

**INTEGRATED SAFEGUARDS DATASHEET  
APPRAISAL STAGE**

**I. Basic Information**

Date prepared/updated: 08/01/2006

Report No.: AC2033

**1. Basic Project Data**

Country: India	Project ID: P090592	
Project Name: Punjab Rural Water Supply and Sanitation		
Task Team Leader: Ghanasham V. Abhyankar		
Estimated Appraisal Date: August 7, 2006	Estimated Board Date: October 24, 2006	
Managing Unit: SASEI	Lending Instrument: Specific Investment Loan	
Sector: Water supply (50%);Sanitation (50%)		
Theme: Rural services and infrastructure (P)		
IBRD Amount (US\$m.):	0.00	
IDA Amount (US\$m.):	157.00	
GEF Amount (US\$m.):	0.00	
PCF Amount (US\$m.):	0.00	
Other financing amounts by source:		
	<u>BORROWER/RECIPIENT</u>	139.00
		139.00
Environmental Category: B - Partial Assessment		
Simplified Processing	Simple <input checked="" type="checkbox"/>	Repeater <input type="checkbox"/>
Is this project processed under OP 8.50 (Emergency Recovery)	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**2. Project Objectives**

GoPs RWSS program development objective will be to increase rural communities' access to improved and sustainable RWSS services.

**3. Project Description**

The Program will be implemented in all 18 districts of Punjab. There are 12278 Gram Panchayats (as also the same number of villages or habitations) in Punjab. As per 2001 census, total rural population in Punjab is 16.1 million, of which 33 % is SC population. There is no tribal population in Punjab. The proposed program under the SWAp basket will aim to provide/ upgrade drinking water facilities in about 3000 NC/ PC habitations. In addition, in the proposed program will improve operational and financial performance of the water supply schemes in another 2600 FC habitations and initiate introduction of community sanitation schemes in about 1100 habitations, which already have high coverage and use of household sanitation facilities. Thus, the proposed program will benefit about 4.0 million people living in NC/ PC villages and another about 3.5 million people through upgradation of existing water supply schemes. The Community sanitation schemes will benefit 1.65 million people. Of the prospective beneficiary population about 50% is expected to be from the SC category.

The project will have three main components: Component A: Program Management, Component B: Community Development and; Component C: Infrastructure Building.

#### **4. Project Location and salient physical characteristics relevant to the safeguard analysis**

The state of Punjab lies in Northern India, and is surrounded by other Indian states of Jammu & Kashmir, Himachal Pradesh, Haryana and Rajasthan. It shares its western boundary with Pakistan. The state can be divided into five major land forms: Alluvial plains; Sand dunes; Flood plains; Shivalik hills; and the Piedmont plain.

The Alluvial plains cover about 60% of the total geographic area, and are comprised of the old valley floors, the remnants of which lie above the level of the present river beds. They are popularly known as 'Upper-Bari Doab' (covering most parts of Amritsar and Gurdaspur districts), 'Bist Doab' (covering most parts of Jalandhar, Kapurthala and parts of Hoshiarpur) and the 'Malwa' plain covering areas south of Sutlej river. The plains are very flat and some parts are affected by water-logging and/or alkalinity. Sand Dunes cover about 11 % area of the state, with major pockets observed along the old river courses of Beas, Sutlej and Ghaggar in the districts of Kapurthala, Jalandhar, Ludhiana, Patiala, Sangrur, Bathinda and Faridkot. They are locally known as 'Tibbas', and most of the dunes have been leveled and brought under cultivation. The Flood plains are undulating areas containing various inter-locking channels of streams and swamps, and lie along the main rivers. They comprise about 7% of the geographic area and are characterized by high subsoil water table (especially in the rainy season). The Shivalik hills are located in the northern fringe of Gurdaspur and north-eastern parts of Hoshiarpur and Rupnagar districts. Some parts of the Shivalik hills (known as 'Kandi' area) face special problems of water availability due to the hilly terrain and availability of groundwater only at great depths. The Piedmont plain forms a transitional zone between the Shivalik hills and the alluvial plains. It is about 10-15 km wide and comprises parts of Gurdaspur, Hoshiarpur and Rupnagar districts. The land is dissected by seasonal streams, popularly called 'choes', many of which terminate without joining major stream/river.

Punjab is occupied by Indus river basin and is drained by three major rivers of this system: the Ravi, the Beas and the Sutlej, apart from other drainage channels. The Ghaggar sub-basin drains the southeastern and southern part of the State.

Although Punjab has a large total replenishable ground water resource (1.82 mham/yr), the resource is critically stained in many places due to extensive use of shallow aquifers for irrigation. Recent estimates indicate an overall state-wide ground-water development of 145%. Declining water tables combined with deteriorating groundwater quality in many parts of the state have adversely impacted the water supply situation in the rural areas, and impose specific challenges for provision of rural water supply and sanitation services.

#### **5. Environmental and Social Safeguards Specialists**

Mr S. Satish (SASES)

Mr Sanjay Pahuja (SASES)

<b>6. Safeguard Policies Triggered</b>	<b>Yes</b>	<b>No</b>
<b>Environmental Assessment (OP/BP 4.01)</b>	<b>X</b>	
<b>Natural Habitats (OP/BP 4.04)</b>		<b>X</b>
<b>Forests (OP/BP 4.36)</b>		<b>X</b>
<b>Pest Management (OP 4.09)</b>		<b>X</b>
<b>Cultural Property (OPN 11.03)</b>		<b>X</b>
<b>Indigenous Peoples (OP/BP 4.10)</b>		<b>X</b>
<b>Involuntary Resettlement (OP/BP 4.12)</b>		<b>X</b>
<b>Safety of Dams (OP/BP 4.37)</b>		<b>X</b>
<b>Projects on International Waterways (OP/BP 7.50)</b>		<b>X</b>
<b>Projects in Disputed Areas (OP/BP 7.60)</b>		<b>X</b>

## **II. Key Safeguard Policy Issues and Their Management**

### ***A. Summary of Key Safeguard Issues***

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts: Expected Overall Environmental Impact:

The project will finance investments in rural water supply and drainage improvement schemes to serve the rural populations in Punjab. The project interventions are therefore expected to result in private and public health benefits in the rural communities, through improved quality and delivery levels of RWSS services. Some of the main environmental health benefits expected under the project include: increased and better quality water supply for drinking, cooking, washing, bathing and cleaning purposes; time and energy savings in providing water supply closer to homes; improvements in personal hygiene and village sanitation levels; and reduced fecal-oral contamination of drinking water.

A comprehensive Environmental Assessment (EA) has been conducted for the project, which included an assessment of the policy and institutional framework, assessment of the environmental baseline and identification of baseline environmental issues pertaining to the RWSS sector, assessment of the potential environmental impacts of the proposed project interventions, and development of an appropriate Environmental Management Framework (EMF) for addressing them.

The findings of the EA study indicate that while the proposed project interventions are expected to result in overall environmental and public health improvements in the state, potential adverse impacts could occur if the schemes are not properly designed, sited, implemented, and maintained. The EMF prescribes mitigation measures for identifying and addressing any possible adverse environmental impacts of the project interventions, as well as the institutional arrangements for implementing the EMF.

As a part of the baseline assessment, the EA study indicates the following environmental issues affecting the water supply and sanitation situation in the state:

## Baseline Environmental Issues Currently Affecting RWSS in Punjab:

(a) **Water Availability:** Shallow groundwater has traditionally been the major source of water for drinking, irrigation and industrial uses in Punjab. Owing to large-scale extraction of groundwater for irrigation, combined with increasing demands in other sectors due to population and industrial growth, the shallow aquifers in large parts of Punjab are in the state of over-exploitation, resulting in a significant decline in groundwater levels. For a large number of rural households which are not covered by public water schemes and which are dependent on private sources like the shallow hand-pumps or tube-wells, the declining groundwater levels have adversely affected the water supply.

Although about 80% of DWSS schemes in Punjab are based on groundwater supply, the water is sourced from the deep aquifer layers, ranging in depth from 250-1100 ft. This water supply for drinking water from the deep aquifer is considered abundant from the perspective of ensuring long-term source sustainability. About 20% of the water supply schemes in Punjab are based on canal-water supply, and in some cases the water supply is adversely affected during the periods of canal maintenance shutdown.

(b) **Water Quality:** The groundwater quality in many parts of Punjab is poor owing to natural presence of salinity and fluoride at concentrations exceeding the permissible levels for drinking water use. In addition, the water quality of groundwater may also indicate bacteriological or chemical contamination due to inadequate treatment and disposal of sullage, effluent from septic tanks or industrial discharges. According to DWSS estimates, about 44% of the total 12,278 villages in Punjab suffer from poor water quality conditions. Specifically:

? Salinity is a significant problem in districts of Bathinda, Sangrur, Faridkot and Firozpur.

? Prevalence of fluoride in groundwater is indicated in Ludhiana, Faridkot, Bathinda, Sangrur, Jalandhar and Amritsar.

? Nitrate is present in Patiala, Faridkot, Firozpur, Bathinda, Sangrur and Muktsar.

? In addition, isolated pockets of Ludhiana and Bathinda have been reported to have presence of heavy metals and pesticides, respectively, in shallow groundwater.

Due to its higher depth and relative hydrogeological isolation from the shallow aquifer, deep groundwater is expected to be free from the presence of bacteriological/chemical contaminants.

(c) **Environmental Sanitation:** 49% of the rural households in Punjab have household sanitation coverage, and the main factors affecting the status of sanitation in the villages are the following:

? Wastewater generated by the households, including the wastewater from cattle-sheds, flows into open surface drains leading to stagnation in the lanes and by-lanes

? Without adequate arrangements for treatment and disposal, the wastewater often seeps into hand pumps, open dug wells and pipelines, and the water quality of the village ponds has deteriorated leading to loss of productive uses and contamination of the shallow aquifer.

? Effluent overflowing from the septic tanks, and therefore carrying harmful pathogens can find its way to the village drains.

The proposed project interventions are expected to deliver the health and environmental benefits of improved RWSS services, through adequate design of schemes based on appropriate source selection, water quality testing and monitoring and an Environmental Management Framework (EMF) to address any likely adverse impacts of the project interventions.

#### Key Social Safeguard Issues:

No lands will be acquired involuntarily and hence OP 4.12 is not triggered. So is OP 4.10 as there are no tribal (indigenous peoples) habitations in Punjab.. The program, however, does need lands and mechanisms of securing the same are detailed below.

Land Availability : Land requirement arises for four purposes: FOR (i) water source ; (ii) water treatment plants; (iii) construction of ground level or overhead tanks (G/OHT) or cisterns; and (iv) Water transmission and distribution pipelines as well as sullage/ storm water drains. Water sources could be either ground water or irrigation canal based. The ground water sources do require ?land? and so is the case with WTPs. In the case of tanks, if they are constructed in a place other than that of the ?source, separate land will be essential. Transmission and distribution lines are laid mostly in public land or along public streets and no land needs are to be secured. In a few cases, pipelines may have to pass through private agriculture fields. Since the pipeline are laid at least 90 cms below ground elevation, no land acquisition is needed, but permission from the land owner is taken. If such permission is not forthcoming, then alternative pipe routing is used, even if it is more expensive to do so. This means, lands are required for SI No (i), (ii) and (iii). For these, it is a tradition in Punjab that, the respective Gram Panchayat and/ or communities should make lands available, else, no construction is planned. Most villages have some public lands and the same are made available. The same tradition will continue in respect of the program construction too.

In the case of multi-village water supply schemes, the village which houses the source and WTP will need to make available lands much more than the other participating villages. Then, the village offering land shall be compensated duly by other benefiting villages. The GP offering lands shall pay 30% less of the required capital cost contribution and the same shall be borne duly by the other GPs.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

Environment: Continued large-scale abstractions of groundwater for irrigation and industrial uses, if unabated, can be expected to further constrain the water resources situation in the state, and may have significant long-term impacts.

Social: No adverse/ negative impacts are likely to occur as a result of the program intervention. Instead, positive benefits are likely to occur in the fields of local level

human and institutional development (in particular, strengthening of Gram Panchayats), and improved health and hygiene.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

Environment: Due to the participatory nature of the schemes and framework approach adopted for environmental management, the alternative options for villages would be considered during the design and planning phase of each scheme.

Social: It is well recognized that the RWSS reforms are being attempted for the first time in the state, and that it will be a difficult and challenging task for the government, PRIs and communities. Hence, towards ensuring that potential positive benefits do translate into reality, program plans for trying alternative means of community development support as well as human and institutional development efforts. This will be complemented with an ample provision for 'change management' initiatives .

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

Environmental Management:

As discussed before, the project-sponsored interventions are expected to bring about private and public health and environmental benefits, by improving delivery and quality of RWSS services. The specific measures to address the environmental issues include:

1. Source selection will be conducted with due regard to ensuring year-round adequacy of water supply and long-term sustainability of the resource. More specifically:

? The current DWSS design practice ensures that water supply for ground-water based schemes is sourced from deep aquifer, with depth ranging from 250-1100 feet. The EA study, supplemented by inputs from regional groundwater experts, indicates that the current and expected future drinking water abstractions from the deep aquifer are small compared to their estimates sustainable yield, and therefore source sustainability for deep groundwater-based schemes is ensured.

? In areas where deep aquifers are saline, canal-based schemes will be implemented, if adequate year-round supply can be guaranteed through storage or other measures.

2. The siting, planning, design, and operation of the schemes will ensure that source selection is conducted with due regard to water quality of the source, and that water quality at household delivery level meets the drinking water norms. More specifically:

? Due to its higher depth and relative hydrogeological isolation from the shallow aquifer, deep groundwater is expected to be free from the presence of bacteriological/chemical contaminants. Conventional water quality parameters for DWSS's deep groundwater-based schemes indicate acceptable water quality for drinking purposes.

? However, in view of the traditional emphasis on shallow groundwater quality and due to emerging concerns regarding possible presence of industrial or agricultural

chemicals in some locations, the project will commence and support a systematic assessment of deep groundwater quality in the state.

? Effective and regular disinfection, as well as preventive and corrective maintenance of water distribution systems will be ensured.

? A protocol for regular water quality testing and control has been developed, which will be implemented through the operations phase of the water supply schemes.

3. The project will support interventions on environmental sanitation to ensure that the benefits of improved water supply are not compromised by poor personal hygiene standards, and inadequate drainage, sullage/wastewater treatment and disposal. More specifically:

? The project will support sustained IEC campaign to create and enhance awareness on hygiene aspects pertaining to hand-washing, water collection, storage and handling practices

? The project will support, on demand basis, drainage improvement schemes for improving sullage drainage, addressing effluent overflow from septic tanks into village drains, installing small-bore sewerage and undertaking ponds rehabilitation.

In addition, the EMF will prescribe measures to ensure that:

4. the temporary adverse environmental impacts associated with construction-stage activities are systematically addressed in the project-sponsored schemes.

5. appropriate environmental monitoring indicators are integrated in the overall project M&E systems

6. adequate resources are provided for environmental awareness and capacity building in village communities, Gram Panchayats and DWSS staff

7. adequate resources are provided for a thorough assessment of the water availability and quality of the deep aquifers.

#### Implementation Arrangements:

Program implementation and oversight arrangements have been developed keeping in view that the proposed program will adopt a sector wide approach (SWAP) wherein, irrespective of funding sources, the GoP will adopt uniform principles and guidelines for implementing all activities in the rural water supply and sanitation sector statewide. Towards ensuring a state wide buy-in and spread, a Steering Committee will be constituted at the state level with the Chief Minister as its Chairperson and the Minister of DWSS as the co-Chairperson. The DWSS will re-define its role, changing from builder /provider to that of a facilitator/ partner and will shoulder responsibility for state wide leadership, collaboration and management of RWSS sector including undertaking Information, Education and Communication (IEC), safeguards, arranging capacity support, Quality Assurance as well as monitoring and evaluation of outputs and outcomes. To enable this transformation, the existing DWSS structure will be re-organized such as to provide for two, rather independent, channels ? one, the Program Facilitation and Monitoring Wing, and the other, Operations Wing. The former, with an unitary structure (through the district), a State Water and Sanitation Program Management Cell (SPMC) and a District PMC, will be responsible for policy analysis and formulation,

approval of annual plans, arranging funds, IEC, quality control and M&E. The operations Wing will be largely the current DWSS set-up with Regional Chief Engineers and the existing offices of Circles, Divisions and Sub-divisions. They will be responsible for providing technical support to the GPs and communities. The DPMCs will be guided by a District Water Supply and Sanitation Committee (DWSC) headed by the President of the Zilla Panchayat. Grassroots level management decision making including construction fund management and procurements will rest with Gram Panchayat and the associated sub-committee, GP Water and Sanitation Committee. The overall implementation arrangements, decision making authority and oversight arrangements at national, provincial, district and village level are presented in the line diagram and are further elaborated in the following paragraphs.

The SPMC and DPMC staff will include Environmental-cum-Social Development Coordinator charged with the overall responsibility of ensuring the implementation of the environmental and social development aspects. DWSS being chiefly an Engineering Department, non-engineering skills necessarily needs to be supplemented. For this, the Cell will outsource a professional management consulting firm, at the state as well as district levels.

Program Management Support Consultancy (PMSC). A professional management-consulting firm will be hired by SPMC which will :

- ? Provide experienced personnel in managing community development interventions including safeguards, as well as monitoring and evaluation including process monitoring and impact assessments.
- ? Support Programme Director in developing and guiding implementation of capacity building, IEC, and communication.
- ? Assist the Program Director in the preparation of progress reports as well as in consolidating the key learning, document the same and disseminate it statewide.

The consultancy will, in particular, assist the SPMC in: (i) developing and disseminating alternative mechanisms to reach and work with the communities viz., participatory management techniques and methodologies; (ii) drawing strategies and implementation action plans transparency, inclusion and accountability; (iii) designing and adopting change management approaches, in particular, and capacity building, in general; and (iv) designing, rolling out and maintaining a web site reflecting status and progress in the RWSS sector in the state. It is expected that the DWSS will acquire/ learn the non-engineering skills (supplemented by PMC) within 2-3 years and thereon the same will be managed in-house by DWSS.

Additionally, a state level environmental resource agency will be contracted to provide environmental capacity building, to conduct environmental audits and to provide technical support as and when required. Similarly at the district level, each of the 18 DPMC will include an Environmental/ Social Development Specialist in their staff, who will be responsible for providing environmental support and supervision to each project-scheme in the district. In addition, a panel of environmental experts will be constituted in each district to provide technical support on as required basis. At the village level, the

awareness and capacity for environmental management in the local GPWSC and SO would be enhanced through a targeted training and capacity building program.

The environmental management will form an integral part of the overall scheme cycle. Each scheme report shall contain an environmental/ social checklist highlighting the issues and mitigation measures (if required). Scheme appraisals will take due note of this and shall guide in decision making. Grassroots/ village level checklist preparation will rest with the concerned Junior Engineer and the Support Organization. Implementation monitoring will rest chiefly with the GPWSC who will be capacitated and supported for this by DWSS. The post implementation supervision (including water quality) would be integrated with the overall monitoring of performance indicators.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people. Environment: Key program stakeholders were identified and consultations held to seek their views and incorporate the same into designing of the program. Grassroots level stakeholders include: (i) benefiting households (including women, poor, Scheduled Castes, and the hamlets); (ii) Gram Panchayats (men and women elected representatives), (iii) Junior Engineers of DWSS, and (iv) other community based organizations. Block/ district level stakeholders are : the respective Panchayat Raj Institutions; other concerned line departments such as health, rural department, power, irrigation; district/ block administration; the DWSS; and non-governmental organizations, contractors/ suppliers and consultants. Departments of Finance, Drinking Water Supply & Sanitation, Rural Development and Panchayat Raj, Science and Technology, Irrigation, Health, political leaders, NGOs and consultants. There have been consultations throughout the project preparation both by the Bank Missions as well as by the Government of Punjab.

The environmental and social assessment studies have been conducted with active participation by relevant stakeholders. EMF has been prepared with extensive inputs from DWSS technical and field staff. Summaries of the assessments have been translated into local language and disseminated throughout the state. Stakeholder consultation workshops are also underway to discuss the findings and the EMF.

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### ***B. Disclosure Requirements Date***

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#### **Environmental Assessment/Audit/Management Plan/Other:**

Date of receipt by the Bank	07/14/2006
Date of "in-country" disclosure	08/02/2006
Date of submission to InfoShop	08/01/2006
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	

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**\* If the project triggers the Pest Management and/or Cultural Property, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.**

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

***C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)***

**OP/BP/GP 4.01 - Environment Assessment**

Does the project require a stand-alone EA (including EMP) report?	Yes
If yes, then did the Regional Environment Unit or Sector Manager (SM) review and approve the EA report?	Yes
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes

**The World Bank Policy on Disclosure of Information**

Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes

**All Safeguard Policies**

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes
Have costs related to safeguard policy measures been included in the project cost?	Yes
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes

***D. Approvals***

<b><i>Signed and submitted by:</i></b>	<b><i>Name</i></b>	<b><i>Date</i></b>
Task Team Leader:	Mr Ghanasham V. Abhyankar	
Environmental Specialist:	Mr Sanjay Pahuja	
Social Development Specialist	Mr S. Satish	
Additional Environmental and/or Social Development Specialist(s):		
<b><i>Approved by:</i></b>		
Regional Safeguards Coordinator:	Mr Frederick Edmund Brusberg	
Comments:		
Sector Manager:	Ms Sonia Hammam	
Comments:		

