

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: AB856

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| Project Name | IRAN – Alborz Integrated Land and Water Management Project |
| Region | MIDDLE EAST AND NORTH AFRICA |
| Sector | Irrigation and drainage (80%); General agriculture, fishing and forestry sector (20%) |
| Project ID | P071170 |
| Borrower(s) | GOVERNMENT OF IRAN |
| Implementing Agency | |
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| | Mazandaran Golestan Regional Water Company (MGRWC) 3 rd K.M. of Sari, Ghaemshahn Road Postal Code 4815898643 Mazandaran, Islamic Republic of Iran |
| Environment Category | <input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD |
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1. Key development issues and rationale for Bank involvement

Under its ongoing Third Five-Year Development Plan for 1999-2004, the Government of Iran (GOI) has emphasized the themes of: (i) a declining role for Government in the operation and maintenance (O&M) of irrigation schemes; (ii) decentralization (including more active participation by users or beneficiaries); (iii) increasing productivity and farm income in agriculture; and (iv) conservation of natural resources. The government has also, recognizing the environmental sustainability implications of past and current agricultural performances, included an institutional framework for environmental protection through its National Strategy for the Environment and Sustainable Development.

The Bank's Interim Assistance Strategy (IAS) of May 2001 supports the stated GOI priorities of economic reforms, social protection, environmental and natural resource management. Based on the achievements of the previous Bank-financed Irrigation Improvement Project (IIP) (Loan 3570-IRN, closed December 31, 1999), the IAS advocates a comprehensive river basin approach to water resource management. The IAS states that any new Bank involvement in water management and agricultural development of a river basin should link watershed management of the basin's upper reaches with conservation of water resources in the lower reaches. In the upper reaches, watershed management would include soil conservation with forestry management and restoration of rangeland productivity, which has been depleted by overgrazing on the part of herders. In the lower reaches where water resources are used for irrigation and urban water supply, surface and ground water resources need to be conjunctively managed in order to support irrigation development with sustainable environment management and urban water supply. A key challenge is to improve the O&M efficiency of the rural and urban hydraulic infrastructure.

Key issues in the water resources sector as identified in the Bank's Country Water Resources Assistance Strategy (CWRAS) (June 2004) and Agricultural and Natural Resources Management Sector Note (January 2001) are declining water availability and its deteriorating quality, low water-use efficiencies, salinity and water logging, inadequate O&M, limited cost recovery, and lack of institutional coordination. The World Bank's Environmental Strategy Study of 1995 has also identified soil erosion as a serious environmental problem, which has led to the degradation of about three-fifths of the land in Iran's 17 watersheds. These trends have taken place at a time when GOI has undertaken significant investments in hydraulic infrastructure by constructing several large and medium dams for providing water for both irrigation and urban water supply. Overall, inappropriate management of river basins has reduced the capacity of existing dams through erosion-induced siltation to the tune of some 100 million cubic meters (MCM) annually.

The proposed project will introduce an integrated river basin approach to land and water resources management in the Alborz river basin of Mazandaran province, where GOI is currently constructing the Alborz dam (78 meter in height). The design will address inter-sectoral water conflicts regarding ground and surface water usage in an efficient, economic and equitable manner for long-term implementation. This will provide valuable lessons for replication in other river basins of the country in the forthcoming Fourth Five Year Development Plan.

The country has had limited access to global practices, especially in integrated water resources management on the basin level with a focus on the environment and social aspects. Therefore, the government views the Bank's intervention as an important mechanism for knowledge transfer and institutional capacity building. Government officials have made it clear that while they appreciate the Bank's lending instruments, they are more interested in tapping the Bank's global knowledge. From the Bank's side, the combination of technical assistance and investments would provide the opportunity to develop its status as a knowledge institution in line with the Water Resources Sector Strategy (2003). The preparation of the proposed project is fully consistent with the objectives outlined in the Country Water Resources Assistance Strategy and the Urban Water Supply and Sanitation Project under preparation.

2. Proposed objective(s)

The project's development objective is to enhance current government efforts to achieve sustainable integrated land and water management at the river basin level through: (i) increasing agriculture productivity through the improved irrigation and drainage system and participatory management mechanism; (ii) reducing soil erosion and sediment yields into the Alborz Dam, which is under construction using GOI funds, through the improved upper watershed management; and (iii) protecting the water environment downstream of the Babol River and other water bodies through the improved hydrological / water quality monitoring, reservoir operation, and pest management.

The project will enable water resources in the Alborz River basin to be managed in a sustainable manner by addressing the concerns described above. Improving management of arable and rangeland in the catchment area of the Alborz Dam (currently under construction with funding from the GOI) will reduce the risks of siltation from watershed degradation. Benefits will accrue to all stakeholders in rural and urban areas. The primary beneficiaries are farmers, livestock herders, urban residents and forest dwellers. By including users from farm-level Water Users Associations (WUAs) and micro-catchment level watershed management/forest cooperatives, the project will support decision-making on water resources management down to the lowest appropriate levels. A comprehensive river basin management approach will facilitate solutions to basin-level water allocation and water quality problems, eventually leading to better natural resource management and conservation. This will provide valuable lessons for replication in other river basins of the country.

3. Preliminary description

The project comprises the following components:

1. ***Upper Watershed and Forestry Management (US\$13 million):*** This will include: (a) technical assistance, master planning and capacity building in the upper watershed; (b) forest and rangeland rehabilitation and management (51,500 ha); (c) soil and water protection measures in the upper watershed area; and (d) assistance for community-based forestry and rangeland management. In the alpine rangeland and forest areas, overgrazing and illegal timber cutting have caused serious pasture and forest degradation, which has led to increased soil erosion and sediment yields downstream. The component aims at establishing effective soil and water protection measures and improving sustainable and participatory community-based forest and rangeland management, including the establishment of cooperatives in the upper watershed;
2. ***Irrigation and Drainage Management (US\$130 million):*** This will include: (a) rehabilitation and construction of irrigation and drainage systems covering a total area of about 52,000 ha, of which 33,000 ha are traditional irrigation areas and 19,000 ha are new additions (currently being irrigated by ground and rain water); (b) capacity building and technical assistance for the establishment of WUAs and their increased O&M/cost recovery function; and (c) agricultural extension and research activities to support farmers for improved water management and crop diversification. The component aims to enhance irrigation water use efficiency and agriculture production/income by rehabilitation and modernization of the irrigation/drainage systems and improved O&M through development of participatory water management including training and agricultural extension/research support;
3. ***Integrated Basin Water Management (US\$7.0 million):*** This comprises: (a) establishment of a Basin Water Committee (BWC) and Basin Water Fund (BWF); and (b) establishment of a GIS-based information dissemination and optimized water distribution system on a basin scale:
 - The former sub-component will include: (i) establishment and technical support for the BWC, comprising the key stakeholders, which will include the Regional Water Authority of Mazandaran and Golestan (RWAMG), the Mazandaran Jihad-e Agricultural Organization (MJAO), and end user representatives; (ii) establishment of the BWF to provide WUAs, forestry cooperatives, and other communities and informal groups with support for community-based land and water conservation and income generating activities under the guidance of the BWC. This sub-component aims to support both integrated land/water resources management on a basin scale and community-based initiatives for improved land/water resources management.
 - The latter sub-component includes: (i) technical assistance for detailed system development; (ii) capacity building and training of the core management unit within the RWAMG and associated entities; and (iii) provision of monitoring equipment and decision-making tools. This sub-component aims to enhance inter-sectoral coordination through the GIS-based system and the optimized water distribution system on a basin scale and enable distribution of stored water to farming areas in the most efficient manner.
4. ***Environment Management (US\$8.0 million):*** This pertains to the implementation of the Environmental Management Plan (EMP) of the Environmental and Social Assessment (ESA), including water quality monitoring, integrated pest management, and other mitigation measures.
5. ***Project Implementation and Coordination Support (US\$4.0 million):*** This involves: (i) project implementation and coordination support for the PMUs (Project Management Units) and PIUs (Project Implementation Units); and (ii) their monitoring and evaluation (M&E), reporting and auditing activities.

Regarding institutional arrangements, community-based WUAs established on the basis of Iran's Cooperatives Law were successfully piloted at the farm level in the previous Irrigation Improvement Project. This project will replicate WUAs up to the secondary level of the irrigation network. In the previous Irrigation Improvement Project (IIP), Water Users Groups (WUGs) were established up to the tertiary and quarterly levels which would mean an area of approximately 300 ha. This project aims to go a step higher and establish WUAs up to the secondary level which would cover a wider area (for instance 3,000 ha instead of 300) in all irrigated areas of the project. Furthermore, the project's team and the government are conducting an institutional analysis and preparing a mechanism to operationalize the BWC concept with adequate civil society participation by appraisal.

Total base costs of the project are estimated at around US\$163 million and total costs including physical and price contingencies are around US\$216 million. It is expected that the IBRD loan would be around US\$140 million with the remainder funded by Government counterpart financing and beneficiary contributions.

4. Safeguard policies that might apply

The project includes in its area of influence, the Alborz Dam (height = 78 meters), which is not financed by the project. The dam and its reservoir area are currently under construction, under a separate project that is fully financed by the Government. A separate environmental assessment report was previously prepared for the dam project and has been approved by the Iranian Department of Environment (DOE).

The present project, categorized as Category A under OP4.01, triggers seven (7) safeguard policies—environmental assessment, pest management, involuntary resettlement, forests, safety of dams, cultural property and projects on international waterways — for which mitigation measures will be undertaken as will be described in the supplementary Environmental and Social Assessment (ESA) report that is under preparation by the Government.

Project investment activities are planned in the forested upper watershed area that comprises the catchment area for the Alborz Dam. The area downstream of the dam is a well developed agricultural plain that also will have investment activities. Water quality and quantity will be monitored under the project and community activities will be arranged for improving the environment in both the upper and lower watersheds.

5. Tentative financing

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| Source: | (\$m.) |
| Borrower | 76 |
| International Bank for Reconstruction and Development | 140 |
| | Total |
| | 216 |

6. Contact point

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