

## Integrated Safeguards Data Sheet (Updated)

Report No: AC91

### Section I - Basic Information

Date ISDS Prepared/Updated: 03/15/2004

#### A. Basic Project Data (from PDS)

##### I.A.1. Project Statistics

Country: IRAN, ISLAMIC REPUBLIC OF	Project ID: P071191
Project: IR-WATER SUPPLY AND SANITATION	Task Team Leader: Mohammed Benouahi
Authorized to Appraise Date: January 23, 2004	IBRD Amount (\$m): 253.50
Bank Approval: May 25, 2004	IDA Amount (\$m):
Managing Unit: MNSIF	Sector: Sewerage (60%); Water supply (30%); Central government administration (10%) Theme: Pollution management and environmental health (P); Infrastructure services for private sector development (P); Access to urban services for the poor (P); Other financial and private sector development (S); Gender (S)
Lending Instrument: Specific Investment Loan (SIL)	
Status: Lending	

##### I.A.2. Project Objectives (From PDS):

The project development objectives are:

- (a) enhance the quality of life in the proposed cities, Ahwaz and Shiraz, particularly in poor areas by:
  - (i) improving access to satisfactory water supply and significantly increasing coverage of sanitation services; and
  - (ii) improving environmental, hygiene and health conditions, as well as promoting reuse of treated effluents;
- (b) strengthen and develop the capacity of Ahwaz and Shiraz Water and Wastewater Companies (WWCs), and assist the latter in improving their efficiency, sustainability and financial autonomy; and
- (c) initiate sector reforms, particularly with respect to institutional arrangements, the regulatory framework, demand management, as well as prepare a sanitation strategy.

##### I.A.3. Project Description (From PDS):

Long-term development plans have been designed for the extension of water and wastewater system and facilities in Ahwaz and Shiraz over the period 2004-2027. These plans are formulated to serve a population of about 2.2 and 1.9 million respectively in Ahwaz and Shiraz by 2027. They are scheduled to be implemented in four phases and the project under consideration covers works proposed under phase 1. Areas to be covered will be as follows:

**In Ahwaz:** The water component of the project aims at improving the quality of water and regulating the pressure in the water system. This will be done by rehabilitating the existing water treatment plants and providing additional treatment to ensure adequate water quality, constructing 5 new reservoirs and the required pumping stations, and implementing the necessary transmission lines. Additionally, rehabilitation of the water network and implementation of house connections will take place where needed throughout the project period. The wastewater component includes the improvement and rehabilitation of the existing treatment plant in the west of Ahwaz (Choneibeh), the construction of the first two modules of a new treatment plant in the east of Ahwaz, and the implementation of the wastewater collection system that are

planned to connect 750,000 persons by 2007.

**In Shiraz:** The water component will finance works that will increase supply capacity and regulate the pressure in the water network. This will be achieved by digging and equipping 17 wells, constructing four reservoirs, the required pumping stations and pressure reducing valves, laying and extension of the transmission and distribution system. Rehabilitation of the water network and implementation of house connections will take place where needed throughout the project period. The wastewater component will include works that will extend the collection system in the city and the construction of the first two modules of a new treatment plant. For the wastewater treatment works of the first phase in both cities, it is proposed to apply the design-build-operate approach in order to optimize the design and to ensure proper operation and maintenance of completed works in the initial stages of operation while building local capacity to run the treatment plants. Build-operate and transfer-type of contracts would be considered for the subsequent phases. These contracts will increase the involvement of international private sector in providing wastewater services, which will ensure sustainable service delivery.

The project also includes operation and maintenance equipment and TA/training/consultant services for institutional development and project management, engineering design and construction supervision, updating of the wastewater development program and feasibility studies and engineering design for phase 2 investments.

**I.A.4. Project Location:** (Geographic location, information about the key environmental and social characteristics of the area and population likely to be affected, and proximity to any protected areas, or sites or critical natural habitats, or any other culturally or socially sensitive areas.)

The project will cover two cities that are located in two different provinces:

- Ahwaz in Khoozestan – South-Western part of Iran
- Shiraz in Fars Province – Southern part of Iran

Both cities have acceptable water supply systems with over 95% coverage however, there is considerable lack of adequate wastewater collection, treatment and disposal networks. Connection rates to modern sewage networks are presently very low in all cities, there is only one treatment plant in operation, that of Ahwaz, and even this plant treats only a small proportion of the wastewater discharged by the local population to the Karoon River, the largest river in Iran. The lack of adequate sanitation facilities has resulted in considerable environmental degradation and heightened health risks. Among the major negative impacts arising from the existing situation are:

- The pollution and degradation of natural resources (surface water, groundwater, soil, aquatic life.....) is leading to the reduction of opportunities (salt production from the salt lake in Shiraz);
- The spread of underreported traditional and possibly water-related diseases to local populations and tourists alike;
- Contamination of the food chain from untreated wastewater is affecting consumers' health;
- Loss of water resources (e.g. several wells have been closed in Shiraz); and
- Considerable costs for remediation of damages (e.g. additional treatment requirements of the water supply sources, new remote sources of clean water, cost of health treatment, lost income and schooling days, etc...).

***Khoozestan Province: Ahwaz*** is the capital of Khoozestan province and is located at approximately 875 km from Tehran. The present population is about 950,000 and is projected to reach 2,200,000 by the year 2027. Ahwaz is one of the most economical centers of the Islamic Republic of Iran as it is located in an oil-rich region and hosts a number of large industries. The Karoun River, the largest river in Iran, flows along Ahwaz and divides the city into two separate drainage zones: the eastern zone and the western zone. At present, more than half of the population is connected to a wastewater collection network. Areas without wastewater either use seepage pits or discharge their wastewater in open channels, rivers or in open grounds creating wastewater pools, polluting the soil and water resources, and creating health hazards. To improve the wastewater situation, the existing wastewater treatment plant that was constructed in 1977 has been recently rehabilitated and put into operation. This treatment plant, which is based on activated sludge, serves the Western drainage zone but can only treat the wastewater generated by 140,000 persons.

The pollution of the Karoun River is a major problem and a priority issue not only for Ahwaz but for the whole province. The discharge of untreated municipal and industrial effluents, the drainage from agricultural lands, and the uncontrolled discharge of solid wastes directly into the River and its tributaries have considerably degraded the water quality of Karoun. Available treatment facilities have proved to be insufficient to produce adequate drinking water quality. At present, water from well fields is being transferred around 70 km and blended with the river water in order to reduce the concentration of contaminants and make it treatable. However, the maximum water that can be obtained represents less than 10% of Ahwaz water demand and as such cannot improve the degraded water quality to acceptable levels. Consumers are switching to new sources of drinking water (15-20 liter deposit-refund containers) or taking measures to reduce the contamination of the drinking water (filtering and boiling tap water). The water quality but also personal and domestic hygiene behaviors are largely contributing to high diarrhea prevalence that reaches 50% during peak months. Out of the total gastro-enteritis cases in Iran during the year 2000, 10% were reported in Ahwaz, which accounts for only 1.5% of the total population but where there is acute pollution of both ground water and surface water.

***Fars province: Shiraz*** is the capital of Fars province and is located at approximately 925 km from Tehran. The present population is about 1,200,000 and is projected to reach 1,950,000 by the year 2027. Shiraz has a rich historical heritage and is close to Persepolis, the most important archeological site of the country. At present only 8% of the population is connected to wastewater collection. Due to the high water table, the performance of seepage pits has been unsatisfactory and several houses are discharging their wastewater into the open drainage channels that run along the roads adjacent to the residential areas. During the dry periods, the channels become open wastewater collectors releasing un-pleasant odors, attracting mosquitoes and affecting the health of the residents. The impact of wastewater on health is considered to be lower than in other cities, yet water related diseases such as cholera and gastro enteritis are being reported by the health centers of the City and have been attributed to irrigation of raw vegetables with untreated wastewater and to ground water contamination. It was also reported that around 26 wells have been closed due to pollution mainly in areas where ground water is relatively high. Water-related diseases are moderately prevalent in Shiraz with diarrhea set at 20 percent between June and October.

## ***B. Check Environmental Classification: A (Full Assessment)***

### ***Comments:***

The components of the proposed project have been reviewed and environmentally screened. The project has been classified as Category “A” because of the extension of water treatment plants, the construction of wastewater treatment plants, the re-use of sludge and treated effluent, the potential impact from the discharge of industrial effluents, the presence of archeological sites in one city and the overall complexity

of the project. The most significant positive and negative environmental impacts that the project will generate can be summarized as follows:

**Positive impacts:** The proposed project will improve the quality of water supply and sanitation services with the objective of reducing environmental pollution and improving public health conditions of the various cities.

The project will extend and rehabilitate the water supply network to ensure 100% water supply coverage, to provide good quality water on a continuous basis, to cater for population growth and to reduce unaccounted for water. Thus the project will provide controlled water supply to the households and will reduce overdraft of the aquifer. It will also improve health conditions of the population by providing them with good quality domestic water from sustainable sources.

The provision of wastewater collection and treatment facilities will have a strong positive effect on the overall environment and the public health conditions in each city. It is expected that as result of the health risk assessment, appropriate indicators will be developed to measure the exposure to wastewater related diseases. There will be improvement of the water quality in the streams and rivers that flow throughout the cities. A major benefit is the protection of the groundwater resources from contamination by untreated sewage and the preservation of the marine environment and other vulnerable water. As a result economic benefits will occur in terms of increased water volume of good quality, increased fisheries and tourism activities, and lower remediation costs. Furthermore, the wastewater treatment facilities will provide an opportunity to better control industrial discharges through pretreatment and connection to the collection system as stipulated in the Iranian law. Finally it is worth noting that the design of the treatment plants will take into consideration the use of their by-products (treated effluent and generated sludge) with the aim of protecting the environment and the scarce water resources. This will generate significant economic, social and health benefits and will enable the Government to enforce the law that prohibits the use of raw wastewater for irrigation.

**Negative impacts:** Major environmental issues are:

- (i) risk of poor performance of water treatment facilities that would lead to insufficient water quantity of inadequate quality if the water supply system is not properly maintained and monitored;
- (ii) possible discharge of toxic/harmful industrial substances into the wastewater collection network because of the lack of enforcement on the provision of the required pre-treatment; and
- (iii) use of treated effluent for irrigation and of treated sludge for soil conditioning could, in case of any adverse diversions in treatment quality, cause a health threat to people.

Other issues are mainly related to inconvenience to be experienced during construction such as disruption of traffic pattern, disrupted access to residential or/and other buildings, change in the landscape (loss of vegetation), noise nuisance, air pollution due to dust formation, safety hazard from construction activities and inappropriate disposal of excavated materials and construction debris.

### C. Safeguard Policies Triggered (from PDS)

(click on  for a detailed description *or* click on the policy number for a brief description)

Policy	Triggered
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Forestry (OP 4.36, GP 4.36)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Pest Management (OP 4.09)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Cultural Property (OPN 11.03)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Indigenous Peoples (OD 4.20)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Involuntary Resettlement (OP/BP 4.12)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Safety of Dams (OP 4.37, BP 4.37)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)*	<input type="radio"/> Yes <input checked="" type="radio"/> No

## Section II - Key Safeguard Issues and Their Management

*D. Summary of Key Safeguard Issues. Please fill in all relevant questions. If information is not available, describe steps to be taken to obtain necessary data.*

II.D.1a. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts.

### **Environmental assessment OP 4.01:**

Environmental assessment studies including environmental management plans (EMP) were prepared for the two cities in compliance with the requirements of the Government of the Islamic Republic of Iran as well as the Procedures of the World Bank, including Operational Policy OP 4.01 “Environmental Assessment” and Operational Policy Note OPN 11.03 “Cultural Heritage”. The reports covered three major areas:

- (i) Project description, legal and regulatory framework, and baseline conditions;
- (ii) Analysis of impacts and design alternatives;
- (iii) Environmental Management Plan.

The environmental assessment indicated that the execution of the project will have positive environmental impacts in terms of reducing pollution of natural resources, will generate significant economical, social and public health benefits, and will enable the government to enforce existing environmental regulations and standards. Potential adverse environmental impacts might arise but can be mitigated. Mitigation measures to ensure that potential adverse environmental impacts are minimized were identified and include:

- Routine maintenance of the water supply system and regular monitoring of water quality including water sources, treatment plants and reservoirs;
- Connections will be provided only to industries that pre-treat their effluents to levels which comply with the World Bank Environmental Guidelines mentioned in the “Pollution Prevention and Abatement Handbook”;
- Restricting the use of treated effluents for irrigation in case relevant WHO Guidelines cannot be

met;

- Drying of sludge for one year, before its use as soil conditioner, to ensure elimination of nematode eggs; and
- Construction activities will be coordinated with all concerned authorities prior to the start of the construction works. In addition, Good Practice Environmental Procedures will be adopted.

***Cultural Property (OPN 11.03):***

**Shiraz.** Shiraz, the capital of Fars province, is an ancient city. It lies 35 km north of Persepolis, the most important historic site of ancient Iran, contains several other historic sites, and is an important tourist destination. Most of the works lie outside the city in barren, uninhabited or agricultural lands, well away from any areas of cultural interest. The implementation of the project will not affect any archeological or historical sites. However, such sites may exist buried under the areas where construction activities are planned. To address this concern, the environmental assessment, consistent with the provisions of Operational Policy OPN 11.03 included an archaeological assessment of potential impacts to archeological and historical sites that may be located during construction and a special cultural heritage component was included in the EMP. Moreover, the final design of the project concerning the pipelines was sent to the Cultural Heritage Organization (CHO), which has legal authority to ensure protection of archeological sites. Following careful review and recommendations, some minor changes were incorporated in the design, and CHO has now issued a permit for construction of pipelines.

**Ahwaz.** There are no sites of cultural value in the area.

***Involuntary Resettlement (OP 4.30):***

The implementation of the project required includes the expropriation of land for the construction of treatment plants, pumping stations and sewerage lines. Given the common characteristics of this project in each city, a Resettlement Policy Framework has been prepared together with abbreviated resettlement action plans for the first two cities. Iranian law conforms in all major respects to Bank law, and provides for minimization of disturbance, advance notification to owners, compensation of all right holders at full value independently assessed, and right of negotiation and appeal. In no case are residences or current economic activities or livelihoods affected. In Ahwaz there is expropriation of an unused agricultural plot of 67 ha from 13 owners, with compensation currently being negotiated, and two small-undeveloped urban plots for pumping stations from private owners. All other land is public land expropriated by transfer with compensation from other public organizations. Full documentation is available to support the plants, and a Bank social scientist has visited the sites and confirmed the findings of the local social scientist. The project therefore complies with the requirements of OP 4.12.

**II.D.1b. Describe any potential cumulative impacts due to application of more than one safeguard policy or due to multiple project component.**

Impact on archeological findings during excavation in the city of Shiraz.

**II.D.1c Describe any potential long term impacts due to anticipated future activities in the project area.**

None.

**II.D.2. In light of 1, describe the proposed treatment of alternatives (if required)**

1. The quality of treated effluents will be monitored on a regular basis. In case the concentrations of the parameters in the treated effluent into the receiving bodies (rivers and streams) are higher than those in the pollution prevention and abatement handbook, treatment of the wastewater will be reviewed in

terms of cost availability and efficiency. Otherwise the treated effluent will be discharged in a way as not to reach the receiving water bodies. Alternative discharge means have been identified during the environmental assessment studies.

2. In case archeological remains are found, chance find procedures will apply: construction will be stopped and changes in right of way will be undertaken.

#### II.D.3. Describe arrangement for the borrower to address safeguard issues

The Environmental Assessment studies include an environmental management plan (EMP) to ensure that all negative impacts are properly mitigated and monitored.

The EMP covers all components funded by the project as well as existing water supply sources and wastewater treatment facilities including any facilities that are under construction. The plan outlines the measures incorporated in the design, construction and operation of the project to mitigate potential environmental impacts. It also includes a monitoring program, the institutional arrangement for implementing the various tasks as well as capacity building and technical assistance for key stakeholders involved in the project. The cost of implementing the EMP was estimated and appropriate budgetary allocations were provided as part of the project cost.

#### II.D.4. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

Key stakeholders of the project include Government and related agencies including WWWC, DOE, municipality, city councils, agricultural association, industrial association, health centers, farmers, NGOs and communities.

At the initiation of the project, technical, financial, environmental and social issues associated with the project were discussed in meetings attended by design consultants, representatives of the City Councils, Municipalities, WWCs and various other stakeholders. Further consultations were held during project preparation to facilitate stakeholder involvement and awareness at all levels of project implementation and to ensure that information required for decision making is available to all interested parties.

TORs for the EA studies were developed and shared with the key stakeholders in scoping meetings, which were held on April 2002. In addition the Bank team provided a one-day training on August 2002 regarding the Bank's safeguard policies.

The preparation process for the Environmental Assessment included public consultations which were carried out at various stages. The consultations involved line ministries, city authorities, provincial Departments of Environment, operating water and wastewater companies, local communities, NGOs and the public. This process was complemented by additional consultations undertaken in preparation of the RAP and SA. The EA executive summaries in English and Farsi, were distributed to all concerned stakeholders. Public hearings were held in Ahwaz and Shiraz on October 28th, 2003 and January 4th, 2004, respectively and were attended by a large number of people including representatives of most ministries, Governors, MPs, local communities, NGOs, contractors, consultants, university professors and medias. The public did not have any restriction on the implementation of the project, on the contrary all presents welcomed the project, requested its initiation the soonest possible and asked for additional activities to solve pollution problems.

Prior to appraisal, the environmental social assessment studies and the executive summaries will be disclosed in the WWCs, the Directorate of Environment and the Bank's Infoshop.

**E. Safeguards Classification** (*select in SAP*). Category is determined by the highest impact in any policy. Or on basis of cumulative impacts from multiple safeguards. Whenever an individual safeguard policy is triggered the provisions of that policy apply.

- [ ] S1. – Significant, cumulative and/or irreversible impacts; or significant technical and institutional risks in management of one or more safeguard areas
- [X] S2. – One or more safeguard policies are triggered, but effects are limited in their impact and are technically and institutionally manageable
- [ ] S3. – No safeguard issues
- [ ] SF. – Financial intermediary projects, social development funds, community driven development or similar projects which require a safeguard framework or programmatic approach to address safeguard issues.

**F. Disclosure Requirements**

<i>Environmental Assessment/Analysis/Management Plan:</i>	<u>Expected</u>	<u>Actual</u>
Date of receipt by the Bank	1/31/2004	
Date of “in-country” disclosure	1/31/2004	
Date of submission to InfoShop	2/3/2004	
Date of distributing the Exec. Summary of the EA to the Executive Directors ( <i>For category A projects</i> )	1/28/2004	
<i>Resettlement Action Plan/Framework:</i>	<u>Expected</u>	<u>Actual</u>
Date of receipt by the Bank	1/31/2004	
Date of “in-country” disclosure	1/31/2004	
Date of submission to InfoShop	2/10/2004	
<i>Indigenous Peoples Development Plan/Framework:</i>	<u>Expected</u>	<u>Actual</u>
Date of receipt by the Bank	Not Applicable	Not Applicable
Date of “in-country” disclosure	Not Applicable	Not Applicable
Date of submission to InfoShop	Not Applicable	Not Applicable
<i>Pest Management Plan:</i>	<u>Expected</u>	<u>Actual</u>
Date of receipt by the Bank	Not Applicable	Not Applicable
Date of “in-country” disclosure	Not Applicable	Not Applicable
Date of submission to InfoShop	Not Applicable	Not Applicable
<i>Dam Safety Management Plan:</i>	<u>Expected</u>	<u>Actual</u>
Date of receipt by the Bank	Not Applicable	Not Applicable
Date of “in-country” disclosure	Not Applicable	Not Applicable
Date of submission to InfoShop	Not Applicable	Not Applicable

If in-country disclosure of any of the above documents is not expected, please explain why.

<u>Signed and submitted by</u>	<u>Name</u>	<u>Date</u>
Task Team Leader:	Mohammed Benouahi	03/04/2004
Project Safeguards Specialists 1:	Sherif Kamel F. Arif/Person/World Bank	03/10/2004
Project Safeguards Specialists 2:	Meskerem Brhane/Person/World Bank	03/04/2004

## Project Safeguards Specialists 3:

<u>Approved by:</u>	<u>Name</u>	<u>Date</u>
Regional Safeguards Coordinator:	Sherif Kamel F. Arif	03/10/2004
Sector Manager	Francoise Clottes	02/10/2004