INTEGRATED SAFEGUARDS DATA SHEET
CONCEPT STAGE

Report No.: ISDSC6486

Date ISDS Prepared/Updated: 05-Feb-2014

Date ISDS Approved/Disclosed: 18-Feb-2014

I. BASIC INFORMATION

A. Basic Project Data

Country:	Pakistan	**Project ID:**	P131324
Project Name:	PK-Sindh Barrages Improvement Phase I Project (P131324)		
Task Team Leader:	Abdulhamid Azad		
Estimated Appraisal Date:	21-Jul-2014	**Estimated Board Date:**	16-Dec-2014
Managing Unit:	SASDA	**Lending Instrument:**	Specific Investment Loan
Sector(s):	Irrigation and drainage (70%), General water, sanitation and flood protection sector (30%)		
Theme(s):	Water resource management (60%), Rural services and infrastructure (20%), Social risk mitigation (10%), Climate change (5%), Other e nvironment and natural resources management (5%)		

Financing (In USD Million)			
Total Project Cost:	170.00	Total Bank Financing:	160.00
Financing Gap:	0.00		

Financing Source	**Amount**
BORROWER/RECIPIENT	10.00
International Development Association (IDA)	160.00
Total	170.00

Environmental Category:	A - Full Assessment
Is this a Repeater project?	No

B. Project Objectives

The development objective is to safeguard the reliable supply of water to about 1 million hectares through the rehabilitation of the Guddu barrage and the improvement of O&M capacity of the Irrigation and Power Department.

C. Project Description

1. Pakistan’s agricultural sector is almost wholly dependent on irrigation: irrigated land supplies more than 90 percent of agricultural production. Agriculture in most areas is not possible without irrigation because the climate of Pakistan is arid to semi-arid with low and variable rainfall. Annual rainfall over much of the area is not more than 150 mm per annum with high evaporation rates, ranging from 1,250 mm to 2,800 mm per annum.

2. Given climate change and high population growth rates, current forms of water resources management are widely recognized as being unsustainable and inadequate to ensure future water availability for food security, economic growth, and the needs of the environment.

3. Barrages are strategic hydraulic assets. Barrages are used to raise the water level in the river so that irrigation water can be diverted to the main and link canals by gravity for various uses. Barrages are also used for river control and flood management, act as a source of water supply for all sectors of the economy, function as bridges over rivers, and are often used for utility crossings such as gas pipelines. Therefore, the condition and the safe and reliable operation of a barrage have far-reaching implications for the livelihood and economic growth of all sectors of society.

4. Priorities for Improvement of Barrages in Sindh. Three large barrages were built between 1932 and 1962 on the Indus River in Sindh Province. The northern one, Guddu Barrage, has major safety issues. The second one, Sukkur barrage, is one of the oldest and serves about 3 million ha of agricultural lands. It also has several safety issues. Repairs on the Sukkur Barrage are being carried out regularly. The last one (most southerly), the Kotri Barrage, was rehabilitated in 2000.

5. The project area is dry with a mean annual rainfall of less than 88 mm. There are two wet seasons: the first with low rainfall in February and March and second with higher rainfall in the monsoon period of July, August, and September. About 80% of the mean annual rainfall occurs in the two wet seasons.

6. Guddu barrage. The primary function of the gated Guddu barrage is to provide irrigation water to over one million hectares of agricultural lands in the Jacobabad, Larkana , Sukkur and the Naseerabad districts , by feeding the Ghotki Feeder and Rainee canals on the left (east) side and the Begari Sindh (BS) Feeder and Desert Pat Feeder canals on the right (west) side. The barrage incorporates two fish ladders. The barrage is also used for river control and flood management. It has been designed to pass a super-flood discharge of up to 33,980 cubic meters per seconds (m3/sec). The barrage is also an important transport link across the River Indus and provides cooling water for the thermal power station at Guddu. Two major gas lines cross the barrage. The barrage was commissioned in 1962 and has now seen over fifty years of active service. The Guddu barrage has a span of 1,400 meters. It consists of 64 gates of 18 meters each and one navigation lock with a span of 15 meters. The gates weighing 55 to 100 tons are “fixed wheel” type and operate without counterweights. The project has the following three components:

7. Component A: Rehabilitation of Barrage (US$140 million). This component will support rehabilitation and modernization of the barrage and its associated structures. The works have been determined based on (a) detailed diagnostic assessment; (b) hydrological and sediment analysis studies including physical and numerical model studies; and (c) geotechnical, structural, and safety evaluation studies. The component will finance gate replacement works to improve the regulation and the flow of the barrage. This includes replacing all 65 main barrage steel gates (the gates are 18.3 m wide and 6.6 m high and weigh 55 tons each), 25 main canal head regulator gates (the gates are

7.3 wide and 3.8 high and weigh 25 tons each) and hoist gears. It also includes providing new standby generators, electrical cabling and switch gears, replacement of barrage lighting, repairs to the barrage life-bridge and safety barriers, as well as rehabilitation of the three main canal head regulators. In addition, this component finances the strengthening of embankments to ensure improved flood protection. Minor concrete repairs are needed along some of the upstream gate grooves and both fish ladders require rehabilitation.

8. Component B: Improved Barrage Operation (US$15 million). This component will support modernization and improvements to the barrage operation and maintenance. This will include necessary upgrades to the instrument monitoring systems such as piezometers, gate positioning and gauging, training and capacity building for staff, replacement of surveillance and maintenance boats and procurement of hydrographic equipment. The project will provide new covered workshops and a stock of spare parts for maintenance activities. The instrument monitoring system for the barrage will be renovated and the operating staff will be equipped with an upgraded operation, maintenance, and surveillance manual. An emergency preparedness plan will be prepared. The emergency plan will specify the actors and actions in relation to the following chain of tasks: (a) detection and classification of any potential problem at the barrage site; (b) decision to notify and warn competent authorities; and (c) mobilization of response units when needed. This component will lead to upgrading of the operating facilities with a higher level of control and improved operation & maintenance.

9. Component C: Project Management and Monitoring and Evaluation (US$15 million). This component will support the coordination of all project-related activities as well as training and technical assistance in procurement, financial, social and environmental safeguards and communication. This component will also cover the cost of consulting services including construction supervision, contract administration, quality control, preparation of any additional designs, and bidding documents. Activities will include the establishment of an independent Panel of Experts (POEs) to review, monitor, evaluate, and help guide the rehabilitation process with regard to the safety of the barrage. The component will also support implementation of an information dissemination and communication program, particularly regarding possible canal closures and implementation of the safeguard related action plans.

10. A social development action plan and an environmental management plan will be developed based on detailed surveys, social and environmental studies, and consultations with local communities in the command areas and areas around the barrage. This component will support the implementation of these two plans. If necessary, this component will also support the implementation of a resettlement action plan.

D. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

11. Guddu barrage. The primary function of the gated Guddu barrage is to provide irrigation water to over one million hectares of agricultural lands in the Jacobabad, Larkana and Sukkur and the Naseerabad districts, by feeding the Ghotki Feeder and Rainee canals on the left (east) side and the Begari Sindh (BS) Feeder and Desert Pat Feeder canals on the right (west) side. The barrage incorporates two fish ladders. The barrage is also used for river control and flood management. It has been designed to pass a super-flood discharge of up to 33,980 m3/sec. The barrage is also an important transport link across the River Indus and provides cooling water for the thermal power station at Guddu. Two major gas lines cross the barrage. The barrage was commissioned in 1962 and has now seen over fifty years of active service.

12. The project is confined to a single site and involves works that have been designed in detail based on a well-prepared detailed Feasibility Study (FS) of an international standard. The project involves mechanical and civil works on the existing barrage structure (rehabilitation), and no new works are included. By far the largest and most complex element of these works is the removal and replacement of the 65 barrage gates and 25 head regulator gates. A detailed inspection of each gate shows that wear and tear on the gates, rollers and hoists is considerable and that the probability of failure is evident. There is considerable risk of failure of the main barrage gates within the next five years. Considering that it will take about four years for the project to be completed and for all the gates and mechanical equipment to be replaced, the proposed project needs to proceed, so that the gates are replaced before any failure occur.

13. During project preparation an environmental impact assessment will be prepared aimed at identifying potential adverse impacts of the project such as (a) potential disruption in the irrigation supplies due to the extended canal closure during rehabilitation works, (b) potential damage to the habitat of Indus blind dolphin in the reach between Guddu and Sukkur barrages, and climate change related impacts in reference to irrigation supplies and flood management . As the project involves large-scale rehabilitation works on the existing barrage, there is a possibility of interruption of water supplies through canal closures for a short or longer duration. Also, the project may impact on flora and fauna: the Indus River between the Guddu and Sukkur barrages is a important game reserve and habitat for the Indus or Blind Dolphin (Platanista gangetica minor). This part of the river contains large population of dolphin. Therefore, the project is categorized as an Environmental Category “A” project, requiring thorough environmental and social assessment, development of social impact and environmental management plans, consultations with a wide spectrum of stakeholders, disclosure of mitigation measures, and their diligent implementation and monitoring. Design consultants have already prepared an environmental impact assessment study, which needs to be verified and updated to fill in the gaps by a team independent consultants.

E. Borrowers Institutional Capacity for Safeguard Policies

The Irrigation and Power Department of the Government of Sindh has extensive experience in implementing World Bank funded projects, with a number of projects in the irrigation sector based along the Indus River, thus, they are experienced with the Bank environment and social safeguards requirements. A skeleton Project Management Office (PMO) within the Irrigation and Power Department of Sindh exists already. It will have been expanded and fully staffed by the time of project appraisal. The PMO is expected to grow substantially and be in future responsible for rehabilitating other barrages in Sindh. The project will improve the capacity of PMO staff in handling social, environmental, and resettlement issues, in applying emergency preparedness plans, and in developing improved communication strategies. A capacity building plan will be developed during the preparation, including training and knowledge exchange within or outside of Sindh.

F. Environmental and Social Safeguards Specialists on the Team

Miki Terasawa (SASDS)

Javaid Afzal (SASDI)

II. SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)

Environmental Assessment OP/ BP 4.01	Yes	The proposed project involves civil and mechanical rehabilitation works of the existing barrage, which is located on Indus river. The impact of the project will be site specific and will be mainly associated with the construction phase. An independent EIA will be undertaken during project preparation. The project will develop an emergency preparedness plan, a social development action plan and an environmental management plan.
Natural Habitats OP/BP 4.04	Yes	The project may impact on flora and fauna: the Indus River between the Guddu and Sukkur barrages is an important game reserve and habitat for the Indus or Blind Dolphin (Platanista gangetica minor). This part of the river contains large population of dolphins. During the preparation, the project will assess the performance of the fish ladder and propose improvements or alternatives based on best global practices available technologies if possible.
Forests OP/BP 4.36	TBD	There may be an impact on local eucalyptus plantation. If so, an action plan will be prepared accordingly.
Pest Management OP 4.09	No	There will be no change in the irrigation supplies from the barrage after the rehabilitation works have been completed and therefore there will be no change in the existing pesticide use practices in the irrigation command.
Physical Cultural Resources OP/ BP 4.11	No	The rehabilitation works are limited to the existing structure with no new activities.
Indigenous Peoples OP/BP 4.10	No	There are no known indigenous groups in Sindh province as identified under this policy. The only identified indigenous people in Pakistan under the OP/BP 4.10 are in Kalash valley in the northern Pakistan (Chitral district of Khyber Pakhtunkhwa province).
Involuntary Resettlement OP/BP 4.12	TBD	Temporary land acquisition may be required. If so, an appropriate resettlement action plan will be prepared.
Safety of Dams OP/BP 4.37	Yes	Although barrages are not dams, they are indeed major hydraulic structures on which millions of hectares of irrigated land and population are dependent. The dam safety Policy is triggered, and an action plan will be developed, including

		establishment of an independent panel of experts.
Projects on International Waterways OP/BP 7.50	No	The project area is located on the Indus River which is an international waterway. However, the project essentially involves rehabilitation of existing barrage facilities. It does not involve works and activities that would exceed the original scheme, change its nature, or alter or expand its scope and extent to make it appear a new or different scheme. Therefore given the nature of works envisaged under the proposed project: (a) the project will not adversely affect the quality or quantity of water flows to other riparians; and (b) it will not be adversely affected by other riparians' water use. The project team has also reviewed Article VI1 of the Indus Waters Treaty between India and Pakistan and concluded that a notification by Pakistan to India under paragraph (2) of the said Article VI1 is not required, as the project will not cause interference with the waters of any of the Rivers and will not affect the other riparians materially. Therefore, the Project falls within the exception to the notification requirements of OP 7.50, set forth in paragraph 7(a) of OP 7.50.
Projects in Disputed Areas OP/BP 7.60	No	The project is located within Sindh province of Pakistan.

III. SAFEGUARD PREPARATION PLAN

A. Tentative target date for preparing the PAD Stage ISDS: 30-May-2014

B. Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing[1] should be specified in the PAD-stage ISDS:

March 2014

IV. APPROVALS

Task Team Leader:	Name: Abdulhamid Azad	
Approved By:		
Regional Safeguards Coordinator:	Name: Francis V. Fragano (RSA)	Date: 18-Feb-2014
Sector Manager:	Name: Simeon Kacou Ehui (SM)	Date: 18-Feb-2014

[1] Reminder: The Bank's Disclosure Policy requires that safeguard-related documents be disclosed before appraisal (i) at the InfoShop and (ii) in country, at publicly accessible locations and in a form and language that are accessible to potentially affected persons.