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## Influencing Project Design through Participation: Pakistan Ghazi-Barotha Hydropower Project

### Social Development Best Practice Elements

- Attention to adverse impacts
- Institutionalized mechanisms for participation
- Establishment of mechanisms for voice and accountability

The Ghazi-Barotha Hydropower Project is a major run-of-river power project designed to meet the acute shortage of power in Pakistan. It is being implemented by the Water and Power Development Authority of Pakistan (WAPDA). The project consists of a barrage located near Ghazi village in the North West Frontier Province, a 52 km long concrete lined power channel and a power complex located near Barotha village in the province of Punjab. It is expected to have an installed capacity of 1450 MW and provide an estimated energy output of 6600 GWh. The project is a major element of the Government's strategy for meeting future power demand in Pakistan.

Impacts of the project include changes of land use in areas temporarily and permanently acquired for construction. This will affect about 20,000 people, including resettlement of 179 families with a surveyed population of 899 persons. From the earliest stages of project development, assessment of social impacts was incorporated into the evaluation and selection of alternatives for the siting of major infrastructure components. The analysis of alternatives has allowed for a significant reduction in the extent of resettlement and archeological impacts. The project serves as an

example of inclusive project planning. Communities and NGOs worked with social scientists and engineers to develop engineering solutions to mitigate adverse social impacts and to make the project design responsive to social concerns.

### Physical Design of the Project

Beginning with the pre-feasibility stage in 1991, social considerations were factored into how major components of the project would be treated, including the siting of the barrage and headponds and the alignment of the power channel. The evaluation of design alternatives and adoption of modifications took place in consultation with affected communities and included protection of cultural heritage sites.

The channel represented perhaps the biggest challenge. It was realigned away from the most economical and direct route to one that followed a higher contour along more difficult terrain at a substantial increase in cost. Although more costly to construct, the power channel alignment radically reduced resettlement from potentially impacting 40,000 people to 899. The

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realignment of the power channel followed the contour higher up the slope. It thereby bypassed many villages and minimized damage to shrines, graveyards and archaeological sites, substantially reducing the resettlement cost.

### **Treatment of Environmental and Social Impacts**

Community concerns were integrated in the preparation of the Resettlement Action Plan (RAP). Among these concerns were the needs to ensure equitable compensation and also to give priority in employment to those adversely affected by the construction. Provisions of the RAP were designed to ensure that affected communities participate directly in determining fair and equitable compensation for the acquisition of their land.

Instead of revenue officials determining the replacement cost of lands and houses, these costs have been determined by a Land Valuation Committee composed of a government representative, a WAPDA representative, two representatives of the affected community, and a representative of the specially created independent Ghazi-Barotha Development Organization (GBDO). Significant emphasis has been placed to ensure that the views of women, small landowners, landless tenants and poor laborers are reflected in determining compensation values and that they understand their entitlements and procedures for compensation under the project. Gender specific scoping sessions and compensation delivery modalities have been developed to ensure that women titleholders, not male relatives, receive their entitlements.

Reluctance of people adversely affected by resettlement to settle into an unfamiliar host community also led to an innovative approach to develop irrigated spoil banks to support irrigated agriculture. The Project requires the acquisition of 3,457 hectares of land from private landowners. Of this, 1,640 hectares would be needed temporarily for the spoil banks. These lands are being developed, provided with irrigation facilities, and used as the core land-for-land option for adversely affected landowners. The income of a typical farmer currently working barani (rain-fed) land who receives land on irrigated spoil banks could potentially be doubled. This would

provide the adversely affected people an economic base within the project area. It will also lessen the overall impact of land acquisition.

### **Institutional Mechanisms**

The participatory processes developed for the project have been facilitated by two independent bodies, the GBDO and the Environment and Resettlement Panel (ERP). Supported by an endowment grant by WAPDA and registered as an independent company, the GBDO is tasked with maintaining ongoing consultations with affected communities on land acquisition issues. It has also incorporated community participation in the preparation and implementation of an integrated regional development plan. GBDO has established community organizations in all the villages affected by the project. In its advocacy role, it has negotiated and resolved difficult land acquisition issues between the project affected persons and the government. The board of the GBDO consists of thirteen members and includes six community representatives, divided evenly between men and women. During project implementation, the GBDO meets regularly and is actively involved in identifying and addressing a broad range of social concerns.

The Environment and Resettlement Panel, consisting of three internationally recognized experts, has been associated with the Project from the initial stages of project preparation. During the preparation of the project, it was responsible for conducting a comprehensive review of the environmental and resettlement impacts of the project as an input to the project design and analysis of design alternatives. This Panel has been reconstituted to review and monitor implementation of the environmental mitigation and resettlement plan during the construction and initial operation of the project. Panel members visit the project site twice a year, and consult extensively with a broad range of stakeholders. The panel provides communities and local NGOs with an independent channel for voicing their concerns to the Bank and WAPDA. The panel's reports are disseminated widely among NGOs and community organizations, and are viewed by these parties as an independent assessment of the environmental and social issues the project is facing during implementation.

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