflict with Thailand. For those, who need money for their children marriage, medical care or pay back to bank loans they would sale their residential or farm land at cheaper price (30% to 60% from last year price). Land people grab (forest cleared land for agricultural purpose, usually a bit far from national road) is now sell at 1$/m2 and lower, according to interview with Mr. Vat Hann (Commune Chief, Banteay Chmar Commune).

Below table is summary of finding for each type of land price.

No.	Category	Average Price ($) per m2	Average Price ($) per m2
		2008	2009
1	Agricultural land along existing road	3.8	2.2
2	Agricultural land at bypass road	2.1	0.97
3	Residential land	10.7	7.2
4	Resident-cum-commercial	26	19
5	Commercial	85	62.5

4.2 House and Stall

Affected structures are survey to see all materials used. In this study bill of quantities of existing structure were developed to estimate their cost.

To simplify compensation process of the project, housing structures are classified into 4 types according to roof structure material: I). thatch/leaves; II). metal sheet/fiber cement; III). tile; and IV). concrete. Below is cost of affected structure based on bill of quantity survey of structure along the development strip.

Type		Wall	Column	Floor	No. of Floor	Unit Cost 2008 ($/m2)	Unit Cost 2009 ($/m2)
I Thatch/ Leaves/ Plastic	1A	No	Pole	Soil	Single	6.70	6.80
	1B	No	Pole/ Wood	Wood	Single	12.00	12.20
	1C	Thatch/ Leaves/ Rough Wood/Plastic	Pole/ Wood	Soil	Single	13.80	13.90

Type		Wall	Column	Floor	No. of Floor	Unit Cost 2008 ($/m2)	Unit Cost 2009 ($/m2)
	1D	Thatch/ Leaves/ Rough Wood/ Plastic	Pole/ Wood	Wood/Lean Concrete	Single	17.00	17.6
II Metal Sheet/ Fiber cement	2A	No	Pole/ Wood	Soil	Single	15.10	14.20
	2B	No	Pole/ Wood	Wood/ Bamboo/ Lean Concrete	Single	22.80	22.00
	2 C	Thatch/ Leaves/ Rough Wood	Pole/ Wood	Soil	Single	26.90	26.30
	2D	Metal/ Fiber Cement	Pole/ Wood	Soil	Single	31.50	30.10
	2E	Metal/ Fiber Cement	Pole/ Wood	Wood/ Lean Concrete	Single	34.00	33.80
	2F	Thatch/ Leaves/ Rough Wood	Pole/ Wood	Wood/ Lean Concrete	Single	35.00	34.40
	2G	Wood	Wood	Lean Concrete/ Wood	Single	60.70	60.00
	2H	Brick	Wood/ Concrete	Concrete/ Tile	Single	64.25	62.80
	2I	Wood	Wood/ Concrete	Wood	House on still	120.80	117.50
	2J	Brick/Wood	Wood/ Concrete	Wood/ Concrete/ Tile	Ground Floor and First floor	147.55	146.50
III Tile	3A	Wood/ Brick	Wood/ Concrete	Wood/ Concrete/ Tile	Single	126.40	116.00
	3B	Wood	Wood/ Concrete	Wood	House on still	128.65	122.70
	3C	Wood/ Brick	Wood/ Concrete	Wood/ Concrete/ Tile	Brick for ground floor and Wood for first floor	159.20	153.30
	3D	Brick	Concrete	Concrete/ Tile and concrete slab	Brick ground floor and brick first floor	179.35	175.00
IV Concrete	4A	Brick	Concrete	Concrete/ Tile	Single	184.90	176.5
	4B	Brick	Concrete	Concrete/ Tile	Ground Floor, First Floor and Second Floor or more than 2 stories	193.45 For every affected floor	190.00 For every affected floor

4.3 Other Structure

Not different from housing and front stall other structures are also calculated based on market price of construction material survey along the project area.

No.	Other structure	Unit	Unit Cost (US$)	Unit Cost (US$)
			2008	2009
1	Dug Well (diameter of 800mm and 6-10 meters dept)	1	120.00	120.00
2	Dug Well; soil/ no concrete pipe	1	80.00	80.00
3	Pumped well	1	320.00	320.00
4	Grave (earth)	1	100.00	100.00
5	Grave (concrete)	1	2,500.00	2,350.00
6	Chedey/stupa (2x2m)	1	3,600.00	3,600.00
7	Forecourt or patio/ Concrete	1m2	8.50	8.00
8	Concrete block/ Terracotta	1m2	6.50	6.50
9	Culvert (diameter of 600mm)	1	32.50	32.00
10	Culvert (diameter of 800mm)	1	58.50	42.50
11	Dug pond	1m2	12.00	12.00
12	Front metal roof	1m2	15.00	15.00
	Labor cost to move structure			
1	Labor to remove wooden passage into house	ls	2.50	2.50
2	Labor cost to remove wooden bridge (3-5 meters wide)	ls	97.50	97.50
3	Labor cost to move stall away from COI	ls	15.00	15.00
4	Labor cost to move house from COI (Less than 10 meters)	ls	120.00	120.00
5	Labor cost to move house from COI (More than 10 meters)	ls	195.00	195.00
6	Labor to move gate (wood, steel, other wood or steel post)	ls	10.00	10.00
	Fence and Gate			
1	Weak fence/ Loose fence (bamboo or wood)	1 LM	0.22	0.22
2	Bamboo/ round wood post with bamboo bar	1 LM	1.00	1.00
3	Wood post with wire or bamboo bar/ wood bar	1 LM	1.25	1.25
4	Wood post with no bar (less than 1 meter space)	1 LM	2.60	2.60
5	Wood post with no bar (1-2 meters space)	1 LM	1.20	1.20
6	Wood post with no bar (more than 2 meters)	1 LM	0.25	0.25
7	Wood post with wood bar and grille/ Bamboo grille	1 LM	3.25	3.25
8	Concrete post with wire bar	1 LM	3.50	3.50
9	Brick of 100mm; concrete/brick column; wooden grille	1 LM	9.20	9.20
10	Brick of 100 or 200mm; concrete/brick column; steel grille	1 LM	16.30	16.30
11	Metal sheet/ Wood plank	1 LM	7.15	7.15
12	Brick of 100mm; plastering both sides	1 LM	21.00	21.00
13	Pagoda fence	1 LM	29.00	29.00
14	Gate of brick column and steel doors	Set	68.00	68.00

4.4 Crops and Trees

Crop and tree will be calculated based on harvesting yield and maturity time of different tree species to be compensated discussed with horticulture department and agricultural department of Odor Mean Chey province. Formula for fruit tree cost calculation is: Yield x Number of harvesting x Market price x Number of years to be mature.

The price of fruit is vary depend on season i.e. mango is cheaper in this season as there are lots of mango supply to the market.

No.	Crop type	Unit	Unit Cost (US$)	Unit Cost (US$)
			2008	2009
1	Rice	m2	0.08	0.08
2	Lemongrass	Clump	0.87	0.87
3	Pumpkin	1m2	0.90	0.90
4	Mint/ Basil	1m2	0.10	0.10
	Tree type			
1	Mango	tree	60.00	45.00
2	Coconut	tree	32.00	32.00
3	Tamarin	tree	30.00	28.00
4	Jack	tree	35.00	30.00
5	Custard apple	tree	6.00	6.00
6	Sugar cane	tree	0.03	0.03
7	Palm tree	tree	45.00	45.00
8	Teuk Doh Kor	tree	30.00	32.00
9	Papaya	tree	3.00	3.00
10	Banana	tree	0.90	0.90
11	Guava	tree	5.00	5.00
12	Plum	tree	10.00	12.00
13	Cashew	tree	11.00	11.00
14	Bamboo	thicket	15.00	15.00
15	Eucalyptus/ Acacia	tree	8.00	8.00
16	Ampil Teuk	tree	7.50	7.50
17	Chan Kiri	tree	18.00	18.00
18	Krasang	tree	16.00	16.00
19	Kantuort	tree	3.00	3.00
20	Roluos	tree	1.50	1.50
21	Kgnork	tree	4.00	4.00
22	Trasek	tree	1.50	1.50
23	Jujube	tree	3.00	4.00
24	Thkov	tree	9.00	9.00
25	Kapok	tree	1.50	1.50
26	Rum chek	clump	0.43	0.43
27	Others	tree	5.00	5.00

Trees in the above table are equal to or more than 5 years. It is suggested that, during project implementation, all rate of trees can be adjusted according to their age as following:

1. from 1-3 years old- should get compensation 1/3 of it full price (as it can be re-plant)
2. from 3-5 years old- should get only 2/3 of full price
3. more than 5 years old- should get full compensation from above table