

**The Stakeholder Meeting 3-3  
for the Construction  
of the Second Mekong Bridge  
in the Kingdom of Cambodia**

Part II Final Results of EIA Study

January 24, 2006  
Phnom Penh Hotel

Ministry of Public Works and Transport (MPWT)  
in cooperation with JICA

Part II-a Scope of EIA Study

Part II-b Final Results of EIA Study (Natural Environment)

Part II-c Final Results of EIA Study (Social Environment)

Part II-a Scope of EIA Study

1. Study Objectives

The objectives of this EIA Study are:

- To carry out relevant environmental field surveys;
- To evaluate significance of potential environmental impacts to be caused by the proposed project;
- To summarize environmental mitigation measures; and
- To establish environmental management program including environmental monitoring program during both construction and operation phases.

2. Impacts to be Assessed (Natural Environment)

No.	Impact to be Studied	Evaluation in IEE Study (Construction Phase)	Evaluation in IEE Study (Operation Phase)	On-site Survey in EIA
1	Air Quality	C	C	X
2	Water Quality	A	D	X
3	Soil and Sedimentation Quality	A	A	X
4	Waste Disposal	A	D	X
5	Noise and Vibration	B	C	X
6	Subsidence	A	A	X
7	Bad Smells	D	D	
8	Topography and Geology	A	A	X
9	River bed Materials	A	D	X
10	Fauna and Flora	A	B	X
11	Use of Water Resources	B	D	X
12	Accidents	B	B	
13	Greenhouse Effect Gas	C	C	

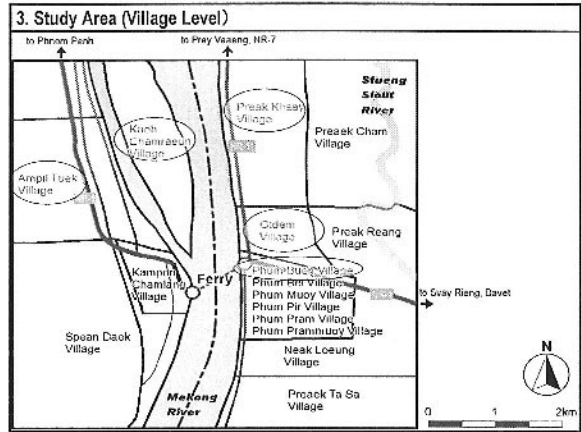
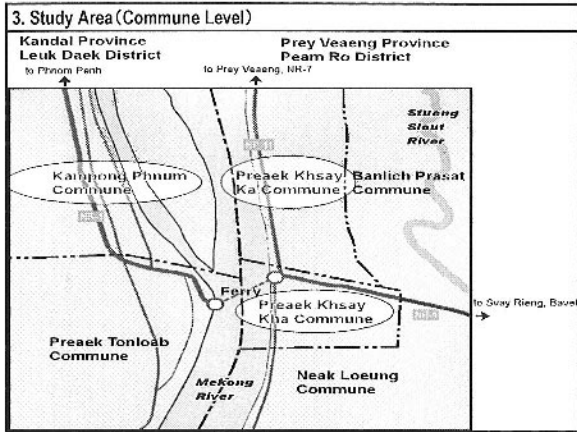
2. Impacts to be Assessed (Social Environment)

No.	Impacts to be assessed	Evaluation in IEE Study (Construction Phase)	Evaluation in IEE Study (Operation Phase)	On-site Survey in EIA
1	Migration of population / Involuntary resettlement	A	D	X
2	Impact on local economy (employment, livelihood, etc.)	D	B	X
3	Utilization of land and local resources	B	B	X
4	Social institutions (social capital and local decision-making institution)	D	D	
5	Existing social infrastructure and services	D	D	
6	Vulnerable social groups	B	B	X
7	Equality of benefits and losses and equality in development process	B	B	X
8	Local conflicts of interests	C	B	X
9	Gender	C	B	X
10	Children's rights	C	B	X
11	Cultural heritage	D	D	
12	Infectious diseases (HIV/AIDS)	B	B	X

3. Study Area

- There are 5 villages under 3 communes which might be directly affected by the ROW for the construction of the Bridge.
- There are other 11 villages under 4 communes which might be indirectly affected by the construction of the Bridge.

Province	District	Commune	Directly Affected Villages	Indirectly Affected Villages	No. of Total Villages
Kandal	Leuk Daek	Kampong Phnum	2	0	2
Kandal	Leuk Daek	Preak Tonloab	0	2	2
Prey Veng	Peam Ro	Preak Khsay Ka	2	0	2
Prey Veng	Peam Ro	Preak Khsay Kha	1	5	6
Prey Veng	Peam Ro	Neak Loeng	0	2	2
Prey Veng	Peam Ro	Banlish Prasat	0	2	2



#### Part II-b Final Results of EIA Study (Natural Environment)

##### 1. Summary of Impacts (Natural Environment)

Environmental Factors	Possible Impacts
1. Air Quality	1. Dust during the construction period 2. Future roadside air quality condition after the construction
2. Water Quality	1. Risk of water pollution to the Mekong River during the construction. 2. Potential of water quality degradation due to the erosion during/and after the construction
3. Soil and Sedimentation	1. Potential for soil erosion during/and after the construction. 2. Potential of sedimentation due to the erosion during/and after the construction. 3. Potential of cross-sectional seepage of the approach roads after the construction.
4. Waste Disposal	1. Preparation of excavated soil dump site. 2. Household wastes discharged from construction yard during the construction period.
5. Noise/Vibration	1. Noise and vibration during the construction period. 2. Future roadside noise and vibration after the construction.
6. Subsidence	1. Potential of Subsidence during/and after the construction.

#### Part II-b Final Results of EIA Study (Natural Environment)

##### 1. Summary of Impacts (Natural Environment, Cont.)

7. Bad Smell	1. Bad smell due to the compost smell originated from the decayed plants under inundated water.
8. Topography and Geology	1. Worsened local flood/or inundation after the construction. 2. Risk of malaria, dengue and waterborne disease outbreak from newly created long-term inundated area. 3. Potential of the regional seepage/or recharge from the Mekong River to the regional drainage system of the flood-free land during/and after the construction. 4. Potential of the erosion of the riverbank of the Mekong River.
9. River Bed (e.g., benthos)	1. Disturbance to the river bed condition (e.g., benthos)
10. Flora/Fauna	1. Destruction of natural floodplain vegetation. 2. Disturbance to birds and wildlife during the construction period. 3. Illegal fishing/or hunting activities by bridge construction workers. 4. Habitat change due to the physical change/or damage on the Mekong River. 5. Risk of pollution to aquatic species during the construction period. 6. Disturbance to animal path after the construction.
11. Water Resources	1. Demolition of shallow wells. 2. Risk of pollution to the aquifer during the construction period.
12. Accidents	1. Potential of increased traffic accidents during the construction period. 2. Potential increase in traffic accidents after bridge operation starts. 3. Undiscovered UXOs or landmines during the construction period. 4. Increased risk of vessel collisions.
13. Global Warming	1. Possible CO <sub>2</sub> emission increase after bridge operation starts.

#### Part II-b Final Results of EIA Study (Natural Environment)

##### 2. Objectives of Mitigations

The objectives of the mitigations (i.e., avoidance, reduction, and elimination) plan are:

- To review impacts identified through the environmental impact assessment (EIA);
- To incorporate probable working practices into the mitigation plan at the pre-construction and construction phases of the project in order to anticipate those issues which are likely to require close environmental management;
- To maintain a comfortable roadside environment throughout the project; and
- To alleviate disturbance of regional hydrological balance, in particular, drainage system, and to lessen related secondary impacts such as inundation.

#### Part II-b Final Results of EIA Study (Natural Environment)

##### 2. Objectives of Mitigations, Cont.

- To alleviate secondary impacts of a large-scale subsidence around the approach roads on both sides of the Mekong River.
- To minimize the risk of the erosion of road bank of approach roads, that may lead to new local inundation or water quality degradation, and the erosion of the riverbank of the Mekong River.
- To alleviate disturbance of natural fauna/flora condition over the Mekong floodplain and inside of the Mekong River throughout the project.
- To harmonize new transport facilities with surrounding communities.

**Part II-b Final Results of EIA Study (Natural Environment)**

**2. Contents of Mitigation Measures**

- a) Maintenance of comfortable roadside environment throughout the project.
- b) Alleviation of disturbance of regional hydrological balance and to lessen related secondary impacts such as inundation.
- c) Alleviation of secondary impacts of a large-scale subsidence around the approach roads on both sides of the Mekong River.
- d) Minimize the risk of the erosion of road bank of approach roads and the erosion of the riverbank of the Mekong River.
- e) Alleviation of disturbance of natural fauna/flora condition over the Mekong floodplain and inside of the Mekong River throughout the project.
- f) Harmonization of new transport facilities with surrounding communities.

**Part II-b Final Results of EIA Study (Natural Environment)**

**3. Environmental Management Plan**

- Effective environmental management during pre-construction and construction requires the establishment of effective institutional arrangements for the implementation of the Environmental Management Plan (EMP). Specific objectives of the plan are to:
  - Define organizational and administrative arrangements for the environmental monitoring, including the definition of responsibilities of staff, coordination, liaison and reporting procedures.
  - Discuss procedures for pro-active environmental management, so that potential problems can be identified and mitigation measures to be adopted prior to the construction commencement.

**Part II-b Final Results of EIA Study (Natural Environment)**

**4. Environmental Monitoring**

Monitoring Issue	Monitoring Method	Positive Indicator
Air Quality	Observations should be made on the level of dust generated during construction activities. Dampening down should be carried out if levels are unacceptable. Further details on the method to be used are provided in following sections.	Deposition of dust on surfaces should decrease with increased dampening.
Water Quality	Engineer should monitor the water quality of the Mekong River, and tributaries running into the Mekong River during the construction activity.	No accidental spillage of construction wastes into the Mekong River nor relevant significant water quality degradation recognized throughout construction period.
Soils and sedimentation (erosion and seepage)	Engineer should make a daily inspection of earthworks, and ensure that slopes are suitably graded. Once earthworks are complete, Engineer should monitor restoration measures implemented by Contractor, such as revegetation or use of gabion mattress as well as occurrence of seepage-related erosion.	Absence of rills, gullies or other erosion features. No significant seepage-related erosion recognized.

**Part II-b Final Results of EIA Study (Natural Environment)**

**4. Environmental Monitoring**

Monitoring Issue	Monitoring Method	Positive Indicator
Soils and sedimentation (sedimentation)	Engineer should monitor sedimentation of major tributaries and sand-bar generation at down stream side of new routes for safe flood control.	No trace of significant sedimentation and of new sand bar generation. Secure safe river space and make local water flowing smooth.
Waste Disposal	Engineer to ensure waste dumping site for construction waste material, soil, and so on.	No illegal disposal of waste material.
Noise/ Vibration	Noise measurement should be carried out at the boundary and the inside of the work site and at the nearest sensitive receiver. Vibration measurement should be carried out within the residential area.	Noise levels at the nearest sensitive receiver should not exceed the Cambodian environmental standards.
Subsidence	Engineer should monitor the subsidence around the project site.	No differential settlement that would cause cracks/or partial destruction of the road will not be occurred.

**Part II-b Final Results of EIA Study (Natural Environment)**

**4. Environmental Monitoring**

Monitoring Issue	Monitoring Method	Positive Indicator
Bad Smell	Engineer to ensure that no illegal dumping of household waste from the construction yard nor newly created permanent inundation area on where plants will be forced to be submerged for the long term.	No complaints about the compost smell to be generated from submerged and decayed plants.
Topography and Geology	Engineer should monitor occurrence of newly developed inundation or flooding events around the project site.  Engineer should monitor regional groundwater level distribution and enhanced consolidation to be caused by groundwater level drawdown, periodically.	No trace of permanent inundation and/or flooding.  No big groundwater level fluctuation. No regional vegetation change and/or enhanced aquifer consolidation.
River Bed (e.g., benthos)	Engineer should monitor the water quality (e.g., turbidity, TSS and others) of the Mekong River as well as temporal disturbance to the river bed condition.	No significant disturbance to the river bed condition (e.g., benthos) recognized during the construction period.

**Part II-b Final Results of EIA Study (Natural Environment)**

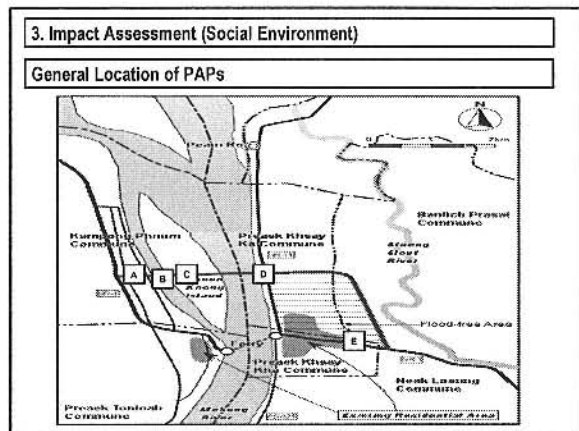
**4. Environmental Monitoring**

Monitoring Issue	Monitoring Method	Positive Indicator
Flora/Fauna (Vegetation)	Engineer should ensure that excessive clearance of vegetation is avoided. Contractor must seek approval of Engineer prior to clearance. Re-planting or relocation of trees should be done with the coordination of MoE and/or MAFF.	Area of vegetation to be cleared minimized. Relocation/re-planting be coordinated with MoE and/or MAFF.
Flora/Fauna (Birds/wildlife/aquatic species)	Engineer should examine the timing, shaping and sizing operations to avoid breeding or nesting season and trees, protecting key food, cover, and water resources. The number of roadkill and unusual death of aquatic species shall be counted.	No trace of roadkills, unusual death of any species.
Flora/Fauna (Conservation pond for box turtles)	Engineer should inspect the creation of conservation pond such as accidental spillage of construction waste or illegal dumping of waste into the pond.	No significant water quality degradation nor disturbance to local environment of conservation pond recognized.

Part II-b Final Results of EIA Study (Natural Environment)		
4. Environmental Monitoring		
Monitoring Issue	Monitoring Method	Positive Indicator
Flora/Fauna (illegal fishing/hunting)	Engineer should monitor in collaboration with both Kandal and Prey Veng Fisheries Department if there is illegal fishing/hunting of local species.	No report of illegal fishing/hunting activities by construction worker.
Water Resources	Engineer should monitor the water quality of wells located around the project site as well as the occurrence of dried-up wells to be caused by groundwater level drawdown during the construction period.	No significant water quality degradation and/or dried-up wells recognized throughout construction period.
Accidents (road safety)	Engineer should monitor the condition of trucks arriving at the site and keep a record of night driving.	No road accidents related with project. Night driving kept to minimum.
Accidents (UXOs)	Engineer to ensure that UXOs within the project site cleared completely.	No additional discovery/hitting of UXO during the construction period.
Accidents (Vessel collision)	Engineer should monitor the condition of barges operating at the site while have coordination with current maritime operation of the Mekong River (e.g., ferry, container ship and others).	No vessel accidents related with project.

Part II-b Final Results of EIA Study (Natural Environment)		
4. Environmental Monitoring		
Monitoring Issue	Monitoring Method	Positive Indicator
Complaints	Engineer should inspect the record of complaints made by local residents, to be kept by Contractor, and should check that action is taken quickly and that the number of complaints does not rise significantly.	Number of complaints decreases.

3. Impact Assessment (Social Environment)				
Involuntary Resettlement				
<ul style="list-style-type: none"> <li>The PAPs (house owners) are distributed across the route of the Bridge in 5 clusters (Cluster A, B, C, D, and E) of communities in Kampong Phnom, Preak Khsay Ka, and Preak Khsay Kha commune, and PAPs (land owners) are distributed on the ROW and the construction yards of the Bridge.</li> <li>The total number of PAPs is 260 and the number of assets counted are 270 cases as of the timing of the Simple Survey.</li> </ul>				
No.	Commune	Number of Project Affected Households (PAPs)	Number of Assets (House and Land)	Number of Project Affected Individuals
1	Prek Ksay Ka	69	71	373
2	Prek Ksay Kha	81	88	437
3	Kampong Phnom	110	113	594
Total		260	270	1,404



3. Impact Assessment (Social Environment)	
Involuntary Resettlement	
<ul style="list-style-type: none"> <li>Although the project site is part of the National Road No.1, the ROW (Right of Way) for the Bridge should be declared as the new ROW.</li> <li>The existing ROW for the National Road No. 1 is officially based on the Prime Minister Declaration on 27 September 1999 stating that National Road No.1 is 60 meters in rural areas.</li> <li>However, the ROW for the Bridge was declared as the "Construction Area" as the tentative ROW which is legally based on the Article 13 of the new Land Law that went effect in 2001.</li> <li>Eventually, the "Construction Area" is categorized into the following 2 types of land. <ul style="list-style-type: none"> <li>Tentative right of way (ROW) as part of the National Road No.1 as well as by-passes and approach roads connecting to the Bridge, and</li> <li>Land needed for the construction yard.</li> </ul> </li> </ul>	

3. Impact Assessment (Social Environment)	
Impacts on Local Economy	
<ul style="list-style-type: none"> <li>Since the portion of sales to drivers and passengers is estimated at relatively small in the business communities such as large markets and relatively large in small-scale business communities such as restaurants, retail shops and mobile vendors around the both ferry terminals, the economic impacts might remain trivial in large markets and serious in small-scale business communities.</li> <li>The massive inflow of construction workers for the construction of the Bridge might have significant economic impacts on the local economy. The business community could benefit, if the contractor is encouraged to buy local materials.</li> <li>Although it is likely that 31 locally-employed workers of the Neak Loeng Ferry might lose their job opportunities, it might be solved by shifting these workers and their families to other ferry-crossing points.</li> </ul>	

3. Impact Assessment (Social Environment)	
Impacts on Local Economy	
(1) Mobile Vendors	
Group of Vendors	No. of Vendors as of December 2004
Men's Vendors	37
Women's Vendors	252
Western Ferry Terminal	289
Men's Vendors	5
Women's Vendors	149
Eastern Ferry Terminal	154
Both Terminals	443

3. Impact Assessment (Social Environment)			
Impacts on Local Economy			
(1) Mobile Vendors			
Group of Vendors	Number of Vendors	Average Daily Earnings (USD / day)	Total Estimated Daily Earnings (USD / day)
Men's Vendors	12	2,71	32,5
Women's Vendors	137	2,71	371,3
Children's Vendors	140	1,25	35,0
Western Ferry Terminal	298	-	438,8
Men's Vendors	0	-	-
Women's Vendors	9	2,71	24,4
Children's Vendors	145	1,04	150,8
Eastern Ferry Terminal	154	-	175,2
Project Area Total	452	-	614,0

3. Impact Assessment (Social Environment)	
Impacts on Local Economy	
(2) Restaurants and Retail Shops	
(a) Snapshot of Western Side	(b) Snapshot of Eastern Side

3. Impact Assessment (Social Environment)						
Impacts on Local Economy						
Survey on Restaurant (Eastern Side)						
No.	Years of Business	Kind of Food	Average Revenue per Day (Riel)	Average Customers per Day (Persons)	Percentage of Sales to Passengers by at Ferry Terminals (%)	Comments on Impacts by Abolishment of Ferry Terminals
1	25	Khmer	15,000	20	70,0	Decrease customers.
2	10	Khmer	45,000	40	85,0	No comments.
3	25	Khmer, Chinese	55,000	15	70,0	No comments.
4	20	Khmer, Chinese	150,000	50	100,0	Lose job.
5	20	Khmer	20,000	30	100,0	Lose job.
6	25	Khmer, Chinese	5,000	30	50,0	Decrease customers.
7	25	Noodle, Coffee	0	20	50,0	Lose job.

3. Impact Assessment (Social Environment)					
Impacts on Local Economy					
Survey on Retail Shops (Western Side)					
No.	Years of Business	Kind of Food	Average Revenue per Day (Riel)	Average Customers per Day (Persons)	Percentage of Sales to Passengers by at Ferry Terminals (%)
1	17	Gold, Mobile Phone	30,000	15	30,0
2	2	Motor Repair	5,000	3	40,0
3	5	Money Change, Phone	25,000	15	0,0
4	25	Grocery Cake	15,000	20	90,0
5	14	Grocery, Money Change	20,000	50	30,0
6	15	Watches, Glasses	4,000	3	2,0
7	15	Stationary, Photocopy	7,500	10	80,0
8	20	Newspaper, Cigarette	7,500	5	20,0
9	25	Watches, Glasses, Gold	40,000	5	20,0
10	3	Second-hand Bicycle	8,000	1	20,0

3. Impact Assessment (Social Environment)		
Impacts on Local Economy		
(3) Staff and Workers of Neak Loeng Ferry		
No.	Group	Number of Personnel
1	Management	3
2	Administration and Security Control Group	60
3	Accountant and Fare Group	30
4	Planning Group	3
5	Technical Group (Ferry Operator, Equipment, Workshop)	31
Total		127

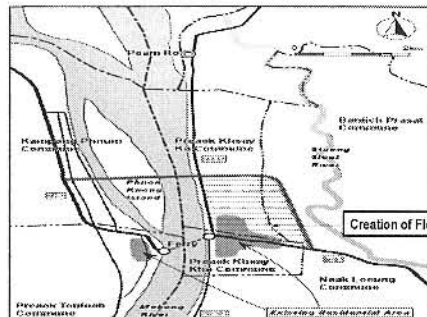
**3. Impact Assessment (Social Environment)**

**Utilization of Land and Local Resources**

- The construction of the bridge will make the local land use more valuable and multi-purpose even in the rainy season. The flood-free land will be created by triangle spaces surrounded by the National Road No.1, the National Road No.11, and an approach road which is associated with the construction of the Bridge. In this case, there is a slight risk that, due to the created flood-free land, production activities of some farmers and fishermen might be affected.

**Utilization of Land and Local Resources**

**Creation of Flood-free Land**



**3. Impact Assessment (Social Environment)**

**Vulnerable Social Group**

- Vulnerable groups of people are socially and economically in weak positions, and easily affected by various social impacts. Especially, they might face difficulties in coping with involuntary resettlement as well as loss of cash income due to the abolishment of ferry services. Among these groups, special attentions must be paid on children as well as women, which will be separately discussed later.
- Socially and economically vulnerable vendors working at the both ferry terminals might be affected due to the loss of their customers who are drivers and passengers stopping over at the terminals, although, in the construction phase of the Bridge, their sales might temporarily increase thanks to the massive inflow of construction workers. Special attention should be paid to the livelihood of these vulnerable group by mitigating those economic impacts.

**3. Impact Assessment (Social Environment)**

**Vulnerable Social Group**

**Number of PAPs by Type of Vulnerability**

Type of Vulnerability	Preah Khsay Ka	Preah Khsay Kha	Kampong Phnom	Total
Female-headed Household	4	8	21	33
Household under Poverty Line	7	11	32	50
Household with Physically-handicapped Family Members	4	6	11	21
Household in Flood-prone Area	36	61	34	131

**3. Impact Assessment (Social Environment)**

**Vulnerable Social Group**

**Survey on Physically-handicapped Persons**

No.	Terminal	Handicapped	Years of Stay	Age	No. of Family Members	Monthly Income (Riel)	Monthly Income of Other Family Members (Riel)	Total Monthly Family Income (Riel)
1	East	Blind	30	83	8	90,000	310,000	400,000
2	East	Blind	12	39	8	150,000	0	150,000
3	West	Right Leg	3	53	1	90,000	0	90,000
4	West	Left Leg	8	39	8	200,000	300,000	500,000
5	West	Left Leg	10	40	4	90,000	90,000	180,000

**3. Impact Assessment (Social Environment)**

**Equity of Benefits and Losses**

- The improvement of crossing services will not necessarily equitably benefit all the stakeholders in the project affected area.
- The abolishment of the ferry services associated with the construction of the Bridge might significantly decrease the income of poor people such as vendors without capital, thereby enlarging the economic disparity in the project affected area.
- Furthermore, the construction of the Bridge might change the crossing convenience of people, thereby enlarging the geographical disparity in the project affected area.

**3. Impact Assessment (Social Environment)**

**Conflicts of Interests**

- The construction of the Bridge might change the value of land in the project affected area which might have a slight risk of inviting the conflicts of interests in relations to the land disputes.
- According to the report from Preak Khsay Kha commune, the commune solved about 120 cases of land disputes over the border last year. At least, 5 serious cases were sent to the court last year.
- The flood-free land which will be created by triangle spaces surrounded by the National Road No.1, the National Road No.11, and an approach road associated with the construction of the Bridge might increase its value in comparison with other areas, thereby having possibilities of conflicts of interests among land owners.

**3. Impact Assessment (Social Environment)**

**Gender**

- The improvement in mobility accrued from the construction of the Bridge might increase a risk of trafficking of women as well as the associated chronic problems such as prostitution and spread of HIV/AIDS.
- Due to the abolishment of the ferry terminals as a result of the bridge construction, the rate of stopovers of drivers and passengers at the terminals might significantly decrease opportunities to sell various products, thereby accordingly decreasing women's income.

**3. Impact Assessment (Social Environment)**

**Gender**

**Women's Vendors at Ferry Terminals**

Group of Vendors	Number of Vendors	Average Daily Earnings (USD / day)	Total Estimated Daily Earnings (USD / day)
Men's Vendors	12	2.71	32.5
Women's Vendors	137	2.71	371.3
Children's Vendors	140	1.25	35.0
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Eastern Ferry Terminal	154	-	175.2
Project Area Total	452	-	614.0

**3. Impact Assessment (Social Environment)**

**Children's Rights**

- The improvement in mobility accrued from the construction of the Bridge might increase a risk of trafficking of children as well as the associated chronic problems such as orphans and spread of HIV/AIDS.
- Due to the abolishment of the ferry terminals associated with the construction of the Bridge, the rate of stopovers of drivers and passengers at the terminals might significantly decrease, thereby accordingly decreasing children's income through selling various products.
- Due to the construction of an approach road associated with the construction of the Bridge, there might exist a slight possibility that children are forced to detour in their schoolings.

**3. Impact Assessment (Social Environment)**

**Children's Rights**

**Children's Vendors at Ferry Terminals**

Group of Vendors	Number of Vendors	Average Daily Earnings (USD / day)	Total Estimated Daily Earnings (USD / day)
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**3. Impact Assessment (Social Environment)**

**Cultural Heritage**

- The RAP (Resettlement Action Plan) should document all necessary actions to protect, move, and restore the cultural property of all affected people. The movement of cultural artifacts must be carried out in consultation with local communities and in collaboration with governmental agencies.
- Possible project sites such as the construction yard as well as the as the associated approach roads are not proximately located in any of archeological and religious heritages. Nevertheless, In case that the cultural property is found during the construction phase, they should be treated in accordance with a cultural property management plan.

3. Impact Assessment (Social Environment)					
Infectious Diseases					
<p>■ It is obvious that the latest number of cases in Kandal Province is on upward trend, while the nation-wide figure is on downward trend.</p>					
Year	Affected	Male	Female	Died	Total
2001	Adult	9	12	4	17
	Child	1	1	0	2
2002	Adult	34	34	37	31
	Child	4	2	1	5
2003	Adult	27	39	25	41
	Child	7	2	2	7
2004	Adult	45	56	27	74
	Child	8	6	4	10

3. Impact Assessment (Social Environment)
Infectious Diseases
<p>■ The construction activities associated with the construction might affect the spread of HIV/AIDS. A large number of workers will be stationed at working sites in case of the construction of a bridge as well as additional piers. They are mostly seasonal workers who might be predominantly young and sexually active, leading to increasing risks of the epidemic during the construction period of facilities.</p> <p>■ The improvement in mobility accrued from the construction of the Bridge might bring about a risk of increasing the prevalence ratio of HIV/AIDS through activating various mobile groups of people.</p>

3. Impact Assessment (Social Environment)			
Mitigation Measures for Social Environmental Impacts (1)			
Impacts	Mitigation Programme	Time Frame	Budgetary Arrangement
Involuntary Resettlement	a) Compensation Package for Loss of Land b) Compensation Package for Loss of Structures c) Compensation Package for Productive Trees d) Allowances for Disruption and Resettlement of PAPs e) Exemption of Taxes and Fees for Land Transactions f) Assistance to Provision of Information on Relocation g) Grievances Mechanism for Resettlement Activities	Before construction	Included in RAP
Impacts on Local Economy	a) Comprehensive Michi-no-eki (Roadside Station) D development Program b) Smooth Transfer and Training Program for Contract-based Neak Loeng Ferry Staff and Their Families c) Participatory Maintenance Programme for Local Roads near Approach Road of the Bridge d) Credit and Saving Program for Small-scale Business for Local Traders and Farmers	During and post construction	Should be studied in collaboration with line ministries and agencies

3. Impact Assessment (Social Environment)			
Mitigation Measures for Social Environmental Impacts (2)			
Impacts	Mitigation Programme	Time Frame	Budgetary Arrangement
Utilization of Land and Local Resources	a) Supporting and Training Program for Farmers' Land Use in Flood-free Land b) Supporting and Training Program for Fishermen's Fish-catching in Flood-free Land c) Surveillance and Information Provision Program for Soils and Water Flow in Flood-free Land	During and post construction	Should be studied in collaboration with line ministries and agencies
Vulnerable Social Groups	a) Allowances for Vulnerable PAPs b) Supporting programme for Physically-handicapped Vendors	Before, during and post construction	Should be studied in collaboration with line ministries and agencies
Equity of Benefits and Losses	a) Surveillance for Indicators of Local Economic Disparity b) Surveillance for Indicators of Local Geographical Disparity	During and post construction	Should be studied in collaboration with line ministries and agencies

3. Impact Assessment (Social Environment)			
Mitigation Measures for Social Environmental Impacts (3)			
Impacts	Mitigation Programme	Time Frame	Budgetary Arrangement
Local Conflicts of Interests	a) Surveillance for Prevention Program of Land Disputes b) Land Registration Promotion Program	During and post construction	Should be studied in collaboration with line ministries and agencies
Gender	a) Supporting programme for Women's Vendors b) HIV/AIDS Prevention Package for Women	During and post construction	Should be studied in collaboration with line ministries and agencies
Children's Rights	a) Supporting programme for Children's Vendors b) HIV/AIDS Prevention Package for Children	During and post construction	Should be studied in collaboration with line ministries and agencies
Infectious Diseases	a) Comprehensive HIV/AIDS Prevention Package for Construction Workers and Local Communities	During and post construction	Should be included in EMP.

3. Impact Assessment (Social Environment)
Mitigation Measures for Social Environmental Impacts
<p>(1) Comprehensive Michi-no-eki development Programme</p> <p>"Michi-no-eki (Roadside Station)" programme is proposed in order to provide opportunities to sell local products to drivers and passengers who will stop over at Neak Loeng. The main functions of Michi-no-eki are: Rest, Market, Terminal, Public Services and Sightseeing.</p>




<b>3. Impact Assessment (Social Environment)</b>
<b>Mitigation Measures for Social Environmental Impacts</b>
<p>(2) Smooth Transfer and Training Programme Neak Loeung Ferry Staff</p> <p>MPWT will be able to transfer those staff to other crossing points, since a potential demand for ferry transport in Cambodia is evident. In addition to the transfer, MPWT is required to provide the training and consultation programme for the staff and their families, considering their concerns and requests.</p>

<b>3. Impact Assessment (Social Environment)</b>
<b>Mitigation Measures for Social Environmental Impacts</b>
<p>(3) Participatory Maintenance of Local Roads connecting to Approach Roads of the Bridge</p> <p>In addition to the Michi-no-eki, providing immediate and direct income from labor-based construction and maintenance of approach roads, improving critical small scale civil works, and developing the local small-scale contracting industry, are important in terms of the rural development and the provision of economic opportunities.</p>

<b>3. Impact Assessment (Social Environment)</b>
<b>Mitigation Measures for Social Environmental Impacts</b>
<p>(4) Credit and Saving Program for Small-scale Business for Local Traders and Farmers</p> <p>Access to credit is extremely important for people to invest on the increase in livestock and vegetable productions. Saving programs should be set up to encourage local people to save money for those investment during the post-construction period by using a series of special demand expected to be generated by the massive inflow of construction workers during the construction period.</p>

<b>3. Impact Assessment (Social Environment)</b>
<b>Mitigation Measures for Social Environmental Impacts</b>
<p>(5) Comprehensive HIV/AIDS Prevention Package for Construction Workers and Local Communities</p> <p>The mitigation measures of HIV/AIDS during and after the construction period of the Bridge are critical to provide a wide range of prevention and supporting programmes targeting construction workers and local people. The programme is proposed to include:</p> <ul style="list-style-type: none"> <li>(i) Advocacy actions on HIV/AIDS;</li> <li>(ii) Information and education campaign on HIV/AIDS;</li> <li>(iii) Surveillance and monitoring activities of HIV/AIDS prevalence; and</li> <li>(iv) The 100% condom use program (CUP)</li> </ul>

**THANK YOU !**



for your attention and patience.

Ministry of Public Works and Transport