

## **APPENDIX-E**

### **Future Traffic Demand Forecast**



Matema - Cuamba

Year	Remarks	With Project														Without Project													
		Traffic Volume							Trend							Traffic Volume							Trend						
		Total Traffic	Passenger Car	Growth Rate %	Mini Bus	Trend Traffic	Diverted Traffic	Cargo	Growth Rate %	Large Bus	Trend Traffic	Diverted Traffic	Cargo	Growth Rate %	Mini Bus	Trend Traffic	Diverted Traffic	Cargo	Growth Rate %	Large Bus	Trend Traffic	Diverted Traffic	Cargo	Growth Rate %					
2007		121	46	7.24	13	13	41	4.69	21	21	41	41	4.69	13	13	41	41	4.69	22	22	41	41	4.69	77	77				
2008		128	49	7.24	14	14	43	4.69	22	22	43	43	4.69	14	14	43	43	4.69	23	23	43	43	4.69	81	81				
2009	Construction	135	53	7.24	15	15	45	4.69	23	23	45	45	4.69	15	15	45	45	4.69	24	24	45	45	4.69	85	85				
2010		143	57	7.24	16	16	47	4.69	24	24	47	47	4.69	16	16	47	47	4.69	24	24	47	47	4.69	88	88				
2011	Construction	151	60	5.92	17	17	49	4.28	25	25	49	49	4.28	17	17	49	49	4.28	26	26	49	49	4.28	92	92				
2012		689	64	5.92	77	27	365.86	5.92	91	32	262.62	59	457	409	837.82	47	205	64	5.92	18	18	5.92	28	4.28	96	4.28			
2013		717	68	5.92	81	29	365.86	5.92	93	33	4.28	60	476	427	4.28	49	215	68	5.92	19	19	5.92	29	4.28	100	4.28			
2014		746	72	5.92	84	31	5.92	53	96	35	4.28	61	495	445	4.28	50	226	72	5.92	20	20	5.92	30	4.28	105	4.28			
2015		776	76	5.92	87	32	5.92	55	97	36	4.28	61	516	464	4.28	51	237	76	5.92	21	21	5.92	32	4.28	109	4.28			
2016		808	80	5.59	90	34	5.59	56	100	38	4.52	62	538	485	4.52	53	249	80	5.59	22	22	5.59	33	4.52	114	4.52			
2017		842	85	5.59	93	36	5.59	57	103	40	4.52	63	561	507	4.52	54	261	86	5.59	23	23	5.59	34	4.52	119	4.52			
2018		877	89	5.59	96	38	5.59	58	106	42	4.52	64	586	530	4.52	56	274	89	5.59	25	25	5.59	36	4.52	125	4.52			
2019		913	94	5.59	100	40	5.59	60	107	43	4.52	64	611	554	4.52	57	288	94	5.59	26	26	5.59	38	4.52	130	4.52			
2020		951	100	5.59	104	43	5.59	61	110	45	4.52	65	637	579	4.52	58	302	100	5.59	27	27	5.59	39	4.52	136	4.52			
2021		991	105	5.59	107	45	5.59	62	113	46	4.77	65	666	607	4.77	60	318	105	5.59	29	29	5.59	41	4.77	143	4.77			
2022		1034	111	5.59	110	47	5.59	63	116	50	4.77	66	697	636	4.77	61	334	111	5.59	31	31	5.59	43	4.77	149	4.77			
2023		1078	117	5.59	114	50	5.59	64	118	52	4.77	66	728	666	4.77	62	351	117	5.59	32	32	5.59	45	4.77	157	4.77			
2024		1125	124	5.59	118	53	5.59	65	122	55	4.77	67	762	698	4.77	64	369	124	5.59	34	34	5.59	47	4.77	164	4.77			
2025		1172	131	5.59	121	56	5.59	65	124	57	4.77	67	796	731	4.77	65	388	131	5.59	36	36	5.59	50	4.77	172	4.77			
2026		1223	138	5.59	125	59	5.59	66	127	60	4.77	67	833	766	4.77	67	408	138	5.59	38	38	5.59	52	4.77	180	4.77			
2027		1276	146	5.59	129	62	5.59	67	131	63	4.77	68	870	803	4.77	68	429	146	5.59	40	40	5.59	54	4.77	189	4.77			
2028		1332	154	5.59	134	66	5.59	68	134	66	4.77	68	910	841	4.77	69	451	154	5.59	42	42	5.59	57	4.77	198	4.77			
2029		1390	162	5.59	138	69	5.59	69	137	69	4.77	68	952	881	4.77	71	474	162	5.59	45	45	5.59	60	4.77	207	4.77			
2030		1451	172	5.59	143	73	5.59	70	141	72	4.77	69	995	923	4.77	72	498	172	5.59	47	47	5.59	63	4.77	217	4.77			
2031		1514	181	5.59	147	77	5.59	70	145	76	4.77	69	1040	967	4.77	73	524	181	5.59	50	50	5.59	66	4.77	227	4.77			
2032		1580	191	5.59	153	82	5.59	71	148	79	4.77	69	1088	1013	4.77	75	551	191	5.59	53	53	5.59	69	4.77	238	4.77			



Matema - Cuamba

Year	Remarks	With Project												Without Project											
		Total Traffic	Passenger Car	Growth Rate %	Mini Bus	Trend Traffic	Growth Rate %	Diverted Traffic	Large Bus	Trend Traffic	Growth Rate %	Diverted Traffic	Cargo	Trend Traffic	Growth Rate %	Total Traffic	Passenger Car	Growth Rate %	Mini Bus	Trend Traffic	Growth Rate %	Diverted Traffic	Cargo	Trend Traffic	Growth Rate %
2007		121	46	7.24	13	13	7.24	21	21	4.69	41	41	4.69	158	46	7.24	13	13	7.24	22	4.69	77	4.69		
2008		128	49	7.24	14	14	7.24	22	22	4.69	43	43	4.69	167	49	7.24	14	14	7.24	23	4.69	81	4.69		
2009	Construction	135	53	7.24	15	15	7.24	23	23	4.69	45	45	4.69	177	53	7.24	15	15	7.24	24	4.69	85	4.69		
2010	Construction	143	57	7.24	16	16	7.24	24	24	4.69	47	47	4.69	187	57	7.24	16	16	7.24	26	4.69	88	4.69		
2011	Construction	151	60	5.92	17	17	5.92	25	25	4.28	49	49	4.28	196	60	5.92	17	17	5.92	27	4.28	92	4.28		
2012		717	64	5.92	77	27	365.66	50.00	32	262.62	59	484	413	894.85	72	205	64	18	5.92	28	4.28	96	4.28		
2013		746	68	5.92	81	29	5.92	52.00	33	4.28	60	504	430	4.28	215	68	5.92	19	5.92	29	4.28	100	4.28		
2014		776	72	5.92	84	31	5.92	53.00	35	4.28	61	525	449	4.28	226	72	5.92	20	5.92	30	4.28	105	4.28		
2015		807	76	5.92	87	32	5.92	55.00	36	4.28	61	546	468	4.28	237	76	5.92	21	5.92	32	4.28	109	4.28		
2016		840	80	5.59	90	34	5.59	56.00	38	4.52	62	569	489	4.52	249	80	5.59	22	5.59	33	4.52	114	4.52		
2017		874	85	5.59	93	36	5.59	57.00	40	4.52	63	593	511	4.52	261	85	5.59	23	5.59	34	4.52	119	4.52		
2018		910	89	5.59	96	38	5.59	58.00	42	4.52	64	619	534	4.52	274	89	5.59	25	5.59	36	4.52	125	4.52		
2019		947	94	5.59	100	40	5.59	60.00	43	4.52	64	645	558	4.52	288	94	5.59	26	5.59	38	4.52	130	4.52		
2020		986	100	5.59	104	43	5.59	61.00	45	4.52	65	672	584	4.52	302	100	5.59	27	5.59	39	4.52	136	4.52		
2021		1,027	105	5.59	107	45	5.59	62.00	48	4.77	65	702	612	4.77	318	105	5.59	29	5.59	41	4.77	143	4.77		
2022		1,071	111	5.59	110	47	5.59	63.00	50	4.77	66	733	641	4.77	334	111	5.59	31	5.59	43	4.77	149	4.77		
2023		1,116	117	5.59	114	50	5.59	64.00	52	4.77	66	766	671	4.77	351	117	5.59	32	5.59	45	4.77	157	4.77		
2024		1,164	124	5.59	118	53	5.59	65.00	55	4.77	67	800	703	4.77	369	124	5.59	34	5.59	47	4.77	164	4.77		
2025		1,213	131	5.59	121	56	5.59	65.00	57	4.77	67	836	737	4.77	388	131	5.59	36	5.59	50	4.77	172	4.77		
2026		1,263	138	5.59	125	59	5.59	66	60	4.77	67	873	772	4.77	408	138	5.59	38	5.59	52	4.77	180	4.77		
2027		1,318	146	5.59	129	62	5.59	67	63	4.77	68	912	809	4.77	429	146	5.59	40	5.59	54	4.77	189	4.77		
2028		1,374	154	5.59	134	66	5.59	68	66	4.77	68	953	847	4.77	451	154	5.59	42	5.59	57	4.77	198	4.77		
2029		1,433	162	5.59	138	69	5.59	69	69	4.77	68	995	888	4.77	474	162	5.59	45	5.59	60	4.77	207	4.77		
2030		1,496	172	5.59	143	73	5.59	70	72	4.77	69	1040	930	4.77	498	172	5.59	47	5.59	63	4.77	217	4.77		
2031		1,559	181	5.59	147	77	5.59	70	145	4.77	69	1086	975	4.77	524	181	5.59	50	5.59	66	4.77	227	4.77		
2032		1,627	191	5.59	153	82	5.59	71	148	4.77	69	1135	1021	4.77	551	191	5.59	53	5.59	69	4.77	238	4.77		

## **APPENDIX-F**

### **Drawings of EWPP in Ribaue**

**jica** JAPAN INTERNATIONAL COOPERATION AGENCY

EMERGENCY WORK AS PILOT PROJECT  
IN

RIBAUE CITY, MOZAMBIQUE

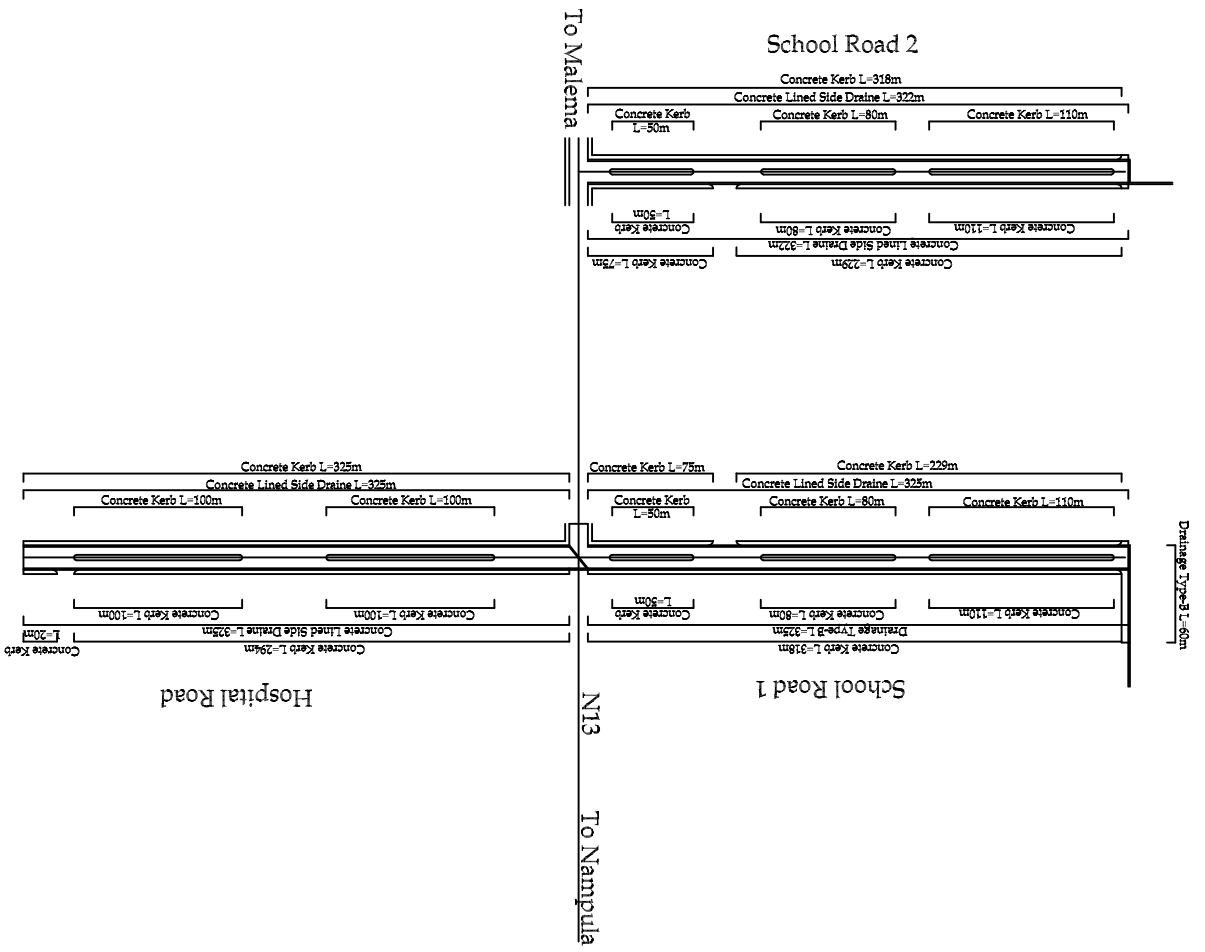
1.0km Road Paving Project

TENDER DRAWINGS

APRIL 2007

ORIENTAL CONSULTANTS CO., LTD.  
JAPAN ENGINEERING CONSULTANTS CO., LTD.

REMARKS



1.0km Road Paving Project

ORIENTAL CONSULTANTS CO., LTD.  
JAPAN ENGINEERING CONSULTANTS CO., LTD.

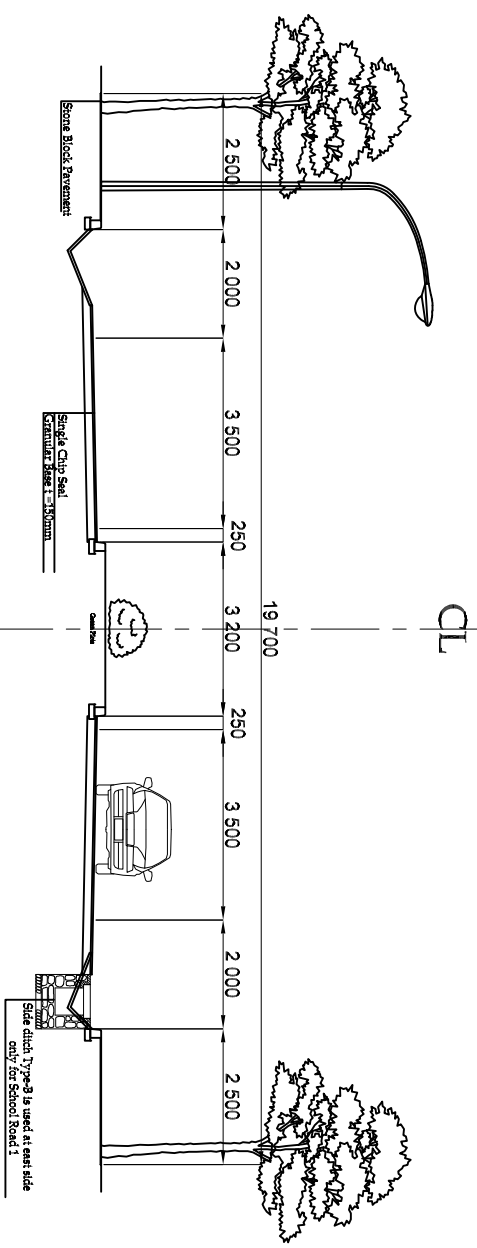
DRAWING TITLE

Plan

NAME	PREPARED BY	CHECKED BY	APPROVED BY	SCALE	SHEET NO.	DRAWING NO.	REV. NO.
SIGNATURE				-	1	-	-
DATE							



# Hospital, School Road 1/2 Typical Cross Section



**JICA** JAPAN INTERNATIONAL COOPERATION AGENCY

REMARKS

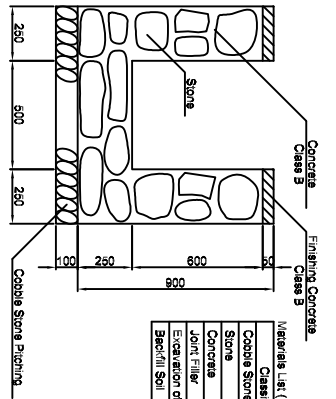
1.0km Road Paving Project

ORIENTAL CONSULTANTS CO., LTD.  
JAPAN ENGINEERING CONSULTANTS CO., LTD.

DRAWING TITLE

Typical Cross Section

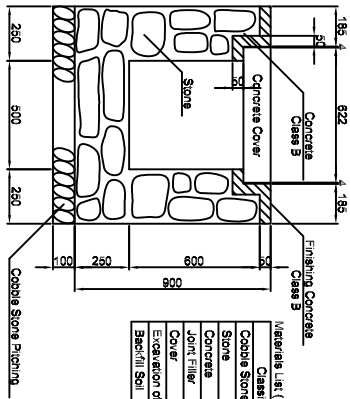
NAME	PREPARED BY	CHECKED BY	APPROVED BY	SCALE	SHEET NO.	DRAWING NO.	REV. NO.
SIGNATURE				1:100	2		
DATE							



Material List (Drainage Type-A)

Classification	Standard	Unit	Quantity	Remarks
Cobble Stone Pitching	1=10cm	m <sup>2</sup>	100	
Concrete	Class B	m <sup>3</sup>	4.4	
Joint Filler	1=10mm	m <sup>2</sup>	14	
Excavation of Foundation		m <sup>3</sup>	200	
Backfill Soil		m <sup>3</sup>	100	

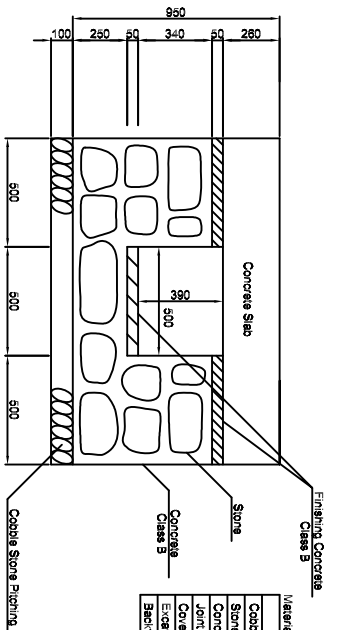
Drainage Type-A  
Scale = 1/25



Material List (Drainage Type-B)

Classification	Standard	Unit	Quantity	Remarks
Cobble Stone Pitching	1=10cm	m <sup>2</sup>	100	
Concrete	Class B	m <sup>3</sup>	4.2	
Joint Filler	1=10mm	m <sup>2</sup>	14	
Cover		Piece	200	
Excavation of Foundation		m <sup>3</sup>	200	
Backfill Soil		m <sup>3</sup>	100	

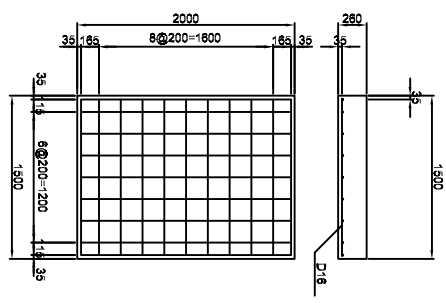
Drainage Type-B  
Scale = 1/25



Material List (Cross Culvert)

Classification	Standard	Unit	Quantity	Remarks
Cobble Stone Pitching	1=10cm	m <sup>2</sup>	150	
Stone		m <sup>3</sup>	67	
Concrete	Class B	m <sup>3</sup>	23	
Joint Filler	1=10mm	m <sup>2</sup>	8	
Cover		Piece	50	
Excavation of Foundation		m <sup>3</sup>	283	
Backfill Soil		m <sup>3</sup>	105	

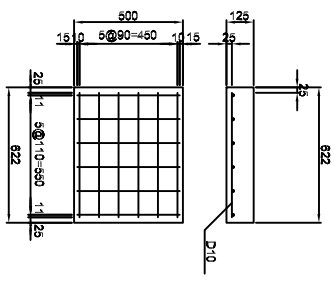
Cross Culvert  
Scale = 1/25



Plan of Slab  
Scale = 1/50

Material List (Slab)

Classification	Standard	Unit	Quantity	Remarks
Concrete	Class A	m <sup>3</sup>	78	
Reinforcement	SD345 D16	t	5.16	
Form		m <sup>2</sup>	482	



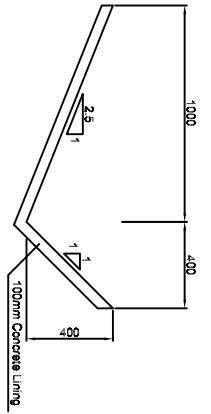
Plan of Cover  
Scale = 1/25

Material List (Cover)

Classification	Standard	Unit	Quantity	Remarks
Concrete	Class A	m <sup>3</sup>	4	
Reinforcement	SD345 D10	t	0.35	
Form		m <sup>2</sup>	9	

REMARKS

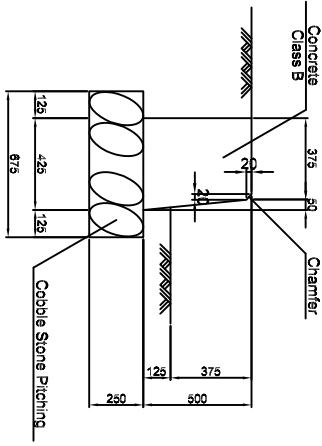
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SIGNATURE				3			
DATE							



Materials List (Concrete Lined Side Drain)

Classification	Standard	Unit	Quantity	Remarks
Concrete	Class A	m <sup>3</sup>	17	
Form		m <sup>2</sup>	17	
Excavation		m <sup>3</sup>	70	

Concrete Lined Side Drain  
Scale = 1:50



Concrete Kerb  
Scale = 1:10

Materials List (Concrete Kerb)

Classification	Standard	Unit	Quantity	Remarks
Cobble Stone Pitching	t=10cm	m <sup>2</sup>	27	Per 100m
Concrete	Class B	m <sup>3</sup>	3	
Form		m <sup>2</sup>	40	
Joint Filler	t=10mm	m <sup>1</sup>	0.3	

REMARKS

1.0km Road Paving Project

— ORIENTAL CONSULTANTS CO., LTD.  
— JAPAN ENGINEERING CONSULTANTS CO., LTD.

DRAWING TITLE

Drainage and Ancillary Details (2)

NAME	PREPARED BY	CHECKED BY	APPROVED BY	SCALE	SHEET NO.	DRAWING NO.	REV. NO.
SIGNATURE					4		
DATE							

## **APPENDIX-G**

### **Regional Development Plan**

## **Appendix-G: Regional Development Plan**

### **G.1 Voices for Road Improvement and Regional Development**

The following are the voices for improvement of the road and regional development. These were heard through interviews with individuals in various fields including central and local government agencies, private companies, donor officials, NGOs, people in the villages, etc.

#### **G.1.1 Farmers**

- 1) Mr. A : Farmer in Namialo

The people in the village want jobs, in addition to farm work, to get cash.

- 2) Mr. B : Farmer and retail shop seller in Rapale

The village is far from the national road, and the feeder road to the village is in a very bad condition. Although one person bought a bicycle, he could not use the bicycle in the rainy season. They need improvement of the feeder roads connecting to the national road, after improvements to the national road.

- 3) Mr. C : Farmer in Entre Lagos

The people in the village are looking for additional jobs in addition to farm work. The question of the possibilities for the processing of the fruits, which they produce in their farms, was raised.

- 4) Mr. D : Farmer and shop seller in Anchillo

The vegetables in Anchillo are fresh and cheaper than those in Nampula. Those products must be competitive in the market of Nampula.

#### **G.1.2 Government Agencies**

- 1) Ms. Shibamba : Director of Investment and Cooperation, and Mr. Antonio Luis :  
Bilateral Cooperation, Ministry of Planning and Development

The areas of Nacala, Nampula, Pemba and the coastal areas of the northern region have connection with the rest of the country. However, other parts of the region are left as remote islands. The improvement of the road will spur the regional development of the northern region and they have been looking forward to this for a long time.

- 2) Ms. Sala Jane, Head of SIDA, Nampula

The relation with road development and HIV/AIDS infection is very strong. They

advised that the number of persons infected with HIV/AIDS in Ribaue and Malema is higher than other districts, because many laborers came from outside the country and worked in these areas for the rehabilitation of the railway in 1993 to 1995. They had contact with the local women at that time. That is why, the campaign of HIV/AIDS is very important to carry on meeting with the schedule of the construction of road.

- 3) Mr. Ilidio Marques, Provincial Director's Office of Industry and Commerce Department, Nampula

A good road between Nampula and Cuamba has been looked forward to for a long time. One of the biggest problems of the region is the very bad-condition of this road. The inland areas have a high potential for agricultural production, and indeed, high volumes of agricultural products are harvested; however, many products are left in the field, especially fresh vegetables and fruits, which cannot be transported to the coastal areas, including Nampula and Nacala, because of the very bad road. The improvement of the road, including feeder roads and warehouse development are key issues to the province.

- 4) Mr. Jose Varimelo, Director of Agricultural Department, Nampula

The improvement of the regional roads (for trucks) is the first priority for promoting the agricultural development of the region. The inland area is called the "Grain Belt of Mozambique", and the agricultural development is essential to supply food not only for the people in the northern area, but also nationally and internationally. After the road improvement, the commercialization of the agricultural products is a key issue.

- 5) Dr. Domingos Cintura, Director of Tourism Department, Nampula

The improvement of the road will contribute highly to the increase of tourists in the region. The potential tourist resources, such as rock climbing, rock painting, wildlife, beaches, lakes are located along the road.

- 6) Mr. Engo. Albertino Mourinho, Regional Director General of the Company MED, Nampula

The improvement of the road will stimulate the expansion of electricity supply along the road. The number of the electricity customers along the road between Nampula and Nacala was increased recently after the road improvement.

- 7) Mr. E : Head of Post Administration in Anchillo

The number of traffic accidents in the area has increased ( especially involving school children) , after the improvement of the road between Nampula and Nacala. The aspect of the traffic safety for the road improvement is very important.

- 8) Dr. Bahtista Rodrigues : Provincial Director and Sr. Vieira : Provincial Office of Transport and Communications, Nampula

They agreed to my observation that the number of bicycles in the region, especially in the rural areas has increased in the recent years. The bicycles will be the major transportation means in the rural area for the coming years. People can buy bicycles without incurring excessive debt, and use it to transport their agricultural products to the market without fuel.

- 9) Mr. Francisco Seutade, Director of Provincial Police and His Staffs, Nampula

They agreed to cooperate in the campaign for traffic safety, which is proposed in the pilot project in Anchillo, because the ideas on traffic safety in the project are really useful for the promotion of traffic safety, especially for the school children.

### **G.1.3 NGOs and Private Companies**

- 1) Mr. Martin E. Mason : CRUSA, International NGO, Nampula

The road between Nampula and Cuamba is welcome, because an 800 ha soy beans projects has been going on in the Gurue district. They face the problem of transporting the harvested soy beans to Nampula.

- 2) Mr. Tim Russell : CARE International NGO, Nampula

CARE's programs and activities are widely executed in the province and also along the road between Nampula and Cuamba. The upgrading of the road will contribute very much to the socio-economic development of the region.

- 3) Mr. Antonio Muagerene, Executive Director of OLIPA-ODES, Local NGO

The on-going projects of rural development, operated by the OLIPA-ODES are in Rapale, Malama and Ribaue. They could not reach the sites because of the bad condition of the road in the rainy season.

- 4) Mr. Shrikanth Naik, Export Marketing Co. Lda., Private Company, Nampula

They transport maize for processing, mainly from Cuamba, Malema, Ribaué to Nampula. They use both train and road at the present, and they could not transport by

road in the rainy season, even though they take detours. When the road between Nampula and Cuamba is improved, they would mainly use the road, because of convenience.

- 2) Mr. Luis Madubula Giquira, Director General of the CIMPAN Company, Private Company, Nampula

After the improvement of the road they will be able to use the road between Nampula and Cuamba all year to collect the maize products from the farms,. The usage of the railway is not convenient due to the bureaucracy and the time taken for the procedures.

## G.2 Important Meetings regarding the Pilot Project

The series of the discussions for the formulation and implementation of the pilot projects are held among the related agencies. The major meetings are listed as follows;

**List of Major Meetings (April to May 2007)**

Date	Agenda	Participants	Conclusions
10Apr.07	Explanation of PP and request cooperation	<ul style="list-style-type: none"> <li>• Mr. Augusto Ferro (Head of Nampula District)</li> <li>• Mr. Gaburiel (Staff of ANE Nampula office)</li> <li>• Mr. Latifo Salimo (Head of Anchilo Post Administration)</li> </ul>	<ul style="list-style-type: none"> <li>• Legal development approval must be obtained.</li> <li>• Continuous cooperation and discussions are necessary</li> </ul>
11Apr.07	Explanation of PP and request cooperation	<ul style="list-style-type: none"> <li>• Prof. Doutor F. E. Tocali (Nampula Governor)</li> <li>• Mr. Antonio A. Mahave (Provincial Director of Public Works &amp; Housing)</li> <li>• Mr. Nhaca (ANE Nampula Office)</li> </ul>	<ul style="list-style-type: none"> <li>• Governor will appoint Station Master</li> <li>• Continuous cooperation and discussions are necessary</li> </ul>
23Apr.07	Community Consultation for Concession of Land	<ul style="list-style-type: none"> <li>• Agricultural Department, Public works &amp; housing (District)</li> <li>• Cadastre (Province)</li> <li>• Mr. Gabriel (ANE Nampula Office)</li> </ul>	<ul style="list-style-type: none"> <li>• Confirmation of the project site on the ground</li> <li>• Agreement of the community on the project and compensation</li> </ul>
25Apr.07	Assignment and roll of the Station Master	<ul style="list-style-type: none"> <li>• Mr. Latifo Salimo (Head of Anchilo Post Administration)</li> </ul>	<ul style="list-style-type: none"> <li>• Agreement of the roll of Station Master</li> <li>• Selection of Operator</li> </ul>
27Apr.07, 30Apr.07, 03May 07	Selection of Operator and staffs	<ul style="list-style-type: none"> <li>• Mr. Latifo Salimo (Head of Anchilo Post Administration)</li> <li>• Mr. Antonio A. Chacals (President of Forum of Producer's Associations Anchilo)</li> </ul>	<ul style="list-style-type: none"> <li>• Station Master appoint the Forum of Producer's Association Anchilo as operator of Michinoeki</li> <li>• The president of forum will select the staffs</li> <li>• 6 persons are assigned by the</li> </ul>



			president
03May07, 08May07, 28May07	Joint meetings of Traffic Safety Campaign	<ul style="list-style-type: none"> <li>• Mr. Bonyamin T. Rofa (Public Education, Police)</li> <li>• Ms. Maria I. J. Jeremia (INAV)</li> <li>• Mr. Gabriel (ANE Nampula Office)</li> </ul>	<ul style="list-style-type: none"> <li>• Confirmation of program for the campaign</li> <li>• Roll and contribution of each organization</li> <li>• Agreement of organization of the campaign</li> </ul>
30Apr.07	Management Mechanism of the Michinoeki	<ul style="list-style-type: none"> <li>• Mr. Nhaca and Gabriel (ANE Nampula Office)</li> </ul>	<ul style="list-style-type: none"> <li>• Agreement on the mechanism of the Michinoeki (Joint administration, Owner, Maintenance of facility, Rental fee)</li> <li>• MOU</li> <li>• Business Plan</li> <li>• Monthly report</li> </ul>
04May07, 05May07, 06May07, 08May07, 11May07, 13May07	Training of Staffs	<ul style="list-style-type: none"> <li>• Mr. Juliao S. Antonio (Head of Facility)</li> <li>• Ms. Ludes L. Cardoso (Sales Instructor)</li> <li>• Mr. Cardoso R. Antonio (Bicycle Sales Manager)</li> <li>• Ms. Angelina Joao (Cleaner)</li> <li>• Mr. Agostinho Americo (Security Guard-1)</li> <li>• Mr. Eugenio J. Mulua (Security Guard-2)</li> </ul>	<ul style="list-style-type: none"> <li>• Objectives of Michinoeki project</li> <li>• Organization of the project</li> <li>• Roll of POU and each staff</li> <li>• Business Plan</li> <li>• Monthly report/Format</li> <li>• PR Plan and materials</li> <li>• Cooperation to the Traffic Safety Campaign</li> </ul>
07May07	Contribution of Nampula District	<ul style="list-style-type: none"> <li>• Mr. Augusto Ferro (Head of Nampula District)</li> </ul>	<ul style="list-style-type: none"> <li>• Agreement on contribution of District (no need to pay the fee for the concession of land)</li> <li>• Agreement on the mechanism of the Michinoeki (Joint administration, Owner, Maintenance of facility, Rental fee)</li> <li>• Request to be the main organizer of the traffic safety campaign</li> <li>• MOU</li> <li>• Business Plan</li> <li>• Monthly report</li> </ul>

In addition to the above organizations, the following organizations also contacted regarding the formulation and implementation of the pilot project.

	Name of person	Position and organization name
	Michinoeki	
1)	Mr. Ildio Marques	Provincial Director of Industry and Commerce
2)	Mr. Francisco Mucanheia	Provincial Permanent Secretary
3)	Mr. Antonio Muagerene	Executive Director of OLIPA-ODES/NGO
4)	Mr. Jose Varimelo	Provincial Director of Agriculture Department
5)	Mr. Luis M. Giquira	Director General of CIMPAN Private Company
6)	Mr. Nelson Melo	Director of National Agrarian Service, Ministry of Agriculture, Maputo

### G.3 Record of Staff Training Sessions

The series of the training for the POU staff were conducted by the JICA Study Team as follows;

**Record of Staff Training Sessions (April to May 2007)**

Session	Date/Time	Main topics	Outcome
1 <sup>st</sup> Session	04 May 2007 9:30~12:00	<ul style="list-style-type: none"> <li>• Self-introduction</li> <li>• Explanation of the Michinoeki Pilot Project</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding to the project</li> </ul>
2 <sup>nd</sup> Session	05 May 2007 8:00~12:00	<ul style="list-style-type: none"> <li>• Presentation of the project outline by the staffs</li> <li>• Explanation of the Michinoeki projects in Japan</li> <li>• What is the market? Who is the customers, How much the tenant fee, etc</li> </ul>	<ul style="list-style-type: none"> <li>• Increase of understanding to the project</li> <li>• What is the roll for each staff</li> <li>• What are the sales points</li> <li>• 5 MTn of tenant receipt</li> </ul>
3 <sup>rd</sup> Session	06 May 2007 14:00~16:30	<ul style="list-style-type: none"> <li>• Monthly report and format</li> <li>• Business plan and salary</li> <li>• Management of money</li> <li>• Home work of format</li> <li>• Site observation</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding to the project operation</li> <li>• Learning on business and operation</li> <li>• Business plan and salary</li> <li>• Necessary format and documentation system</li> <li>• Utilization of bank and safe</li> </ul>
4 <sup>th</sup> Session	08 May 2007 14:20~17:00	<ul style="list-style-type: none"> <li>• Report of home work (format), discussions and revision</li> <li>• Cleaning and solid waste management</li> <li>• Security guard's work</li> <li>• Home work of PR/leaflet</li> </ul>	<ul style="list-style-type: none"> <li>• Increase of understanding to the project operation</li> <li>• Learning on filling format</li> </ul>
5 <sup>th</sup> Session	11 May 2007 14:20~17:20	<ul style="list-style-type: none"> <li>• Report of home work (PR, leaflet), discussions and revision</li> <li>• Request contributions to the preparation work for the opening of Michinoeki and traffic safety campaign</li> </ul>	<ul style="list-style-type: none"> <li>• Increase of understanding to the project operation</li> <li>• Identification of the preparatory works and contribution by the staffs</li> <li>• PR plan, leaflet, banner</li> </ul>
6 <sup>th</sup> Session	13 May 2007 8:20~12:30	<ul style="list-style-type: none"> <li>• Visit of Institute of Social Communication (for production of project documentary)</li> <li>• Visit of ANE staffs (Maputo and Nampula) and team leader</li> <li>• Confirmation on procurement, schedule, preparatory works towards the opening</li> </ul>	<ul style="list-style-type: none"> <li>• List of necessary items to procure</li> <li>• Activity schedule towards the opening</li> <li>• Confirmation of preparatory works by the staffs</li> </ul>

### G.4 Photo Record of the Pilot Project Implementation

#### Community Consultation 230407



Confirmation of the project site with the plan



Marking the boundary and corner of the site



The neighbors help the work



Explanation of land tenure system, compensation and the proposed project



Under the mango tree. The old man in the front is the owner of the trees to be compensate



55 persons attended, of which 54 signed on the agreement document

Site Clearance 280407



Site view from the national road



Condor, the contractor explains the work to the local laborers



View from the site to the national road



Cutting down the grass on the access road



One of the trees to compensate (not cut down)



One of the trees to compensate (cut down)

Selection and Training of Staffs 300407-130507 (1)



Members of the forum are listening about project



How to select the staffs of the Michinoeki project



The applicants are all present in the list



"One of the staff explains his hopes to the project"

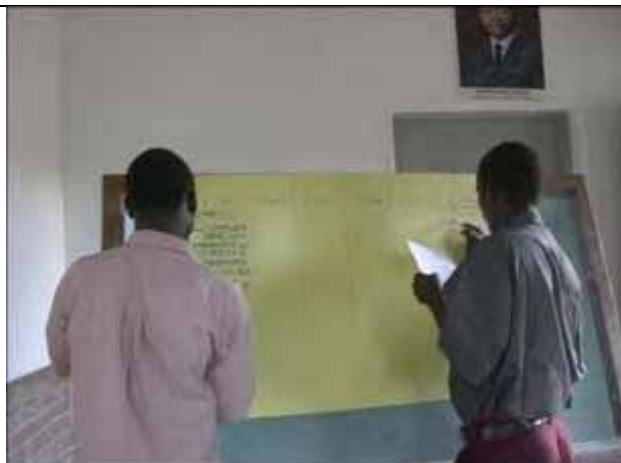


"I want to sell fresh and clean vegetable"



"The rolls of the guard man is important..."

Selection and Training of Staffs 300407-130507 (2)



Making the list of necessary goods for the project



Presentation of the home works



Free discussion



Mr. Notece. ANE HQ explains the Michinoeki pro.



Mr. Konno, Team Leader explains the key points of the Michinoeki project



The assigned station master (back) and the president of the forum (front)

### The POU Staffs of the Michinoeki

No.	Job Title	Name	Date of birth	Years old	Producer's association	Post at association	Ed. grade	ID No.
①	Head of Facility	Juliao Salino Antonio	03.07.82	24	AMA	Secretary of forum	8°	030097469Z
②	Sales Instructor	Lurdes Luis Cardoso	04.07.81	25	7 de Arbil	Member	7°	NO. 00 assento: 2027
③	Bicycle Sales Manager	Cardoso Rosario Antonio	14.10.67	39	ACAN	Manager of forum	7°	13730944
④	Cleaning	Angelina Joao Vieira	09.08.70	36	ACAN	Member	6°	030193257E
⑤	Security Guard-1	Agostinho Americo	12.08.73	33	ACAMO	Secretary	5°	03029071e
⑥	Security Guard-2	Eugenio Joao Malua	26.10.76	30	AMA	Member	7°	030079462Q

⑤  
Agostinho

④  
Angelina

③  
President  
t of

②  
Cardc  
Lurdes

⑥  
Eugenio



①  
Juliao

①Juliao: Head of Facility



②Ludes: Sales Instructor



③Cardoso: Sales Manager of Bicycle



④Angelina: Cleaner



⑤Agostinho: Security Guard-1



⑥Eugenio: Security Guard-2



### Pedestrian Crossing/Traffic Safety Campaign



Location of the marking of pedestrian crossing-1:  
Central part of Anchilo (distant view)



Location of the marking of pedestrian crossing-1:  
Existing bus stop (close view)



Passengers getting on and off at the bus stop



The pedestrian crossing the national road



Stop board using at the crossing road



Joint meeting with Police, INAV, ANE and JICA ST.



## **APPENDIX-H**

### **Pilot Project**

## **Appendix-H Pilot Project**

### **1) Balance**

Table 4.1 shows the income and expenditure balance sheet (business plan) of the Michinoeki. The business of the Michinoeki will be run well that the total amount of profit of the project will be around 8,500 MTn at the first opening month and around 35,000 MTn at the 6<sup>th</sup> month and around 33,100 MTn at the month of 1 year after the opening based on the assumed business plan

- Table 4.1-A shows the income and expenditure balance by month
- Table 4.1-B shows the income and expenditure balance by yearly
- Table 4.1-C shows the total balance for one year
- Table 4.1-D shows the total balance of the bicycle promotion center

**Table 4.1 Income and Expenditure Balance Sheet (Business Plan)**

**Table A: Monthly Balance (MTn)**

Year	2007	2008	2009	2010	2011	2012
No. of road user's visitors	1,000	1,070	1,145	1,225	1,311	1,403
Expenditure/person	30	30	30	30	30	30
Sels income (road user)	30,000	32,100	34,347	36,751	39,324	42,077
Tenant receipts	3,000	4,500	4,500	4,500	4,500	4,500
No. of neighbor's visitors	500	535	572	613	655	701
Expenditure/person	10	10	10	10	10	10
Sels income (neighbor)	5,000	5,350	5,725	6,125	6,554	7,013
Total income	38,000	41,950	44,572	47,377	50,378	53,589
Salary of staffs	10,100	10,100	10,555	10,555	11,033	11,534
1) Station Master (1 person)	1,000	1,000	1,000	1,000	1,000	1,000
2) Head of facility (1 person)	3,000	3,000	3,150	3,150	3,308	3,473
3) Sales instructor (1 person)	2,500	2,500	2,625	2,625	2,756	2,894
4) Cleaner (1 person)	1,200	1,200	1,260	1,260	1,323	1,389
5) Security guard (2 persons)	2,400	2,400	2,520	2,520	2,646	2,778
Facility rental fee	3,840	3,840	3,840	3,840	3,840	3,840
Electricity charge	1,000	1,000	1,050	1,050	1,103	1,158
Purchase of goods/ equipments	2,000	1,000	1,000	1,000	1,000	1,000
Tax	103	103	103	103	103	103
Stock (prime cost)	22,000	25,000	26,250	27,563	28,941	30,388
Balance(monthly)	-1,043	908	1,774	3,267	4,359	5,567

**Table B: Yearly Balance (MTn)**

Year	2007	2008	2009	2010	2011	2012
No. of road user's visitors	5,000	12,840	13,739	14,701	15,730	16,831
Expenditure/person	30	30	30	30	30	30
Sels income (road user)	150,000	385,200	412,164	441,015	471,887	504,919
Tenant receipts	15,000	54,000	54,000	54,000	54,000	54,000
No. of neighbor's visitors	2,500	6,420	6,869	7,350	7,865	8,415
Expenditure/person	10	10	10	10	10	10
Sels income (neighbor)	25,000	64,200	68,694	73,503	78,648	84,153
Total income	190,000	503,400	534,858	568,518	604,534	643,072
Salary of staffs	50,500	121,200	126,660	126,660	132,393	138,413
1) Station Master (1 person)	5,000	12,000	12,000	12,000	12,000	12,000
2) Head of facility (1 person)	15,000	36,000	37,800	37,800	39,690	41,675
3) Sales instructor (1 person)	12,500	30,000	31,500	31,500	33,075	34,729
4) Cleaner (1 person)	6,000	14,400	15,120	15,120	15,876	16,670
5) Security guard (2 persons)	12,000	28,800	30,240	30,240	31,752	33,340
Facility rental fee	19,200	46,080	46,080	46,080	46,080	46,080
Electricity charge	5,000	12,000	12,600	12,600	13,230	13,892
Purchase of goods/ equipments	10,000	12,000	12,000	12,000	12,000	12,000
Tax	513	1,230	1,230	1,230	1,230	1,230
Stock (prime cost)	110,000	300,000	315,000	330,750	347,288	364,652
Balance (yearly)	-5,213	10,890	21,288	39,198	52,314	66,806

**Table C: Total Balance of Michinoeki without Bicycle Business (MTn)**

	2007					2008						
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
No. of road user's visitors	1,000	1,000	1,000	1,000	1,000	1,070	1,070	1,070	1,070	1,070	1,070	1,070
Expenditure/person	30	30	30	30	30	30	30	30	30	30	30	30
Sels income (road user)	30,000	30,000	30,000	30,000	30,000	32,100	32,100	32,100	32,100	32,100	32,100	32,100
Tenant receipts	3,000	3,000	3,000	3,000	3,000	4,500	4,500	4,500	4,500	4,500	4,500	4,500
No. of neighbor's visitors	500	500	500	500	500	535	535	535	535	535	535	535
Expenditure/person	10	10	10	10	10	10	10	10	10	10	10	10
Sels income (neighbor)	5,000	5,000	5,000	5,000	5,000	5,350	5,350	5,350	5,350	5,350	5,350	5,350
Total income	38,000	38,000	38,000	38,000	38,000	41,950	41,950	41,950	41,950	41,950	41,950	41,950
Salary of staffs	10,100	10,100	10,100	10,100	10,100	10,100	10,100	10,100	10,100	10,100	10,100	10,100
1) Station Master (1 person)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
2) Head of facility (1 person)	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
3) Sales instructor (1 person)	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
4) Cleaner (1 person)	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
5) Security guard (2 persons)	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
Facility rental fee	3,840	3,840	3,840	3,840	3,840	3,840	3,840	3,840	3,840	3,840	3,840	3,840
Electricity charge	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Purchase of goods/ equipments	2,000	2,000	2,000	2,000	2,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Tax	103	103	103	103	103	103	103	103	103	103	103	103
Stock (prime cost)	12,500	22,500	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Total expenditure (monthly)	29,543	39,543	42,043	42,043	42,043	41,043	41,043	41,043	41,043	41,043	41,043	41,043
Balance (monthly)	8,458	6,915	2,873	-1,170	-5,213	-4,305	-3,398	-2,490	-1,583	-675	233	1,140
Total balance(without bicycle)	8,458	15,373	18,245	17,075	11,863	7,558	4,160	1,670	88	-588	-355	785
Total balance (bicycle)	17	2,700	8,050	14,500	20,950	27,400	31,183	32,300	0	0	0	0
Total balance (with bicycle)	8,474	18,073	26,295	31,575	32,813	34,958	35,343	33,970	32,388	31,713	31,945	33,085

**Table D: Total Balance of Bicycle Promotion Center Business (MTn)**

	2007					2008		
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
No. of bicycle to sell	20	20	20	0	0	0	0	0
Selling price/ bicycle	800	800	800	0	0	0	0	0
Sales income (monthly installments)	2,667	5,333	8,000	8,000	8,000	8,000	5,333	2,667
No. of bicycle of "Labor Counter-value"	0	0	0	0	0	0	0	0
Selling price/ bicycle	400	400	400					
Sales income (monthly installments)	0	0	0	0	0	0	0	0
Total income	2,667	5,333	8,000	8,000	8,000	8,000	5,333	2,667
Salary of staff	2,200	2,200	2,200	1,100	1,100	1,100	1,100	1,100
1) Sales manager of bicycle	2,200	2,200	2,200	1,100	1,100	1,100	1,100	1,100
Electricity fee and miscellaneous	450	450	450	450	450	450	450	450
Balance(monthly)	17	2,683	5,350	6,450	6,450	6,450	3,783	1,117
Balance(total)	17	2,700	8,050	14,500	20,950	27,400	31,183	32,300

## 2) Important Meetings regarding the Pilot Project

The series of the discussions for the formulation and implementation of the pilot projects are held among the related agencies. The major meetings are listed in Table 4.2

**Table 4.2 Major Meetings**

Date	Agenda	Participants	Conclusions
10Apr.07	Explanation of PP and request cooperation	<ul style="list-style-type: none"> <li>• Mr. Augusto Ferro (Head of Nampula District)</li> <li>• Mr. Gaburiel (Staff of ANE Nampula office)</li> <li>• Mr. Latifo Salimo (Head of Anchilo Post Administration)</li> </ul>	<ul style="list-style-type: none"> <li>• Legal development approval must be obtained.</li> <li>• Continuous cooperation and discussions are necessary</li> </ul>
11Apr.07	Explanation of PP and request cooperation	<ul style="list-style-type: none"> <li>• Prof. Doutor F. E. Tocali (Nampula Governor)</li> <li>• Mr. Antonio A. Mahave (Provincial Director of Public Works &amp; Housing)</li> <li>• Mr. Nhaca (ANE Nampula Office)</li> </ul>	<ul style="list-style-type: none"> <li>• Governor will appoint Station Master</li> <li>• Continuous cooperation and discussions are necessary</li> </ul>
23Apr.07	Community Consultation for Concession of Land	<ul style="list-style-type: none"> <li>• Agricultural Department, Public works &amp; housing (District)</li> <li>• Cadastre (Province)</li> <li>• Mr. Gabriel (ANE Nampula Office)</li> </ul>	<ul style="list-style-type: none"> <li>• Confirmation of the project site on the ground</li> <li>• Agreement of the community on the project and compensation</li> </ul>
25Apr.07	Assignment and roll of the Station Master	<ul style="list-style-type: none"> <li>• Mr. Latifo Salimo (Head of Anchilo Post Administration)</li> </ul>	<ul style="list-style-type: none"> <li>• Agreement of the roll of Station Master</li> <li>• Selection of Operator</li> </ul>
27Apr.07, 30 Apr.07, 7, 03May 07	Selection of Operator and staffs	<ul style="list-style-type: none"> <li>• Mr. Latifo Salimo (Head of Anchilo Post Administration)</li> <li>• Mr. Antonio A. Chacals (President of Forum of Producer's Associations Anchilo)</li> </ul>	<ul style="list-style-type: none"> <li>• Station Master appoint the Forum of Producer's Association Anchilo as operator of Michinoeki</li> <li>• The president of forum will select the staffs</li> <li>• 6 persons are assigned by the president</li> </ul>
03May07, 08 May 07, 28 May 07	Joint meetings of Traffic Safety Campaign	<ul style="list-style-type: none"> <li>• Mr. Bonyamin T. Rofa (Public Education, Police)</li> <li>• Ms. Maria I. J. Jeremia (INAV)</li> <li>• Mr. Gabriel (ANE Nampula Office)</li> </ul>	<ul style="list-style-type: none"> <li>• Confirmation of program for the campaign</li> <li>• Roll and contribution of each organization</li> <li>• Agreement of organization of the campaign</li> </ul>

Date	Agenda	Participants	Conclusions
30Apr.07	Management Mechanism of the Michinoeki	<ul style="list-style-type: none"> <li>• Mr. Nhaca and Gabriel (ANE Nampula Office)</li> </ul>	<ul style="list-style-type: none"> <li>• Agreement on the mechanism of the Michinoeki (Joint administration, Owner, Maintenance of facility, Rental fee)</li> <li>• MOU</li> <li>• Business Plan</li> <li>• Monthly report</li> </ul>
04May07, 05May07, 06May07, 08May07, 11May07, 13May07	Training of Staffs	<ul style="list-style-type: none"> <li>• Mr. Juliao S. Antonio (Head of Facility)</li> <li>• Ms. Ludes L. Cardoso (Sales Instructor)</li> <li>• Mr. Cardoso R. Antonio (Bicycle Sales Manager)</li> <li>• Ms. Angelina Joao (Cleaner)</li> <li>• Mr. Agostinho Americo (Security Guard-1)</li> <li>• Mr. Eugenio J. Mulua (Security Guard-2)</li> </ul>	<ul style="list-style-type: none"> <li>• Objectives of Michinoeki project</li> <li>• Organization of the project</li> <li>• Roll of POU and each staff</li> <li>• Business Plan</li> <li>• Monthly report/Format</li> <li>• PR Plan and materials</li> <li>• Cooperation to the Traffic Safety Campaign</li> </ul>
07May07	Contribution of Nampula District	<ul style="list-style-type: none"> <li>• Mr. Augusto Ferro (Head of Nampula District)</li> </ul>	<ul style="list-style-type: none"> <li>• Agreement on contribution of District (no need to pay the fee for the concession of land)</li> <li>• Agreement on the mechanism of the Michinoeki (Joint administration, Owner, Maintenance of facility, Rental fee)</li> <li>• Request to be the main organizer of the traffic safety campaign</li> <li>• MOU</li> <li>• Business Plan</li> <li>• Monthly report</li> </ul>

In addition to the above organizations, the following organizations also contacted regarding the formulation and implementation of the pilot project.

	Name of person	Position and organization name
Michinoeki		
1)	Mr. Ilidio Marques	Provincial Director of Industry and Commerce
2)	Mr. Francisco Mucanheia	Provincial Permanent Secretary
3)	Mr. Antonio Muagerene	Executive Director of OLIPA-ODES/NGO
4)	Mr. Jose Varimelo	Provincial Director of Agriculture Department
5)	Mr. Luis M. Giquira	Director General of CIMPAN Private Company
6)	Mr. Nelson Melo	Director of National Agrarian Service, Ministry of Agriculture, Maputo
7)	Mr. Domingos Cintura	Provincial Director of Tourism Department
8)	Mr. Tim Russell	CARE international Nampula Office
Bicycle Promotion Center		
1)	Mr. Paulo Fumane	Executive Director of CTA, Maputo
2)	Mr. Bonifacio Saulosse	Director of CPI Nampula
3)		
Traffic Safety Campaign		
1)	Mr. Francisco Seutede	Director of Provincial Police
2)	Dr. Bahtista Rodrigues	Provincial Director of Transport and Communications
Other candidate projects (Micro credit, HIV/AIDS, Water, etc)		
1)	Mr. Alcidio Faria	Director of Ophavela
2)	Ms. Sala Jane	Head of SIDA Nampula Office
3)	Mr. Piteter Geene	Project Manager of ASUNANI

## **APPENDIX-I**

### **Breakdown of the Project Cost for the Study**



## Breakdown of the Project Cost

Item	Description	Unit	Section 1 (Nampula - Ribuae)			Section 2 (Ribuae - Malema)			Section 3 (Malema - Cuamba)			Section 4 (Cuamba - Vila Fontaine)			Total (Section 1-3) (km)			
			Q'ty	Material coefficient	Transport coefficient	Unit Price 1	Amount 1	Q'ty	Material coefficient	Transport coefficient	Unit Price 2	Amount 2	Q'ty	Material coefficient		Transport coefficient	Unit Price 3	Amount 3
0	Compensation	km	131.85			3,365.00	443,675.25				3,365.00	346,157.55				3,365.00	379,942.15	1,169,774.95
1	Preliminary & general works	L.S.	1			11,882,979.98	11,882,979.98	1			9,776,507.43	9,776,507.43	1			11,598,962.93	11,598,962.93	33,258,450.34
2	Earthworks																	
	2.1	Excavation	875,431			3.12	2,733,971.01	595,259			3.12	1,858,993.86	460,346			3.12	1,437,660.56	6,030,625.43
	2.2	Fill (use excavated soil)	875,431			3.16	2,762,166.31	405,156			3.16	1,278,351.18	261,433			3.16	824,875.52	4,865,392.81
	2.3	Fill (borrow material)	89,144			4.87	434,042.14				4.87	0.00				4.87	434,042.14	
	2.4	Disposal of surplus soil				3.50	0.00	190,103			3.50	665,223.37	198,913			3.50	696,052.02	1,361,275.39
						<b>Total S1-2</b>	<b>5,930,179.46</b>				<b>Total S2-2</b>	<b>3,802,568.41</b>				<b>Total S3-2</b>	<b>2,958,587.89</b>	<b>12,691,335.77</b>
3	Pavement																	
	3.1.1	Replacement of subgrade (t = 150mm)				2.47	0.00				2.47	0.00				2.47	0.00	0.00
	3.1.2	Replacement of subgrade (t = 200mm)				2.87	0.00				2.87	0.00				2.87	0.00	0.00
	3.2	Granular sub base course (t = 150mm) (Soaked CBR > 30%)				0.89	0.00				0.45	0.00				0.47	0.00	0.00
	3.3	Granular sub base course (t = 175mm) (Soaked CBR > 30%)				1.04	0.00				0.53	0.00				0.55	0.00	0.00
	3.4	Granular sub base course (t = 225mm) (Soaked CBR > 30%)				1.34	0.00				0.68	0.00				0.71	0.00	0.00
	3.5.1	Granular sub base course (t = 325mm) (Soaked CBR > 30%)				1.93	0.00				0.98	0.00				1.03	0.00	0.00
	3.5.2	Granular sub base course (t = 375mm) (Soaked CBR > 30%)				2.23	0.00	928,970			1.13	1,050,642.79	1,034,780			1.19	1,227,207.38	2,277,850.17
	3.5.3	Granular sub base course (t = 400mm) (Soaked CBR > 30%)				2.38	2,860,918.30				1.21	0.00				1.27	0.00	2,860,918.30
	3.6	Cemented sub base course (t = 150mm) (7day UCS 0.75 - 1.5MPa)				3.68	0.00				1.87	0.00				1.96	0.00	0.00
	3.7	Cemented sub base course (t = 175mm) (7day UCS 0.75 - 1.5MPa)				4.30	0.00				2.18	0.00				2.28	0.00	0.00
	3.8	Cemented sub base course (t = 200mm) (7day UCS 0.75 - 1.5MPa)				4.91	0.00				2.49	0.00				2.61	0.00	0.00
	3.9.1	Cemented sub base course (t = 225mm) (7day UCS 0.75 - 1.5MPa)				5.52	0.00				2.80	0.00				2.94	0.00	0.00
	3.9.2	Cemented sub base course (t = 250mm) (7day UCS 0.75 - 1.5MPa)				6.14	0.00				3.11	0.00				3.26	0.00	0.00
	3.9.3	Cemented sub base course (t = 300mm) (7day UCS 0.75 - 1.5MPa)				7.36	0.00				3.73	0.00				3.92	0.00	0.00
	3.9.4	Cemented sub base course (t = 325mm) (7day UCS 0.75 - 1.5MPa)				7.98	0.00				4.04	0.00				4.24	0.00	0.00
	3.10	Granular base course (t = 150mm) (Soaked CBR > 80%)				2.59	0.00				1.31	0.00				1.38	0.00	0.00
	3.11.1	Granular base course (t = 200mm) (Soaked CBR > 80%)				3.46	0.00	928,970			1.75	1,638,549.65	1,034,780			1.84	1,902,233.73	3,530,783.39
	3.11.2	Granular base course (t = 225mm) (Soaked CBR > 80%)				3.89	0.00				1.97	0.00				2.07	0.00	0.00
	3.11.3	Granular base course (t = 250mm) (Soaked CBR > 80%)				4.32	5,196,760.07				2.19	0.00				2.30	0.00	5,196,760.07
	3.12	Cemented base course (t = 150mm) (7day UCS 1.5 - 3.0MPa)				5.07	0.00				2.57	0.00				2.69	0.00	0.00
	3.13	Cemented base course (t = 180mm) (7day UCS 1.5 - 3.0MPa)				6.08	0.00				3.08	0.00				3.23	0.00	0.00
	3.14	Cemented base course (t = 200mm) (7day UCS 1.5 - 3.0MPa)				6.76	0.00				3.43	0.00				3.59	0.00	0.00
	3.15	Prime coat	1,202,390			1.59	1,913,665.01	928,970			2.33	2,166,482.52	1,034,780			3.01	3,117,281.99	7,197,429.52
	3.16	Tick coat	1,202,390			0.88	1,055,519.26	928,970			1.29	1,194,965.70	1,034,780			1.66	1,719,397.69	3,969,882.65
	3.17.1	Asphalt concrete (t = 50mm)				10.22	0.00				11.71	0.00				13.07	0.00	0.00
	3.17.2	Asphalt concrete (t = 100mm)				20.45	0.00				23.42	0.00				26.15	0.00	0.00
	3.18	Double bituminous surface treatment (DBSD)	1,202,390			4.64	5,580,085.65	928,970			5.31	4,937,438.76	1,034,780			5.93	6,140,679.35	16,658,203.75
	3.19	Open seal for sidewalk	29,680			2.78	82,604.45	3,760			3.19	11,984.98	15,880			3.56	56,515.58	151,106.01
	3.20	Granular sub base course for sidewalk (t = 100mm, Soaked CBR > 30%)	29,680			0.59	17,654.85	3,760			0.30	1,133.99	15,880			0.32	5,022.14	23,810.98
						<b>Total S1-3</b>	<b>16,707,208.60</b>				<b>Total S2-3</b>	<b>10,991,198.38</b>				<b>Total S3-3</b>	<b>14,168,337.86</b>	<b>41,866,744.84</b>

## Breakdown of the Project Cost

Item	Description	Unit	Section 1 (Nampula - Ribaue)			Section 2 (Ribaue - Malema)			Section 3 (Malema - Cuanamba)			Section 4 (Cuanamba - Vila Fontana)			Total (Section 1-3) 347.63 (km)			
			Q'ty	Material coefficient	Transport coefficient	Unit Price 1	Amount 1	Q'ty	Material coefficient	Transport coefficient	Unit Price 2	Amount 2	Q'ty	Material coefficient		Transport coefficient	Unit Price 3	Amount 3
4	Drainage																	
	4.1	Unlined side ditch	m			3.35	0.00											
	4.2	Concrete lined side ditch	m	76,040	49.0%	79.3%	21.36	1,623,952.52	72,920	49.0%	116.2%	3.35	0.00					
	4.3	U-shaped side ditch (open)	m	1,170	49.0%	79.3%	38.43	44,958.42	240	49.0%	116.2%	46.16	11,077.94	1,350	49.0%	150.1%	71,903.04	
	4.4	U-shaped side ditch (covered)	m	14,840	49.0%	79.3%	47.79	709,216.88	2,960	49.0%	116.2%	57.41	169,925.80	17,240	49.0%	150.1%	1,442,012.22	
	4.5	Cross culvert	m	252	49.0%	79.3%	292.41	73,687.76	72	49.0%	116.2%	351.25	25,290.05	420	49.0%	150.1%	170,228.57	
	4.6	Box culvert (1.0x1.0)	No	179	49.0%	79.3%	7,226.46	1,293,537.03	139	49.0%	116.2%	8,680.57	1,206,599.35	179	49.0%	150.1%	10,016.46	
4.7	Box culvert (2.0x2.0)	No	12	49.0%	79.3%	22,795.51	273,546.12	60	49.0%	116.2%	27,382.42	1,642,944.94	38	49.0%	150.1%	1,200,663.30		
						<b>Total S1-4</b>	<b>4,018,898.73</b>				<b>Total S2-4</b>	<b>4,926,521.65</b>				<b>Total S3-4</b>	<b>6,195,309.58</b>	
5	Road furniture																	
	5.1	Road sign (Warning) A=0.62m2/no	m2	54		79.3%	232.05	12,530.65	16		116.2%	340.03	5,440.42	64		150.1%	439.23	
	5.2	Road sign (Regulatory) A=1.13m2/no	m2	54		79.3%	232.05	12,530.65	14		116.2%	340.03	4,760.37	44		150.1%	19,325.91	
	5.3	Road marking (continuous) W=100mm	m	283,242		79.3%	0.52	147,164.99	217,356		116.2%	0.76	165,482.25	244,095		150.1%	240,056.37	
	5.4	Road marking (continuous) W=400mm	m	1,430		79.3%	2.08	2,971.96	330		116.2%	3.05	1,004.97	1,210		150.1%	4,759.92	
							<b>Total S1-5</b>	<b>175,198.24</b>				<b>Total S2-5</b>	<b>176,688.02</b>				<b>Total S3-5</b>	<b>292,252.61</b>
6	Miscellaneous work																	
	6.1	Concrete kerb	m	14,840	49.0%	79.3%	16.21	240,626.08	1,880	49.0%	116.2%	19.48	36,617.53	12,200	49.0%	150.1%	274,193.38	
	6.2	Demolishing existing concrete (plain)	m3	754			12.49	9,413.99	826			12.49	10,312.94	1,183			14,770.22	
	6.3	Demolishing existing concrete (reinforced)	m3	114			22.69	2,586.29	535			22.69	12,137.41	28			635.23	
	6.4	Removal of balley bridge (W=4m)	m				90.75	0.00				90.75	0.00	31			2,813.16	
							<b>Total S1-6</b>	<b>252,626.36</b>				<b>Total S2-6</b>	<b>59,067.88</b>				<b>Total S3-6</b>	<b>292,411.99</b>
7	Bridge																	
	No. 12 Monapo bridge L=25m	No						1				452,123.97					452,123.97	
	No. 19 Lalama bridge L=30m	No						1			522,422.84						522,422.84	
	No. 24 Nataleia bridge L=48m	No						1			710,680.92						710,680.92	
	No. 27 Mutivouse bridge L=30m	No						1			652,066.08						652,066.08	
	No. 30 Namuela bridge L=30m	No															602,003.26	
	No. 34 Lurto bridge L=94m	No															2,101,346.61	
	Temporary construction road	km	124.00															
							<b>Total S1-7</b>	<b>0.00</b>				<b>Total S2-7</b>	<b>2,337,293.81</b>				<b>Total S3-7</b>	<b>2,703,349.87</b>
	9	Dayworks							101.00			10,183.00						10,183.00
	10	Social issues																
							<b>Total S1-8</b>	<b>28,346,803.39</b>				<b>Total S2-8</b>	<b>23,321,821.16</b>				<b>Total S3-8</b>	<b>27,669,281.81</b>
						<b>Total S1-9</b>	<b>41,434,522.51</b>				<b>Total S2-9</b>	<b>34,089,905.99</b>				<b>Total S3-9</b>	<b>40,444,189.22</b>	
11	Contingency cost	L.S.	1			4,143,452.25	4,143,452.25	1			3,408,950.60						4,044,418.92	
	Total construction cost (1-11)					45,577,974.76	45,577,974.76	1			37,498,456.59							44,488,608.14
	VAT (17%) of total construction cost (1-11)					7,748,255.71	7,748,255.71	1			6,374,737.62							7,563,063.38
	<b>Total construction cost (1-11) inclu. VAT</b>					<b>53,326,230.47</b>					<b>Total Construction S2 (1-11)</b>	<b>43,873,094.21</b>					<b>Total Construction S3 (1-11)</b>	<b>52,051,671.52</b>
12	Engineering cost	L.S.	1			3,646,237.98	3,646,237.98	1			2,999,876.53							3,359,088.65
	8% of total construction cost (1-11)					619,860.46	619,860.46	1			509,979.01							605,045.07
	<b>Total engineering cost inclu. VAT</b>					<b>4,266,098.44</b>					<b>Total engineering S2</b>	<b>3,509,855.54</b>					<b>Total engineering S3</b>	<b>4,164,133.72</b>
	VAT (17%) of engineering cost					49,224,212.75	49,224,212.75	1			40,498,333.12							48,047,696.79
	Total project cost (1-12)					8,368,116.17	8,368,116.17	1			6,884,716.63							8,168,108.45
	VAT (17%) of total project cost (1-12)					57,592,328.91	57,592,328.91	1			47,383,049.75							56,215,985.24
	<b>Total project cost (1-12) inclu. VAT</b>					<b>63,958,445.08</b>					<b>Total project S2 (1-12)</b>	<b>54,766,095.48</b>					<b>Total project S3 (1-12)</b>	<b>61,384,113.99</b>