SECTOR I

APPENDIX A

TOR for EIA of Community Pond in Fatima Jinnah Park

Introduction

The Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, is undertaking a development study "The Study on Comprehensive Flood Mitigation and Environmental Plan of Lai Nullah Basin", in close cooperation with the concerned authorities in Pakistan. One of the components of the flood mitigation plan is the construction of a community pond in Fatima Jinnah Park (hereinafter referred to as 'the Project'). The executing agency for the project is the Capital Development Authority that will undertake the project on behalf of the Federal Flood Commission, Ministry of Water and Power, Government of Pakistan.

The Project

Lai Nullah basin receives heavy rainfall of more than 500 mm during monsoon, which could lead to large flood runoff discharge. Moreover, the recent intensive urban development in Islamabad located in the upper reaches of the Lai Nullah tends to increase the peak flood runoff discharge. At the same time, the flow capacity downstream of Lai Nullah has been remarkably reduced due to illegal encroachment of buildings into the river course and pile of garbage indiscriminately dumped into the river due to metrological conditions and human activities, flood discharge frequently overtops Lai Nullah inflicting severe flood damages particularly in Rawalpindi City, located in the lower reaches. The July 2001 flood caused the worst damages in the basin including deaths of 65 people and complete/partial destruction of about 3,000 houses. Public facilities such as transportation and electric power supply had also been completely paralyzed.

First Phase of the Study had been completed on December 05, 2002, and the Interim Report recommended that immediate action should be taken to implement the Project for construction of the community pond at Fatima Jinnah Park in Block F-9, Islamabad.

Salient features of the principal structures are as enumerated below:

1. Flood detention dam:

   Darn type: Combined

   Maximum reservoir area: 0.64km^2 (once for 100 years)

   Dam height: 20m

   Gross storage capacity: 2.95 million m^3

   Effective storage capacity: 2.9 million m^3

   Crest length: 1,550m

   Crest width: 6.0m

2. Diversion channel

   Design discharge: 80m^3

   Channel bed slope: 1/200

   Channel width: 13m

   Riverbed width: 10m

   Side slope: 1:1.5 (wet stone masonry)

   Design water depth: 2.4m

Channel length: 825m

Reconstruction of bridges: 3 units

3. Fixed weir on Bedarawali Kas

   Weir: H2.5m X L37m

   Overflow crest length: 16m

   Orifice H1.0m x W1.0m x 2 unit

4. Diversion weir on diversion channel

   Weir: H5.2m x L20m

   Orifice-I: H1.0m x W1.0 x 1 unit

   Orifice-2: H1.5m x W1.5m x 7 units

5. Amenity facilities:

   Entrance gates/car parking: 4 units

   Road in the park: 4,700m

   Multipurpose ground: 2 lots

   Tennis Courts: 6 lots

   Basket Courts: 4 lots

   Others including waterfront entrance plaza, gardening, forestation

Project Schedule

The EIA shall be completed by the date to be decided later.

Project Area

The term 'Project Area' refers to the area where the project components will be located, where the project activities are expected to take place, and where the proposed activities' environmental impact is expected to occur. The proposed Project area for the Project is as follows:

- The entire Fatima Jinnah Park and the surrounding areas within one km of the boundaries of the Park
- All roads and a zone of 500m width centered on the road that will be used for major project related traffic
- Excess soil dumping site and a zone of 500 m around it. The soil dumping site will be located within 8 km of the Park. The possible locations include several undeveloped sectors of Islamabad, for example E-10, F-12, G-12, H-10, H-11, and H-12. The selected location will be communicated later

The consultants may suggest changes to the proposed Project area.

Objective of the EIA

The objective of the EIA shall be to evaluate possible impacts to the environment due to the design, construction and operation of the proposed project and recommend suitable mitigation measures to minimize or avoid these impacts resulting in a socially and environmentally acceptable project. The EIA shall be carried out in accordance with the Pakistan Environmental Protection Act, 1997, other related environmental laws, regulations, rules and guidelines. The EIA shall also meet the requirements of the

JICA environmental guidelines. The consultant shall consider and document the concerns and comments of stakeholders including communities, government agencies and major relevant NGO's.

Key Environmental Issues

JICA has conducted an internal environmental screening of the Project and has determined the following as the main environmental concerns associated with the Project:

Change in Hydrological situation of Fatima Jinnah Park

Fauna and flora of the Fatima Jinnah Park

Traffic disruption due to project related traffic, mainly the trucks containing the excavated soil from the park to the dump sites

Noise due to project related traffic, particularly during the night

Change in drainage pattern due to the disposal of 980,000 m^3 of soil

Affect on the existing flora and fauna of the excess soil dumping site

The terms of reference is based on the above assessment, however, the proposed EIA shall not limited to these impact. The Consultants are expected to carry out their own assessment and ensure that all potential impacts of the proposed project are assessed.

Terms of Reference

The consultant shall be responsible for the following:

1. Description of the Proposed Project

   The consultant shall gain a complete understanding of the proposed project and provide a description of the same in the EIA. The Consultant shall include the following information in the EIA in a non-technical language:

   Design of the project components

   Pre-construction activities

   Construction activities

   All operation activities including flood control, flood warning, and contingency plans

   Use of local resources including land and water

   Wastes and emissions arising from all activities

   Clear understanding on the waste management aspects of the operations (equipment, activities, and human resources)

2. Review secondary information on the physical, biological and socio-economic environment of the project area.

   The consultant shall collect and document all available secondary data on the physical, biological, and socioeconomic environment of the project area. This shall include:

   Physical environment including topography, geology, soils, surface and groundwater resources and climate

   Biological environment including flora and fauna, particularly in respect of rare or endangered species

Socioeconomic environment including settlements, socioeconomic conditions, community well-being, infrastructure and land use

Heritage aspects – including sites of cultural, archaeological or historical significance

3. Review existing environmental legislation, guidelines and standards applicable to the proposed project and assess their applicability.

   The consultant shall review all relevant legislation, regulations, rules, and guidelines applicable to the proposed project and assess their applicability.

4. Baseline Surveys

   For the purpose of the EIA, baseline surveys shall be undertaken of the project area. A team of experts shall undertake the baseline survey, including:

   Zoologist, Botanist, Water Resources Specialist, Environment Specialist, Sociologist/Anthropologist

   The scope and the expected outcome of the baseline study are as follows:

   Flora

   The existing flora of the Park is part of the habitat, which supports the wildlife species and other environmental parameters in the area. A complete knowledge of flora of the area and its role in the habitat and ecological integrity is therefore necessary for identification and assessment of impacts related to the proposed project. The baseline survey shall:

   List flora species in the Project area

   Identify types of vegetation communities in the area and vegetation habitats

   Identify species of economic value

   Identify threatened, rare, and vulnerable species and their distribution outside the Park

   Identify, and if required, evaluate present threats to flora of the project area

   It is suggested that Braun-Blanquet method shall be used for vegetation survey. The Consultants can suggest alternate survey methods that can achieve the same objective. If the Braun-Blanquet method is used, a minimum of 20 quadrats shall be placed in the stream vegetation, 10 in the area that will be excavated for the community pond (excluding the stream vegetation) and 5 in the remaining undeveloped area of the Park. Some representative samples should also be collected from the developed areas. The quadrats shall be randomly placed in each habitat. Each quadrat shall be 5 m × 5 m for shrubs and trees, and 1 m × 1 m for herbs. The suggested density of the quadrats is based on the available information and may have to be increased as per the detailed field observation.

   A vegetation survey shall also be undertaken at the proposed excess soil dumping site(s). The survey shall:

   List flora species in the area

   Identify species of economic value

   Identify threatened, rare, and vulnerable species and their distribution outside the Project area

   Fauna

   There are evidences that several different types of species reside in the Park. The survey shall cover the following species:

Carnivores, Small mammals, Reptiles, Birds

The baseline survey shall contain the following information:

A list of species based on field observations, sampling and secondary data

Species that are included in the IUCN Red List, protected under the wildlife laws or are believed to be under threat from different sources

Identification of habitats for key wildlife species that will be affected

Assessment of abundance and distribution of key wildlife species outside the Park

Determination of the biology, behavior, breeding season, habitat requirements and feed requirements for all relevant species on the basis of the secondary data.

Identification, and if required, evaluation of present threats to relevant species and their habitats.

Description of association of the species with the vegetation of the habitat

A wildlife survey shall also be undertaken at the proposed excess soil dumping site(s). The survey shall:

List wildlife species in the area

Identify threatened, rare, and vulnerable species and their distribution outside the Project area

Water Resources

The baseline shall contain the following information:

Identification of all perennial and non-perennial, surface and sub-surface water resources in the project area

For all water wells in the project area, discharge, water quality, history, uses, and ownership

Sources of recharge to the existing groundwater aquifers

Pre-project flood condition including inundation, and water level

Present use of the water sources

Present run-off pattern in the excess soil dumping site(s).

Appropriate qualitative and quantitative methods shall be used for the collection of the above data.

Communities

Communities form an important part of the overall environment of the area. In order to understand the socioeconomic set up of the area a survey of the communities shall be undertaken. The socioeconomic survey would focus on the following:

Group A: The residents of Islamabad as users of the facility, particularly those living in the immediate surrounding of the Park (Sectors F-10, F-8, E-9, and G-9).

Group B: Residents living along the access route or having commercial establishments along the access routes

Group C: Persons with economic interest on the Park. These include businesses inside the Park as well as occasional user such as street vendors.

Group D: Persons living near the excess soil dumping site(s).

The scope of the socioeconomic survey for the above groups would be the following:

Group A: A general profile of the users (approximate numbers of visitors from each sector; there frequency and average duration of visit). Alternate amenity facilities available to them.

Group B: Estimated density of population in the project area

Group C: Identification, number, natures of business, economic profile, alternate sources.

Group D: General profile, dependence, if any, on the proposed disposal site.

The socioeconomic survey shall also identify any archaeological, historical and culturally sensitive resources in the project area, and describe its importance.

Traffic and Noise

The current volume of traffic and noise levels on all roads that will be used for the project. The traffic and noise survey shall be conducted over a seven-day period. Hourly traffic count, by type of traffic (cars, vans, motorcycles, bus, truck, etc.) shall be provided over a 24-hour period. Peak and average traffic noise shall be measured at 30-minute intervals during the same period. It is likely that the survey will be conducted during the school vacations. School traffic projections shall be provided. A limited survey shall be conducted after the summer vacations to verify the projections. The survey results shall be submitted as supplementary data.

5. GIS database and Use of GIS Techniques

All geographical information collected will be put into a GIS database. This may include, but not limited to, components of the baseline survey discussed in Item 4 above.

6. Identification and Evaluation of Environmental Impacts

All potential impacts arising from each activity of the proposed project shall be identified.

The impacts identified shall be characterized into the following:

Nature - direct or indirect

Duration - short term of long term

Timing - the stage of the operation during which the impact is expected

Likelihood - probability of occurrence

Reversible or irreversible

Consequence - severity of impact

Significance - based on the consequence and likelihood of the impact, effects on the natural ecosystem, level of concerns from relevant stakeholders and conformance with relevant legislative or statutory requirements.

Identification of impacts shall be based on understanding of the project activities, understanding of the project area environment, understanding of the relevant legislative requirements, past experience, professional judgment, expert advise and case studies of drilling operations in other environmentally sensitive areas of the world with similar conditions (physical, socioeconomic and others). Impact identification and assessment may also consider cumulative/integrated approach to impact assessment over a long term.

The impact evaluation shall priorities each potential impact, screen out significant impacts and form the basis for the development of the environmental mitigation and monitoring program for all significant impacts.

7. Stakeholder Consultation

   The consultant, in association with the proponents, shall ensure that all the key stakeholders are consulted during various stages of the EIA process. The consultant will undertake stakeholder consultation in accordance with the Pakistan Environmental Protection Agency Guidelines. The consultation will focus the communities as identified in Item 4 above, NGOs, government agencies, and academic institutions.

8. Recommendations for Mitigation Measures

   The consultant shall identify mitigation measures to help prevent or minimize all potential environmental impacts of the operation. These mitigation measures may include management and monitoring practices, alternative technologies, physical controls, environmental enhancement programs or compensation in monetary terms. The mitigation measures proposed shall be based on a good understanding of the sensitivity and behavior of environmental receptors within the project area (gained on the basis of the secondary data and first hand data collected in the baseline survey), past experience, case studies, legislative controls, guidelines, previous of similar projects, and expert advise.

   For any residual impacts (impacts remaining after applying the recommended mitigation measures) or for impacts for which there has been a level of uncertainty in prediction such as the level of disturbance to wildlife, the consultant shall recommend monitoring measures or propose environmental enhancement programs. Type and nature of environmental enhancement programs must be in line with the physical, biological and socioeconomic needs of the area.

9. Development of an Environmental Management Plan

   An Environmental Management Plan (EMP) shall be prepared for the construction phase of the project. The EMP shall:

   Provide a mitigation and monitoring plan. Mitigation plan to include clear and practical steps for mitigating impacts with clear monitoring protocols.

   Define roles and responsibilities of the proponent and contractors for implementation and monitoring

   Prescribe requirements for communication, documentation and training during the construction

   Provide a waste disposal plan

   A traffic management plan

10. Preparation of a Final Report

    The consultant shall prepare a final report compiling the information collected and findings of the EIA study. The table of contents of the report shall be as follow:

    Executive Summary

    Scope and Methodology

Project Description

Governing Legislation and Statutory Requirements;

Description of the Baseline Environmental Conditions of the Project Area

Identification and Evaluation of Potential Environmental Impacts

Mitigation and Monitoring Requirements

Environmental Management Plan

Documentation of the stakeholders consultation

Three copies of the draft report shall be submitted for review and upon approval 17 copies of the final report shall be provided to the relevant agencies.