

2.3 Matrix for Scoping

Site: Con Dao

| Name of Cooperation Project | | Imported Coal Transshipment Terminal Project | | | | | | | | | | | | |
|--|----------------|--|------------------|--|---------------------------|-----------------------------|---|---|--|-----------------|--------------------------------------|------------------------------|----------------------------|---|
| No. | Likely Impacts | Overall Rating | Planning Phase | | Construction Phase | | | | | Operation Phase | | | | |
| | | | Land acquisition | Change of fishing zones, Land use, Restriction of activities | Reclamation of coastlines | Deforestation in coastlines | Alteration to ground by cut land, filling, drilling, etc. | Construction of Mooring, Seawalls, Water facilities, etc. | Operation of Construction Equipment and Vehicles | Drainage | Sailing/ Arrival & Departure of Ship | Operation of Port Facilities | Increase of Traffic Volume | Appearance/ Occupancy of Building Structure |
| Social Environment * the impacts on "Gender" and "Children's Right" might be related to all criteria of Social Environment. | 1 | Involuntary Resettlement | C | C | - | - | - | - | - | - | - | - | - | - |
| | 2 | Local economy such as employment and livelihood, etc. | A | - | - | - | - | A | B | B | - | B | +B | B |
| | 3 | Land use and utilization of local resources | A | B | - | B | - | A | B | B | - | - | B | - |
| | 4 | Social institutions such as social infrastructure and local decision-making institutions | - | - | - | - | - | - | - | - | - | - | - | - |
| | 5 | Existing social infrastructures and services | B | - | - | - | - | - | - | C | - | - | - | B |
| | 6 | The poor, indigenous and ethnic people | C | C | - | - | - | - | - | - | - | - | - | - |
| | 7 | Misdistribution of benefit and damage | - | - | - | - | - | - | - | - | - | - | - | - |
| | 8 | Cultural heritage | B | - | - | - | - | - | - | - | - | - | - | - |
| | 9 | Local conflict of interests | - | - | - | - | - | - | - | - | - | - | - | - |
| | 10 | Water Usage or Water Rights and Rights of Common | B | - | - | - | - | - | B | - | - | - | B | - |
| | 11 | Sanitation | - | - | - | - | - | - | - | - | - | - | - | - |
| | 12 | Hazards (Risk) Infectious diseases such as HIV/AIDS | B | - | - | - | - | - | B | - | - | - | - | - |
| Natural Environment | 13 | Topography and Geographical features | C | - | - | C | - | C | C | - | - | - | - | - |
| | 14 | Soil Erosion | C | - | - | C | - | C | C | - | - | - | - | - |
| | 15 | Groundwater | - | - | - | - | - | - | - | - | - | - | - | - |
| | 16 | Hydrological Situation | - | - | - | - | - | - | - | - | - | - | - | - |
| | 17 | Coastal Zone | B | - | - | B | B | B | B | B | - | B | - | - |
| | 18 | Flora, Fauna and Biodiversity | A | - | - | A | A | A | A | A | - | B | - | - |
| | 19 | Meteorology | B | - | - | - | - | - | - | - | - | - | B | - |
| | 20 | Landscape | A | - | - | A | A | A | A | A | - | - | - | - |
| | 21 | Global Warming | - | - | - | C | C | C | C | - | - | - | C | - |
| Pollution | 22 | Air Pollution | C | - | - | - | - | - | C | C | - | - | B | - |
| | 23 | Water Pollution | B | - | - | C | - | - | B | C | - | - | - | - |
| | 24 | Soil Contamination | B | - | - | B | - | - | - | - | - | - | - | - |
| | 25 | Waste | C | - | - | - | - | - | C | - | - | - | C | - |
| | 26 | Noise and Vibration | B | - | - | - | - | - | - | C | - | - | C | B |

| | | | | | | | | | | | | | | |
|----|-------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | Ground Subsidence | C | - | - | C | - | - | - | - | - | - | - | - | - |
| 28 | Offensive Odor | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 29 | Bottom sediment | C | - | - | - | - | - | C | - | - | - | - | - | - |
| 30 | Accidents | B | - | - | - | - | - | B | - | - | C | B | B | - |

Rating:

A: Serious impact is expected. B: Some impact is expected. C: Extent of impact is unknown (Examination is needed. Impacts may become clear as study progresses)

+ : Positive impact

No mark: No impact is expected.

Reference:

- 1) Japan International Cooperation Agency (1992) "I Ports and Harbors: Environmental Guidelines for Infrastructure Projects", Tokyo, Japan.
- 2) Norman Lee and Clive George (2002) "Environmental Assessment in Developing and Transitional Countries", JOHN WILEY & SONS, LTD., London, England.

Site: Soc Trang

| Name of Cooperation Project | | Imported Coal Transshipment Terminal Project | | | | | | | | | | | | |
|--|---|--|------------------|--|---------------------------|-----------------------------|---|--|--|-----------------|--------------------------------------|------------------------------|----------------------------|---|
| No. | Likely Impacts | Overall Rating | Planning Phase | | Construction Phase | | | | | Operation Phase | | | | |
| | | | Land acquisition | Change of fishing zones, Land use, Restriction of activities | Reclamation of coastlines | Deforestation in coastlines | Alteration to ground by cut land, filling, drilling, etc. | Construction of Moorings, Seawalls, Water facilities, etc. | Operation of Construction Equipment and Vehicles | Drainage | Sailing/ Arrival & Departure of Ship | Operation of Port Facilities | Increase of Traffic Volume | Appearance/ Occupancy of Building Structure |
| Social Environment * the impacts on "Gender" and "Children's Right" might be related to all criteria of Social Environment. | 1 | Involuntary Resettlement | C | C | - | - | - | - | - | - | - | - | - | - |
| | 2 | Local economy such as employment and livelihood, etc. | B | - | - | - | - | C | B | B | - | B | +B | B |
| | 3 | Land use and utilization of local resources | A | A | B | B | - | B | B | B | - | - | B | - |
| | 4 | Social institutions such as social infrastructure and local decision-making institutions | - | - | - | - | - | - | - | - | - | - | - | - |
| | 5 | Existing social infrastructures and services | B | - | - | - | - | - | - | B | - | - | - | B |
| | 6 | The poor, indigenous and ethnic people | C | C | - | - | - | - | - | - | - | - | - | - |
| | 7 | Misdistribution of benefit and damage | - | - | - | - | - | - | - | - | - | - | - | - |
| | 8 | Cultural heritage | - | - | - | - | - | - | - | - | - | - | - | - |
| | 9 | Local conflict of interests | - | - | - | - | - | - | - | - | - | - | - | - |
| | 10 | Water Usage or Water Rights and Rights of Common | B | - | - | - | - | - | - | - | - | B | - | - |
| | 11 | Sanitation | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | Hazards (Risk) Infectious diseases such as HIV/AIDS | B | - | - | - | - | - | B | - | - | - | - | - | |
| Natural Environment | 13 | Topography and Geographical features | C | - | - | C | - | C | C | - | - | - | - | - |
| | 14 | Soil Erosion | B | - | - | B | - | B | C | - | - | - | - | - |
| | 15 | Groundwater | C | - | - | C | - | - | - | - | - | C | - | - |
| | 16 | Hydrological Situation | C | - | - | - | - | - | C | - | - | - | - | - |
| | 17 | Coastal Zone | A | - | - | A | A | B | B | - | - | - | - | - |
| | 18 | Flora, Fauna and Biodiversity | A | - | - | B | A | C | C | - | - | - | - | - |
| | 19 | Meteorology | - | - | - | - | - | - | - | - | - | - | - | - |
| Pollution | 20 | Landscape | B | - | - | C | C | C | C | - | - | B | - | - |
| | 21 | Global Warming | C | - | - | - | - | - | - | - | - | C | - | - |
| | 22 | Air Pollution | B | - | - | - | - | - | C | C | - | B | - | - |
| | 23 | Water Pollution | B | - | - | C | - | - | B | C | - | - | - | - |
| | 24 | Soil Contamination | B | - | - | B | - | - | - | - | - | - | - | - |
| | 25 | Waste | C | - | - | - | - | - | C | - | - | C | - | - |
| | 26 | Noise and Vibration | C | - | - | - | - | - | C | - | - | C | - | - |
| | 27 | Ground Subsidence | C | - | - | C | - | - | - | - | - | - | - | - |
| | 28 | Offensive Odor | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | | | |
|--|----|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 29 | Bottom sediment | C | - | - | - | - | - | C | - | - | - | - | - | - |
| | 30 | Accidents | B | - | - | - | - | - | B | - | - | C | B | B | - |

Rating:

A: Serious impact is expected. B: Some impact is expected. C: Extent of impact is unknown (Examination is needed. Impacts may become clear as study progresses)
 + : Positive impact

No mark: No impact is expected.

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Site: Tra Vinh

| Name of Cooperation Project | | Imported Coal Transshipment Terminal Project | | | | | | | | | | | | | | |
|--|----------------|--|------------------|--|---------------------------|-----------------------------|---|--|--|-----------------|-------------------------------------|------------------------------|----------------------------|---|---|---|
| No. | Likely Impacts | Overall Rating | Planning Phase | | Construction Phase | | | | | Operation Phase | | | | | | |
| | | | Land acquisition | Change of fishing zones, Land use, Restriction of activities | Reclamation of coastlines | Deforestation in coastlines | Alteration to ground by cut land, filling, drilling, etc. | Construction of Moorings, Seawalls, Water facilities, etc. | Operation of Construction Equipment and Vehicles | Drainage | Sailing/Arrival & Departure of Ship | Operation of Port Facilities | Increase of Traffic Volume | Appearance/ Occupancy of Building Structure | | |
| Social Environment * the impacts on "Gender" and "Children's Right" might be related to all criteria of Social Environment. | 1 | Involuntary Resettlement | B | B | - | - | - | - | - | - | - | - | - | - | | |
| | 2 | Local economy such as employment and livelihood, etc. | B | - | - | - | - | C | B | B | B | - | B | +B | B | - |
| | 3 | Land use and utilization of local resources | A | A | C | B | B | B | B | B | B | - | - | B | - | - |
| | 4 | Social institutions such as social infrastructure and local decision-making institutions | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 5 | Existing social infrastructures and services | B | - | - | - | - | - | - | B | - | - | - | - | B | - |
| | 6 | The poor, indigenous and ethnic people | C | C | - | - | - | - | - | - | - | - | - | - | - | - |
| | 7 | Misdistribution of benefit and damage | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 8 | Cultural heritage | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 9 | Local conflict of interests | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 10 | Water Usage or Water Rights and Rights of Common | B | - | - | - | - | - | - | - | - | B | - | - | - | - |
| | 11 | Sanitation | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 12 | Hazards (Risk) Infectious diseases such as HIV/AIDS | B | - | - | - | - | - | B | - | - | - | - | - | - | - |
| Natural Environment | 13 | Topography and Geographical features | C | - | - | C | - | C | C | - | - | - | - | - | - | |
| | 14 | Soil Erosion | B | - | - | B | - | B | C | - | - | - | - | - | - | |
| | 15 | Groundwater | C | - | - | C | - | - | - | - | - | - | C | - | - | |
| | 16 | Hydrological Situation | C | - | - | - | - | - | C | - | - | - | - | - | - | |
| | 17 | Coastal Zone | B | - | - | B | B | B | B | - | - | - | - | - | - | |
| | 18 | Flora, Fauna and Biodiversity | A | - | - | B | A | C | C | - | - | - | - | - | - | |
| | 19 | Meteorology | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 20 | Landscape | B | - | - | C | C | C | C | - | - | - | B | - | - | | |
| 21 | Global Warming | C | - | - | - | - | - | - | - | - | - | C | - | - | | |
| Pollution | 22 | Air Pollution | B | - | - | - | - | - | C | C | - | - | B | - | - | |
| | 23 | Water Pollution | B | - | - | C | - | - | B | C | - | - | - | - | - | |
| | 24 | Soil Contamination | B | - | - | B | - | - | - | - | - | - | - | - | - | |
| | 25 | Waste | C | - | - | - | - | - | - | C | - | - | C | - | - | |
| | 26 | Noise and Vibration | C | - | - | - | - | - | - | C | - | - | C | - | - | |
| | 27 | Ground Subsidence | C | - | - | C | - | - | - | - | - | - | - | - | - | |
| | 28 | Offensive Odor | - | - | - | - | - | - | - | - | - | - | - | - | - | |

| | | | | | | | | | | | | | | | |
|--|----|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 29 | Bottom sediment | C | - | - | - | - | - | C | - | - | - | - | - | - |
| | 30 | Accidents | B | - | - | - | - | - | B | - | - | C | B | B | - |

Rating:

A: Serious impact is expected. B: Some impact is expected. C: Extent of impact is unknown (Examination is needed. Impacts may become clear as study progresses)
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Site: Cai Mep

| Name of Cooperation Project | | Imported Coal Transshipment Terminal Project | | | | | | | | | | | | | | |
|--|----------------|--|------------------|--|---------------------------|-----------------------------|---|--|--|----------|--------------------------------------|------------------------------|----------------------------|---|---|---|
| No. | Likely Impacts | Overall Rating | Planning Phase | | Construction Phase | | | | | | Operation Phase | | | | | |
| | | | Land acquisition | Change of fishing zones, Land use, Restriction of activities | Reclamation of coastlines | Deforestation in coastlines | Alteration to ground by cut land, filling, drilling, etc. | Construction of Moorings, Seawalls, Water facilities, etc. | Operation of Construction Equipment and Vehicles | Drainage | Sailing/ Arrival & Departure of Ship | Operation of Port Facilities | Increase of Traffic Volume | Appearance/ Occupancy of Building Structure | | |
| Social Environment * the impacts on "Gender" and "Children's Right" might be related to all criteria of Social Environment. | 1 | Involuntary Resettlement | B | B | - | - | - | - | - | - | - | - | - | - | | |
| | 2 | Local economy such as employment and livelihood, etc. | B | - | - | - | - | C | B | B | B | - | B | +B | B | - |
| | 3 | Land use and utilization of local resources | A | A | C | B | A | B | B | B | B | - | - | B | - | - |
| | 4 | Social institutions such as social infrastructure and local decision-making institutions | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 5 | Existing social infrastructures and services | B | - | - | - | - | - | - | - | B | - | - | - | B | - |
| | 6 | The poor, indigenous and ethnic people | C | C | - | - | - | - | - | - | - | - | - | - | - | - |
| | 7 | Misdistribution of benefit and damage | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 8 | Cultural heritage | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 9 | Local conflict of interests | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 10 | Water Usage or Water Rights and Rights of Common | B | - | - | - | - | - | - | - | - | - | B | - | - | - |
| | 11 | Sanitation | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 12 | Hazards (Risk) Infectious diseases such as HIV/AIDS | B | - | - | - | - | - | - | B | - | - | - | - | - | - |
| Natural Environment | 13 | Topography and Geographical features | C | - | - | C | - | C | C | - | - | - | - | - | - | |
| | 14 | Soil Erosion | B | - | - | B | - | B | C | - | - | - | - | - | - | |
| | 15 | Groundwater | C | - | - | C | - | - | - | - | - | - | C | - | - | |
| | 16 | Hydrological Situation | C | - | - | - | - | - | C | - | - | - | - | - | - | |
| | 17 | Coastal Zone | B | - | - | B | B | B | B | - | - | - | - | - | - | |
| | 18 | Flora, Fauna and Biodiversity | A | - | - | B | A | C | C | - | - | - | - | - | - | |
| | 19 | Meteorology | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | 20 | Landscape | B | - | - | C | C | C | C | - | - | - | - | B | - | |
| | 21 | Global Warming | C | - | - | - | - | - | - | - | - | - | - | C | - | |
| Pollution | 22 | Air Pollution | B | - | - | - | - | - | C | C | - | - | B | - | | |
| | 23 | Water Pollution | B | - | - | C | - | - | B | C | - | - | - | - | | |
| | 24 | Soil Contamination | B | - | - | B | - | - | - | - | - | - | - | - | | |
| | 25 | Waste | C | - | - | - | - | - | C | - | - | - | C | - | | |
| | 26 | Noise and Vibration | C | - | - | - | - | - | - | - | - | - | C | - | | |
| | 27 | Ground Subsidence | C | - | - | C | - | - | - | - | - | - | - | - | | |
| | 28 | Offensive Odor | - | - | - | - | - | - | - | - | - | - | - | - | | |

| | | | | | | | | | | | | | | | |
|--|----|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 29 | Bottom sediment | C | - | - | - | - | - | B | - | - | - | - | - | - |
| | 30 | Accidents | B | - | - | - | - | - | B | - | - | C | B | B | - |

Rating:

A: Serious impact is expected. B: Some impact is expected. C: Extent of impact is unknown (Examination is needed. Impacts may become clear as study progresses)

+ : Positive impact

No mark: No impact is expected.

Reference:

- 1) Japan International Cooperation Agency (1992) "I Ports and Harbors: Environmental Guidelines for Infrastructure Projects", Tokyo, Japan.
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2.4 Survey Result of Site Conditions

Con Dao Island

| | Item | Evaluation | Comments | |
|---|------|--|----------|---|
| Social Environment: *Impacts on "Gender" and "Children's Right" may be related to all social environment criteria. | 1 | Involuntary Resettlement | C | The port facilities (Jetty) will be constructed in the bay area, and large scale Involuntary Resettlement is not anticipated by the project implementation. |
| | 2 | Local Economy such as Employment and Livelihood, etc | A | Main economy of this island is tourism because the island was developed as a base of tourism by the Government. The project scale is very big, and the local people will be employed as worker in this port project. The port project will result in the improvement of the local economy including of those people living around the project area. However, the project will be causing serious impact to the tourism. |
| | 3 | Land Use and Utilization of Local Resources | A | Basically, the construction project will be conducted in the existing coastal area. Coal storage area required approx. 72 ha. There is a limitation of land use, and it is very difficult to find enough space for coal stock yard in the island. The proposed master plan prohibits the building of factories or exploitation of the marine environment. |
| | 4 | Social Institutions such as Social Infrastructure and Local Decision - making Institutions | - | Environmental impact is not anticipated by the project implementation. |
| | 5 | Existing Social Infrastructures and Services | B | Environmental impact is anticipated by the project implementation. |
| | 6 | The Poor, Indigenous and Ethnic people | C | There are no data of the poor, indigenous and ethnic people. |
| | 7 | Misdistribution of Benefit and Damage | - | No misdistribution of benefit and damage was expected. |
| | 8 | Cultural heritage | B | There are local archaeological, historical, cultural and religious heritage site in the island. |
| | 9 | Local Conflicts of Interest | - | There are no local residents who live in the project area. No significant impact on the living conditions of inhabitants is anticipated and there are no local conflicts of interest. |
| | 10 | Water Usage or Water Rights and Communal Rights | B | There are fishermen living in the island and they carry out their fishing operation by small boats in the coastal area. No fishing village is observed in the vicinity of the proposed project site. |
| | 11 | Sanitation | - | Project will not cause sanitation problems. |
| | 12 | Hazards (risk) Infectious Diseases such as HIV/AIDS | B | There might be some possibility for disease to be introduced at the site and surrounding area, because of the expected migration of many workers and local entrepreneurs during the construction period. |
| Natural Environment | 13 | Topography and Geographical Features | C | There are no data of topography and geographical features. |
| | 14 | Soil Erosion | C | There are no data of soil erosion. |
| | 15 | Groundwater | - | There are no data of groundwater. |
| | 16 | Hydrological Situation | - | There are no data of hydrological situation |
| | 17 | Coastal zone | B | Almost all of the coastal zones are covered with rocks, and only few places are available with white sand beach. Island coastal zone provide rich resources for ecology. |

| | Item | Evaluation | Comments |
|-----------|----------------------------------|------------|---|
| | 18 Flora, Fauna and Biodiversity | A | There are many protected animals and birds that live in this island (sea turtle, dugong, coral, petrel etc.). The park has a total area of about 15,043 ha including 9,000ha of marine and 6,043 ha of green forest. Serious impact will be expected during the construction and operation of the terminal and coal storage yard. |
| | 19 Meteorology | B | West side of the island is expected to experience high tidal waves and the operation of vessel has a high risk, for accidents, therefore special attentions for shipping in this area is necessary. |
| | 20 Landscape | A | All area of the island is designated as a national park and the construction is expected to impact the landscape. Approx. 10 m height of coal piling is expected and create special scenery at site. |
| | 21 Global Warming | C | There are no data of global warming |
| Pollution | 22 Air Pollution | B | Huge volume of coal will be imported monthly from Indonesia/Australia. After the coal unloading, it is stored into the coal stock yards. Then, all of the coals are transported to the small vessel by belt conveyer. In dry season, the handling of coal is expected to have impact of air pollution. |
| | 23 Water Pollution | B | Due to the resulting disturbance of seabed soil during construction, it is anticipated that a part of the seabed soil will become suspended soils by the construction of jetty. There are no data of seabed soil quality presently. |
| | 24 Soil Contamination | B | In the case of large scale land reclamation, soil contamination is anticipated. |
| | 25 Waste | C | In the absence of oil treatment and oil disposal facilities in the port, it is anticipated that all of the effluent (bilge) from ships are treated at the dock yard. |
| | 26 Noise and Vibration | B | The expected noise sources during the construction are the piling work equipment and transportation vehicles |
| | 27 Ground Subsidence | C | There are no data of ground subsidence |
| | 28 Offensive Odor | - | No odor source is anticipated |
| | 29 Bottom Sediment | C | There are no data of bottom sediment |
| | 30 Accidents | B | Operation of the port will potentially increase the overall traffic density in nearby areas, which may cause some traffic safety problems to the nearby residents, workers and visitors. |

| Grade | Number | Notes |
|---------|--------|-------|
| A | 4 | |
| B | 11 | |
| C | 8 | |
| No Mark | 7 | |

Evaluation;

A: Serious impact is expected,

B: Some impact is expected,

C: Extent of impact is unknown,

No Mark: No impact is expected.

Tra Vinh

| | Item | Evaluation | Comments | |
|---|------|--|----------|---|
| Social Environment: *Impacts on "Gender" and "Children's Right" may be related to all social environment criteria. | 1 | Involuntary Resettlement | B | The port facilities (Jetty and coal stock yard) will be constructed in the coastal area, and large scale Involuntary Resettlement is not anticipated by the project implementation. |
| | 2 | Local Economy such as Employment and Livelihood, etc | B | Main economy at the project area is farming and fishing. The project scale is very big, and the local people will be employed as worker in this port project. The port project will result in the improvement of local economy including of those people living around the project area. |
| | 3 | Land Use and Utilization of Local Resources | A | Basically, the construction project will be conducted in the existing coastal area. Coal storage area required approx. 72 ha, and the existing site is covered with mangrove and miscellaneous trees, and a part of the proposed site is utilized for farming by local residents. |
| | 4 | Social Institutions such as Social Infrastructure and Local Decision - making Institutions | - | Environmental impact is not anticipated by the project implementation. |
| | 5 | Existing Social Infrastructures and Services | B | Environmental impact is anticipated by the project implementation. |
| | 6 | The Poor, Indigenous and Ethnic people | C | There are no data of the poor, indigenous and ethnic people. |
| | 7 | Misdistribution of Benefit and Damage | - | No misdistribution of benefit and damage was expected. |
| | 8 | Cultural heritage | - | Impact for local archaeological, historical, cultural and religious heritage is not anticipated in the proposed site. |
| | 9 | Local Conflicts of Interest | - | No significant impact on the living conditions of inhabitants is anticipated and there are no local conflicts of interest. |
| | 10 | Water Usage or Water Rights and Communal Rights | B | There are several fishermen living in the coastal area adjacent to project area and they carry out their fishing operation by small boats and fixed shore net in the coastal area. |
| | 11 | Sanitation | - | Project will not cause sanitation problems |
| | 12 | Hazards (risk) Infectious Diseases such as HIV/AIDS | B | There might be some possibility for disease to be introduced at the site and surrounding area, because of the expected migration of workers and local entrepreneurs during the construction period. |
| Natural Environment | 13 | Topography and Geographical Features | C | There are no data of topography and geographical features. |
| | 14 | Soil Erosion | B | Soil erosion was observed in the coastal area. In the case of required land reclamation, have possibility of soil contamination. |
| | 15 | Groundwater | C | There are no data of groundwater. |
| | 16 | Hydrological Situation | C | Due to muddy conditions of the seawater, the water has low transparency, and there is very low visibility in the sea water at the expected project area. |
| | 17 | Coastal zone | B | Coastal zone have sandy beach. In the hinterland of the project site, several farmers cultivate crops. There are many fish ponds and fishermen conduct aquaculture in the area. |
| | 18 | Flora, Fauna and Biodiversity | A | The proposed project site is not located within an area of protected habitats of endangered species designed by the country's law and international treaties and conventions. There is a mangrove forest but the density is small relatively compared with other sites. Required minimization of deforestation area of mangrove |
| | 19 | Meteorology | - | No impact is anticipated |

| Item | | Evaluation | Comments | |
|-----------|----|---------------------|----------|--|
| | 20 | Landscape | B | Proposed area is not designated as a national park and reserved area. Approx. 10 m height of coal piling is expected and create special scenery at site. |
| | 21 | Global Warming | C | There are no data of global warming |
| Pollution | 22 | Air Pollution | B | Huge volume of coal will be imported monthly from Indonesia/Australia. After the coal unloading, it is stored into the coal stock yards. Then, all of the coals are transported to the small vessel by belt conveyer. In dry season, the handling of coal is expected to have impact of air pollution. |
| | 23 | Water Pollution | B | Due to the resulting disturbance of seabed soil during construction, it is anticipated that a part of the seabed soil will become suspended soils by the construction of jetty. There are no data of seabed soil quality presently. |
| | 24 | Soil Contamination | B | In the case of large scale land reclamation, soil contamination is anticipated. |
| | 25 | Waste | C | In the absence of oil treatment and oil disposal facilities in the port, it is anticipated that all of the effluent (bilge) from ships are treated at the dock yard. |
| | 26 | Noise and Vibration | B | The expected noise sources during the construction are the piling work equipment and transportation vehicles |
| | 27 | Ground Subsidence | C | There are no data of ground subsidence |
| | 28 | Offensive Odor | - | No odor source is anticipated |
| | 29 | Bottom Sediment | C | There are no data of bottom sediment |
| | 30 | Accidents | B | Operation of the port will potentially increase the overall traffic density in nearby areas, which may cause some traffic safety problems to the nearby residents, workers and visitors. |

| Grade | Number | Notes |
|---------|--------|-------------|
| A | 2 | |
| B | 13 | +B=1, -B=12 |
| C | 8 | |
| No Mark | 7 | |

Evaluation;

A: Serious impact is expected,

B: Some impact is expected,

C: Extent of impact is unknown,

No Mark: No impact is expected.

Cai Mep

| | Item | Evaluation | Comments | |
|---|------|--|----------|---|
| Social Environment: *Impacts on "Gender" and "Children's Right" may be related to all social environment criteria. | 1 | Involuntary Resettlement | B | The port facilities (Jetty and coal stock yard) will be constructed in the coastal area, but large scale Involuntary Resettlement is not anticipated by the project implementation. |
| | 2 | Local Economy such as Employment and Livelihood, etc | B | Project scale is very big, and the local people will be employed as worker in this port project. The port project will result in the improvement of the local economy including of those people living around the project area. Resort area is located 10 km away from the site. |
| | 3 | Land Use and Utilization of Local Resources | A | Basically, the construction project will be conducted in the existing coastal area. Coal storage area required approx 72 ha, and the existing site is covered with mangroves and miscellaneous trees. |
| | 4 | Social Institutions such as Social Infrastructure and Local Decision - making Institutions | - | Environmental impact is not anticipated by the project implementation. |
| | 5 | Existing Social Infrastructures and Services | B | Environmental impact is anticipated by the project implementation. |
| | 6 | The Poor, Indigenous and Ethnic people | C | There are no data of the poor, indigenous and ethnic people. |
| | 7 | Misdistribution of Benefit and Damage | - | No misdistribution of benefit and damage was expected. |
| | 8 | Cultural heritage. | - | Impact for local archaeological, historical, cultural and religious heritage is not anticipated in the proposed site. |
| | 9 | Local Conflicts of Interest | - | No significant impact on the living conditions of inhabitants is anticipated and there are no local conflicts of interest. |
| | 10 | Water Usage or Water Rights and Communal Rights | B | There are fishermen living in the mouth of the river adjacent to the project area and they carry out their fishing operation by small boats and fixed shore net in the coastal area. |
| | 11 | Sanitation | - | Project will not cause sanitation problems |
| | 12 | Hazards (risk) Infectious Diseases such as HIV/AIDS | B | There might be some possibility for disease to be introduced at the site and surrounding area, because of the expected migration of workers and local entrepreneurs during the construction period. |
| Natural Environment | 13 | Topography and Geographical Features | C | There are no data of topography and geographical features. |
| | 14 | Soil Erosion | B | In case of land reclamation is required, there is a possibility of soil contamination to occur. |
| | 15 | Groundwater | C | There are no data of groundwater. |
| | 16 | Hydrological Situation | C | Due to muddy conditions of the seawater, the water has low transparency, and there is very low visibility in the sea water at the expected project area. |
| | 17 | Coastal zone | B | There are many mangroves forest at the proposed project area and at the vicinity of the project area. Fishermen conduct their fishing operation in the river. There are many fish ponds and the fishermen conduct aquaculture in the area. |
| | 18 | Flora, Fauna and Biodiversity | A | The proposed project site is not located within an area of protected habitats of endangered species designed by the country's law and international treaties and conventions. For the construction of coal storage yard, the existing mangrove forest will be subjected to deforestation. |
| | 19 | Meteorology | - | No impact is anticipated |
| | 20 | Landscape | B | Proposed area is not designated as a national park and reserved area. Approx. 10 m height of coal piling is expected and create special scenery at site. |

| Item | | Evaluation | Comments | |
|-----------|----|---------------------|----------|--|
| | 21 | Global Warming | C | There are no data of global warming |
| Pollution | 22 | Air Pollution | B | Huge volume of coal will be imported monthly from Indonesia/Australia. After the coal unloading, it is stored into the coal stock yards. Then, all of the coals are transported to the small vessel by belt conveyer. In dry season, the handling of coal is expected to have impact of air pollution. |
| | 23 | Water Pollution | B | Construction project will include dredging for port and access channels. Due to the resulting disturbance of seabed soil during construction, it is anticipated that a part of the seabed soil will become suspended soils by the construction of jetty. There are no data of seabed soil quality presently. Access channel of vessels was already completed by other project, therefore it is possible that the dredging work in this project will just be minimal. |
| | 24 | Soil Contamination | B | In the case of large scale land reclamation, soil contamination is anticipated. |
| | 25 | Waste | C | In the absence of oil treatment and oil disposal facilities in the port, it is anticipated that all of the effluent (bilge) from ships are treated at the dock yard. |
| | 26 | Noise and Vibration | B | The expected noise sources during the construction are the piling work equipment and transportation vehicles |
| | 27 | Ground Subsidence | C | There are no data of ground subsidence |
| | 28 | Offensive Odor | - | No odor source is anticipated |
| | 29 | Bottom Sediment | C | There are no data of bottom sediment |
| | 30 | Accidents | B | Operation of the port will potentially increase the overall traffic density in nearby areas, which may cause some traffic safety problems to the nearby residents, workers and visitors. |

| Grade | Number | Notes |
|---------|--------|-------|
| A | 2 | |
| B | 13 | |
| C | 8 | |
| No Mark | 7 | |

Evaluation;
A: Serious impact is expected,
B: Some impact is expected,
C: Extent of impact is unknown,
No Mark: No impact is expected.

Soc Trang

| | Item | Evaluation | Comments | |
|---|------|--|----------|--|
| Social Environment: *Impacts on "Gender" and "Children's Right" may be related to all social environment criteria. | 1 | Involuntary Resettlement | C | The port facilities (Jetty and coal stock yard) will be constructed in the coastal area, and large scale Involuntary Resettlement is not anticipated by the project implementation. |
| | 2 | Local Economy such as Employment and Livelihood, etc | B | Project scale is very big, and the local people will be employed as worker in this port project. The port project will result in the improvement of the local economy including of those people living around the project area. Soc Trang provinces has many pagodas, the number of tourist visiting the province was estimated at 620,000 in 2010. |
| | 3 | Land Use and Utilization of Local Resources | A | Basically, the construction project will be conducted in the existing coastal area. Coal storage area required approx 72 ha, and the existing site is covered with mangroves and miscellaneous trees. |
| | 4 | Social Institutions such as Social Infrastructure and Local Decision - making Institutions | - | Environmental impact is not anticipated by the project implementation. |
| | 5 | Existing Social Infrastructures and Services | B | Environmental impact is not anticipated by the project implementation. |
| | 6 | The Poor, Indigenous and Ethnic people | C | There are no data of the poor, indigenous and ethnic people. |
| | 7 | Misdistribution of Benefit and Damage | - | No misdistribution of benefit and damage was expected. |
| | 8 | Cultural heritage | - | Impact for local archaeological, historical, cultural and religious heritage is not anticipated in the proposed site. |
| | 9 | Local Conflicts of Interest | - | No significant impact on the living conditions of inhabitants is anticipated and there are no local conflicts of interest. |
| | 10 | Water Usage or Water Rights and Communal Rights | B | There are fishermen living in the mouth of the river adjacent to project area and they carry out their fishing operation by small boats and fixed shore net in the coastal area. |
| | 11 | Sanitation | - | Project will not cause sanitation problems |
| | 12 | Hazards (risk) Infectious Diseases such as HIV/AIDS | B | There might be some possibility for disease to be introduced at the site and surrounding area, because of the expected migration of workers and local entrepreneurs during the construction period. |
| Natural Environment | 13 | Topography and Geographical Features | B | Accretion of river silt and impact of strong sea waves and wind have created a large mound of sand along the coast. |
| | 14 | Soil Erosion | B | Large scale erosion was observed in the coastal area proposed for coal storage site. Erosion of the flood plains in front of the dyke is clearly visible. |
| | 15 | Groundwater | C | There are no data of groundwater. |
| | 16 | Hydrological Situation | C | Due to the muddy conditions of the seawater, the water has low transparency, and there is very low visibility in the sea water at the expected project area. |
| | 17 | Coastal zone | A | As a countermeasure for erosion, many mangrove plants were forested in the proposed site by GIZ project (Environmental preservation project of shoreline in Soc Trang). This project started in 2007 and will be continued up to 2013 by GIZ. There are many fish ponds and fishermen conduct aquaculture in the area. Depth of the sea in the coastal area is shallow, that a large volume of dredging is expected for access channel of vessels. |
| | 18 | Flora, Fauna and Biodiversity | A | The proposed project site is not located within an area of protected habitats of endangered species designed by the country's law and international treaties and conventions. However, for the construction of coal storage yard, existing mangrove forest will be subjected for deforestation. About 3,000 ha of mangroves have been rehabilitated in the coastal area since 1990 (GIZ report) |

| Item | | Evaluation | Comments | |
|-----------|----|---------------------|----------|---|
| | 19 | Meteorology | - | No impact is anticipated |
| | 20 | Landscape | B | Proposed area is not designated as a national park. Approx. 10 m height of coal piling is expected and create special scenery at site. |
| | 21 | Global Warming | C | There are no data of global warming |
| Pollution | 22 | Air Pollution | B | Huge volume of coal will be imported monthly from Indonesia/Australia. After the coal unloading, it is stored into the coal stock yards. Then, all of the coals are transported to the small vessel by belt conveyer. In dry season, the handling of coal is expected to have impact of air pollution. |
| | 23 | Water Pollution | B | Construction project will include dredging for port and access channels. Due to the resulting disturbance of seabed soil during construction, it is anticipated that a part of the seabed soil will become suspended soils by the construction of jetty. There are no data of seabed soil quality presently. Access channel of vessels was completed by other project and it is possible to minimize dredging work in this project. |
| | 24 | Soil Contamination | B | In the case of large scale land reclamation, soil contamination is anticipated. |
| | 25 | Waste | C | In the case absence of oil treatment and oil disposal facilities in the port, it is anticipated that all of the effluent (bilge) from ships are treated at the dock yard. |
| | 26 | Noise and Vibration | B | The expected noise sources during the construction are the piling work equipment and transportation vehicles |
| | 27 | Ground Subsidence | C | There are no data of ground subsidence |
| | 28 | Offensive Odor | - | No odor source is anticipated |
| | 29 | Bottom Sediment | C | There are no data of bottom sediment |
| | 30 | Accidents | B | Operation of the port will potentially increase the overall traffic density in nearby areas, which may cause some traffic safety problems to the nearby residents, workers and visitors. |

| Grade | Number | Notes |
|---------|--------|-------|
| A | 3 | |
| B | 12 | |
| C | 8 | |
| No Mark | 7 | |

Evaluation;

A: Serious impact is expected,

B: Some impact is expected,

C: Extent of impact is unknown,

No Mark: No impact is expected.

2.5 Data of Con Dao National Park

(1) Location:

Ba Ria – Vung Tau Province

(2) Type of national park:

There are two types: Tropical rain closed evergreen forest and tropical rain closed semi-deciduous forest

(3) Area

The park has the total area of about 15,043 ha including 9,000ha marine and 6,043 ha forest

(4) Protected animals, birds:

Forests in Con Dao are mainly proteozic, belonging to the tropical island ecosystem with 882 species of fauna, nearly 150 species of animal, among which there are some rare species only found in Con Dao such as Con Dao black squirrel, winged house gecko, and some species of birds just existing in Con Dao like Masked booby, Red-billed tropicbird, Nicba pigeon and Rock pigeon. Distribution of animals in Con Dao island is shown in Figure 3.5.1.

Con Dao has various marine ecosystems with 285 species of hard coral, 84 species of sea weed, 202 species of fish, 153 species of mollusc, etc. What is more, aquiferbosa ecosystem, geophyte in sea estimate about 200ha, comprising of 9 species among 16 ones in the world. Con Dao's sea is a home of tortoise-shell, turtle, Black whale, and especially Dugong, one of the extremely rare species in the world.

(5) Characteristics:

Con Dao National Park is one of two national parks in Viet Nam owing both forest and marine protected area

(6) Others

There is great potential to further develop ecotourism at the national park, in the form of hiking, birdwatching, snorkeling, diving and watching nesting turtles. Controlled and environmentally sensitive ecotourism development has the potential to raise awareness of conservation issues and generate revenue for management of the national park.

The waters off the Con Dao archipelago are an important fishery. Several marine products of high economic value, such as groupers and giant clams, occur in the area. The islands' mangroves are an important nursery area for the fishery.

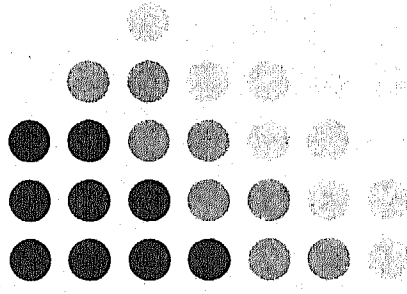
**Japan International Cooperation Agency (JICA)
Preparatory Survey on Son Hau Coal Fired Power
Plant and related Infrastructures**

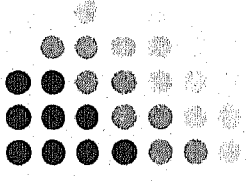
**Imported Coal Transship Terminal
(Phase1)**

MOIT Presentation (2nd)

February 2012

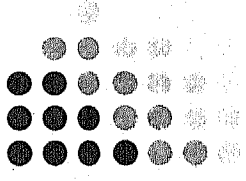
Sumitomo Corporation





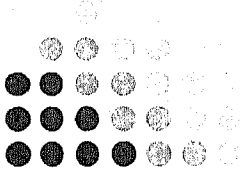
Contents of Presentation

- 1. Study Case**
- 2. Secondary Freight**
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 - 3.1 Vinh Tan**
 - 3.2 Tra Vinh (Duyen Hai)**
 - 3.3 Cai Mep**
- 4. Project Cost (Long-Term)**
- 5. Ship Size**
- 6. Project Cost (Short-Term)**



1. Study Case

| | Short-Term | Long-Term |
|---|------------|-----------|
| 1 | Vinh Tan | Tra Vinh |
| 2 | Vinh Tan | Cai Mep |
| 3 | Tra Vinh | Tra Vinh |
| 4 | Cai Mep | Cai Mep |
| 5 | Cai Mep | Tra Vinh |



2. Secondary Freight

The secondary freight from imported coal transshipment terminal to the Mekong River estuary is calculated preliminary as shown below.

| Location of Terminal | Cai Mep | Tra Vinh | Vinh Tan |
|---|----------------|----------------|----------------|
| Transport time (one way) + spare time 1hour | 12hrs | 1.2hrs | 36hrs |
| Loading port stay 5,000DWT | 5.5hrs | 5.5hrs | 5.5hrs |
| Unloading port stay 5,000DWT | 9.1hrs | 9.1hrs | 9.1hrs |
| Cycle time 5,000DWT | 38.6hrs (1.6d) | 17.0hrs (0.7d) | 86.6hrs (3.6d) |
| Charterage 5,000DWT | US\$3,120 | US\$1,365 | US\$7,020 |
| Freight rate 5,000DWT | US\$0.70/MT | US\$0.30/MT | US\$1.60/MT |
| Operation risk factor | 1.5 | 1.0 | 3.0 |
| Freight rate 5,000DWT for Study | US\$1.05/MT | US\$0.30/MT | US\$4.80/MT |

Transport distance (Nm=1,852KM): Cai Mep – Mekong River estuary approx. 65Nm
 Tra Vinh – Mekong River estuary approx. 1Nm
 Vinh Tan – Mekong River estuary approx. 190Nm
 Speed of coaster vessel: 5.5Knot/hr

