

**Environmental Checklist: 12. Dams and Reservoirs ( 1 )**

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
1 Permits and Explanation	(1) EIA and Environmental Permits	<p>Have EIA reports been officially completed?</p> <p>Have EIA reports been approved by authorities of the host country's government?</p> <p>Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied?</p> <p>In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?</p>	
	(2) Explanation to the Public	<p>Are contents of the project and the potential impacts adequately explained to the public based on appropriate procedures, including information disclosure? Is understanding obtained from the public?</p> <p>Are proper responses made to comments from the public and regulatory authorities?</p>	
2 Mitigation Measures	(1) Water Quality	<p>Do water quality of dam pond/reservoir comply with the country's ambient water quality standards? Is there a possibility that proliferation of phytoplankton and zooplankton will occur?</p> <p>Does the quality of water discharged from the dam pond/reservoir comply with the country's ambient water quality standards?</p> <p>Are adequate measures, such as clearance of woody vegetation from the inundation zone prior to flooding planned to prevent water quality degradation in the dam pond/reservoir?</p> <p>Is there a possibility that reduced the river flow downstream will cause water quality degradation resulting in areas that do not comply with the country's ambient water quality standards?</p> <p>Is the discharge of water from the lower portion of the dam pond/reservoir (the water temperature of the lower portion is generally lower than the water temperature of the upper portion) planned by considering the impacts to downstream areas?</p>	
	(2) Wastes	<p>Are earth and sand generated by excavation properly treated and disposed of in accordance with the country's standards?</p>	
3 Natural Environment	(1) Protected Areas	<p>Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?</p>	

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Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
3 Natural Environment	(2) Ecosystem	<p>Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)?</p> <p>Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions?</p> <p>Is there a possibility that the project will adversely affect downstream aquatic organisms, animals, plants, and ecosystems? Are adequate protection measures taken to reduce the impacts on the ecosystem?</p> <p>Is there a possibility that installation of structures, such as dams will block the movement of the migratory fish species (such as salmon, trout and eel that move between rivers and sea for spawning)? Are adequate measures taken to reduce the impacts on these species?</p>	
	(3) Topography and Geology	<p>Is there a possibility that reductions in sediment loads downstream due to settling of suspended particles in the reservoir will cause impacts, such as scouring of the downstream riverbeds and soil erosion? Is there a possibility that sedimentation of the reservoir will cause loss of storage capacity, water logging upstream, and formation of sediment deposits at the reservoir entrance? Are the possibilities of the impacts studied, and adequate prevention measures taken?</p>	
4 Social Environment	(1) Resettlement	<p>Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?</p> <p>Is adequate explanation on relocation and compensation given to affected persons prior to resettlement?</p> <p>Is the resettlement plan, including proper compensation, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?</p> <p>Does the resettlement plan pay particular attention to vulnerable groups or persons, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples?</p> <p>Are agreements with the affected persons obtained prior to resettlement?</p> <p>Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan?</p> <p>Is a plan developed to monitor the impacts of resettlement?</p>	

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Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
4 Social Environment	(2) Living and Livelihood	<p>Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?</p> <p>Is there a possibility that the project will adversely affect the downstream land uses? In particular, is there a possibility that reductions in the supply of fertile soils to downstream areas will adversely affect agricultural production?</p> <p>Is sufficient infrastructure (e.g., hospitals, schools, roads) available for project implementation? If existing infrastructure is insufficient, is a plan developed to construct new infrastructure or improve existing infrastructure?</p> <p>Is there a possibility that diseases, including communicable diseases, such as HIV will be introduced due to immigration of workers associated with the project? Are adequate considerations given to public health, if necessary?</p> <p>Is there a possibility that the existence of the dam will cause impacts on water navigation, such as limitations of vessel traffic and water area uses by local inhabitants?</p> <p>Is the minimum flow required for maintaining downstream water uses secured?</p> <p>Is there a possibility that reductions in water flow downstream or seawater intrusion will cause impacts on downstream water uses and land uses?</p> <p>Is there a possibility that water-borne or water-related diseases (e.g., schistosomiasis, malaria, filariasis) will be introduced?</p>	
	(3) Heritage	<p>Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage sites? Are adequate measures considered to protect these sites in accordance with the country's laws?</p>	
	(4) Landscape	<p>Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?</p>	
	(5) Ethnic Minorities and Indigenous Peoples	<p>Does the project comply with the country's laws for rights of ethnic minorities and indigenous peoples?</p> <p>Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples?</p>	

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Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
5 Others	(1) Impacts during Construction	<p>Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)?</p> <p>If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?</p> <p>If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?</p> <p>In the case of the projects including borrow sites, if construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?</p> <p>If necessary, is health and safety education (e.g., traffic safety, public health) provided for project personnel, including workers?</p>	
	(2) Accident Prevention Measures	<p>Are adequate contingency plans and mitigation measures developed to cover both the soft and hard aspects of the project, such as accident prevention programs, installation of prevention facilities and equipment, and safety education for workers? Are adequate measures for emergency response to accidental events considered?</p> <p>Is a warning system established to alert the inhabitants to water discharge from the dam?</p>	
	(3) Monitoring	<p>Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts?</p> <p>Are the items, methods and frequencies included in the monitoring program judged to be appropriate?</p> <p>Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)?</p> <p>Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?</p>	
6 Note	Reference to Checklist of Other Sectors	<p>Where necessary, pertinent items described in the Forestry Projects checklist should also be checked (e.g., projects in the mountains including large areas of deforestation).</p> <p>In the case of dams and reservoirs, such as irrigation, water supply, and industrial water purposes, where necessary, pertinent items described in the Irrigation Projects, and Water Supply checklists should also be checked.</p> <p>Where necessary, pertinent items described in the Power Transmission and Distribution Lines checklist should also be checked (e.g., projects including installation of electric transmission lines and/or electric distribution facilities).</p>	

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Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
6 Note	Note on Using Environmental Checklist	If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	

1) Regarding the term “Country’s Standards” mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are made, if necessary.

In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan' experience).

2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which it is located.