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INDIA: Maharashtra Rural Water Supply and Sanitation Program
(Program-for-Results)
2014-2020

Technical Assessment

FINAL

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ABBREVIATIONS AND ACRONYMS

APL	Above the Poverty Line
AWMA	Aquifer Water Management Association
BDO	Block Development Officer
BPL	Below the Poverty Line
BRC	Block Resource Center
CEO	Chief Executive Officer
CPS	Country Partnership Strategy
CSSWS	Community Safe and Secure Water System
DLI	Disbursement-Linked Indicator
DLPCC	District Level Program Coordination Committee
DPC	District Planning Commission
DPHL	District Public Health Laboratory
DPR	Detailed Project Report
DWSM	District Water and Sanitation Mission
ERR	Economic Rate of Return
GEM	Gender Empowerment Measure
GHI	Global Hunger Index
GDI	Gender-related Development Index
GDP	Gross Domestic Product
GoI	Government of India
GoM	Government of Maharashtra
GP	Gram Panchayat
GSDA	Groundwater Survey and Development Agency
HDI	Human Development Index
HR	Human Resources
ICT	Information and Communication Technology
IDA	International Development Association
IEC	Information, Education and Communication
KRC	Key Resource Center
lpcd	litres per capita per day
MDWS	Ministry of Drinking Water and Sanitation
M&E	Monitoring and Evaluation
MEETRA	Maharashtra Environmental Engineering Training & Research Academy
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MIS	Management Information System
MJP	Maharashtra Jeevan Pradhikaran
MLA	Member of Legislative Assembly
MP	Member of Parliament
NABL	National Accreditation Board for Testing and Calibration *Laboratories*

NBA	Nirmal Bharat Abhiyan
NGO	Non-Governmental Organization
NGP	Nirmal Gram Puraskar
NPV	Net Present Value
NRDWP	National Rural Drinking Water Programme
NSDP	Net State Domestic Product
O&M	Operation and Maintenance
ODF	Open Defecation Free
OTSP	Other Tribal Sub Plan
PDO	Program Development Objective
PEAIS	Panchayat Empowerment and Accountability Incentive Scheme
PforR	Program-for-Results
PHD	Public Health Department
PMU	Program Management Unit
PRI	Panchayati Raj Institutions
PWS	Piped Water Scheme
RDD	Rural Development Department
RTI	Right to Information
RWSS	Rural Water Supply and Sanitation
RWS	Rural Water Supply
SAC	Social Audit Committee
SCSP	Scheduled Cast Sub-Plan
SLPCC	State Level Program Coordination Committee
SO	Support Organization
SWSM	State Water and Sanitation Mission
TSC	Total Sanitation Campaign
TSP	Tribal Sub-Plan
VHNWSC	Village Health, Nutrition, Water Supply and Sanitation Committee
VWSC	Village Water and Sanitation Committee
WHO	World Health Organization
WSD	Water Supply Department
WSP	Water and Sanitation Program
WSSD	Water Supply and Sanitation Department
WSS	Water Supply and Sanitation
WSSO	Water and Sanitation Support Organization
ZP	Zilla Parishad

TECHNICAL ASSESSMENT

PART A: The Context

Country Context

1. India has been one of the fastest growing economies in the last decade, but its economy now shows signs of slowing down. Between 2004 and 2011, a period that includes the global financial crisis, India's growth averaged 8.3 percent per year. Expanding social programs lowered the poverty rate by 1.5 percentage points per year during 2004–09, double the rate of the preceding decade. India's growth rate recently slipped to a decade low of 5 percent in 2012-13 due to a combination of domestic and external factors, including high inflation, high fiscal deficit and weak external demand for the country's exports. This slowdown carries high social costs for millions of Indians, and threatens the gains made in poverty reduction over the past decade.

2. India's recently published 12th Five-Year Plan calls for major investments in infrastructure, including water and sanitation, as one of the pathways to increased growth and poverty reduction. Lack of adequate water supply and sanitation facilities impacts health and economic well-being of millions of Indians, especially those living in rural areas. According to the 2011 Census of India, close to 70 percent of India's 1.2 billion people live in rural areas, and contribute to about 40 percent of the country's Gross Domestic Product (GDP). It is estimated that the total economic impacts of inadequate water supply and sanitation in India is about INR 2.44 trillion (US$53.8 billion) a year, equivalent of 6.4 percent of India's GDP in 2006.[1] This means an annual loss of INR 2,180 (US$48) per person. Therefore, improving access to water and sanitation services is a development priority for India.

3. By 2010, about 90 percent[2] of India's rural population had reasonable access[3] to an improved water source[4] but only 31 percent of rural households had access to piped water (2011 Census). However, about 12 percent (97 million) of the global population without an improved drinking water source lives in India[5] as of 2010. Rural sanitation is another major challenge for India. Of the 2.5 billion people lacking sanitation across the world, over 650 million live in India. Only about 31 percent of rural households in India have access to sanitation (2011 Census). Nearly 60 percent (626 million) of the global population practicing open defecation lives in India, as of 2010.[6]

4. The Government of India (GoI) recognizes these challenges. It invests about US$3 billion annually in the Rural Water Supply and Sanitation (RWSS) sector to improve access to RWSS services. In addition to access, quality of services and financial and operational sustainability are the other areas of concerns for GoI in the sector. To provide focus to the

[1] WSP (2007). The economic impacts of inadequate sanitation in India. WSP/World Bank, Delhi.
[2] Ref: data.worldbank.org
[3] Reasonable access is defined as the availability of at least 20 liters a person a day from a source within 1 kilometer of the dwelling.
[4] Improved source is a household connection, public standpipe, borehole, protected well or spring, and rainwater collection.
[5] Progress on Drinking Water and Sanitation, 2012 update, WHO/UNICEF
[6] Ibid4.

efforts in the sector a new ministry – the Ministry of Drinking Water and Sanitation[7] (MDWS) -- was created in 2011, which took over the responsibility for the sector from the Ministry of Rural Development. Building on earlier experiences, GoI has launched two main programs: the National Rural Drinking Water Programme (NRDWP) for water (2009); and Nirmal Bharat Abhiyan (NBA) (*Clean India Campaign*) for sanitation (2012). Through these programs, the Ministry provides policy directions to the states and part finances the expenditure in the sector. The priorities of NRDWP include ensuring drinking water security to the rural community, meeting acceptable standards of water quality, involving Panchayati Raj Institutions[8] (PRIs) as well as providing support to capacity building programs, and Monitoring and Evaluation (M&E) programs. The priorities of NBA include achieving village-level complete sanitation through a 'saturation' approach (that is, focus on access, usage, household and institutional toilets, effective handling of solid and liquid waste management, cleanliness and hygiene) and strengthening demand and supply linkages to achieve clean villages status.

Maharashtra's Sector Context

5. Maharashtra is a leading state in the country in adopting sector reforms that promote decentralization of sector management and demand-responsive approaches. Maharashtra, with a rural population of 61.8 million (55 percent of the total), is the second largest state in India in terms of population (total 112.4 million) and third largest in terms of geographic area[9] (307,731 square kilometer). It has 35 districts, with 28,813 Gram Panchayats[10] (GPs), covering 98,842 habitations. The Government of Maharashtra's (GoM's) Water Supply and Sanitation Department (WSSD) is responsible for both urban and rural water supply and sanitation in the state. The state was the first in the country to declare a uniform policy on making the communities responsible for 100 percent of the operation and maintenance (O&M) costs and 10 percent of the capital costs of rural water supply and sanitation (RWSS) facilities of its programs, from user fees, back in the year 2000. The state has homegrown programs such as the Sant Gadge Baba Gram Swachata Abhiyan since the year 2000, which is a competition-based campaign approach to promote sanitation. Due to this, the state is leading the country in terms of the number of GPs achieving Open Defecation Free (ODF) status; about 9,523 GPs and 11 Panchayat Samitis (Blocks)[11] have received the Nirmal Gram Puraskar (NGP)[12] (*clean village award*) from the President of India. The state also has one of the strongest PRI systems in India; it's Zilla Parishads (ZPs) and GPs play key role in development planning, implementation and service delivery. GoM has had a partnership with the World Bank in the sector for over two decades since 1991, with two projects: Maharashtra Rural Water Supply and Environmental Sanitation Project (Cr. 2234-IN) (1991-98) and Maharashtra Water Supply and Sanitation (Jalswarajya) Project (Cr. 3821-IN) (2003-09).

[7] http://mdws.gov.in/

[8] Panchayati Raj is a system of governance in India, encompassing lower tiers of government, with Gram Panchayats as one of the basic units of governance and administration at the village level and Zila Parishads at the district level.

[9] This is more than the area (square kilometer) of some countries such as New Zealand (268,680), Italy (301,230), Syria (185,180), Uganda (236,040) and the Philippines (300,000), and is almost about the size of Vietnam (329,569).

[10] A GP typically will have four to five habitations, each habitation consisting of a group of houses typically varying from 10-100 households.

[11] http://nirmalgrampuraskar.nic.in/Report/RptGPAwardedSummaryTill2010.aspx (NBA website)

[12] NGP is a GoI-promoted program to incentivize GPs to achieve ODF status, which involves toilet access and usage at household, community and institutional levels; and achievement of cleanliness at the community level.

6. The World Bank's previous engagements in the state, most notably the recently concluded Jalswarajya project[13] (2003-09), were instrumental in strengthening decentralization and demand-responsive approaches in the sector, but Maharashtra still faces significant challenges in improving service delivery. Due to past investments by GoM, all the 98,000+ habitations in the state are covered with a water supply system, with varying degrees of technical complexity. The quality of services across the state, however, remains poor with less than 30 percent house connections on an average (despite high demand from rural households), unreliable/intermittent supply (average two to three hours' supply/day), low pressures, and water quality problems. Investments are being made every year in the construction of new water schemes and augmentation of existing schemes to raise the service level status of the habitations to 'Fully Covered.'[14] Despite significant efforts, about 3-5 percent of habitations slip back to 'Partially Covered' or 'Not Covered' status every year, and a major portion of the financing in the sector goes into rehabilitation and upgrading of old systems. Financial sustainability is another critical issue, as tariff collections stand at only 66 percent, recovering only 39 percent of the O&M costs.

7. More than 85 percent of the rural water supply (RWS) in Maharashtra is groundwater based. Groundwater tables in the state are rapidly declining due to overdraft, triggered by increased demand from agriculture and industry sectors. The groundwater assessments[15] reveal that, of 1,531 watersheds, 73 are categorized as overexploited, that is, groundwater development is more than 100 percent recharge[16] and water tables are declining. Three watersheds are critical (groundwater development is in the range of 90-100 percent) and 120 watersheds are semi-critical (groundwater development between 70-90 percent). Of 353, nine blocks are overexploited and 19 are semi-critical. This is a critical issue and efforts are needed to introduce demand management models in order to sustain schemes based on groundwater sources.

8. Under its current 10-year RWSS program, GoM seeks to significantly expand the frontiers in the sector with a focus on increasing house connection coverage, ensuring continuous water supply with adequate pressure and minimum quality standards, and ensuring that 100 percent of the rural population has access to safe water and basic sanitation. While the decentralized institutional structure is in place to manage this vision, there are capacity gaps. Maharashtra is also a rapidly urbanizing state with many large villages (with populations more than 10,000) and a growing number of peri-urban areas that are demanding higher levels of service. Finally, the state also faces challenges in addressing the needs of water-stressed and water-quality affected areas, managing drinking water quality, and ensuring drinking water security in the face of increasing droughts and climate change impacts on rainfall patterns and the yield of existing sources.[17]

[13] This project won the first position globally 'People's First' award in the World Bank, in 2010.

[14] A habitation is considered 'Fully Covered' if it has access to a safe water source able to yield a minimum of 40 liters per capita daily, and the household is located within a distance of 500 meter from either a public or a community source, or 30 minutes of time taken for fetching water, as per GoI guidelines. A 'Partially Covered' habitation has access to a water source which does not meet the 'Fully Covered' criteria. A habitation is considered 'Not covered' if it does not have access to a safe water source.

[15] Based on data available with Groundwater Surveys and Development Agency (GSDA), GoM

[16] The definition of overexploitation used in the Maharashtra Groundwater Act 1993 states that an overexploited watershed means a watershed where the estimated annual groundwater extraction if more than 85 percent of the estimated average annual groundwater recharge

[17] More than 85 percent of the rural drinking water schemes source water from groundwater aquifers which are declining rapidly.

9. On the sanitation front, as of 2011, about 44 percent of the households had access to functioning toilets (individual toilets – 38 percent, rest – public),[18] though the WSSD data show access at 72 percent. Therefore, increasing access to toilets and their sustainable use is one of the priorities for GoM. While the state has shown impressive performance in terms of achieving ODF status for the GPs, sustaining this achievement is another challenge as a significant number of GPs slip from this status[19]. Achieving complete sanitation at the village level, based on NBA's saturation approach is another important priority for the government.

[18] 2011 Census.
[19] Assessment Study of Impact and Sustainability of Nirmal Gram Puraskar, 2011, MDWS. This study was done in 12 states in including Maharashtra.

PART B: Program Description

Program Scope

1. **GoM's existing RWSS Program**. The GoM program in the RWSS sector is mainly driven by the GoI programs: NRDWP for water supply and NBA for sanitation. The objectives and key components of GoM's RWSS program are summarized in Table 1.

Table 1: GoM's Existing RWSS Program

	Objectives and Description	Components	US$ M per Year	% Share Avg.		
				GoM	GoI	Com*
NRDWP (Water)	To achieve household drinking water security[20] through appropriate drinking water security plans at district/village level, through: (i) Single village schemes – point sources and piped water. (ii) Regional water supply schemes. (iii) Source development work, tube well, dug well, bore holes. (iv) Source strengthening for sustainability. (iv) Decentralized management with community participation.	• **Coverage -** safe and adequate drinking water supply to unserved, partially served and slipped back habitations. • **Sustainability** of groundwater sources to achieve drinking water security at the local level. • **Water quality surveillance:** support to decentralized laboratories to periodically test water samples. • Investments to provide potable drinking water to **water quality-** affected habitations. • **O&M support** for expenditures on operations, repairs and replacement costs of water supply systems. • **Support** activities such as M&E, R&D, IEC, etc.	275	40	50	10
NBA (Sanitation)	The key objectives of NBA are to: (i) Bring about an improvement in the general quality of life in rural areas.	• **IEC and capacity building** activities to mobilize the community. • Cash incentives to BPL and identified[21] APL households to build	80	60	30	10

[20] GoI defined household drinking water security as: to provide every rural person with adequate safe water for drinking, cooking and other domestic basic needs on a sustainable basis. This basic requirement should meet minimum water quality standards and be readily and conveniently accessible at all times and in all situations.

[21] Identified APL includes all Scheduled Castes/Tribes, Small and Marginal Farmers, Landless Labourers with Homesteads, Physically Handicapped and Women Headed Households.

	Objectives and Description	Components	US$ M per Year	% Share Avg.		
				Go M	GoI	Com *
	(ii) Accelerate sanitation coverage in rural areas to achieve the vision of Nirmal Bharat (clean India) by 2022 with all GPs in the country attaining Nirmal (clean) status. (iii) Develop community managed environmental sanitation systems focusing on solid and liquid waste management for overall cleanliness in the rural areas. This is sought to be achieved through community awareness-building in a decentralized manner.	**individual household toilets.** • Establishing **rural sanitation marts and production centers** for sanitary products and services. • **A revolving fund for financing toilet loans to** other categories of APL households and child day care centers. • **Community and institutional toilets.** • Financing solid **and liquid waste management activities in villages.** • NGP awards to GPs that achieve ODF status.				
		Total	355			

2. GoM declared its vision for the sector through Sujal Nirmal Maharashtra – (clean water, clean Maharashtra) which aims to increase access to safe drinking water and sanitation services to rural communities at an affordable cost in an environmentally sustainable manner. The overall aim is to enable an 'ODF state' and universal access to potable drinking water over the next decade through NRDWP and NBA programs.

3. With respect to water supply, the state receives funds in the order of US$170 million annually from GoI, and itself allocates about US$80 million annually to the sector, into various components as illustrated in Table 1. For sanitation, an additional amount of about US$70 million[22] is being allocated annually. The community contributes about 10 percent of the funds allocated. Thus, the total size of GoM's current annual program totals about US$355 million[23] per year, which translates into US$3.5 billion over the next 10 years.

4. GoM has agreed that the World Bank's Program-for-Results (PforR) instrument is the appropriate vehicle for World Bank support for three key reasons:

a) The PforR instrument provides an appropriate framework for the World Bank to support GoM's own RWSS program, through GoM's own systems and procedures, and to strengthen the institutional capacity needed for the program to achieve its desired results. The instrument aligns well with GoM's intention to increase the results orientation of its program, with clear links between World Bank financing and actual results achieved;

[22] MDWS – 2011-12.
[23] These figures are last three years' average (2008-09, 2009-10, 2010-11).

b) There is strong support for improving outcomes from GoM's existing RWSS program. GoM has recognized that achieving better sector outcomes will require improvements in institutional capacity for planning, implementation and monitoring. The PforR instrument provides better alignment with GoM's objectives of strengthening capacity while simultaneously encouraging the practice of managing for results and a stronger focus on actual service improvement;

c) The World Bank was engaged with GoM in the RWSS sector for many years[24] and supported the development of community-driven/demand-responsive approaches to planning, implementation and operation of RWSS services as well as improved fiduciary, social and environmental processes, in line with good practices. GoM has shown strong support for these approaches and systems, and demonstrated continuous development over the last decade. However, efforts are still needed to apply these approaches and systems uniformly and effectively, and to institutionalize them across the state. The PforR instrument would allow the World Bank's support to better align with and strengthen the application of approaches and systems; and

d) Maharashtra is an advanced state and a mature partner (this will be the third engagement in the RWSS sector) for pioneering the PforR instrument in India.

5. GoM and the World Bank agreed that it would be appropriate to use the PforR instrument to concentrate World Bank support in NRDWP and NBA – the two main expenditure drivers of GoM's RWSS programs. The Bank will support a portion of this program over a six-year period (2014-20) focusing on two primary categories of activities:

(i) Institutional capacity building for planning, implementation, and monitoring of the RWSS sector across Maharashtra; and

(ii) Water supply and Sullage management service improvement in peri-urban villages; Water Supply service improvement, improved groundwater management practices in water-stressed and water-quality-affected areas; in selected representative districts across Maharashtra.

These two categories of activities reflect the underlying challenges in the sector as revealed by the assessments undertaken by the Bank team. The first category of institutional capacity building for the sector is aimed to bridge the following gaps ;- the skill gaps (both number of professionals and type of professionals), systems gaps (planning, monitoring, evaluations, auditing, procurement, financial management, etc.); and physical infrastructure gaps (buildings, scientific equipment and furniture) among key sector institutions; and at the local governments across the state; in order to improve their overall performance. The second category, to be implemented in selected districts, consists of a mix of traditional and innovative engineering and management interventions, incorporating global good practices and with a focus on service delivery (not just infrastructure creation). It is expected that these improved approaches demonstrated in the Program would be absorbed by the 'capacitated institutions' and scaled up across the state with necessary fine tuning.

On rural sanitation, the GoM has a well-defined philosophy, goal and approaches in promoting community led and owned environmental sanitation. The Program will support this approach through improved institutional capacity and demonstrate innovative technical and management models for addressing the emerging challenge of 'sullage management' in peri-

[24] This will be the third engagement by the World Bank with GoM in the RWSS sector since 1991.

urban villages. The investments will be focused in representative districts across the state, identified through appropriate criteria detailed in Table 2. Villages for project intervention, within these districts, will be selected based on appropriate criteria, detailed in Table 3. These two activities reflect the underlying challenges in the sector as revealed by the technical assessment undertaken by the World Bank team. GoM prefers to call this World Bank-supported portion of its program the *Jalswarjya-2 Program*[25] (hereinafter referred to simply as the "Program"). GoM has also identified the following medium-term goals for Bank support: (i) strengthening planning and monitoring in the sector; (ii) strengthening capacity for program implementation and sustainability; (iii) increasing access to quality and sustainable water and sanitation services in peri-urban villages; and (iv) increasing access to safe drinking water in water–stressed and water quality-affected areas. The World Bank's operation will support GoM in developing indicators and targets to track progress on these goals.

Program Activities

Category 1

6. *Institutional capacity building for planning, implementation and monitoring of the sector across the state*: The indicative list of activities to be supported under this category are summarized below:

a) Establishment of a strengthened monitoring and evaluation (M&E) system for the sector, covering key sector performance indicators, fiduciary performance indicators and project/contract management performance indicators;

b) Strengthening RWSS planning processes, including the preparation of a five-year sector strategic plan for the state; and development and dissemination of tools and guidelines for improving the quality and consistency of district annual plans with the GoM's strategic priorities;

c) Strengthening implementation capacity of sector institutions at various levels (state, district and block), through additional HR, streamlining of roles and accountabilities, improving the efficiency of funds flow, developing individual competencies and collective capabilities (resources, tools and assets) that would enable each agency/unit to perform its functions effectively, efficiently and in a sustainable manner;

d) Strengthening program management capacity at all levels through additional external technical assistance and other support, as required, for all major business processes related to the functioning of the Program, including technical, fiduciary, social and environment processes;

e) Strengthening of water testing laboratories (at state, district and sub-district levels) for undertaking water quality monitoring and surveillance as per GoI/GoM defined protocols;

f) Restructuring the existing Maharashtra Environmental Engineering Training and Research Academy (MEETRA) and establishing it as a premier training institute for the sector;

g) Strengthening GSDA's capacities for comprehensive monitoring of groundwater quantity and quality to enable better water security planning;

[25] The word 'Jalswarjya' means self-governance in water.

h) Strengthening sustainable sanitation initiatives by improving NBA program implementation across the state;
i) Strengthening the governance and accountability systems of the sector, including grievance redressal and vigilance mechanisms, at the state level, and SACs at the GP level; and
j) Impact assessment activity (building on the impact evaluations done under the previous World Bank engagement in the sector) to better assess the impact of the World Bank-supported Program and government program initiatives.

Category 2

7. Water supply and Sanitation Service Improvements in selected districts: Program support under this category is limited to selected twelve (12) districts, representing all six administrative divisions of the Maharashtra (that is, two districts per region). The districts are selected based on transparent, predefined and demand-driven criteria, explained in Table-2 below. The indicative list of activities to be supported is summarized below:

a) Construction, rehabilitation, augmentation and extension of existing water supply systems and construction of new sullage management schemes in peri-urban villages. The GoM's ongoing program of NBA for household sanitation will be integrated with sullage management under the Bank Program. This will help to demonstrate new technical and management models of delivering GoM defined quality and sustainable water and sanitation services in peri-urban villages, which is a key challenge faced by the state;
b) Scaling up of sustainable groundwater management practices in critically exploited aquifers of the state (that are located in the selected districts), through the application of the successful Aquifer Water Management Initiative (AWMI) taken up under the previous Bank-supported project. This will help to build capacities for the integration of groundwater management into water service improvement in water-stressed areas; and
c) Construction or rehabilitation of water schemes in water-stressed and water quality-affected areas in the selected districts, through water quality improvement measures (such as recharge and dilution of ground water) and addressing water security through rainwater harvesting measures. This intervention is included in the Program to demonstrate that improved service delivery can be achieved through the application of better planning and implementation processes in water-stressed and water quality-affected areas (especially in small, remote habitations), which is one of the key challenges faced by the state.

8. On sanitation, the Program would provide technical assistance/capacity building support in delivering the NBA, across the state. Specific focus will be given to ensuring convergence of various sanitation initiatives -- solid waste management, sullage management, providing access to toilets, and so on -- through the preparation of Village Environmental Sanitation Plans. In addition, effective models for managing sullage will be designed and demonstrated in peri-urban villages.

Table 2: District Selection Criteria

Parameter	Criteria	Source of Data
Technical	***Peri-urban areas*** (number of municipal corporations, councils and Nagar panchayats)	Census 2011
	Water Quality affected habitations - Chemical (number of sources with single chemical contamination - all parameters like Iron, Fluoride, Salinity, Nitrate, Arsenic & Others)	MDWS data
	Status of Ground Water Exploitation - number of over exploited, critical & semi-critical watersheds	GSDA data
Social	***Coverage with sanitation*** - percentage of households with individual household sanitary latrines	Census 2011
Pro-activeness	***Water Tariff collection efficiency***	RDD data
	Nirmal Gram Puraskar GPs	MDWS data

Note: All the criteria have direct relationship for ranking which means, more on the criteria, more the marks.

The Villages for the above interventions will be selected through appropriate selection criteria, captured below in Table 3.1 and Table 3.2. However, the criteria for selection of peri-urban villages will be applied based on techno-economic feasibility considerations.

Table 3.1: Peri-urban GP Selection Criteria

Norm/ Criteria	Max. Marks	Evaluation Process	Allotment of Marks
Percentage of Individual HH toilets	20	As per actual percentage	(20 x Toilet %)
Source of Existing PWS	15	Surface source / Tapping (other than RR scheme)	15
		Other source	00
Per Capita availability of water in LPCD	10	31 to 40 LPCD	10
		21-30 LPCD	8
		11 to 20	6
		0 to 10	4
Age of existing scheme (the latest scheme executed)	15	More than 20 years	15
		16-20 years	12
		11-15 years	9
		5-10 years	6
Affordability (Eligible APL Population)	10	Population 51% to 100%	10
		Population 26 % to 50%	07
		Population 0 % to 25%	04
Social Mobilization Indicator – NGP, Sant Gadgebaba Award etc. (Only one highest award shall be considered)	10	NGP	10
		Other - National/ State award	08
		Regional award	06
		District award	04
		No Award	00
Tariff Collection	10	100% and above	10
		76%-99%	08
		51-75%	06
		26-50%	04
		0-25%	02
Sanitation Survey (Latest)	10	Green Card	10
		Yellow Card	5

		Red Card	0
Total	100		

Note:

- Population and household figures will be as per the latest Census figures available.
- All figures are to be certified by Gramsevak & BDO as per the format attached.
- The selection of GPs will be on the basis of the marks obtained.

Table 3.2: Village Selection Criteria for Water-stressed Villages

Norm/ Criteria	Max. Marks	Evaluation Process	Allotment of Marks
Percentage of Individual Household toilets	40	As per actual percentage	(40 x Toilet %)
Average Rainfall in the block	30	More than District average	30
		Equal to District average	25
		76 to 99% of District average	20
		51 to 75% of District average	15
		26 to 50% of District average	10
		Less than 25% of Dist. Average	00
Tanker supply in last 3 years	30	Tanker supply for all 3 years	30
		Tanker supply for any 2 years	20
		Tanker supply in any year	10
		No tanker supply	00
	100		

Notes:

1. Population and house hold figures will be as per latest census
2. All figures are to be certified by Gramsevak & BDO as per the format attached.
3. Marks obtained by the habitations within the GP will be averaged.
4. The selection of GPs will be on the basis of the marks obtained.

9. *Program exclusions:* The Program will exclude activities that, in the opinion of the World Bank, are likely to have significant adverse impacts that are sensitive, diverse, or unprecedented on the environment and/or affected people; or involve procurement of :
works, estimated to cost US$50 million equivalent or more per contract;

(i) goods, estimated to cost US$30 million equivalent or more per contract;
(ii) non-consulting services, estimated to cost US$20 million equivalent or more per contract; and
(iii) consultant services, estimated to cost US$15 million equivalent or more per contract.

Physical investments that are excluded from the Program due to their high environmental risks include:

(i) schemes that involve construction or rehabilitation of dams which are greater or equal to 10 meters in height;
(ii) groundwater-based schemes in overexploited and critical basins that do not integrate source sustainability measures; and
(iii)schemes involving highly polluted surface water sources.

10. *Program costs and financing:* The Program will be implemented over a six-year period, with disbursements up to a maximum of US$165 million over this period (the credit

amount). GoM and the World Bank have agreed to financing allocation to each Disbursement-Linked Indicator (DLI) as follows:

(i) up to 21 percent of the credit amount will be disbursed against achievement of DLI#1;

(ii) up to 22 percent against achievement of DLI#2;

(iii)up to 24 percent against achievement of DLI#3;

(iv)up to 15 percent against achievement of DLI#4; and

(v) up to 18 percent against achievement of DLI#5.

Overall, the estimated funding envelop for the Program is US$235 million (Table 4). This includes a commitment from GoM of US$70 million and the proposed Bank support ofUS$165 million.

Table 4: Program Costs and Financing

Item	Amount (US$ Million)	% of Total
Estimated Program Expenditures		
Institutional capacity building for planning, implementation, and monitoring of the RWSS sector across Maharashtra	64.6	27
In select districts, implementation of: (a) Water supply and Sullage management service improvement in peri-urban villages; and (b) Water Supply service improvement, and improved groundwater management practices in water-stressed and water-quality-affected areas.	170.4	73
TOTAL estimated expenditures	**235**	**100**
Program Funding Sources		
International Development Association (IDA via WSSD budget line)	165	70
GoM (via WSSD budget line) and community	70	30
TOTAL Sources	**235**	**100**

11. *Beneficiaries.* A total of about one million people (present population) are expected to benefit from Program interventions on water supply and sanitation service improvements in the selected twelve districts. This has two parts: (i) an estimated 0.59 million people living in peri-urban villages are expected to benefit from high quality and sustainable water services, of which, by the end of the Program, at least 0.34 million people are expected to connect to the scheme through house connections; and (ii) an estimated 0.47 million people living in water-stressed and water quality-affected areas and in remote habitations are expected to benefit from safe drinking water due to interventions in water purification and rainwater harvesting. In addition about 0.77 million people are expected to benefit from the Aquifer Water Management Initiatives. The entire rural population of Maharashtra is expected to reap indirect benefits because of the Program's statewide institutional capacity building interventions. A separate impact evaluation study, planned under the Program, will assess the benefits to various social and gender groups as well as the indirect benefits of institutional capacity building interventions.

Program Development Objectives

12. *The proposed Program is a subset of GoM's existing program of investment in the RWSS sector* in Maharashtra. The Program Development Objective (PDO) is to improve the performance of Maharashtra's sector institutions in planning, implementation and monitoring of its RWSS program and to improve access to quality and sustainable services in peri-urban villages, and in water–stressed and water quality-affected areas.

13. *Key result areas*: GoM and the World Bank have agreed to use the PforR lending instrument to concentrate World Bank financing in four key results areas that contribute to the achievement of the PDO:

(i) Result Area 1: Strengthened planning and monitoring in the RWSS sector;
(ii) Result Area 2: Improved institutional capacity for RWSS program implementation;
(iii) Result Area 3: Improved access to quality and sustainable water and sanitation services in peri-urban villages; and
(iv) Result Area 4: Improved access to safe drinking water in water-stressed and water quality-affected areas.

14. *PDO indicators*: GoM and the World Bank have also agreed on a set of outcome indicators that will be used to measure the achievement of the PDO:

(i) PDO Indicator 1: Number of districts using improved planning processes and strengthened M&E systems;
(ii) PDO Indicator 2: Percentage of completed rural water supply schemes that follow GoM's demand-responsive approach and exit the implementation process with a schedule performance index of between 0.75 and 1.25;
(iii) PDO Indicator 3: Number of people in peri-urban villages who have access to a sustainable water supply system and receive a regular water service; and
(iv) PDO Indicator 4: Number of people in water-stressed and water quality-affected areas who have access to a safe and secure drinking water source.

15. *Intermediate results indicators:* In order to provide evidence of continued progress towards the PDO, GoM and the World Bank have also agreed on a set of intermediate results indicators that will be used to measure and track intermediate results or intervening steps towards the PDO. There are two types of intermediate results indicators: those that are linked to disbursements, referred to as DLIs), and those that are not linked to disbursements, referred to as 'other intermediate results indicators.'[26] The achievement of DLIs triggers World Bank disbursements to the Program. However, once disbursed, the World Bank funds would supplement GoM's own resources and then be utilized for activities that support activities linked to any intermediate results indicators (including those indicators that do not trigger disbursements). The list of intermediate results indicators agreed between GoM and the World Bank is summarized in Table 5. A detailed results framework for the Program is provided in Annex 3.

[26] This does not mean that other indicators are not important. All intermediate results indicators are critical to the achievement of the PDO and will be measured and monitored throughout the PforR operation.

Table 5: Intermediate Result Indicators

Program Result Area	Intermediate Results Indicators	
	Disbursement-Linked Indicators	**Other Intermediate Results Indicators (which do not trigger disbursements)**
Result Area 1: Strengthened planning and monitoring in the sector	**DLI#1**: Strengthened M&E System for the sector	Improved sector planning processes for the sector
Result Area 2: Improved institutional capacity for program implementation	**DLI#2**: Strengthened Capacity of key Sector Institutions Percentage of sanctioned staff maintained, trained and equipped every year in key sector institutions as per Annual Capacity Development Plan	• Percentage of rural water supply schemes that follow GoM's demand-responsive approach • Percentage of GPs that are using sustainable O&M mechanisms • Percentage of GPs that maintain Open Defecation Free (ODF) status
Result Area 3: Improved access to quality and sustainable water and sanitation services in peri-urban villages	**DLI#3**: Number of house connections to a Commissioned Water Supply System **DLI#4**: Number of house connections to a Sustainable Water Supply System and receiving a Regular Water Service	Number of house connections to a sustainable sullage collection and safe disposal system
Result Area 4: Improved access to safe drinking water in water-stressed and water quality-affected areas	**DLI#5**: Number of Community Safe and Secure Water Systems (CSSWS)	Number of aquifer water management initiatives (AWMIs) successfully implemented

16. *Disbursement-linked indicators*: The choice of DLIs was based on four factors: (i) signaling role of the indicator, that is, whether it signals a critical action along the results chain; (ii) perceived need to introduce a strong financial incentive to deliver the activity; (iii) practical aspects of verifying achievement; and (iv) GoM's capacity to achieve the DLI during the implementation period of the PforR operation. DLI#1 and DLI#2 signal critical actions along the results chain without which the PDO cannot be achieved. DLI#3, DLI#4 and DLI#5 provide funds against performance (achievement of priority outputs) to encourage the practice of managing for results, and a stronger focus on actual service improvement. Detailed descriptions/definitions of the achievement of each DLI are provided in Annex 3.

17. Disbursement *arrangements*. DLIs for the Program are provided in Annex 3, together with the disbursement amounts for each of the indicators and the protocols for their verification.

18. *Disbursement modalities for each DLI*. Details of agreed disbursement modalities for each DLI are provided in Annex 3. Disbursements under DLI #1 are not scalable as the indicator relates to a set of actions that are either achieved or not. Where actions are not achieved in any particular year/period, the allocated amount is carried over to the subsequent year. On the other hand, disbursements under DLI#2, DLI#3, DLI#4 and DLI#5 are scalable, that is, disbursements will be proportional to the progress towards achieving the targeted DLI

value. For DLI#2, the target is specified as the percentage of sanctioned staff maintained, trained and equipped every year in key sector institutions as per GoM's annual capacity development plan. As this indicator is about maintaining required levels of trained staff every year throughout the Program period, the targeted value is constant each year. If the target is not achieved in any year, the undisbursed amounts cannot be rolled over to the subsequent year. But if the target is under achieved in any period, pro-rata disbursements will be reduced for that particular period. For DLI#3, the targets are specified as the cumulative number of house connections made to a commissioned water supply system. Similarly, for DLI#4, the targets are specified as the cumulative number of house connections to a sustainable water supply system and receiving a regular water service with adequate pressure and minimum water quality standard. The targets for DLI#5 are also specified as the cumulative number of CSSWS. Where targets for DLI#3, 4 and 5 are not achieved in any particular year, the related disbursements are rolled over into the next year. On the other hand, if the achievement consistently outperforms the targets, the corresponding credit amount can be fully disbursed before the end of the operation.

19. *Advances*. GoM and the Bank agreed on the need to provide for advances to be disbursed prior to the achievement of DLI#3 and DLI#5, as these require GoM to significantly increase expenditures for planning and construction of water supply schemes for peri-urban villages, and for water-stressed and water quality-affected areas. The Bank will provide an advance of up to 25 percent of the credit amount. The advance will be adjusted against disbursements due when the DLIs are achieved or in the later years of the Program.

20. *DLI verification protocols*. Verification protocols for each DLI are detailed in Annex 3. It was agreed that independent verification of all the DLIs will be done by an external entity to be contracted by GoM. The World Bank will further review the evidence base for all DLIs during implementation. GoM's existing management information system (MIS) and regular sector-related reporting arrangements will be the basis for providing the data needed to verify most of the Program results. For Program results that are not part of the regular sector-related reporting, specific reporting and verification protocols have been developed as detailed in Annex 3.

21. **Implementation Arrangements** Program implementation is fully embedded within the existing institutional framework of the sector as shown in Table 6, with only limited additions created within the existing structure for better monitoring of the Program. The role of each agency/unit is summarized as follows:

a. The WSSD will be responsible for overall program management in coordination with the Water and Sanitation Support Organization (WSSO), MJP, GSDA and Public Health Department (PHD). A State Level Program Coordination Committee (SLPCC) will be set up by WSSD for regular coordination across these institutions. The SLPCC will be supported by a Program Management Unit (PMU);
b. The PMU and WSSO will be the key organization for overseeing capacity building of sector institutions and also development of strengthened M&E systems for the sector, and overseeing their implementation and adoption by districts;
c. MJP and ZPs will take the lead in planning, design and execution of infrastructure projects as per the prevailing state guidelines for peri-urban villages in coordination with PMU, WSSO, GSDA and the concerned GPs;

d. Independent technical review of complex technical designs and detailed project reports (DPRs) prepared by MJP, RWS Divisions and other technical agencies will be carried out through Special Monitoring Cell (Technical). The proposals will be presented for the approval of a state level committee under the chairmanship of Principal Secretary WSSD before Administrative Approval and actual administrative approval will be as per prevailing guidelines.

e. GSDA will take the lead in implementing aquifer management activities in coordination with the ZPs and concerned GPs through Aquifer Water Management Societies (apex bodies of the Village Water and Sanitation Committees (VWSCs) of GPs falling within a given aquifer). GSDA will also be responsible for implementing its own capacity building activities, in coordination with PMU/WSSO;

f. PHD will take the lead in capacity building of laboratories at state, district and block levels;

g. Regional Coordination and Monitoring Units (RCMUs) will be created in all the six administrative regions to closely monitor the sector and Program activities. This unit will also coordinate with the Regional Commissioner and assist in resolving problems faced by ZPs and other district-level agencies;

h. ZPs will take the lead in social mobilization and Information, Education and Communication (IEC) activities through the Deputy Chief Executive Officer (CEO) responsible for the District Water and Sanitation Mission (DWSM) unit as well as through the Block Resource Centers (BRCs) and VWSCs;

i. A District Level Program Coordination Committee (DLPCC), headed by the CEO of the district, will be formed to coordinate Program activities of various institutions at the district level; and

j. GPs will be responsible for planning, implementation and O&M, including tariff collection, through VWSCs. The Gram Sabha (village assembly) will approve all actions and plans for GPs/VWSCs. Social Audit Committees (SACs) will check the GP/VWSC performance from time to time and report to the Gram Sabha for further actions, if any. GPs will decide and implement a formal management model as per O&M guidelines established by GoM.

22. While the institutional framework is in place to implement the Program and manage it at all levels of GoM, various assessments (technical, integrated fiduciary, environmental and social) carried out by the World Bank have highlighted some capacity gaps, which will be addressed through institutional capacity-building activities under the Program.

Table 6: Institutional Arrangements for Program Implementation

Level	Through	Responsibility
State	SWSM	• Overall Program and policy strategic direction and approval
State	Principal Secretary, WSSD (lead entity for Program delivery)	• Overall Program strategic oversight
	Deputy Secretary, WSSD (also will be the Program Director)	• Program direction and implementation monitoring

Level	Through	Responsibility
	PMU	• Day-to-day Program monitoring and coordination between various agencies • Jointly with WSSO lead activities related to capacity building, M&E systems development and sector institutions strengthening
	WSSO	• Overall lead on institutional capacity building activities, technical assistance activities, communication and sector monitoring
	MJP	• Implementation and monitoring of institutional capacity building activities in MEETRA
	GSDA	• Monitoring of AWMIs and GSDA institutional capacity building activities
	PHD	• Monitoring of institutional capacity building activities for public health laboratories
	Special Monitoring Cell (Technical)	• Verify and check the technical aspects of designs and DPRs prepared by MJP and ZPs; review other complex technical designs referred to it by WSSD from time to time
	SLPCC	• Coordinate plans and activities of the above agencies. Headed by Principal Secretary, WSSD
Region	RCMUs	• Coordinate and monitor activities of the sector and Program within the districts in the region • Resolve any problems faced by districts in coordination with Regional Commissioner , WSSD and other organizations as necessary
District	RWS division and DWSM Cell within the ZP administration	• Implementation and adoption of M&E systems; • Receive technical assistance in district-level planning, implementation and monitoring; • Coordinate with MJP and GSDA for Program activities in peri-urban villages • Implement and monitor CSSWSs (water quality and rainwater harvesting interventions); • Undertake communication activities, social mobilization and capacity building of VWSCs in coordination with MJP and GSDA • Select and appoint a suitable Support Organization (SO) for undertaking community mobilization, communication and capacity building activities, as may be needed
	MJP District Offices	• Implement water supply and sullage management interventions in peri-urban villages, in coordination with DWSM, GSDA and others
	GSDA District Offices	• Implement scaling up of AWMIs in coordination with DWSM, RWS division and GPs
	DPHLs	• Implementation of district laboratory strengthening activities

Level	Through	Responsibility
	DLPCC	• Coordinate plans and activities of the above organizations at the district level. Headed by CEO of the ZP
Block	BRCs	• Receive technical assistance, training; • Provide support to the GPs on Community Safe drinking water component
Village	GPs	• Responsible for overall water supply and sanitation service delivery, through sub-committees
	Gram Sabha (village assembly)	• Debate and approve all investment decisions, plans and user fees
	VWSC (a sub-committee of the GP)	• Develop schemes in consultation with the community, execute them and take care of O&M
	SAC (another sub-committee of the GP)	• Oversee inclusion, participation and transparency in scheme execution and service delivery

PART C: Description and Assessment of Program Strategic Relevance and Technical Soundness

1. The proposed Program – with the objective of improving the institutional performance and access to quality and sustainable water services – is strategically relevant and aligned with the visions of both GoI and GoM, and is also consistent with the World Bank's future directions of engagement in India, which is to respond to the "Finance-Plus" approach sought by the Ministry of Finance.[27]

2. *National Level:* At the national level, GoI has shown continuous commitment to sector improvements through issuing policy directions, providing enhanced financial allocation and improving overall sector monitoring and reporting, which is evident from the efforts at designing and pushing reforms since early 2000 through various programs such as Sector Reform Program, Swajaldhara and the current NRDWP. GoI has been incorporating lessons learned in the previous programs, leading to the development of NRDWP "to provide every rural person with adequate safe water for drinking, cooking and other domestic basic needs on a sustainable basis." This is planned to be achieved through focusing on water security, decentralized governance and participatory planning. On the sanitation front, the Total Sanitation Campaign (TSC) program, started by GoI in 1999, has undergone several changes reflecting lessons learnt and has culminated into the revised NBA. With the current low sanitation access rate of 31 percent[28] and high slippage rate (95 percent[29]) in retention of ODF status in the villages, GoI's focus has shifted to a 'saturation' approach in its NBA program, where constant handholding support will be provided to the community until complete sanitation is achieved. Appropriate institutional structures, capacity building of key stakeholders, devolution, low cost and sustainable technologies, and performance monitoring and incentives have been the key strategic pillars of all the versions of the RWSS programs promoted by GoI.

3. *World Bank's Engagement Strategy in India:* The Program is coming at the right time, when the World Bank's strategy of engagement in India is moving towards responding to GoI's request to be "Finance Plus," when the government wants World Bank support for projects that have a systemic or transformational impact, those that help innovate and pilot new approaches, and finally those that introduce innovative financing instruments and leverage resources.[30] This Program is well aligned with this requirement.

4. *State Level:* At the state level, the Program seeks to build on World Bank's long-term engagement in the state and GoM's capacity in advancing reforms in the sector. Maharashtra has been consistently aiming to improve the sector performance by undertaking appropriate reforms such as demand-responsive approaches, improved sector monitoring, devolution, institutional reforms, performance incentives, and so on. GoM's community engagement strategies have been reinforced by the earlier World Bank-supported Jalswarajya-1 project experiences. GoM now feels that *'it pays to believe in people.'*[31] Having achieved near

[27] Draft note circulated by CMU on CPS discussions.
[28] Census 2011
[29] CMS-MDWS Study 2010-11
[30] Country Program Strategy for India – FY2013-17
[31] Website of WSSD of GoM http://www.mahawssd.gov.in/scripts/index.html#Intro.

universal access to water supply and improved access to sanitation, Maharashtra now aims to focus on consolidating gains (reducing slippages), improve service standards, and sustain groundwater levels and quality of water through improved capacity of sector institutions, innovative service delivery models, and enhanced monitoring and evaluations. This is reflected in the GoM's vision for the sector to achieve *Sujal Nirmal Maharashtra* (clean water, clean Maharashtra) by 2020: "*increase access to safe drinking water and sanitation services to rural and urban communities at affordable cost in an environmentally sustainable manner, including emphasis on water recharging measures and making the state free of open defecation, through enhanced quality service delivery by local self-governments, with community participation wherever possible.*" The current Program helps GoM move towards this vision. In addition, GoM is also preparing to address the following challenges:

- Due to rapid urbanization and economic growth, citizens in villages with higher growth and proximity to urban centers are demanding higher standards of services, akin to nearby urban areas. GoM has adopted a strategy, in 2012, to address the challenges of 'peri-urban villages' and aims to provide service standards similar to those existing in closest urban areas. This Program will support GoM in addressing this challenge also; and
- Climate change (reflected in lower rainfall, droughts, and so on) and unregulated human interventions have led to a situation of 'water scarcity' in some pockets in the state. Some of the existing systems (mainly those dependent on groundwater) will fail to deliver water to citizens in a few years due to a decline in groundwater tables. GoM aims to promote innovative approaches that counter this situation, both on short- and long-term basis. The Program will support GoM in this issue as well.

5. As per the 2009-10 estimates of the Planning Commission of India, about 29.5 percent of the rural population of Maharashtra subsists below the poverty line.[32] The Economic and Human Development Indicators of Maharashtra are provided in Annex 1. It is an established fact that lack of water and sanitation accounts 80 percent of the all disease occurrence.[33] And the burden of poor water and sanitation and hygiene falls more heavily upon poor rural people, who tend to have fewer financial reserves to manage periods of ill health or the costs of treatment for sick children. World Health Organization (WHO) data on the burden of disease shows that "approximately 3.1 percent of deaths (1.7 million people) and 3.7 percent of disability-adjusted-life-years (54.2 million people) worldwide are attributable to unsafe water, sanitation and hygiene." Most of the diseases that result in diarrhea and, in fact, 88 percent of all diarrheal deaths are related to water and sanitation. It is the second leading cause of under-five child mortality,[34] and, even in India, it is accounting for about 1,000 children dying every day. In addition, hundreds of millions of children suffer from reduced physical growth and impaired cognitive functions due to intestinal worms; all this leads up to high infant mortality rate and mal-nutrition.[35] The economic cost of inaction is huge, evident from India's case which loses almost 18 crore man-days and INR 1,200 crore income annually on account of the disease burden resulting from the absence of water and sanitation facilities,[36] Several benefit-costs analyses have shown that water and sanitation interventions

[32] Press note on poverty estimates, 2009-10, Planning Commission, Government of India, March 2010, available at http://planningcommission.nic.in/news/press_pov1903.pdf.
[33] WHO, 2006.
[34] World Health Report 2005, Child health Epidemiology Reference Group.
[35] Infant mortality rate is 52 (Sample Registration System 2011) while 46 percent of the rural child population is malnourished (National Family Health Survey III, 2008) in rural India.
[36] Ministry of Rural Development, 2003-2004.

grant more economic returns than they cost,[37] For example, US$1 invested in water and sanitation would give an economic return of between US$3 and US$34, depending on the region economic return.[38] *It is estimated that the total economic benefits of meeting the Millennium Development Goals in 2015 (including the health sector, patient expenses, value of deaths avoided, time savings due to improved access to water and sanitation, value of productive days gained (of illnesses avoided) and value of child days gained of those avoided illnesses) is US$66 billion.*[39]

6. *The rationale for government intervention in the provision of RWSS services:* As highlighted in the above section, lack of appropriate water supply and sanitation services leads to significant GDP loss, child growth and overall quality of living. Secondly, delivering good levels of water supply and sanitation services requires huge investments and good institutional mechanisms. Hence, continued government interventions are necessary in the sector. This does not necessarily imply that governments become investors and service providers also. Governments have to devise appropriate polices, institutional frameworks and financing instruments that can promote sector outcomes. GoM understands this principle well, plays a facilitator role in the RWSS sector, and has created an effective decentralized institutional mechanism. The financing is shared by communities in terms of community contributions for capital works, user charges for O&M, and so on. As explained earlier, the RWSS sector in Maharashtra is moving from 'coverage' targets to 'service delivery and sustainability' targets. GoM has a well-defined role in managing this transition and sustaining gains. The key government roles are: policymaking, capacitating institutions, building community awareness, constant monitoring and taking course correction steps, enabling consumer voice through participation and grievance redressal, ensuring equity, and, finally, providing necessary finances in an efficient, effective and transparent manner. In this Program, the World Bank aims to strengthen these very roles of GoM through measures related to institutional capacity building, improving M&E systems, introducing the value for money concept (through DLIs), and supporting necessary policy and strategy development. As of now, there are also limited private capital investments in the RWSS sector in India, except in some cases of specific water treatment units (for example, based on Reverse Osmosis technologies). As per a recent Water and Sanitation Program (WSP) study report,[40] the key constraints are assessed to be: a) weak culture of levying and paying user charges (although it is possible for operators to provide services that are paid for by government); and b) lack of political will. There are instances of private sector being involved in O&M – on the transmission side (in the states of Maharashtra, Andhra Pradesh and Tamil Nadu), and in distribution (in Punjab). However, sector policies promote community contributions both in water and in sanitation, at different levels for different kinds of investments. Given the large gaps in coverage, particularly on the sanitation front, the government has to continue investing, while playing a facilitating role.

7. *Maharashtra, therefore, has invested heavily in the RWSS sector, through various past programs.* On water, the coverage in the rural areas was improved through various programs undertaken by the state with its own resources and support from GoI and external agencies.

[37] Hutton and Haller 2005; Hutton et al 2007A; and Hutton et. al., 2007B for the UNDP Human Development Report 2006.
[38] *Hutton, Bartram, and Haller, WHO 2007*
[39] *Hutton and Haller, 2004*
[40] Engaging Non-State Providers in Rural Water Supply Services, which is being prepared for a joint publication by the Ministry of Rural Development and WSP

Since the establishment of WSSD in 1996, about 220,000 bore wells/tube wells, 19,000 open wells, 32,000 independent piped water supply schemes and 612 regional piped water supply schemes have been implemented in the state at a cost of INR 16,000 crores. Nearly 40 percent of these investments have been made during the last 10 years (since 2003), in about 86 percent of the state's total habitations (98,842). 85,103 habitations were tackled during this period.

Table 7: Investments by GoM in the Water Sector

Programs/Projects	Period	Achievements (Habitations)	Loan/GoI Share	State Share	Total (INR Crore)
Jalswarajya (World Bank assisted)	2003-10	8,749	845.90	247.88	1,093.78
Aaple Pani (KfW assisted)	2004-11	780	129.71	38.32	168.03
Bharat Nirman	2006-09	36954	1,320.02	1,340.34	2,660.36
NRDWP	2009-present	38,620	1,354.04	983.33	2,337.38
TOTAL		85,103	3,649.67	2,609.87	6,259.55

Source: WSSD data

8. *Focus on rural water service provision.* In addition to building infrastructure, the focus of GoM on rural drinking water service provision has been:

- To involve the community in planning, implementation and service delivery, including assigning the primary role to women through the promotion of Self-Help Groups;
- Implement programs through Maharashtra's strong decentralized institutional framework (PRIs), including blocks, which provided a policy direction for GoI, by recommending the creation of BRCs;
- Attempt to transform sector institutions –MJP and GSDA -- as facilitators; and
- Improve sustainability of groundwater management (as about 85 percent of drinking water sources depend on this) through innovative AWMIs (first in the country), that bring together community living within the geographic area of an aquifer for sustainable structural and non-structural, demand-driven water management initiatives, and so on.

9. *Focus of sanitation efforts.* Compared to water, the investments over the last 10 years on sanitation have been at INR 825 crore (13 percent of water investments). The fund absorption capacity on the sanitation front has been relatively better, at about 75 percent, with a sizable community contribution, which is mainly restricted to household toilets. Compared to physical investments, the fund absorption capacity has been lower in IEC/capacity building activities (60 percent only)

Table 8: Investments by GoM in Sanitation Sector

Share	**Approved** INR Crore	**Funds Received** INR Crore	**Utilization** Rs. Cr	**%age of Utilization against Release**
GOI	977.7	681.2	531.4	78
State's share	364.1	289.0	223.8	77
Beneficiary share	147.8	126.4	702.3	55
Total	1,489.7	1,096.7	825.4	75

10. The focus in sanitation hitherto has been to build toilets, raise awareness on sanitation, and to provide incentives to achieve ODF villages. Under TSC, GoM has built more than 4.5 million toilets in the last 12 years (since 1999) though not all have remained functional. GoM has also invested in institutional toilets with impressive results (87,999 toilets in schools and 58,555 toilets in preschools). The start-up activities and IEC provided implementation support in creating demand for sanitation services. In line with the NBA guidelines of GoI, the focus will now shift to adopting a saturation approach at the GP level to achieve ODF. Under NBA, GoM is expected to prepare a comprehensive state plan based on aggregated plans of GPs (led by VWSCs), blocks (supported by BRCs) and districts (led by DWSM and supported by Key Resource Centers) to achieve total sanitation outcomes by 2022.

11. As can be seen from the above description, GoM has taken several initiatives to complement the improved implementation and outcome of TSC/NBA. One of the milestones has been the competition-based state sanitation award program, Sant Gadge Baba Gram Swachchat Abhiyan[41] (that helped in moving forward the sanitation agenda at the grassroots level. Many other programs (Eco-village, PURA, Bio-village, and so on) have also been initiated, supported by donors but limited in scale and in mandate.

12. *Track record of the GoM programs***.** GoM is focusing on improving the performance of its programs in the sector. It has considerable experience in the RWSS sector in delivering programs. Some innovations from Maharashtra have been adopted at the national level and in other states, for example, state-level award, AWMIs – which found a mention in the 12th Five Year Plan documents, to be adopted at the national level. Unlike many of the other state governments, GoM regularly reviews and updates its policies, and issues regular Government Resolutions in the sector. GoM has also committed itself to certain key result areas to measure its performance against certain benchmarks.

13. The earlier World Bank-supported project Jalswarajya-1 has achieved good outcomes[42] and is the first in India in the RWSS sector to have conducted a scientific impact assessment study. The study conducted midway through project implementation in 2005 and 2007, pointed to the positive impacts of increased access to water supply, increased toilet usage, and reduced coping costs for village communities. Capital cost per capita for the Jalswarajya-1 schemes was lower than that of other schemes in Maharashtra (INR 1,043 in the Jalswarajya schemes as compared to INR 2,116–2,346 in other schemes, resulting in a saving of about INR 1,188 per capita). In another study, the "Effectiveness of Rural Water Supply

[41] Launched in 2000

[42] Link to Implementation Completion Report of Jalswarajya-1, 2010 - http://imagebank.worldbank.org/servlet/WDSContentServer/IW3P/IB/2010/09/21/000356161_20100921010446/Rendered/PDF/ICR13930ICR0P01fficial0use0only0910.pdf

Schemes in India," conducted by the World Bank in June 2008, it was estimated that in the Jalswarajya villages, at a consumption level of 40 lpcd on average, the savings in O&M cost per household per month would be around INR 69.1 due to improved efficiency of operations. The cost of water supply in demand-driven schemes is lower than that of supply-driven schemes. In sanitation, Jalswarajya-1 benefited 900,000 project households (approximately 20 percent of which were tribal) with safe sanitation facilities and of the project GPs about 61 percent have achieved ODF status against the project target of 40 percent.

Technical Soundness

14. *Design of scope of the Program:* GoM's existing RWSS program has two main programs: NRDWP for water and NBA for sanitation, which are formulated nationally by GoI. The state contributes about 60 percent of funds in these programs, and implements various activities for the expansion of RWSS services. The proposed Program will be a subset of GoM's existing program in the RWSS sector, with a focus on two primary categories of activities: (i) Institutional capacity building for planning, implementation, and monitoring of the RWSS sector across Maharashtra; and (ii) Water supply and Sullage management service improvement in peri-urban villages; Water Supply service improvement, improved groundwater management practices in water-stressed and water-quality-affected areas; in selected representative districts across Maharashtra. As can be seen from this l assessment, there are huge funds flowing into the sector through GoI and GoM financing. The focus in the sector is shifting from building assets to delivering services, and sustaining them. This calls for huge capacity building efforts on the institutional side, for planning (especially for strategic multi-year planning at the district level), implementation and service delivery, and monitoring. It is proposed to cover the entire state on institutional capacity building, so that such efforts become catalysts in improving the performance of the overall RWSS program in the state.

15. When it comes to service delivery, the state faces emerging challenges to demonstrate higher service levels in peri-urban areas – which require different interventions such as community involvement through ward level committees, handling higher technical challenges (100 percent house connections and metering, non-revenue water reduction, water audits, pressure control and management, and so on) and new O&M models through formal arrangements, and so on. These interventions are different from those implemented under the earlier World Bank-supported project, Jalswarajya (2003-09), which focused on small, single villages. The state also faces challenges to effectively deliver safe water in water quality-affected areas, and to ensure security of water service year round, particularly in hilly and remote habitations. While, under the existing government programs, physical interventions are carried out in such areas on water schemes to expand coverage, there is a gap in designing and implementing effective technical/social/management interventions in these areas that address the challenges and sustain the services. In order to demonstrate solutions to such challenges, the Program is designed to take up a slice of ongoing NRDWP, demonstrate sustainable service delivery addressing the challenges, and complete implementation within the Program period of six years. In order to do that, it is imperative not to be ambitious, and so there is a geographic slicing proposed, through predefined, transparent and demand-driven selection criteria, to the restrict number of districts and GPs under the Program. On sanitation, the Program supports sullage management service improvement in peri-urban areas and building capacities of institutions in order to deliver the government program of NBA better.

The Program also integrates implementation of NBA in peri-urban villages with sullage management initiatives under the Bank supported Program. These interventions are different from those implemented under the earlier Bank supported project Jalswarajya (2003-09), which focused on small, single villages. While under the existing government programs, physical interventions are made just on water schemes to expand coverage, there is a capacity and financial gap in designing and implementing effective technical/social/management interventions in these challenge areas and, hence, which this Program will support. GoM will scale up these models in its future programs.

16. While GoM has a few standalone M&E systems, these have gaps and are not integrated. The current systems include a web-based GoI system for NRDWP and NBA. This is the most used system and captures data on physical progress, financial progress, water quality, NGP achievement and trainings, and so on. The current system of monitoring captures physical and financial progress information only (mainly access) with no focus on usage, quality or sustainability issues. The process level information related to planning, implementation/management, service delivery, and O&M, has not been included in the M&E system. The evaluation and audit systems are weak despite having access to cutting edge information and communication/mobile technologies. Thus, there is a need *for a sector-wide integrated M&E system that builds on existing systems and links them effectively.*

17. Stronger institutions are needed to play a leadership role in improving the sector and program performance, given the evolving demand and trend in, for example, improving policies, designing and strategizing programs, securing investments, market development, regulations, private sector participation, addressing emerging challenges (demand for improved water service levels, solid and liquid waste management, menstrual hygiene management, transparent subsidy management, groundwater management), reforming incentives programs, convergence (with the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Sarva Shiksha Abhiyan, Integrated Child Development Services), R&D, and so on. The existing institutions are not able to comprehensively address the above challenge, which requires better institutional clarity, definition of roles and responsibility, and *professionalization for improved service delivery in the sector.*

18. *The Program is designed to demonstrate solutions to the above challenges through appropriate interventions, strategies and investment programs in water supply and sanitation.*

19. *Strengthening the client systems:* The Program has also assessed the client's fiduciary, environmental and social systems and aims to bridge key gaps. Improving these systems would release some of the bottlenecks for service performance such as efficient and timely fund flows, competitive and timely procurement performance, environmental and social sustainability measures, and so on.

20. *Building on experiences*: In terms of selection of activities, the Program builds on national and international experiences, and brings to the table latest practices of service level benchmarking, impact assessment, sustainability evaluation, project management performance monitoring, third party audits, and so on. Through these practices, there is potential that a new benchmark is established in the sector, bringing in new perspectives in

thinking. For example, a recent study[43] on 20 years of World Bank's engagement in the RWSS sector, apart from highlighting the World Bank's contributions to the sector, has highlighted that: a) there is a need for ongoing oversight of the VWSCs by the GP and/or the ZPs; b) technical support is necessary to continue to build the capacity of the VWSC; and c) there is need for addressing unreliable electricity supply, which has an effect on the ability to maintain raw water supply of sufficient quantity and quality for the schemes throughout the year, especially in the dry months. The Program will include measures to address these areas. In sanitation, the experiences of World Bank-supported projects in India, Bangladesh, Tanzania and Vietnam show that appropriate linkages with demand and supply systems result in improved access and usage as well as sustainability, if positioned within an incentive and behavior change eco-system where capacities, skills, finances, institutions, markets policies, and programs are aligned. The sanitation programs , therefore, include strengthening of the demand creation and behavior change initiatives linked with incentive mechanism and participation in order to ensure improved access and usage and related hygiene behavior to promote sustainability

With this sound design, the Program aims to respond to the needs and challenges as identified above.

21. **Program Design and its Adequacy in Addressing Development Issues Identified.** Based on the priorities of the GoM and further discussions, the Program has been designed to mainly focus on the sector and program challenges, and to aim at institutional outcomes and service delivery outcomes for higher-order challenges. By addressing across-the-sector institutional outcomes, by limiting the scope based on technical/geographic 'slicing', with respect to service delivery outcomes in peri-urban villages, the Program is appropriately structured to address the developmental challenges at hand.

22. **Strategic Fit.** *The Program fits into the GoI and GoM strategic framework, and is consistent with the World Bank's Country Partnership Strategy (CPS)* (for the period FY13-FY17) which is organized around three engagement areas – integration, transformation and inclusion – with a cross-cutting focus on improving governance, environmental sustainability and gender quality. In addition, the CPS is based on GoI's "Finance-Plus" approach, whereby the value-added by the World Bank goes beyond the financing it brings and contributes to the transfer of knowledge and international best practices, reform of processes and systems, strengthening of capacity and institutions, and exploring of innovative financing instruments. The proposed operation is fully aligned with all of these objectives. As described above, the priorities of both GoM and GoI are to improve sustainability of services and enhance the service standards. There is also focus on institutional capacity building at various levels. The Program fits into this framework, by aiming to deliver similar results, which would help GoM to expand and sustain the approaches so developed under the Program later on.

23. **Typology of Activities and Action Plans.** *The typology of activities under the Program includes both capacity building support activities and investments activities, aimed at addressing the sector challenges listed above.* The World Bank team is helping GoM to develop a detailed action plan to be rolled out during the Program period.

[43] Review of World Bank Support to the Rural Water Supply and Sanitation Sector in India (1991 - 2011), September 2012.

24. **Incentives for Program Stakeholders to Perform.** *There are enough incentives for the Program stakeholders to perform.* For example, there is institutional realignment to ensure role and functional clarity, and provision for adequate staffing and skills at various levels – which actions together will optimize the work of staff and provide resources for required community outreach activities that get less attention otherwise. The logistical constraints of these stakeholders, such as office and transport facilities, will be improved. There are also opportunities to innovate due to the focus of the Program on higher-order challenges as well as for the stakeholders in the institutions at various levels to not only build their technical capacities but also improve professional and personal skills, which is a unique opportunity that is not normally included in the regular government support programs. The community will be incentivized, as there will be different approaches followed for community involvement in large villages, such as ward-level committee meetings. The community is also given an opportunity for appropriate form of social audit of the infrastructure development-taking place in the village, while the technical agencies take up the facilitation role. Moreover, the selection of GPs/districts will be done on the basis of predefined, transparent eligibility criteria, which increases the chances of performance.

25. **Potential Outcomes.** The key potential outcomes of the Program include the following: improvement in institutional effectiveness, management, monitoring and governance systems; improved policies and framework; improved citizen participation and ownership; and development of appropriate implementation models for higher-order challenges, so that the GoM can scale them up based on the capacities built.

PART D: Program Expenditure Framework

1. GoM has sufficient fiscal space to meet the needs of RWSS sector over the medium term. The sector receives about 3-4 percent of the Annual Plan outlay of the state and this is supplemented by the funding from GoI, adding up to about US$355 million per annum on average. The proposed Program cost of US$235 million over six years constitutes about 11 percent of GoM's RWSS sector program for the six-year period; however, the Program is expected to have a significant impact on improving the performance of the sector as a whole.

2. Absorption of funds, however, needs to be improved as on average during 2008-12 the state has been able to spend only 73 percent of available funds in the water sector and an even lower 46 percent in the sanitation sector, mostly due to institutional constraints and program operational issues, which are proposed to be addressed under the Program. Analysis of O&M costs and performance revealed that tariff collections (66 percent) and cost recovery (39 percent) are issues to be addressed, the present average per household O&M costs amounting to approximately INR 236 (US$ 3.8) per year are projected to increase in the future. The sector also receives O&M subsidies from GoI and the state, to support O&M costs of high cost schemes (due to long distance of sources/electricity charges), utilization effectiveness of which is not closely monitored presently. Given all this, a comprehensive review of O&M policy is proposed under the Program (Annex 5 can be referred for additional details).

PART E: Results Framework and M&E

1. The current vision, policies, practices and institutional arrangements of GoM are forward looking and are continuously being moderated to address emerging challenges. GoM also aligned its approaches with the broad guidelines recommend by GoI through NRDWP and NBA. About 50% of rural households in the state access water supply through taps[44] (as against about 31% national average) and the state aims to enhance this number to more households in future. The state has adopted some critical policies/ directions;

- Service delivery standards equivalent to the nearby urban centre to peri-urban villages[45]
- Aim to achieve 100 percent ODF status by 2020 as envisioned in the Sujal Nirmal Maharashtra vision
- Piloting of sullage management activities (for liquid waste) in bigger villages, with financial assistance from NABARD. The lessons from the pilots will be useful in gradually expanding the same to more villages in future
- Adoption of water quality monitoring protocol[46] and steps to build capacity of labs and GPs to achieve the targets defined in the protocols
- Adoption of revised Maharashtra Groundwater (Development and Management) Act, 2009 and steps to implement the same[47].

2. All these actions point to the readiness of GoM in tackling the emerging sector challenges and improve the overall service delivery.

3. *Program's Results*: The Program's results complement GoM's results, the Programs Key Result areas are the following, drawing upon the design of the Program scope defined above:

a) Result Area 1: Strengthened planning and monitoring in the RWSS sector;
b) Result Area 2: Improved institutional capacity for RWSS program implementation;
c) Result Area 3: Improved access to quality and sustainable water and sanitation services in peri-urban villages; and
d) Result Area 4: Improved access to safe drinking water in water-stressed and water quality-affected areas.

4. Within these four broad result areas, the Program has intermediate result indicators, consisting of DLIs and other results. All these together would help to measure the outcome of the two key activities of the Program – institutional capacity building; and service delivery.

5. The Program will build the capacities of GoM's institutions to be able to measure these results, improve the reliability of information through internal checks and third party evaluations, and enhance the capacity of systems by adoption of latest Information and Communication Technology (ICT) tools as per the best practices in the sector. A sector-wide

[44] Census 2011 data
[45] Government Resolution on water supply services in Peri-Urban villages, 8th June 2012.
[46] Government Resolution on implementation of water quality monitoring and surveillance mechanisms, dated 30th March 2011.
[47] The Maharashtra Water Resources Regulatory Authority (MWRRA) has been nominated as the Ground Water Authority, and GSDA has been nominated as the technical advisor to the MWRRA.

M&E system will be developed, which is one of the DLIs that aims to measure indicators on sector performance, fiduciary performance and project/contract management performance, across the sector. Please refer Annex 3 for more details.

6. GoM has an existing MIS framework for the RWSS sector that will be gradually strengthened as part of the Program into a sector-wide M&E system. Sector-related information is collected through two existing systems: GoI's web-based MIS and GoM's MIS. GoI's web-based system captures data on physical and financial progress of water supply schemes (though information is based on releases rather than actual expenditure at the GPs) as well as other aspects such as water quality and number of people trained. All districts have computers and internet facilities and they directly upload the information onto GoI's website every month. This is considered a good system, which works well across the state, and, thus, will constitute the primary basis for monitoring some of the results under the Program. On the other hand, GoM's MIS is meant to capture data on water systems built and their performance (financial, technical and service delivery). The system, however, is not yet fully developed or made operational across the state. GoM is currently in the process of reassessing its M&E needs for the RWSS sector, with a view to developing a comprehensive M&E system for the sector that covers not only sector performance but also fiduciary and project management performance. Under this Program, GoM wants to improve its ability to monitor progress and performance of the RWSS sector on a dynamic basis and use the information for timely decision-making and action.

7. While a sector-wide M&E system is being developed under the Program, WSSD will provide paper-based annual Program reports on the status of Program implementation and results achieved. In addition, the World Bank, with assistance from WSP will support an impact evaluation study for the Program under a separate technical assistance operation. This study will look at the health and socioeconomic impacts of the Program on various social and gender groups, as well as the impact of various capacity building initiatives on the performance of GoM's RWSS sector institutions.

8. *Joint Annual Reviews*. GoM and the World Bank have a shared interest in seeing the Program succeed with real lasting impacts on the performance of the sector as a whole. To that end, both parties have agreed to undertake joint annual review meetings at the management level to assess progress, identify and propose remedies for any weaknesses, and identify and propose modalities for scaling up successes. In addition to regular implementation support missions, joint annual reviews will be critical for early identification of problems (for example, non-achievement of DLIs) and opportunities for restructuring the Program (where necessary) in order to achieve its expected results.

PART F: Institutional Arrangements and Governance Structures

1. The RWSS sector is managed by WSSD at the state level, under the guidance and monitoring of a State Water and Sanitation Mission (SWSM), headed by the Chief Secretary of the state. Maharashtra's institutional structure is hugely decentralized (see Annex 7) with responsibilities delegated to the lower levels: at the district level to ZPs; and at the village level to GPs. At the intermediate sub-district level (blocks), facilitation takes place. While the institutions at these levels have various obligations, RWSS service delivery is one of their primary obligations. Particularly in the RWSS sector, the responsibilities are delivered through divisions/units at the ZPs/blocks. At the GP level, sub-committees are formed to look after the RWSS service obligation. The MJP and GSDA are the technical agencies at the state level with good technical capacities and they support the decentralized structures, besides handling complex activities such as groundwater monitoring, multi-village schemes, and so on. The PHD also plays a key role in terms of drinking water quality monitoring and surveillance, through laboratories at state, district and sub-district levels. The WSSD passes on necessary budgets to PHD for these activities. The key players in the sector and their roles are represented in Table 9. The Program is fully anchored into the existing institutional arrangement, and will be delivered with limited additions as indicated above.

2. GoM has planned to streamline the institutional arrangement particularly at the district and sub-district levels, by bringing the IEC and capacity building activities within the department's control (hitherto managed by an officer in the Rural Development Department - RDD), through the creation of a new position of Deputy CEO (water supply and sanitation) at the district level; strengthening BRCs at the sub-district level by hiring staff for different skills; and aligning the VWSCs and GPs at the village level for more accountability and long-term asset ownership and management. Local expertise is also proposed to be hired at the village level to support the VWSCs and GPs to deliver their functions. Most of these changes are based on the learnings from Jalswarajya-1 and the World Bank team's discussions during the preparation of the Program. Some of these have already been affected. Further evolution will be supported under the Program, addressing the following key gaps:

- Staffing gaps: requisite skill set, requisite numbers of staff, capacity development and facilities (office space, mobility, computers, and so on);
- Business protocols and operational guidelines to improve the effectiveness of the current program delivery; and
- Monitoring systems – integrated M&E systems to monitor processes, service delivery, expenditure and sustainability.

Table 9: Key Players in WSSD

Role	Level	Institution
Policy making, sector monitoring, finances mobilization	State	SWSM,[48] WSSD
Technical support to ZP/GPs	State	MJP, GSDA
Capacity building	State/ZP	WSSO, MEETRA, ZPs, BRCs, Key Resource Centers
Design and infrastructure creation (retail water supply, sanitation, waste water and solid waste)[49]	Districts	ZPs GPs
Design and infrastructure creation for bulk water	State	MJP
O&M (retail water supply, sanitation, waste water and solid waste)	Village	GPs/VWSCs
O&M of bulk water	District/state	ZP, MJP
Water quality monitoring, testing and surveillance	Districts/ blocks	District Public Health Laboratory, sub-division laboratories of PHD
Oversight (including monitoring and evaluation)	National/state/ districts	GoI/WSSD/ ZPs
Research and Development	State (WSSO)	GoM plans to capacitate MEETRA to undertake this role also

3. The Program is mainstreamed into this institutional structure and does not propose to create new institutions. The Program's implementation responsibilities have been carefully assessed and allocated to one of the existing institutions. Efforts are aimed at building capacities within these institutions, as required. These are explained in detail in Annex 6.

4. As explained, the governance systems are fairly well established in the sector, as WSSD follows: a) the mandate of Right To Information (RTI) act of India; b) a process of social audits in the RWSS sector through the formation of SACs at the GP level to undertake social audit of schemes being implemented; and c) a 'E-Pani' system for complaint redressal. However, these systems need to be strengthened to enhance their efficiency and effectiveness, which will be supported under the Program. Further enhancements to the social audit processes drawing on experiences from other sectors, and streamlining of ICT into sector governance to improve transparency are being considered. Another key aspect is the absence of a clearly defined 'vigilance' function within the key department, the WSSD. The program aims to strengthen this aspect also.

[48] Approving authority,

[49] MJP is responsible for schemes costing above INR 50 million and also schemes involving advanced technologies. However, MJP also works through ZPs and GPs.

PART G: Economic Justification

1 The Program will support and contribute to financing GoM institutions, sector policy, and infrastructure that will improve and expand access to safe water and hygienic sanitation in target areas. The Program is well justified on the basis of direct benefits to more than 1.5 million people who will have access to safe water supply and improved sanitation.[50] With an estimated population increase of 1.6 percent per annum on an average, the number of direct beneficiaries will be close to 2.2 million by the end of the expected life of Program created assets. The full range of economic benefits derived from this Program (financed either directly by the Program or by the government at a later stage) cannot be measured in entirety due to the incompleteness and lack of adequate data. To the extent possible, selected meaningful quantifiable benefits were estimated, baseline data were collected through surveys and field visits, and measures were taken from analytical work and similar projects (secondary data) for calculating the net benefit of the Program.[51]

2. *Ex ante* economic analysis was conducted (see details in Annex-9) to assess the impacts of the Program based on incremental economic costs and benefits of water and sanitation interventions over the life of the Program. The economic analysis covers the 25-year Program benefits post-construction, with cash flow discounted at 12.5 percent. Incremental costs include investment costs (hardware and software costs) and O&M.[52] The stream of financial costs was adjusted for impacts of taxes, subsidies, and externalities to arrive at the economic value, using an estimated Standard Conversion Factor (SCF) of 0.90. Quantifiable gross benefits considered for the calculation of NPV include the following:

a) The improved water supplies (e.g., 24x7) eradicate the need for any collection and storage, so time saved is 100 percent of time spent before scheme implementation.
b) The value of incremental water consumed by the target population.
c) Reduced O&M cost for the existing schemes with the development of new schemes.
d) Water conservation through groundwater management practices and water harvesting measures. The cost of water saved is a benefit of the project.
e) Saving in capital cost for augmentation and rehabilitation of the existing system to meet the requirements of increased population in peri-urban areas.
f) Reduction in coping costs (e.g., storage vessels and purification systems) due to better water supply.
g) Health benefits are 'avoided costs' of water-borne diseases such as diarrhea, jaundice, and gastroenteritis; i.e., less expenditure on treatment of disease, less expenditure on transport in seeking treatment, less time lost for treatment, as well as saving in government public healthcare expenditures due to reduction in incidence of water-borne diseases.

3. Under conservative assumptions and with only partial benefits of the intervention quantified, the Program yields a positive NPV and an ERR above the cost of capital of 12.5

[50] Estimate based on the number of households in the 12 target districts, assuming five persons per household.
[51] Data collected from six villages in Maharashtra during field visits: Raitale Kharamba, GP Jawhar, District Thane; Wadi, Besa-Beltarodi and Butibori in Nagpur District; and Pipri and Umri in Wardha District. Social and Environmental Assessment data collected by MJP in 60 GPs in Maharashtra have also been used for developing baseline data and indicators used.
[52] Exchange rate used for the analysis is INR 55/ 1 US$ (at Appraisal stage).

percent, and a benefit/cost ratio of 1.81. A sensitivity analysis for a 10 percent increase in Program costs (capital works, technical assistance and capacity building activities and O&M cost overrun) would still result in net positive benefits and ERR above the cost of capital, see Table 10.

Table 10: Net Present Value and Economic Rate of Return

Net Benefit Measure	NPV @ 20 Yrs Discounted at 12.5% (US$ M)	ERR (%)	Benefit Cost Ratio
Total net benefits – Base case	95.1	19.1	1.81
Total net benefit – inflation increase by 2.5% per annum, from 5% to 7.5% (will affect O&M costs and accrued benefits)	129.6	20.6	2.06
Total net benefit – inflation increase by 5% per annum, from 5% to 10% (will affect O&M costs and accrued benefits)	185.8	22.5	2.45
Total net benefit – risk analysis (cost overrun by 10% beyond the estimated capital costs)	80.0	17.7	1.65
Total net benefit – population increase at 2.5% per annum	115.9	20.2	1.96

4. Benefits from Program interventions to the country, the water supply and sanitation sector, and to government-funded programs in the RWSS sector cannot easily be quantified. Institutional strengthening, capacity building and training of concerned government agency personnel, as well as a boost to economic activities and employment generation in the districts as a result of the construction and Program activities are many added benefits of the Program. In addition to the target population directly benefitted by the Program, improved systems, the government's own programs and likely investments would bring benefits to a wider population in the longer term.

PART H: Evaluation of Technical Risks

1. The Program's overall technical risk is assessed to be "Moderate" The risks have been assessed in three areas listed in Table 11. The evaluation of the risks based on the current context and prospects is given in the Technical Assessment.

Table11: Key Program Risks – from Technical Dimension

Sl.No	Risk	Rating
1	The expected institutional capacity building may not happen as expected, in time.	Moderate
2	There may not be any appetite for GoM teams to deliver on some of the Program critical actions	Moderate
3	There may not be demand from peri-urban villages for higher level services on water	Moderate

The mitigation plan for each of the risks is presented in Table12.

Table12: Technical Risks – Mitigation Actions

Risk-1	*Institutional Capacity Building*
Risk Rating	Medium
Mitigation Actions	• The Program team analyzed the key weaknesses and accordingly provided for hiring necessary staff (about 686 professionals) at various levels for the Program's implementation and also GoM's programs • Ensure that within the first six months of the Program, all teams are in place at state, district and block levels. This is one of the DLIs. Ensure that the SLPCC and DLPCC are in place and active • Develop a Human Resource Policy covering the Program staff, both regular and contract staff • Ensure that the designated cells/units are created at MJP and GSDA, and the Program Manager is mobilized by start of the Program
Risk-2	*No appetite for GoM teams to deliver on some of the Program critical actions*
Risk Rating	Medium
Mitigation Actions	• Develop a capacity-building plan during the first year of Program implementation. The plan shall include exposure visits to other states in India which had taken similar initiatives (for example., Punjab), and possibly international exposure visits to selected teams from GoM • Ensure that at least the first batch of the peri-urban villages are selected by the start of the Program and all activities related to institutions building, mobilization, technical surveys, etc., are undertaken within the first 6 months of the Program. Further ensure that designs are prepared and bids are invited immediately after the effectiveness of the of the project period
Risk-2	*No demand from the villages for higher level services, and for Liquid Waste Management*
Risk Rating	Medium
Mitigation Actions	• Develop and implement a strong communication strategy and IEC program during the first year of the Program (which worked well for a World Bank supported 24x7 urban water initiative in Karnataka) • Provide exposure visits to potential large villages to some of the states in India where similar initiatives have been taken up • Have a predefined, demand-based selection criteria to select the villages, and

Risk-1	*Institutional Capacity Building*
	focus on potentially interested villages during the first batch • As the implementation is picking up in the first year, implement intra-state exposure visits to the fence-sitters • As the schemes are being completed, assess the positive impacts and widely disseminate the findings in the public domain

Annex 1: Maharashtra Economic and Human Development Indicators[53]

INDIA: Maharashtra Rural Water Supply and Sanitation Program

		Maharashtra	India
Demographic Indicators		**2011**	**2011**
1	Total population (in millions)	112	1210
2	% contribution to national population	9.29	100
3	Sex ration (females per 1,000 males)	925	940
4	Under 6 sex ratio (females per 1,000 males)	883	914
Economic Indicators		**2009-10**	**2009-10**
5	Net State Domestic Product (NSDP) (at factor cost) (INR crores) (for state)	634,828	4,493,743
	GDP (at factor cost) (INR crores) (for India)		
6	Contribution of agriculture to NSDP/GDP (%)	8.57	14.62
7	Contribution of industry to NSDP/GDP (%)	20.99	20.16
8	Contribution of services to NSDP/GDP (%)	70.44	65.22
9	Per Capita NSDP (factor cost) (INR) (for state)	57458	33731
	Per Capita Net National Product (factor cost) (INR) (for India)		
10	NSDP growth rate (%) (for state)	8.67	8
	GDP growth rate (%) (for India)		
Human Development Indicators		**2007-08**	**2007-08**
11	Human Development Index (HDI)Value	0.572	0.467
12	HDI rank (out of 23)	7	
		2006	**2006**
13	Gender-related Development Index (GDI)	0.677	0.590
14	GDI rank (Out of 35)	10	122
15	Gender Empowerment Measure (GEM)	0.516	0.497
16	GEM rank (Out of 35)	10	
		2011	**2011***
17	Inequality adjusted HDI value	0.397	0.343
18	Inequality adjusted HDI rank (out of 19)	4	
19	Loss in HDI due to inequalities (%)	27.75	32
20	Literacy rate (%)	82.91	74.04
21	Male literacy rate (%)	89.82	82.14
22	Female literacy rate (%)	75.48	65.46
**Value differ from India IHDI in Global HDR 2011 due to different data sources*			
Poverty and Hunger Indicators		**2009-10**	**2009-10**
23	Poverty Headcount Ratio (%)	24.5	29.8
24	Total number of poor (in millions)	27.08	354.68
		2005	**2005**
25	Multidimensional Poverty Index	0.18	0.283
26	Multidimensional Poverty Headcount (%)	37.9	53.7
27	Number of multidimensional poor (in millions)	39.9	612
28	Global Hunger Index (GHI)	22.8	23.3
29	GHI Rank (out of 17)	10	
		2005-06	**2005-06**
30	Prevalence of calorie undernourishment (%)	27	20
31	Prevalence of underweight children under 5 years of age (%)	36.7	42.5

[53] Sources: Census 2011,Planning Commission 2008-2012,UNDP 2008-2012,World Bank 2008-2012,MOHFW 2012

Annex 2: Key Features of the Draft Policy Framework for Rural Drinking Water for the 12th Finance Plan (2012-17)

INDIA: Maharashtra Rural Water Supply and Sanitation Program

- Enhanced water supply of 55 lpcd to be delivered within household premises or within a radius of 100 meters from the household or within 10 meters elevation in hilly areas;
- At least 55 percent of the rural population to have this enhanced level of water supply service by the end of 2017 and at least, 35 percent of the rural population to have individual house connections. All house connections shall be metered;
- GoI shall largely fund piped water supply schemes. Spot sources such as hand pumps, protected wells and protected ponds shall be considered only for tribal and remote locations as a last option where piped water supply may not be feasible. Spot sources shall be funded by the states;
- Service delivery parameters shall be modified to cover the volume of water supplied, frequency and regularity of supply, water quality, and monitored. M&E Divisions shall be established by the GoI and the states;
- Water budgeting, water security plans, and aquifer and surface water management plans shall be prepared and implemented for increased sustainability of drinking water sources;
- Water quality standards based on BIS-10500 will be notified and monitored. In water quality-affected habitations, cost-effective technological options shall be explored and implemented;
- Effective community participation shall be ensured in all phases of the project cycle such as planning, implementation and O&M for increased sustainability of water systems and services;
- State resources centers to be established. BRC personnel to be trained on planning and implementation of water supply and sanitation schemes;
- ZPs should set up separate water and sanitation O&M wings to provide support to GPs and VWSCs. Such wings should empanel private parties for repairs, mechanical cleaning of toilets, and so on.
- Allocation for O&M under NRDWP will be raised from the present level of 10 percent to 15 percent. Corpus funds amounting to 10-15 percent of the project cost will be granted to VWSCs;
- Model DPRs to be prepared for each water supply scheme covering assessment of water needs, water security plan, O&M plan and capacity building;
- A Reform Incentive Fund shall be created for the states and will be given subject to preparation of such DPRs and achievement of expenditures; and
- VWSCs will be rewarded with incentives on achieving collection of user charges. There are three levels of incentives: a) if user charges collected and O&M expenses met fully and 10 percent of the collection is added to the O&M corpus fund then an incentive of INR15,000 will be given; b) if O&M expenses are fully met but no addition is made in the O&M corpus fund, then an incentive of INR 10,000 will be given; and c) if the user charges collection amounts to 80 percent of O&M expenses, then an incentive of INR 8,000 will be given.

Annex 3: Results Framework Matrix

INDIA: Maharashtra Rural Water Supply and Sanitation Program

The Program's overall Results Framework is shown in Annex 3A that includes PDOs, DLIs and other indicators. It should be read in conjunction with the following definitions:

1. **A strengthened M&E system** is one that is able to capture and analyze, either in an integrated fashion or in separate modules, a minimum set of indicators on: (i) *sector performance* including the number of water schemes constructed, people/habitations that are fully covered with improved water sources, and household connections; per capita investment costs; functionality of water schemes; hours of service and water quality; number of households and institutions having access to a toilet, GPs attaining and sustaining ODF and clean status, and so on; (ii) *fiduciary performance* including budget variance, time efficiency of funds flow, timeliness of recording actual expenditures and account reconciliations, average length of procurement processes, number of bidders and bid responsiveness, processing time for contractor payments; and (iii) *project/contract management* performance including the schedule and cost performance of rural water supply schemes.

2. **Full implementation of a strengthened M&E system** will be judged when the district CEO provides a letter confirming that: (i) the system has been installed and is functional as per requirements and specifications; (ii) training has been undertaken; (iii) a team has been appointed at the district who will be in charge of the M&E system, and that it has verified all previous year's data in the system; and (iv) at least one annual performance report has been prepared and submitted to WSSD covering the minimum set of indicators outlined above, together with a short narrative on any performance shortfalls and action plan to address the shortfalls.

3. **GoM's demand-responsive approach.** A rural water supply scheme is considered to have followed GoM's demand-responsive approach if the following minimum conditions are satisfied:

- Schemes follow the standard project cycle as used in the previous Jalswarjya-1 project, and as amended from time to time by WSSD based on experiences;
- A VWSC is established as per GoM guidelines and has received appropriate training in planning, implementation and O&M of the scheme; and
- Women are involved in the planning, implementation and operation of the scheme, through representation on VWSC or other means.

4. **Schedule performance index** is the ratio of time planned and time taken to complete a rural water supply scheme. A scheme is considered completed if the following is satisfied: (i) it is physically completed and commissioned by the relevant engineering officer; and ii) a financial closure audit has been undertaken and the standard WSSD Exit Checklist is followed as per GoM's procedures.

5. **Sustainable O&M mechanisms.** A GP is considered to be using sustainable O&M mechanisms for water supply, if the following minimum conditions are satisfied:

- The GP is fully covered for water supply as per GoM guidelines;

- There is a formal management model decided by the GP and is functioning as per the O&M guidelines established by WSSD;
- There is an annual assessment of O&M costs and tariff collections;
- The VWSC is receiving administrative and technical backup support from the state/district/block teams and there is a record of support provided;
- There is a proper record of water supply assets, and records of O&M expenditure, revenues and/or subsidies, number of users and hours of services; and
- Biannual SAC audits on inclusion, participation, transparency and service quality are conducted and findings shared in the Gram Sabha.

6. **Sanctioned staff positions** are those that have been approved by GoM.

7. **Key sector institutions** mean WSSO, DWSM and BRCs.

8. **A Capacity Development Plan** means a plan that is based on a balanced assessment of capacity development needs of key sector institutions. The capacity development plan must not only focus on individual staff training, but must address a combination of individual competencies and, collective capabilities (resources, tools and assets) that would enable each agency/unit to perform its functions effectively and efficiently.

9. **Implementation of the Capacity Development Plan in any unit/agency** will be judged when the head of the unit/agency has provided a letter confirming that: i) WSSO carried out consultations with the unit/agency in preparing the annual capacity development plan; and (ii) a balanced set of capacity development activities focusing on individual competencies and collective capabilities have been implemented during the year.

10. **Aquifer Water Management Initiatives (AWMIs)** refer to selected aquifer areas in which various structural (physical interventions) and nonstructural (demand management/conservation) measures are implemented with the involvement of the community and with the objective of improving the sustainability of groundwater management to enhance drinking water security. AWMIs will be considered successfully implemented if the following conditions are satisfied:

- Aquifer boundaries are clearly designated through technical assessments;
- Social intermediation is done to raise awareness of community on groundwater management, form Aquifer Water Management Associations, get buy-in for interventions, which may include: structural measures (earthen bunds /weirs/water retaining structures to retain water and recharge groundwater); nonstructural measures (water budgeting, regulation of water use, adoption of efficient cropping pattern, and so on);
- Baseline indicators are measured, which should include, at the minimum, groundwater availability and net available water from run-off;
- Interventions (structural and nonstructural) are planned and implemented with the active involvement of the community;
- Post implementation assessments are made to check the benefits; and
- The AWMI has resulted in an increment in groundwater, or at least does not show reduction, in the aquifer area.

11. **Open defecation free status** refers to a status where every household of the GP has access to an improved toilet and using it regularly with no trace of open defecation practiced by any household member; as measured and confirmed by GoM/GoI's verification methods.

12. **Commissioned water supply system** is one, which is physically completed and certified by the responsible engineering officer.

13. **Sustainable water supply systems** are those which are being operated under a formal management model; have 100 percent household meters installed; have a net revenue from water tariffs and/or GoM subsidies that are sufficient to cover at least the O&M costs of the system.

14. **Sustainable sullage collection and safe disposal systems** are those which: (i) collect sullage generated from households, treat and dispose the sullage according to GoM/GoI environmental standards and norms as per village sanitation plan; and ii) are operated and maintained under a formal management model, with a net revenue and/or GoM subsidies that are sufficient to cover at least the O&M costs of the system.

15. **Regular water service** means continuity of water supply of minimum water quality standard for 8 hours per day at a minimum pressure of 7.0 meter (at predetermined points in the distribution network), for no less than 300 days in a year, unless the service area is declared a drought-affected zone.

16. **Minimum water quality standard** means the water quality complies with GoM's water quality standards.

- **Community Safe and Secure Water System (CSSWS)** is a single village water supply system that satisfies the following minimum conditions:
- The system is located in an area that is categorized as water–stressed or water quality-affected, in accordance with established GoM criteria;
- The system delivers potable drinking water that complies with GoM's minimum water quality standards;
- The system provides a minimum quantity of safe drinking water as per GoM/GoI norms for water-stressed and water-quality affected areas;
- The system was implemented following GoM's demand-responsive approach; and
- There is a formal management model decided by the GP and is functioning as per the O&M guidelines established by WSSD

Annex 3A: Results Framework

Program Development Objective: to improve the performance of Maharashtra's sector institutions in planning, implementation and monitoring of its Rural Water Supply and Sanitation program and to improve access to quality and sustainable services in peri-urban villages, and in water–stressed and water quality-affected areas.

PDO Level Results Indicators	Core	DLI	Unit of Measure	Baseline	Target Values (Cumulative, unless indicated otherwise)						Frequency	Data Source/ Methodology	Responsibility for Data Collection
					Y1	Y2	Y3	Y4	Y 5	Y6			
PDO Indicator 1: Number of districts using improved planning processes and strengthened M&E systems	☐	☐	No. of districts	0	0	0	6	15	24	33	Annual	Review of district annual plans; Review of annual performance reports	WSSO
PDO Indicator 2: Percentage of completed rural water supply schemes that followed GoM's demand responsive approach and exited the implementation process with a schedule performance index of between 0.75 and 1.25	☐	☐	% of rural water supply schemes	0	5	10	15	20	25	30	Annual	Annual performance reports	WSSO
PDO Indicator 3: Number of people in peri-urban villages who are connected to a sustainable water supply system and receive a regular water service	☒	☐	No. of people	0	0	0	85,120	170,240	255,355	340,000	Annual	Technical field visits, review of MJP reports; annual performance reports and user survey	MJP
PDO Indicator 4: Number of people in water-stressed and water quality-affected areas who have access to a safe drinking water source	☒	☐	No. of people	0	0	203,000	365,000	471,000	--	--	Annual	Technical field visits, Annual performance reports and user survey	District RWS division

Intermediate Results Area 1: Strengthened Sector Planning and Monitoring													
Intermediate Results Indicator 1: Strengthened M&E system for the sector	☐	☒	Actions to strengthen the M&E system	Existing M&E system is limited in scope and is not fully used consistently across the state	WSSD has identified sector-wide M&E needs and formulated a plan for developing a strengthened M&E system, which can be implemented across Maharashtra	WSSD has designed and tested the strengthened M&E system	Strengthened M&E system is fully implemented in at least 10 districts	Strengthened M&E system is fully implemented in at least 20 districts	Strengthened M&E system is fully implemented in all 30districts	WSSD carries out a review of implementation of the strengthened M&E system and identifies required changes and future needs	Annual	Review of WSSO reports; annual performance reports; CEO letters to WSSD	PMU/WSSO
Intermediate Results Indicator 2: Improved sector planning process for the sector	☐	☐	Actions to improve planning processes	Existing planning processes lack strategic orientation	WSSD prepares and publishes a five-year sector strategic plan	WSSD develops and disseminates tools and guidelines for improving the quality and consistency of district annual action plans	At least 6 districts are using the improved planning framework and are producing annual action plans that are consistent with sector strategic plan	At least 15 districts are using the improved planning framework and are producing annual action plans that are consistent with sector strategic plan	At least 24 districts are using the improved planning framework and are producing annual action plans that are consistent with sector strategic plan	All 33 districts are using improved planning framework and are producing annual action plans that are consistent with sector strategic plan	Annual	Review of district annual plans	PMU/WSSO
Intermediate Results Area 2: Improved Capacity for Program Implementation													
Intermediate Results Indicator 3: Strengthened capacity of key sector institutions	☐	☒	% of sanctioned staff maintained, trained and equipped every year in key sector	An average of 20% of sanctioned positions remains vacant in key sector institutions and there is no needs-based Capacity	75	75	75	75	75	75	Annual	Review of reports prepared by WSSO, interviews with staff	PMU/WSSO,

			institutions (as per Annual Capacity Development Plan for the sector)	Develop-ment Plan									
Intermediate Results Indicator 4: Percentage of rural water supply schemes that follow GoM's demand responsive approach	☐	☐	% of rural water supply scheme	GoM's demand responsive approach is not followed consistently across the state	15	20	25	30	35	40	Annual	Review of reports prepared by WSSO; review of annual performance reports prepared by districts	WSSO
Intermediate Results Indicator 5: Percentage of GPs that are using sustainable O&M mechanisms	☐	☐	%of GPs	10	15	20	25	30	35	40	Annual	Review of reports prepared by WSSO; review of annual performance reports prepared by districts	WSSO
Intermediate Results Indicator 6: No. of AWMIs successfully implemented	☐	☐	No. of AWMIs	6	6	10	14	18	22	24	Annual	Technical field visits; review of reports prepared by GSDA; and user survey	GSDA, aquifer management associations
Intermediate Results Indicator 7: Percentage of GPs that maintain ODF status	☐	☐	% of GPs	10	10	15	20	25	35	40	Annual	Household survey	WSSO
Intermediate Results Area 3: Improved Access to Quality and Sustainable Water and Sanitation services in Peri-urban Villages													
Intermediate Results Indicator 8: No. of house connections to a commissioned water supply system	☒	☒	No. of house connections	0	0	0	17,024	34,048	51,071	68,095	Annual	Technical field visits, review of MJP reports; annual performance reports and user survey	MJP, IVA

Intermediate Results Indicator 9: No. of houses connections to a sustainable water supply system receiving a regular water service	☒	☒	No. of house connections	0	0	0	0	17,024	34,048	51,071	Annual	Technical field visits, review of MJP reports; annual performance reports and user survey	MJP, IVA
Intermediate Results Indicator 10: No. of houses connections to sustainable sullage collection and safe disposal system	☐	☐	No. of house connections	0	0	0	0	17,024	34,048	51,071	Annual	Technical field visits, review of MJP reports; annual performance reports and user survey	MJP, PMU
Intermediate Results Area 4: Improved Access to Safe Water Drinking Water in Water-stressed and Water Quality-affected Areas													
Intermediate Results Indicator 11: No. of CSSWSs	☒	☐	No. of CSSWS	0	0	250	450	580	--	--	Annual	Technical field visits, and household survey	WSSD, IVA

Annex 3B: Disbursement-Linked Indicator Matrix

DLI	*Total Financing Allocated to DLI (USM)*	*As % of Total Financing Amount*	*DLI Baseline*	*Indicative Timeline for DLI Achievement*					
				Year or Period 1	*Year or Period 2*	*Year or Period 3*	*Year or Period 4*	*Year or Period 5*	*Year or Period 6*
DLI#1: Strengthened M&E system for the sector	**34**	**21%**	Existing M&E system is limited in scope and is not fully used consistently across the state	WSSD has identified sector-wide M&E needs and has formulated a plan for developing a strengthened M&E system, which can be implemented across Maharashtra.	WSSD has designed and tested the strengthened M&E system	Strengthened M&E system is fully implemented in at least 10 districts	Strengthened M&E system is fully implemented in at least 20 districts	Strengthened M&E system is fully implemented in at least 30 districts	WSSD carries out a review of implementation of the strengthened M&E system and identifies required changes and future needs
Allocated amount for DLI#1 (US$ million):				**1.0**	**15.0**	**15.0**	**1.0**	**1.0**	**1.0**
DLI#2: Strengthened capacity of key sector institutions (percentage of sanctioned staff maintained, trained and equipped every year in key sector institutions as per the Annual Capacity Development Plan)	**36**	**22%**	An average of 20% of sanctioned positions remains vacant in key sector institutions and there is no needs-based capacity development plan	75	75	75	75	75	75
Allocated amount for DLI# 2 (US$ million):				**6.0**	**6.0**	**6.0**	**6.0**	**6.0**	**6.0**
DLI#3: No. of house connections to a commissioned water supply system (targets are cumulative)	**40**	**24%**	0	0	0	17,024	34,048	51,071	68,095
Allocated amount for DLI#3 (US$ million):				**0**	**0**	**10**	**10**	**10**	**10**
DLI#4: No. of house connections to a sustainable water supply system receiving a regular water service (targets are cumulative)	**25**	**15%**	0	0	0	0	17,024	34,048	51,071

DLI	*Total Financing Allocated to DLI (USM)*	*As % of Total Financing Amount*	*DLI Baseline*	*Indicative Timeline for DLI Achievement*					
				Year or Period 1	*Year or Period 2*	*Year or Period 3*	*Year or Period 4*	*Year or Period 5*	*Year or Period 6*
Allocated amount for DLI#4(US$ million):				**0**	**0**	**0**	**8.3**	**8.3**	**8.3**
DLI#5: No. of CSSWS (targets are cumulative)	**30**	**18%**	0	0	250	450	580	--	--
Allocated amount for DLI#5 (US$ million):				**0**	**12.93**	**10.35**	**6.72**	**0.00**	**0.00**
Total Financing Allocated (US$ million)	**165**	**100%**		**7.00**	**33.93**	**41.35**	**36.22**	**23.25**	**23.25**

Annex 3C: DLI Verification Protocol

No.	*DLI*	*Definition/ Description of Achievement*	*Scalability of Disbursements (Yes/No)*	*Protocol to Evaluate Achievement of the DLI and Data/Result Verification*		
				Data Source/Agency	*Verification Entity*	*Procedure*
1	**DLI#1:** Strengthened M&E system for the sector	• In Year1, disbursements will be triggered when WSSD has defined sector-wide M&E needs and develops an implementation plan for a strengthened M&E system. • In Year2, disbursements will be triggered when WSSD designs and tests the strengthened M&E system. • In Years 3, 4 and 5, disbursements will be triggered when the strengthened M&E system is fully implemented in at least 10, 20 and all 30 districts, respectively, • In Year 6, disbursements will be triggered when WSSD carries out a review of implementation of the strengthened M&E system and identifies required changes and future needs. *A strengthened M&E system* is one that is able to capture and analyze, either in an integrated fashion or in separate modules, a minimum set of indicators on: (i) sector performance including the number of water schemes constructed; number of people/habitations that are fully covered with improved water sources, number of household connections; per capita investment costs, functionality of water schemes; hours of service and water quality; number of households having access to a toilet, number of GPs attaining and sustaining ODF and clean status, etc.; (ii) fiduciary performance including budget variance, time efficiency of funds flow, timeliness of recording actual expenditures and account reconciliations, average length of procurement processes, number of bidders and bid responsiveness, processing time for contractor payments; and (iii) project/contract management performance including schedule and cost performance of rural water schemes.	No	PMU/WSSO	Independent external entity to be contracted by WSSD	• In Period 1 and 2, PMU/WSSO to prepare annual progress reports on M&E needs identification and system design and testing. • In Period 3-6, full implementation of a strengthened M&E system will be judged when the district CEO of the ZP provides a letter confirming that: (i) the system has been installed and is functional as per requirements and specifications; (ii) training has been undertaken; (iii) a team has been appointed at the district which will be in charge of the M&E system, and that it has verified all previous year's data in the system; and (iv) at least one annual performance report has been prepared and submitted to WSSD covering the minimum set of indicators outlined above, together with a short narrative on any performance shortfalls and an action plan to address the shortfalls.

No.	*DLI*	*Definition/ Description of Achievement*	*Scalability of Disbursements (Yes/No)*	*Protocol to Evaluate Achievement of the DLI and Data/Result Verification*		
				Data Source/Agency	*Verification Entity*	*Procedure*
2	**DLI#2:** Strengthened capacity of Maharashtra's key sector institutions	Strengthened capacity will be judged by the following: (i) In each fiscal year, WSSD achieves staffing levels in its key sector institutions (WSSO, DWSM cell, and BRCs) at an average level of up to 75% of Sanctioned Positions during the Program period across the state; and (ii) WSSD prepares and implements an Annual Capacity Development Plan focused on developing staff individual competencies and collective capabilities. A *Capacity Development Plan* is one that is based on a balanced assessment of the capacity development needs of key sector institutions (WSSO, DWSM and BRCs). The capacity development plan must not only focus on individual staff training, but must address a combination of individual competencies and collective capabilities (resources, tools and assets) that would enable each agency/unit to perform its functions effectively and efficiently.	Yes, but time-bound (i.e., every fiscal year during the Program)	PMU/WSSO	Independent external entity to be contracted by WSSD	• PMU/WSSO to prepare annual progress report on capacity strengthening activities. • Heads of each unit/agency to provide letters confirming that: (i) staffing levels in the key sector institutions have been maintained at an average of 75% of Sanctioned Positions at all times during the Program; (ii) a balanced set of capacity development activities focusing on individual competencies and collective capabilities (resources, tools and assets) are planned and implemented during the year. • Independent verification entity to carry out a desk review of progress reports and letters submitted by the unit/agency heads, and may visit a random sample of 5% of the units to verify the reports. • In year-1, the average shall be counted from July 01, 2014 to March 31, 2015 (since the target agreed at negotiations for completion of staff recruitment is June 30, 2014)
3	**DLI#3**: No. of house connections to a commissioned water supply system	A household water connection will be eligible to count towards the physical targets if the connection is made to a commissioned water supply system *Commissioned water supply system* is one which is physically completed and certified by the responsible engineering officer	Yes	Reports from MJP; physical survey and inspection of a sample of connections	Independent external entity to be contracted by WSSD	• MJP to prepare implementation progress reports on roll-out of household connections in peri-urban schemes • Independent verification entity to carry out physical inspection of a sample of no less than 5% of connections per scheme in all schemes, commissioned during the

No.	*DLI*	*Definition/ Description of Achievement*	*Scalability of Disbursements (Yes/No)*	*Protocol to Evaluate Achievement of the DLI and Data/Result Verification*		
				Data Source/Agency	*Verification Entity*	*Procedure*
						reporting period.
4	**DLI#4**: No. of house connections to a sustainable water supply system receiving a regular water service	A house water connection will be eligible to count towards the physical targets if the connection is made to a sustainable water supply system with regular water service and minimum water quality standards. *Sustainable water supply systems* are those which are being operated under a formal management model; have 100% household meters installed; have a net revenue from water tariffs and/or GoM subsidies that is sufficient to cover at least the O&M costs of the system**.** *Regular water service* means continuity of water supply meeting minimum water quality standard for at least 8 hours per day at a minimum pressure of 7.0 m at predetermined points in the distribution network for no less than 300 days in a year, unless the service area is declared a drought-affected zone. *Minimum water quality standard* means the water quality complies with GoM's water quality standards.	Yes	Reports from MJP; physical survey and inspection of a sample of connections	Independent external entity to be contracted by WSSD	• MJP to prepare annual operational performance reports for all schemes • Independent verification entity to carry out physical inspection of a sample of no less than 5% of connections per scheme in all schemes, as well as household surveys to validate operational performance parameters. The sampling frame includes, additional connections proposed for verification for that reporting period, from the schemes completed under DLI#3. • Though not linked with DLIs, the IVA should verify schemes verified of the previous periods, sampling no less than 5% of the connections per scheme together with household surveys, to check on any slip backs and report the same.

No.	*DLI*	*Definition/ Description of Achievement*	*Scalability of Disbursements (Yes/No)*	*Protocol to Evaluate Achievement of the DLI and Data/Result Verification*		
				Data Source/Agency	***Verification Entity***	***Procedure***
5	**DLI# 5.** No. of CSSWS	A scheme is eligible to be counted as a *community safe and secure water system*, if all the following conditions are satisfied: (i) The system is located in an area that is categorized as water-stressed or water quality- affected area, in accordance with established GoM criteria (ii) The system delivers portable drinking water as per GoM's minimum water quality standards (iii) The system provides a minimum quantity of safe drinking water as per GoM/GoI norms for water-stressed and water-quality affected areas (iv) The system was implemented in line with GoM's demand-responsive approach (v) A formal management model decided by the GP is functioning as per the O&M guidelines established by WSSD.	Yes	Reports from ZP; physical survey and inspection of a sample of systems	Independent external entity to be contracted by WSSD	• ZP to prepare implementation progress reports on the implementation of schemes, processes used and completion and handing over status. • Independent verification entity to carry out physical inspection of a sample of no less than 5% of systems in each district, from the additional systems proposed for verification for the reporting period. • Though not linked with DLIs, the IVA should verify schemes verified of the previous reporting periods, sampling no less than 5% of such schemes per district, to check on any slip backs and report the same.

Annex 3D: Bank Disbursement Table

No.	DLI	Bank Financing Allocated to the DLI	Of which Financing Available for		Deadline for DLI Achievement	Minimum DLI Value to be Achieved To Trigger Disbursements of Bank Financing	Maximum DLI Value(S) Expected to be Achieved for Bank Disbursements Purposes	Determination of Financing Amount to be Disbursed Against Achieved and Verified DLI Value(S)
			Prior results	Advances				
1	DLI#1: Strengthened M&E system for the sector	34	0	1	Results will be verified annually and reported starting from March 31, 2015	Disbursements will be triggered on verified achievement of all actions in any Year or Period	Full implementation of strengthened M&E system in 30 districts and evaluation of the implementation process and identified required changes and future needs	In Period 1 of Program implementation, an amount of US$1 million may be made available by the Bank for withdrawal by the Recipient when WSSD has defined sector-wide M&E needs and developed an implementation plan for a strengthened M&E system In Period 2 of Program implementation, an amount of US$15 million may be made available by the Bank for withdrawal by the Recipient when WSSD has designed and tested the strengthened M&E system In Period 3 of Program implementation, an amount of US$15 million may be made available by the Bank for withdrawal by the Recipient when the strengthened M&E system is fully implemented in at least 10 districts. In Period 4 of Program implementation, an amount of US $1 million may be made available by the Bank for withdrawal by the Recipient when the strengthened M&E system is fully implemented in at least 20 districts In Period 5 of Program implementation, an amount of US $1 million may be made available by the Bank for withdrawal by the Recipient when the strengthened M&E system is fully implemented in at least 30

No.	DLI	Bank Financing Allocated	Of which Financing Available for		Deadline for DLI Achievement	Minimum DLI Value to be Achieved To	Maximum DLI Value(S) Expected to be Achieved for Bank Disbursements	Determination of Financing Amount to be Disbursed Against Achieved and Verified DLI Value(S)
								districts In Period 6 of Program implementation, an amount of US $1million may be made available by the Bank for withdrawal by the Recipient when WSSD has carried out an evaluation of the implementation process for the M&E system and identified required changes and future needs.
2	DLI#2: Strengthened capacity of key sector institutions	36	0	5	Results will be verified annually and reported starting from March 31, 2015	Disbursements will be triggered on verified achievement of all actions in each fiscal year	Maintenance of staffing levels at an average of 75% sanctioned positions in WSSO, DWSM and BRCs at all times in each fiscal year; and implementing an Annual Capacity Development Plan	For each 1% of sanctioned staff that WSSD has maintained, trained and equipped every fiscal year in key sector institutions (WSSO, DWSM and BRCs) as per the annual Capacity Development Plan, an amount of US$80,000 per such 1% of sanctioned staff (up to a cap of 75%) may be made available by the Bank for withdrawal by the Recipient If one or more of these actions are not achieved in one or more fiscal years, the corresponding amount for that year will not be disbursed.
3	DLI#3: No. of house connections to a commissioned water supply system	40	0	10	Results will be verified six monthly and reported starting from March 31, 2017	DLI value must be greater than zero	68,095	For each house connection that is made to a commissioned water supply system, an amount of US$587 per connection may be made available by the Bank for withdrawal by the Recipient
4	DLI#4: No. of house connections to a sustainable water supply system and receiving a regular water	25	0	0	Results will be verified annually and reported starting from March 31, 2018	DLI value must be greater than zero	51,071	For each house connection to a sustainable water supply system and receiving regular water service, an amount of US $490 per connection may be made available by the World Bank for withdrawal by the Recipient

No.	DLI	Bank Financing Allocated	Of which Financing Available for		Deadline for DLI Achievement	Minimum DLI Value to be Achieved To	Maximum DLI Value(S) Expected to be Achieved for Bank Disbursements	Determination of Financing Amount to be Disbursed Against Achieved and Verified DLI Value(S)
	service							
5	DLI# 5. No. of CSSWS	30	0	2.5	Results will be verified annually and reported starting from March 31, 2016	DLI value must be greater than zero	580	For each community safe and secure water system, an amount of US $51,724 may be made available by the Bank for withdrawal by the Recipient

Annex 4: Constraints on Delivering NRDWP/NBA

INDIA: Maharashtra Rural Water Supply and Sanitation Program

The key identified constraints at various levels are:

NRDWP Delivery Constraints

Village Level

- Lack of adequate support mechanism from the districts/sub-districts to the villages to manage implementation (contract management, decision making, following up on clearances and payments at the districts, progress monitoring, and so on);
- Conflict between the VWSC/GP authorities affecting implementation progress, and consequent release of payments; and
- Criteria for village selection and fund release under NRDWP linked to community contribution and ODF achievements.

Block Level

- Low availability of technical staff; and
- Weak involvement of the BDO.

District Level

- Weak advanced planning to prepare comprehensive annual action plans and gearing up of institutions (for example, GSDA getting ready to do source assessments in time);
- District administration is working across the districts on fixing problems, thereby stretched;
- Low availability of technical staff at districts, and lower number of geologists from GSDA; and
- Centralized payment decisions at the Executive Engineer level, and weak delegation of appraisal powers.

State Level

- Lack of comprehensive M&E system to provide timely information for corrective actions.

NBA Delivery Constraints

Village Level

- Low awareness and knowledge on sanitation
- Poor quality of construction under TSC (household, schools, and so on), traditional behavior including irregular/lack of water supply affecting the usage;
- Public toilet/shared toilets are in use but maintenance is a problem;
- Capacity gaps in delivering saturation approach based on planned total sanitation outcomes;
- Convergence of resources is a key issue; MGNREGS has a varying scheme cycle and norms compared to NBA;
- Weak self-regulating systems to maintain sustainability of usage and NGP;

- Poor linkage with market for sanitation services (for new construction, repair, finance, and so on);
- Limited choices in technology; and
- Weakness in the monitoring system.

Block Level

- Low availability of technical staff;
- Capacity gaps in delivering saturation approach based on planned total sanitation outcomes reinforced by lack of planning, coordination, technical knowledge and motivation;
- Weak monitoring and audit system; and
- BRCs are fully functional and needs capacity and management support.

District Level

- Capacity gaps in delivering saturation approach based on planned total sanitation outcomes reinforced by lack of planning skills, timely financing, coordination, technical knowledge and motivation;
- Weakness in managing software program; incentives (NGP) sometimes implemented in target driven mode;
- Weak communication and capacity building strategy, especially to address emerging issues such as solid and liquid waste management;
- Staff is not fully trained to implemented demand driven projects;
- Integration of technical, human, financial resources lacking within institutions in planned way;
- Challenges in converging exiting supportive program resources – MGNREGS, Eco-Village Program, Bio-Village Program, Provision of Urban Amenities in Rural Areas ;
- Weak monitoring system;
- Output driven monitoring; weak systems of benchmarking/assessment of performance of the sector, program, institutions and outcomes; and
- Poor knowledge sharing.

State Level

- Sanitation related program/policy structures are weak;
- Lack of comprehensive M&E system to provide timely information for corrective actions;
- Proper quality assurance systems are not in place to address the sustainability issues;
- State-wide communication system in line with NBA mandate is required;
- Inadequate planning and execution skills among staff;
- Sector needs inputs on regulations which is lacking;
- Incentive structures need reforms (losing their value) to address sustainability;
- Institutions needs clarity, coordination, and technical resources;
- Sanitation market needs to be strengthened in term of products, services and finances;
- Poor quality of hardware and software inputs affecting the outcomes; and
- Lack of shared knowledge systems.

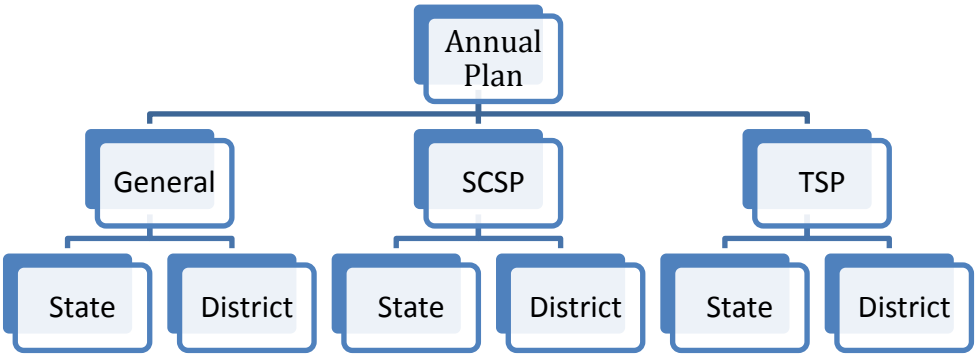
Annex 5: Assessment of Program Expenditure Framework

INDIA: Maharashtra Rural Water Supply and Sanitation Program

Introduction

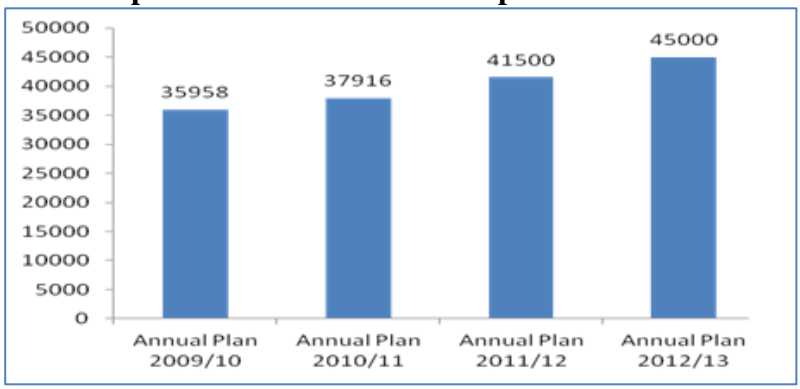
Maharashtra's Annual Plan of have three components: (i) General Plan; (ii) Scheduled Cast Sub-Plan (SCSP); and (iii) Tribal Sub-Plan (TSP). Each section of the Annual Plan earmarks funds for state-level and district-level schemes. The district plan size is determined on the assumed size of the Annual Plan and ceilings are communicated to the District Planning Committees (DPC) for preparing their annual plans. Figure 5.1 represents GoM's planning scheme.

Figure 5.1: GoM's Planning Scheme



The 12th Five Year Plan (2012-17) for Maharashtra proposes an outlay of INR 275,000 crore and the size of the state's Annual Plan for 2012-13 is INR 45,000 crore. Total expenditure for the state under the Plan components has increased to approximately INR 38,000 crore in 2010-11 from INR 13,000 crore in 2005-06. The state has spent more than 3 percent of its GSDP on average between 2005-06 and 2010-11 under the plan component, which is at a reasonable level compared to other states in India.

Figure 5.2: Total Expenditure under Plan Components from 2009-10 to 2012-13



RWSS Sector Expenditure

The majority of funding under the RWSS sector in Maharashtra is provided through Centrally Sponsored Schemes for water supply and sanitation. The total expenditure on the RWSS sector under Plan and Non-plan heads is given in Table 5.1. As the RWSS sector is classified under "Social and Community Services", the entire development expenditure is made under the Revenue Account as Grants-in-Aid received from the Centre and the state.

Table 5.1: Public Expenditure in Water Supply and Sanitation Sector

Total Expenditure (INR Crore)						
	2009/10		2010/11		2011/12	
	State	Central	State	Central	State	Central
Plan						
Revenue	471.67	736	412.71	786.1	505.74	726.8
Capital	15.52		1.83		3.4	
Non-Plan						
Revenue	160	-----	166.15	-----	191	----
Capital	355	-----	291.41	-----	361.8	----
Total	2002.2	736	872.2	786.1	1061.9	726.8

Source: Maharashtra Budget Y-Books, NRDWP, NBA MIS

Table 5.1 contains figures for revenue and capital expenditure on the RWSS sector, that is, budget codes 2215 and 4215 (please see below for the discussion on budget codes). All developmental expenditure on RWSS activities is accounted under the revenue account of the Plan component, whereas salaries and other recurrent expenditures are considered as revenue expenditure funded through by the state through the Non-Plan component.
The proposed budget for 2012-13 (which falls in the 12th Five Year Plan) for the RWSS sector (against NRDWP) as presented in the Annual Plan documents is INR 1,830 crore, which includes INR 210 crore as World Bank support under the proposed Program. The total amount of IDA support over the 12th Plan Period (2012-17) is expected to be INR 900 crore.

Program Expenditure Framework and Financial Performance under RWSS (Plan)

The state has been able to spend, on average, 73 percent of the approved program funds for the last three years and, as a result, there have been considerable opening balances under NRDWP from 2009-10 onwards. This reflects that program implementation has been moderately satisfactory during the last few years. Tables 5.3 and 5.4 represent the status of financial performance of the state under NRDWP and TSC (NBA) over the last few years. Maharashtra has been receiving, on average, more than INR 1,500 crore every year under NRDWP and it is imperative that measures be taken to improve expenditure efficiency. The situation under TSC is a concern, as Maharashtra was able to spend, on average, only 46 percent of available funds over the period 2008-12. Under the Program, institutional capacity building plans will be implemented to improve program efficiency and sustainable achievement of results[54].

[54] Some of the data may differ with the analysis of pervious sections due to difference in time periods of data collection and data sets of GoM and GOI

NRDWP State Sector Expenditure

The NRDWP state sector counterpart funds are allocated under five sub-plans. These are: (i) District Planning Commission (DPC), (ii) Mahajal, (iii) Other Tribal Sub Plan (OTSP), (iv) TSP and (v) Member of Parliament (MP)/Member of Legislative Assembly (MPLA) funds.

The Mahajal sub-plan has been discontinued by the state. DPC and Mahajal incurred the major share of expenditure under the state sector plans. Funds under the DPC component are primarily used for piped water supply, O&M, dug wells, bore wells and for installation of power pumps. The state plans its schemes in the rural water sector through the above mentioned sub-plans while matching the GoI funds under NRDWP. The funds are provided to WSSD through the budget code 2215 and the different departments involved in the sector include, apart from WSSD, Minorities Welfare department, Planning department (responsible for DPCs), and so on. The expenditure incurred under these components for 2010-11 and 2011-12 is shown in Table 5.2.

Table 5.2: NRDWP State Sector Expenditure

Particulars	Expenditure (INR Crores)	Release (INR Crores)
2010-11	**561.6**	**645.2**
DPC Genera;	238.9	287.2
Mahajal	239.9	280.9
OTSP	3.3	2.4
SCP	16.4	21.3
TSP	20.2	15.7
Others	42.7	37.4
2011-12	**610.7**	**784.7**
DPC Genenara;	274.5	360.5
Mahajal	274.9	314.7
OTSP	2.9	6.1
SCP	12.0	23.4
TSP	18.4	34.6
Others	27.7	45.3
Grand Total	**1,172.4**	**1,429.9**

Table 5.3: NRDWP Financial Progress (INR Crore)

Particulars	2009-10			2010-11			2011-12			2012-13			Average (up to 2011-12)
	CENTRAL	STATE	TOTAL	CENTRAL	STATE	TOTAL	CENTRAL	STATE	TOTAL	CENTRAL	STATE	TOTAL	
Opening Balance	196.5	-	196.5	232.4	124.9	357.3	237.1	208.4	445.5	320.1	174.0	494.1	
Release	647.8	477.6	1125.4	731.1	645.2	1376.3	718.4	660.7	1379.1	152.7	75.3	228.0	
Available Funds	844.3	477.6	1322.0	963.5	770.1	1733.6	955.4	869.1	1824.5	472.8	249.3	722.1	1626.7
Expenditure	618.6	402.6	1021.2	713.5	561.7	1275.2	642.8	610.7	1253.5	111.7	85.2	196.9	1183.3
% Expenditure	73.26%		77.25%	74.05%	72.94%	73.56%	67.28%	70.27%	68.70%	23.62%	34.19%	27.27%	73%

Source: Water Supply and Sanitation Department, GoM, 2012-13 figures are until June 2012.

Table 5.4: Financial Progress under NBA (TSC) (INR Crores)

Years	Opening Balance				Release during Year				Available funds	Exp. During Year				% Expenditure	Balance During Year			
	Center	State	Beneficiary	Total	Center	State	Beneficiary	Total		Center	State	Beneficiary	Total		Center	State	Beneficiary	Total
2008-09	49.1	37.1	33.5	119.7	35.3	54.7	6.2	96.2	215.9	50.6	33.7	8.5	92.9	43%	33.7	58.1	31.1	123.0
2009-10	33.7	58.1	31.1	123.0	98.9	38.9	23.2	161.1	284.1	117.4	45.0	15.4	177.8	63%	15.3	52.0	39.0	106.3
2010-11	15.3	52.0	39.0	106.3	129.1	39.9	15.5	184.4	290.7	72.6	26.1	6.1	104.8	36%	71.7	65.8	48.3	185.9
2011-12	71.7	65.8	48.3	185.9	58.0	23.4	16.4	97.8	283.7	83.9	26.4	8.2	118.5	42%	45.8	62.8	56.6	165.2
Average									269	Average			123.4	46%				

Source: Water Supply and Sanitation Department, GoM

Program Budget Structure and Classification

The primary budget code, which is used for program expenditure in the RWSS sector in Maharashtra, is 2215, which includes both rural and urban water supply and sanitation. Since water supply and sanitation is classified under the Social and Community Services category under the functional classification of budget activities, the major portion of developmental expenditure under RWSS services, including construction, are accounted under revenue accounts as expenditure incurred from funds received as Grants-in-Aid (both central and state funds). Under the capital account, budget code 4215 is used for capital outlay on RWSS and 4402 is used for capital outlay on soil and water conservation. A more detailed classification of the budget structure for Maharashtra WSSD is given in subsequent Annex.

GoM allocates external assistance for projects under separate budget lines. Funds under the first Jalswarajya project were also allocated as a separate budget line under the umbrella code of 2215. GoM and the World Bank have agreed to follow the same system under the Program to streamline accounting and fiduciary arrangements according to the government guidelines.

Sectoral Comparison of WSS with other Sectors in Maharashtra

The Water Supply and Sanitation (WSS) sector is included under "Social and Community Services" according to the functional classification of the budget. Other sectors included under this category are education, health, nutrition, housing, urban development, welfare of backward classes, labor and employment, and welfare of women and children. Just for comparison, a brief representation of the funds provided to RWSS and other sectors during the 11th Five Year Plan, 12th Five Year Plan and 2012-13 Annual Plan is given in Table 5.5.

Table 5.5: Funds provided to RWSS and Other Sectors during the 11th Five-Year Plan, 12th Five-Year Plan and 2012-13 Annual Plan

Sector	11th Plan Outlay /1	12th Plan Outlay /1	2012-13 Outlay /1
Water and Sanitation	4231	6073	947
General Education	4985	10313	1520
Public Health	5160	8222	1819
Urban Development	16163	21759	3111
Welfare of Women and Children	1018	1094	235

Comparison of Maharashtra WSS and other States

Under the NRDWP, the fund utilization rate of Maharashtra is relatively low when compared to states such as Punjab (98 percent), Kerala (90 percent) and Haryana (89 percent). On average, the opening balance for NRDWP in Maharashtra was over INR 200 crore during 2009-12 (Figure 5.3.)

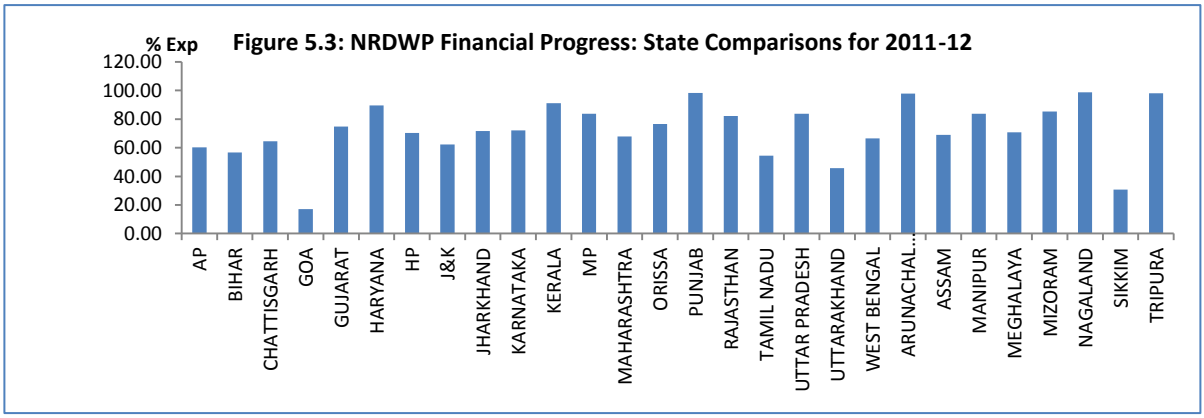
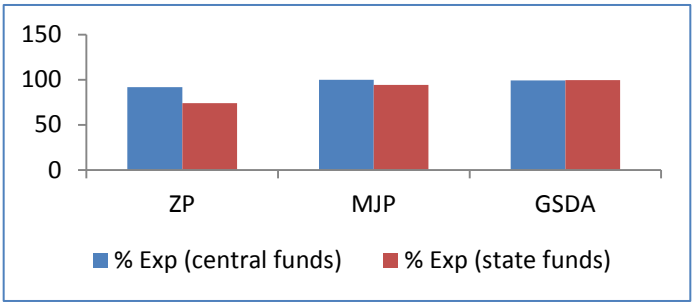


Figure 5.3: NRDWP Financial Progress: State Comparisons for 2011-12

EFFICIENCY of EXPENDITURE

Figure 5.4: Expenditure Efficiency of ZPs, MJP and GSDA



Expenditure efficiency of ZPs, MJP and GSDA: Data on financial progress for FY 2011-12 (till March 2012) shows that MJP and ZPs have performed relatively better than GSDA in the expenditure of the central share of funds allocated for NRDWP schemes. The sum of opening balances of all ZPs for 2011-12 was INR 105.16 crores for the state share whereas it was INR 42.8 crores for the central share. In percent terms, the ZPs were able to spend only 74 percent of the state allocation against 92 percent execution ratio for the central funds. The total available fund for 2011-12 was INR 1,456 crores out of which the state was able to spend only INR 1,218 crores, which is 85 percent of the total available funds. The average expenditure performance over the last three years up to 2011-12 was 73 percent under NRDWP and 46 percent under NBA (see Tables 5.3 and 5.4 above).

District comparisons of expenditures and opening balances: At the district level, utilization of central funds exceeded the rate of utilization of the state funds for the majority of districts for FY 2011-12. The average rate of utilization of state funds was approximately 72 percent while that of central funds was 87 percent across the districts. In a majority of districts, opening balances accruing from the state funds exceeded opening balances of the central funds (Figure 5.5). The districts, which recorded low levels of fund utilization, are Osmanabad, Nanded, Parbhani and Nandurbar (Figure 5.6). Accordingly, these districts also maintained significant opening balances for 2010-11 and 2011-12. Some districts such as Chandrapur, Raigad and Solapur had large opening balances under NBA/TSC throughout 2009-10 to 2011-12.

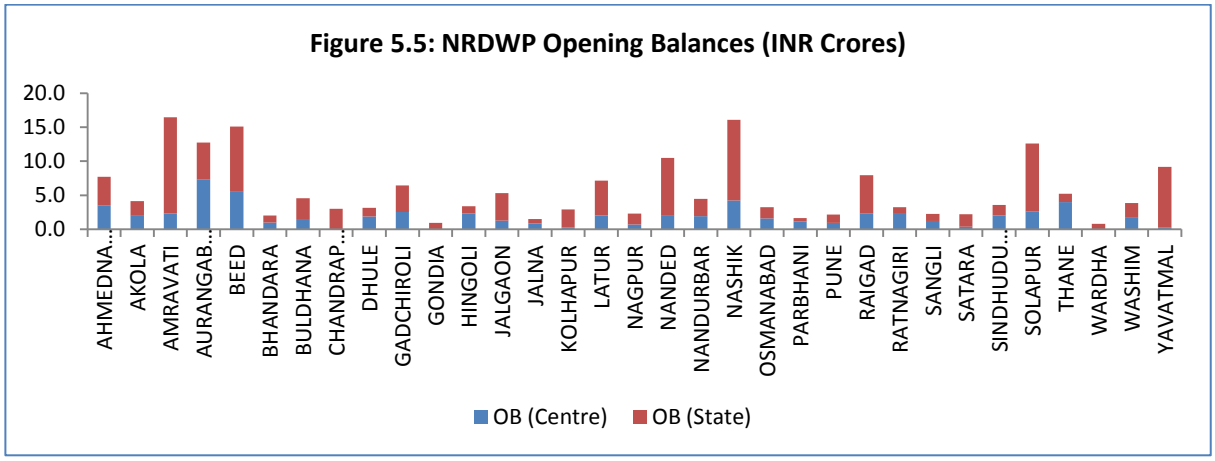


Figure 5.5: NRDWP Opening Balances (INR Crores)
20.0
15.0
10.0
5.0
0.0
AHMEDNA...
AKOLA
AMRAVATI
AURANGAB...
BEED
BHANDARA
BULDHANA
CHANDRAP...
DHULE
GADCHIROLI
GONDIA
HINGOLI
JALGAON
JALNA
KOLHAPUR
LATUR
NAGPUR
NANDED
NANDURBAR
NASHIK
OSMANABAD
PARBHANI
PUNE
RAIGAD
RATNAGIRI
SANGLI
SATARA
SINDHUDU...
SOLAPUR
THANE
WARDHA
WASHIM
YAVATMAL
OB (Centre)
OB (State)

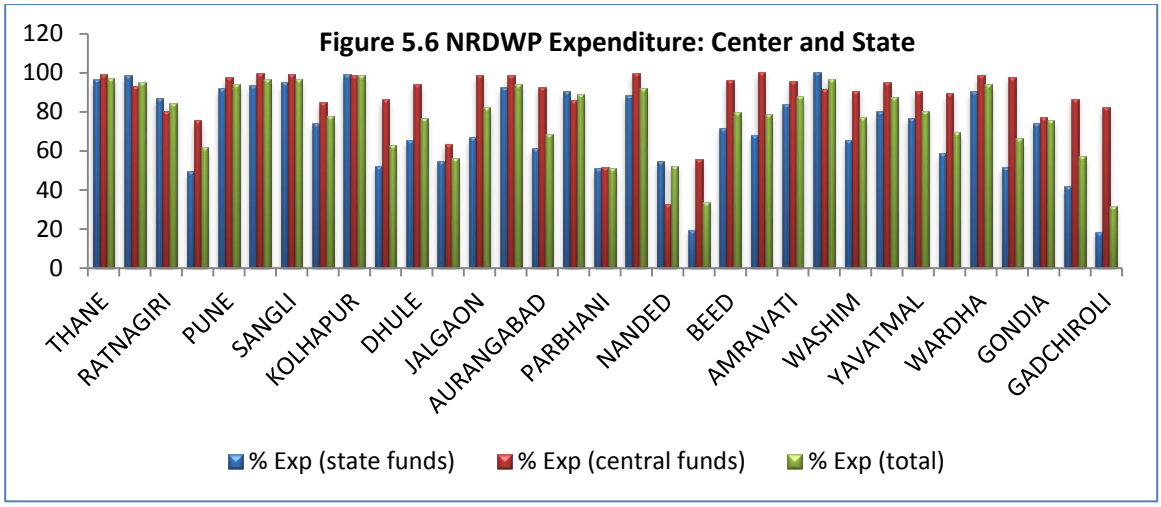
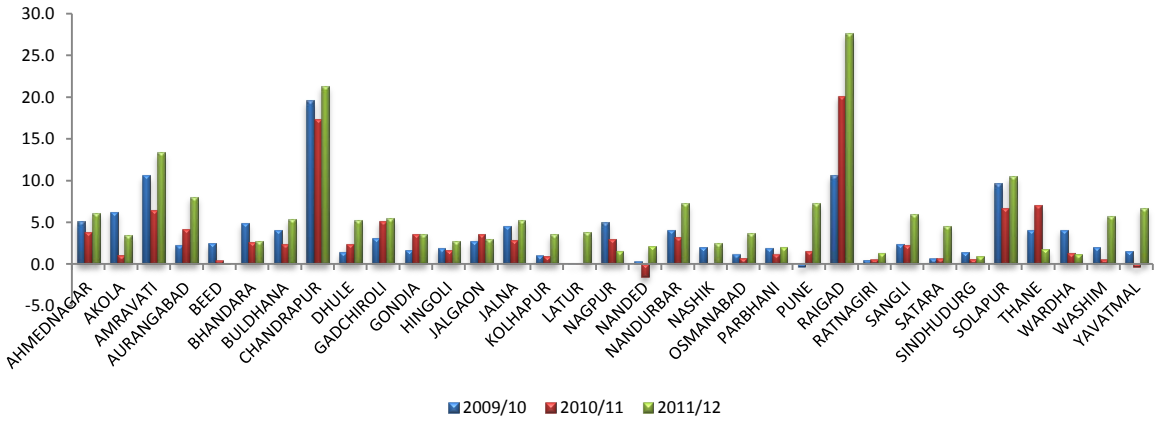


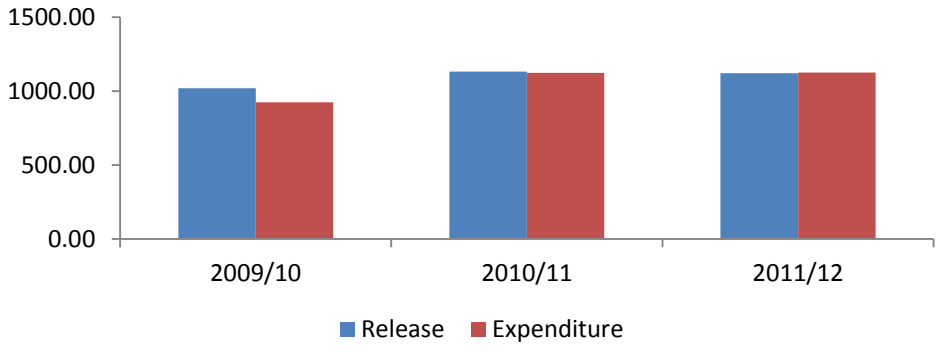
Figure 5.6 NRDWP Expenditure: Center and State
120
100
80
60
40
20
0
THANE
RATNAGIRI
PUNE
SANGLI
KOLHAPUR
DHULE
JALGAON
AURANGABAD
PARBHANI
NANDED
BEED
AMRAVATI
WASHIM
YAVATMAL
WARDHA
GONDIA
GADCHIROLI
% Exp (state funds)
% Exp (central funds)
% Exp (total)

Figure 5.7: District Opening Balances under TSC (INR Crore)



Efficiency of program expenditure on RWSS: As previously mentioned, developmental (program) expenditure under NRDWP is primarily classified under revenue expenditure. Capital outlays under RWSS are made from the Non-Plan component of the state budget. Under capital outlay on RWSS, about INR 365 crore was disbursed as share capital contribution to MJP for 2011-12. In budget 2012-13, INR 155 crore is allocated to MJP as share capital contribution. Financial reports for the last three years (2009-10, 2010-11 and 2011-12) from the NRDWP MIS reflect a steady rise in release of state funds during these three years. Performance of the ZPs was better in terms of utilization of the central share of program funds compared to the state share. However, the state incurred large unspent balances of central funds allocated to NRDWP support activities, Water quality monitoring and surveillance activities and GSDA at the beginning of FY 2011-12. The total opening balance for the state at the beginning of FY 2011-12 was INR 445 crores that included INR 237 crores of central funds and INR 208 crores of state funds. The release of central funds declined marginally in FY 2011-12 compared to FY 2010-11 owing to this large opening balance of NRDWP program funds.

Figure 5.8: NRDWP Program Release and Expenditure (INR Crore)

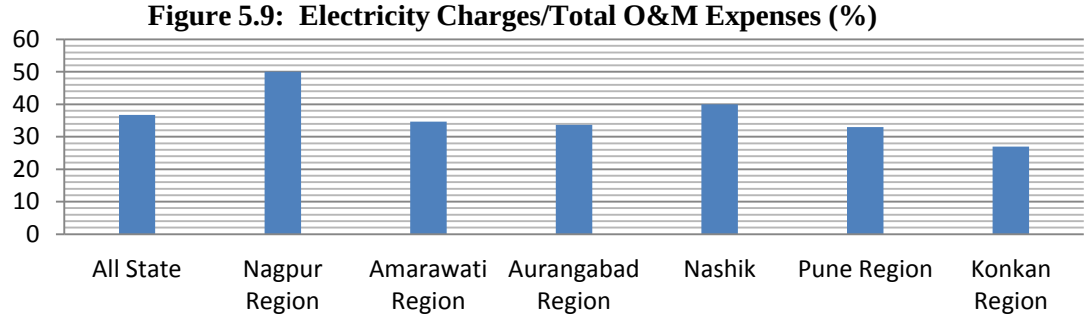


O&M expenditure: Under NRDWP, 15 percent of the total funds are mandated to be provided for O&M subsidies. The O&M subsidies are shared on an equal (50:50) ratio between the central and state governments. The 13th Finance Commission has recommended separate grants to PRIs which could be used to partly meet the O&M expenditures incurred by the PRIs. It is expected that all water supply schemes within GPs shall be maintained by the beneficiaries. The multi-village schemes and the regional schemes are maintained by the ZPs or other concerned agencies such as MJP. Within the broader policy framework of 100 percent O&M cost to be borne by the GPs, the state provides O&M subsidies using the funds coming from the center and state, particularly for high cost schemes, for subsidizing 50 percent of electricity charges for all piped water supply schemes and for undertaking renewal/minor rehabilitation measures by the ZPs.

Analysis of O&M expenditure of individual piped water supply schemes (PWSs): Information on O&M needs, expenditure and actual fund utilization was not available for the entire sector. Some information was available within the current MIS systems of GoM but the reliability of this data is also doubtful. Thus, the analysis undertaken in this section is not fully accurate and is only indicative. This also highlight the need for strengthening the MIS systems to capture more accurate information on O&M expenditure, which will help the policy makers in taking timely and appropriate decision.

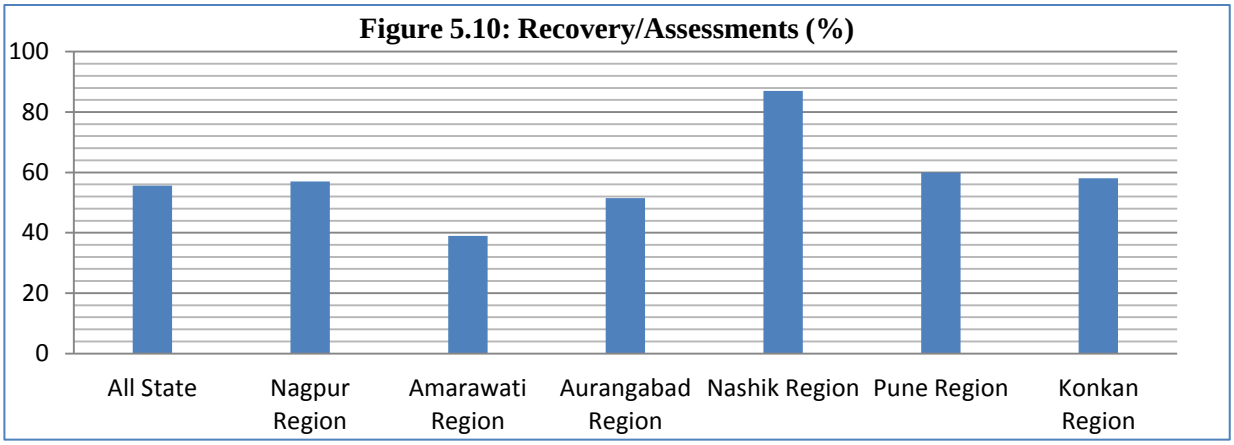
Maharashtra has approximately 15,800 individual PWSs, which are currently operational. Annual O&M expenditure for almost 60 percent of these schemes is estimated to be between INR 25,000- 100, 000 (US$450-1,820). Approximately 2 percent of these schemes require more than INR 500,000 (US$9,100) annually as O&M expenses. Electricity charges constitute the major portion of O&M expenditures for all districts. Establishment and other costs involving repairs and chemicals form the rest of O&M expenditure. Data collected from MJP show that, on average, almost 40 percent of total O&M expenditure is spent on power charges. In some districts, these charges are found to be close to 70 percent of the total O&M expenses (and hence the subsidy policy to enhance operational sustainability).

Figure 5.9: Electricity Charges/Total O&M Expenses (%)



Low collection efficiency: The primary problem with the sustainability of the water supply schemes is the low recovery rate of user charges. The GPs are unable to maintain the schemes and are largely dependent on state arrears and subsidies to sustain the O&M expenditures. Data from MJP and WSSD have shown that on average, across the districts, the GPs are able

to recover between 40-60 percent of total assessments with some better performing regions, such as Nashik, where recovery rate average was more than 80 percent.



Estimates of scheme-level unit costs under the Program: NRDWP annual plans for 2012-13 and 2013-14 have identified approximately 13,286 habitations under various RWS schemes. The average per capita costs of groundwater schemes, surface water schemes and tapping are INR 2,938.63, INR 6,503.18 and INR 2,959.58, respectively.

New state policy on O&M expenditures: Presently, tariffs are not at a level to meet O&M expenditure; the system suffers from poor collection as well. Electricity charges constitute approximately between 30-70 percent of total O&M expenditure. Considering this situation, the state government has developed a new O&M policy to subsidize electricity charges. The RWS schemes are likely to be financially sustainable because of the electricity subsidy provided by GoM to the GPs. This policy will enable the GPs to receive rebates ranging between 40-60 percent for single PWS schemes and 40-75 percent for regional RWS schemes on their total electricity charges. However, electricity subsidies will be paid directly to the power utilities, only when the GPs mobilize and pay at least 50 percent of the electricity charges. The sustainability of O&M is an important policy issue that merits more discussion for a viable policy framework. There is a need to examine how O&M requirements are met with increasing participation from beneficiaries. Given the large-scale expansion envisaged in the sector, the subsidy element can only be projected to increase making sustainability a very important policy issue.

Program Financial Sustainability and Funding Predictability

GoM has been able to sustain a balanced fiscal stance from 2006-07 onwards. The state has maintained a steady rise in revenue receipts. On average, revenue receipts to GSDP ratio for Maharashtra stands at 10.5 percent for the period 2005-06 to 2011-12. Interest payments as a proportion of revenue receipts remained below 15 percent for the 2010-12 period and the state recorded fiscal deficit numbers well below the 3 percent threshold mandated by the Fiscal Responsibility and Budget Management Act for the same period. GoI has committed to increase funding for the RWSS sector at a national scale and GoM has sufficient fiscal space to match the spending on RWSS over the medium term (Table 5.6). GoM has prepared a

medium-term expenditure framework for the WSS sector, which will be shared, with the World Bank team for further discussions.

Table 5.6: GoM Medium-term Fiscal Indicators

Item	Actuals		Budget Estimates (BE)	Revised Estimates (RE)	Budget Estimates (BE)	Target for Next Two Years	
	2009/10	2010/11	2011/12	2011/12	2012/13	2013/14	2014/15
Revenue surplus/deficit as percentage of GSDP	-0.92	-0.06	0.00	-0.17	0.01	0.00	0.00
Fiscal deficit as percentage of GSDP	3.01	1.77	1.93	1.73	1.72	1.73	1.77
Tax revenue as percentage of GSDP	7.76	8.09	8.23	8.34	8.12	8.14	8.16
Total debt stock and percentage of GSDP	20.91	19.01	19.17	19.10	18.84	18.56	18.34
Total contingent liabilities as percentage of GSDP	2.02	1.41	1.35	1.25	1.11	0.98	0.88
Total contingent liabilities as percentage of revenue receipts	20.19	14.21	13.14	11.91	10.89	9.50	8.47
Interest payment as percentage of revenue receipts	17.07	14.78	14.85	13.81	13.55	14.94	14.74

Source: GoM Budget Documents.

Attachment 5A: Budget Codes for Water Supply and Sanitation Sector

INDIA: Maharashtra Rural Water Supply and Sanitation Program

Maharashtra's WSSD has nine major budget heads according to the latest classification under Budget 2012-13. Expenditure under five of these heads is incurred in the Revenue Account and the rest falls under Capital Account and Debt Heads. The primary classification according to the major heads of account is:

Revenue Account

i. 2049: Interest Payments
ii. 2215: Water Supply and Sanitation
iii. 2235: Social Securities and Welfare
iv. 2702: Minor Irrigation
v. 3451: Secretariat (Economic Services)

Capital Account

vi. 4215: Capital Outlay on Water Supply and Sanitation
vii. 4402: Capital Outlay on Soil and Water Conservation.

Debt Heads

viii. 6215: Loans for Water Supply and Sanitation
ix. 7610: Loans to Government Servants

All expenditure on RWSS is recorded under major head 2215. Under 2215, sectoral codes for water supply and sewerage and sanitation are 01 and 02, respectively. Further, under water supply (01); rural water supply programs are coded as 102 and urban water supply is coded as 101. Similarly, under sanitation and sewerage, the sub-sectors are; sanitation and services (105) and sewerage services (107). Under water supply and sanitation (Budget head 2215) and capital outlay on WSS (Budget head 4215), the majority of expenditures are classified under the following heads:

31: Grants-in-Aid (Non-Salary)
36: Grants-in-Aid (Salaries)
26: Advertising and Publicity
33: Subsidy
50: Other Charges
54: Investments

World Bank funds for Jalswarajya-I have always been allotted under the allotment code (06) under RWSS. Under Budget 2012-13, a provisional amount of INR 0.1 million is approved for the Program under the same head. The list of activities/schemes funded is coded against the respective allotment codes and recorded under the major and minor demand heads. For the demand head 4215 (capital outlay on WSS), funds are primarily directed towards share capital contribution to MJP under urban water supply (101). Funds under demand head 4402 flows through GSDA.

Annex 6: Current Institutional Set-up for RWSS in Maharashtra

INDIA: Maharashtra Rural Water Supply and Sanitation Program

1. **Introduction:** Maharashtra is the second most populated state in India with a population of 112.4 million. The rural population is about 61.54 million (54.75 percent). The state is divided into six regions, 35 districts, and 351 blocks. The rural population resides in 29,916 GPs comprising 98,842 habitations.

The governance and administration within the state and also the RWSS sector is highly decentralized.[55] The various tiers of governance and administration for the overall state and RWSS are captured in Table 6.1.

Table 6.1: Administration Structure of RWSS in Maharashtra

Level	Governance and Administration Structure	RWSS Management Structure	Key Role of RWSS Structure
State	Cabinet, various ministries/ departments state technical agencies	Minister WSS	Overall in charge of the sector
		SWSM	Special committee headed by Chief Secretary to guide on policies and review progress
		WSSD	The key department for RWSS headed by Principal Secretary. Responsible for policy making and sector management
		WSSO	Sector monitoring and software management unit
		MJP	Technical agency for designing and implementing complex water supply and sewerage schemes above INR 500 million
		GSDA	Technical agency for groundwater monitoring and supporting management
6 Regions	Regional Commissioner	Regional Monitoring Unit under Regional Commissioner	A unit under Regional Commissioner to closely monitor performance of districts
ZPs/ Districts 35ZPs	ZPs with about 13-16 specialized units under the CEO, the administrative head President ZP is the	DWSM	Overall policy direction and monitoring. Headed by President, ZP
		Water Supply Department	Support GPs in design and execution of water supply schemes
		DWSM Support Unit	Manage all the capacity building, training and IEC activities

[55] The 73rd Constitutional Amendment, 1993, mandated empowering of the three-tier PRIs at the district, block and village levels. GoM adopted most of these recommendations and devolved the rural water supply and sanitation functions to PRIs as reflected in the Maharashtra Zila Parishad and Panchayat Samitis Act, 1961 (ZPs Act) and the Bombay Village Panchayat Act, 1958 (GPs Act).

Level	Governance and Administration Structure	RWSS Management Structure	Key Role of RWSS Structure
	political head and supported by subject committees and general body	DPHL	Water quality sample testing
		Chief Accounts and Finance Officer	Finance management and audits
Panchayat Samitis (Blocks) 351 Blocks	The political head is the President, Panchayat Samiti and BDO is the administrative head. There are 6-7 units under BDO	BRC	To provide hands-on support to GPs for capacity building, monitoring, IEC activities
		Sub-Division Offices	The engineering units at block level to support surveys, planning, project execution, verifying bills, etc.
GPs 27,952 GPs	GPs and sub-committees	GP	Responsible for managing water and sanitation service provision as per GoM rules
		Village Health, Nutrition, Water Supply and Sanitation Committee (VHNWSC), a sub-committee of GP	Responsible for community mobilization, public contribution, design and execution of schemes, O&M
		SAC	Monitor activities of VHNWSC and check issues of equity, inclusion etc.
		Gram Sabha	Nomination of committee members Approval to proposals, plans and expenditure

State Level

2. **Ministry of Water Supply and Sanitation:** The apex body at the state level that is responsible for guiding and ensuring effective rural and urban water supply and sanitation sector management. The Ministry is headed by a full-time cabinet minister and a minister for state. Before the creation of the Ministry in 1996, the responsibility was split between the Ministry of Rural Development (for RWSS issues) and Ministry of Urban Development (for urban water supply and sanitation issues).

3. **SWSM:** The SWSM is the key decision-making body on new policies and programs, and recommends these to the Minister. The SWSM was registered under the Societies Act 1860 (Clause 21) on February 10, 2010 and is headed by the Chief Secretary of the state. There are two committees within the SWSM: Governing Committee and Executive Committee. The composition and roles of both the committees is given in Table 6.2.

Table 6.2: Composition and roles of SWSM's Governing Committee and Executive Committee

Committee	Members	Responsibilities
Governing Committee	• Chief Secretary - Chairman, • Principal Secretary (WSSD) • Secretaries of Finance, Planning, Urban Development, Rural Development, Education, Public Health, Environment, Information and Publicity • Representative of DDWS, GoI • Two sector specialists	• Advise on implementation of NRDWP, NGP • Policy decisions on GoI programs, externally aided projects • Convergence of programs • Coordination and cooperation of agencies • Physical and financial progress monitoring • Quality assurance of infrastructures created under GoI programs • Guide EIC and capacity building programs • Monitor and review the functioning of WSSO and SLSC
Executive Committee	• Principal Secretary (WSSD) (Chairman) • Dy. Secretary/Joint Secretary (WSSD) • Managing Director (WSSSO) • Director (GSDA) • Member Secretary (MJP) • Dy. Director (Information and Publicity), Chief Engineer and Dy. Secretary (WSSD), Dy. Secretaries of PHD, Education, Social Justice, Finance, Planning, Rural Development and sector specialists • Six NGO representatives	• Assist and advise Governing Committee of the SWSM • Recruitment of staff for WSSO • Undertake measures for effective functioning of the SWSM • Third party evaluation of the functioning of SWSM

4. **WSSD:** The key GoM unit under the Ministry of Water Supply and Sanitation to support its functions. The WSSD is headed by a full time Principal Secretary and supported by other officers. The WSSD is mainly responsible for policymaking, funds mobilization, overall monitoring of sector progress and coordination with other ministries, departments, bilateral agencies and civil society organizations.

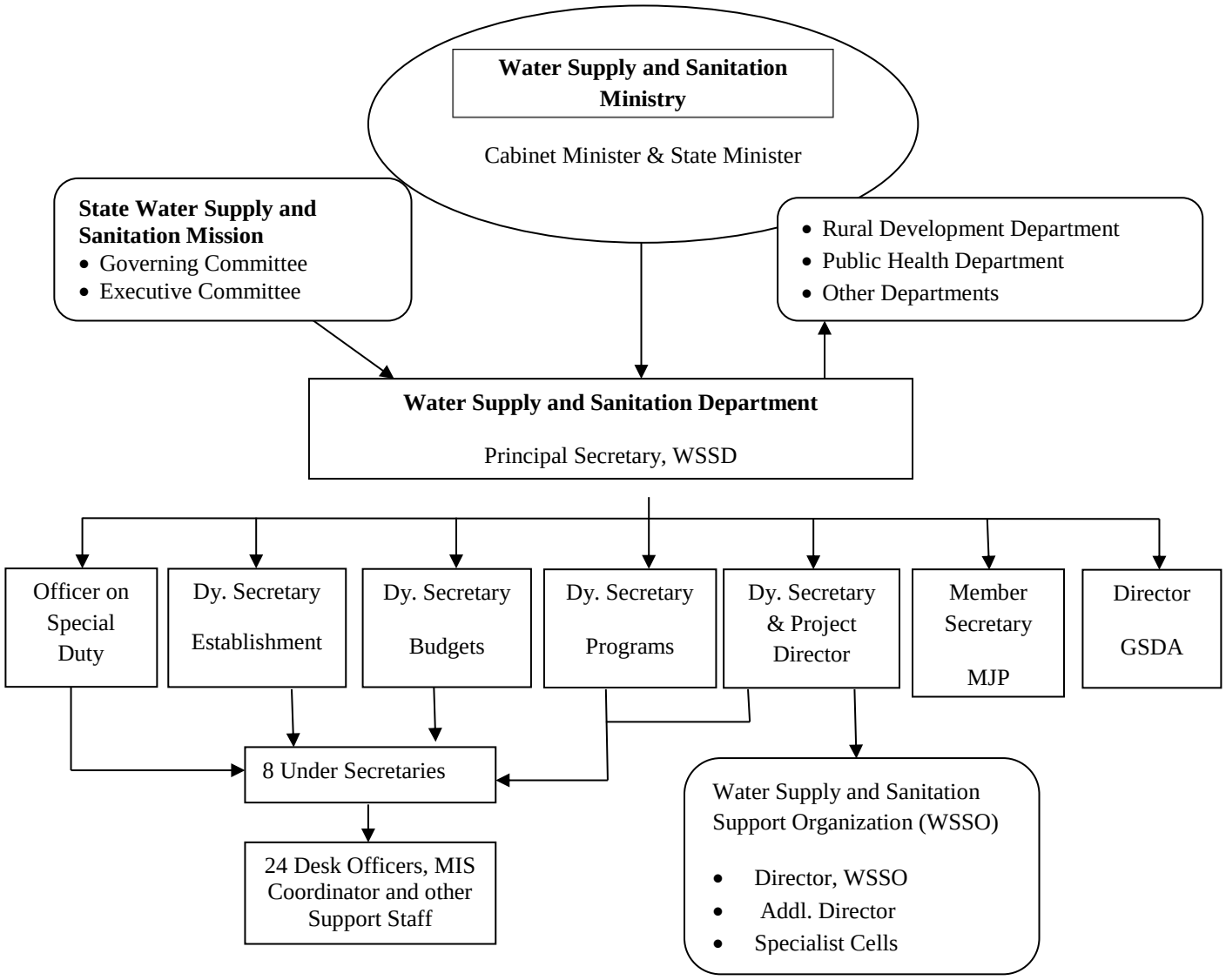
The WSSD is mainly supported by the following units:

5. **State Secretariat:** The Secretariat is a well-defined unit and is capacitated to perform its functions in a satisfactory manner. The number of policy decisions and detailed guidelines developed by the Secretariat over the last five years indicates the vitality of the unit. Because of the good work of this unit, Maharashtra is seen as one of the leading states in the India on policy development and decentralization of the sector.

The Secretariat supports the day-to-day functioning of the WSSD and the Ministry. The Secretariat staff members are from the state-level cadre and play a crucial role in drafting policy decisions, monitoring progress and preparing briefing reports. They also coordinate

with other ministries and GoI for issues related to policy matters and funds. The Secretariat is headed by the Principal Secretary, WSSD, and is supported by others as shown in Figure 6.1.

Figure 6.1: Structure of State-level Institutional Setup



6. **WSSO:** The WSSO is the state level agency to guide and monitor activities related to capacity building, communications, sector monitoring, water quality monitoring, promotion of sanitation, and support to WSSD in policymaking and coordination with key sector agencies. The Deputy Secretary, WSSD, is the overall in-charge for WSSO operations. There are eight cells under WSSO: water supply, water quality, sanitation and M&E, IEC, R&D and Publications, HRD, Accounts, and Establishment. There are two parallel heads of WSSO: Addl. Director and Director. The former heads the water supply cell where all programs of NRDWP are handled. The Director heads all other cells.

The WSSO is a very new unit, which is an amalgamation of CCDU & Bharat Nirman cell working until 2011.[56] While the structure of WSSO with eight cells is good, there are skill gaps in the following areas: solid waste management, liquid waste management, environmental assessments, water quality monitoring and treatment technologies, gender specialization, impact evaluations. The Program will support bridging key skill gaps.

The MJP and GSDA are the other two state-level technical agencies under the WSSD.

7. **MJP:** Established in 1976, through a state Act, the MJP is the state Water Board with a high level of technical expertise. Before decentralization reforms were implemented from the year 2000, MJP was responsible for need identification, design and execution of WSS projects in the state. Post decentralization reforms, these functions were transferred to PRIs. Along with functions, some staff of MJP was also transferred to ZPs. MJP's current role is limited to:

- Completing a few on-going regional/single-village schemes;
- O&M of a few regional schemes that were not handed over to ZPs and a few urban schemes that were not handed over to Urban Local Bodies;
- Design and execution of new schemes costing over INR 50 million, in coordination with ZP/GPs; and
- Design and implementation of about 90 liquid waste management schemes.[57]

As of date (March 2012), MJP has 7154 employees including 1560 water sector engineers. The rest comprise of management, administration and semi-skilled staff (valve operators, pump operators etc.)[58]. In the past, MJP was the sole state-level nodal agency for channeling grants and loans for the WSS sector. Owing to the devolution of WSS functions to local governments, in both urban and rural sectors, the funds are directly passed on the local governments and MJP does not undertake this function now. However, the loans raised in the past, mainly for the urban local governments, are still in the books of accounts of MJP and MJP plays the financial intermediary role in repaying the loans.[59] Till 2011, GoI funds for the rural sector, under NRDWP, were coming into the books of accounts of MJP and then transferred to ZPs. Since 2012, the NRDWP funds are received into a state-level account with WSSO and then disbursed to ZPs as per annual action plans. Post decentralization reforms, in 2011, MJP reorganized itself into four verticals and allocated the staff accordingly for improving its effectiveness:

- Urban and Rural Water Supply Projects Wing: Plan, design and execute new water supply schemes in both rural and urban areas. Also, complete about 242 schemes (covering 1,645 villages and 1,555 habitations) that are under construction as on 2010-

[56] The different units were: NRDWP Cell, TSC Cell. Water Quality Monitoring Cell, Reform Support and Project Management Unit–essentially managing Jalswrajya-1

[57] The National Bank for Agriculture and Rural Development granted an amount of INR 1,000 million to MJP, in 2010, to design and execute liquid waste management projects in about 90 large villages with populations more than 15,000. MJP is currently in the process of developing detailed designs and execution plans.

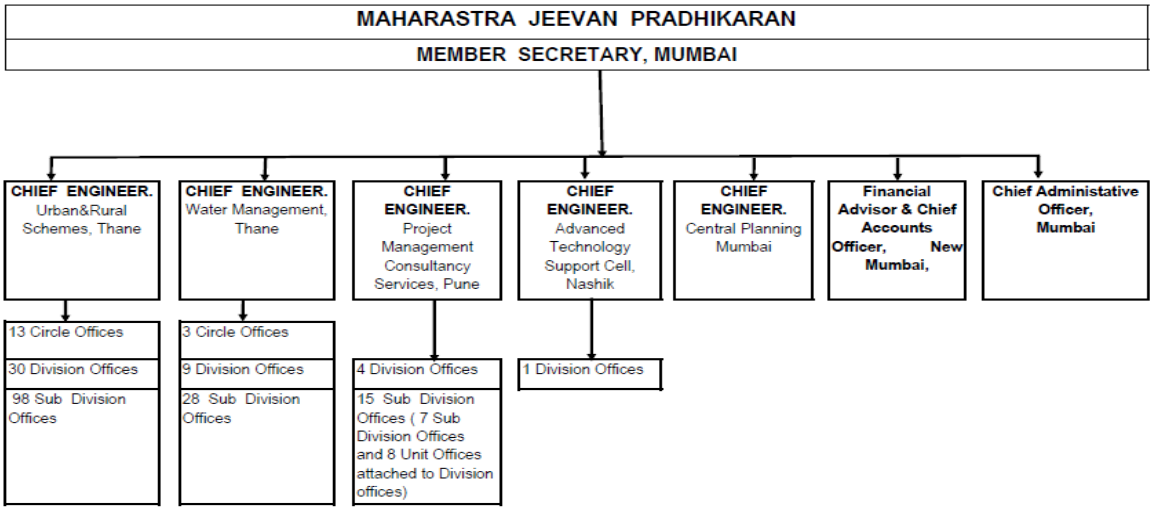
[58] MJP website; http://www.mjp.gov.in/en/page/AboutUs.aspx

[59] MJP's books of accounts show an outstanding loan of INR 11,900 million due from Urban Local Bodies, as per the annual statement of 2007-08.

11.[60] Besides, this wing will also design and execute all RWS schemes costing above INR 50 million, in coordination with the concerned ZPs and GPs;

- Water Management Wing: Operate and maintain the water supply schemes with MJP and any new schemes that are given to it. Currently, this wing handles operations of about 25 urban schemes and about eight regional schemes;
- Project Management Services: Undertake project management under various programs of GoI/ GoM through appropriate contracts and public private partnership models; and
- Advanced Technology Wing: Explore and promote new technologies in the field of water supply, wastewater management, O&M, and so on. The wastewater management schemes in 90 GPs are handled by this wing.
- The restructured organogram of MJP is given in Figure 6.2:[61]

Figure 6.2: Organogram of MJP



As per the GoM rules and procedures for the rural water sector, all individual schemes costing more than INR 50 million and mulit-village schemes costing more than INR 30 million are to be implemented through the MJP structure (Urban and Rural Water Supply Schemes unit). The same rules and procedures shall be adopted for the Program also. As most of the water supply schemes in peri-urban villages are likely to cost over INR 50 million scheme, MJP will lead the execution of these schemes. In addition, MJP will also be responsible for leading the sullage management activities in the Program.

8. **MEETRA:** MJP also has a research and training wing called MEETRA, located in Nashik[62] over a land admeasuring 5 acres. MEETRA provides technical training to various

[60] MJP website. Note on rural water supply schemes.
[61] As depicted on the MJP website:www.mjp.gov.in.
[62] MJP developed a training center named Nashik Research and Training Center in 1984 with funds from the World Bank project to develop training and research capacities. This center has been providing training to grassroots workers since then. In recent years, MJP and WSSD realized a need for a capacitated center to develop advanced courses for various levels of technical personnel and also undertake advanced research. Hence, it was decided to strengthen the Nashik center and rechristened it as MEETRA in 2012. WSSD seeks World Bank support in developing MEETRA into a center for excellence.

levels of operational personnel (operators, engineers, and so on) on technical aspects and information technology aspects. The center has the following assets:

- Past experience in conducting courses for grassroots people (operators, junior engineers, and so on);
- Hydraulic laboratory and several life size models to explain O&M aspects;
- Classrooms, computer rooms, seminar halls, and so on; and
- Residential accommodation for up to 60 participants, on a sharing basis.

MEETRA provides training to about 1,500-2,000 participants in a year, through several short-term courses (three to four days). The courses cover topics related to: water audit, energy audit, pipe designs, computer aided designs, 24x7 designs, RTI, accounts, and so on.

MJP plans to strengthen the center to eventually become a recognized center for excellence and deemed university. MJP is in the process of hiring an expert consultant organization to develop a pragmatic business plan for MEETRA for the future.

The Program will support the plan of developing MEETRA into a center of excellence. A fund of INR 500 million is allocated for this and detailed plans of actions will be developed in the first six months of the project.

9. **GSDA: G**SDA was established in 1971 to support the state in matters related to groundwater management. In the initial years, GSDA was undertaking activities related to groundwater mapping, exploration and drilling. The drilling units have been transferred to ZPs in the year 2000. The GSDA was also responsible for maintenance of hand pumps through YANTRIKI (Technical) Units, which were also transferred to ZPs in the year 2000.

The current major roles of GSDA are:

- Groundwater assessment and mapping through fixed observation stations. These assessments demarcate the mini-watersheds into safe zones, semi-critical zones, critical zones and over-exploited zones;
- Groundwater quality monitoring by measuring samples from observation stations and recording them in software. GSDA has six water testing laboratories to undertake these tests;
- Technical assistance to PRIs on groundwater development and conservations. This includes certification of new sources to be developed for water supply projects;
- Technical advice to the District Collector during scarcity periods on sites for temporary wells, temporary closing of some wells that affect levels in drinking water sources, and so on, as prescribed by the Groundwater Act, 1993. GSDA also develops Scarcity Prediction Reports for every district every year to enable advanced planning of scarcity measures;
- R&D on technologies and approaches to groundwater exploitation and conservations; and
- Demonstration of new approaches such as aquifer management, water security planning, and so on.

In future, GSDA will also act as the technical advisor to the Maharashtra Water Resources Regulatory Authority[63] on matters related to regulation of groundwater, as per the newly approved Groundwater Act.[64]

Headquartered in Pune, GSDA has six Regional and 33 District offices across the state. GSDA is headed by a Director at the state level who reports to the Principal Secretary of the WSSD. Regional offices are located at the regional headquarters (Pune, Konkan-Navi Mumbai, Nashik, Aurangabad, Amravati, Nagpur) headed by Deputy Directors. The district office is headed by a Senior Geologist. The staff members transferred to ZPs are under the administrative control of GSDA.

Out of the 1,365 sanctioned positions within GSDA,[65] 892 are technical positions and 473 are non-technical positions. GSDA currently (March 2012) has about 1,005 staff on its payrolls. In addition, GoM sanctioned 869 positions within ZPs (mainly of geologists) to be deputed from GSDA. Currently, there are 521 staff members within the ZPs. Thus the overall shortage, against sanctioned positions, is about 714 numbers (365 within GSDA and 349 members within ZPs).

GSDA is one of the unique groundwater knowledge institutions at the state level. As most of the rural water supply is dependent on groundwater, besides other major users such as agriculture, monitoring and managing declining groundwater quantities assumes high significance. While GSDA is coping with the ever increasing demands, its overall capacity – in terms of numbers, equipment and MIS systems -- needs to be enhanced.

The following are the key areas of capacity building:

- *Groundwater mapping is currently based on 3,828 observation wells. This needs to be scientifically expanded to get a more realistic and micro picture of the groundwater situation. GSDA is developing a proposal on this;*
- *The six water testing laboratories are outdated and need to be strengthened to enhance their capacity to test more samples, as required for improved groundwater monitoring;*
- *The systems and software that captures groundwater and water quality data analyses need to be upgraded; and*
- *Staffing gaps to undertake existing functions and future functions needs to be bridged.*

[63] GoM created a state water regulator – Maharashtra Water Resources Regulatory Authority in 2005 through the Maharashtra Water Resources Regulatory Authority Act, 2005. Its main roles are: estimation of water resources, allocation of entitlements, fixing bulk prices, and clearing large projects. Till date, the regulator was focusing on surface water only. The new Groundwater Act empowers it to work on issues related to groundwater regulation and GSDA is nominated as its technical advisor on groundwater aspects.

[64] As detailed in the Maharashtra Groundwater (Development and Management) Act, 2012, approved by GoM in 2012. This Act has been approved in May 2012 and the final operational rules and guidelines are being developed.

[65] GoM's GR on GSDA staffing, 2003.

The Program will support first three gaps and work with GoM in bridging the skills gaps through state programs.

10. **PHD:** PHD plays a significant role in water quality monitoring and surveillance. The WSSD passes on funds to PHD for this purpose, annually. The PHD has a four-tier set up for water quality testing - state level, regional level, district level and block level. An analysis of the laboratory set up is given in Table 6.3.

Table 6.3: PHD Laboratory Set Up

Laboratory Type	Strengths	Weaknesses
State Public Health Laboratory	National Accreditation Board for Testing and Calibration Laboratories (NABL)[66] accredited, recognized by GoI/ Courts, etc., as a referral lab; advanced tests (metal, pesticides, etc.) possible	Staff strength, instruments
Regional Public Health Labs	Two labs in Nagpur and Aurnagabad Higher level of testing than DPHLs	Staff, equipment
District Public Health Labs	27 labs (29 including the above 2) Conduct regular water quality tests for chemical and bacteriological contaminations Good number of bacteriological tests conducted	Staff strength is not fully available Space constraints in some cases Equipment/tools Inability to focus on bacteriological testing due to bacteriological load
Mini Labs (block level in rural hospitals)	For undertaking bacteriological tests using FTKs Established in all 351 blocks	Basic set up Needs up gradation to take up bacteriological testing to reduce load on DPHls

The Primary Healthcare Centers located at the sub-block level (usually one center for about 20,000 population) coordinate water testing and undertakes sanitary surveys. Based on the sanitary survey, the center rates the environmental cleanliness and related risks to water quality. The following cards are issued;

- Green Card – implies satisfactory situation and almost no risk;
- Yellow Card – implies moderate risk to water quality and requires a few measures;
- Red Card – implies high risk to water quality and requires immediate interventions such as boundary walls and covering of wells, platforms and soak pits near hand pumps, clearing off garbage/animal waste dumps close to water sources, and so on.

[66] NABL is an autonomous Board under the Ministry of Science and Technology, GoI. NABL has been established with the objective to provide government, industry associations and industry in general with a scheme for third-party assessment of the quality and technical competence of testing and calibration laboratories. GoI has authorized NABL as the accreditation body for Testing and Calibration Laboratories. Its accreditation system complies with ISO/IEC 17011:2004 and Asia Pacific Laboratory Accreditation Cooperation MR001.

- In the event of the GP getting a Red Card, the concerned departments are also alerted and required to follow up with the GP to undertake necessary actions and improve cleanliness around drinking water sources. This is a good system and should be continued.

The Deputy Director-Labs of PHD is the overall in-charge of all the above labs. The DPHLs are under the administrative supervision of Deputy Director-Labs. However, DPHLs report the data to the CEO – the administrative head to the ZP at the district level, on development activities; and BDOs – a similar position at the sub-district level --for their information and further actions.

While this is a good set up, the system is not able to cope with the required workload, if it were to comply with the 'National Water Quality Monitoring Protocols for Drinking Water.'[67] The number of samples to be tested (for 281,941 drinking water sources) is very high. Presently, all the labs are achieving about 900,000 bacteriological tests and 14,000 chemical tests. Moreover, out of the 321 sanctioned posts in all regional and district-level labs, there 59 positions (18 percent) are vacant.

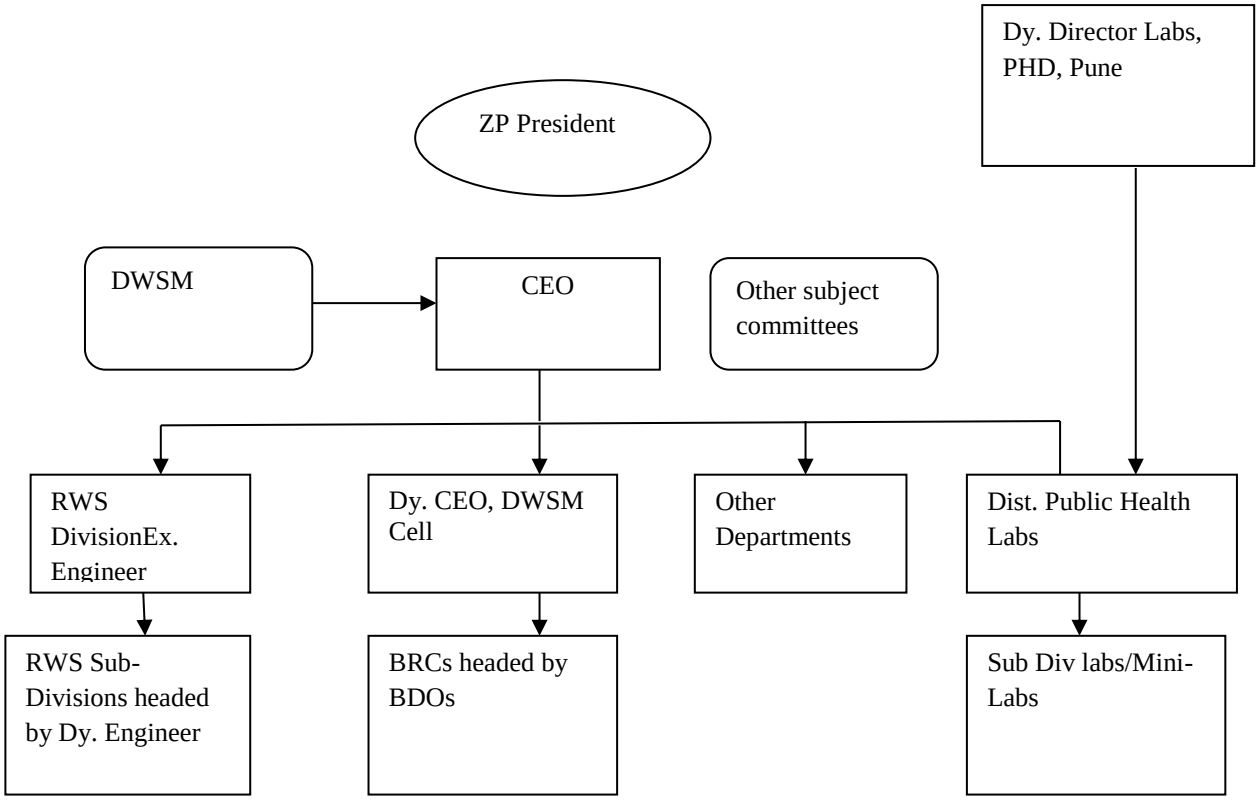
Hence, it is proposed to strengthen the labs through a mix of funds from NRDWP and the Program. The strengthening involves renovation of conference hall, modular furniture in 29 DPHL, construction of 138 sub-division lab buildings measuring (about 80 sq. meters each) on the premises of rural hospitals and design of electronic MIS systems to capture timeline data source wise.

11. **District Level - ZPs:** The highest tier of the three-tier Panchayati Raj system. There are 33 ZPs in the state. The ZP is entrusted with the role of managing the RWSS sector within the districts. The major role of the ZP is to:

- Prepare annual district action plans for RWSS activities;
- Support GPs in need identification, design and execution of appropriate schemes;
- Pass on grants/funds to GPs as per GoM/ GoI rules and regulations;
- Supervise the use of funds and quality of construction;
- Monitor water quality and advise GPs accordingly;
- Own, operate and maintain multi-village schemes, either on its own or through contracts;
- Undertake necessary IEC and capacity building activities; and
- Monitor the execution of schemes, administratively delegated to it (all schemes costing below INR 50 million), including sanitations schemes.

[67] As per the water quality monitoring protocols (GoI guidelines, November 2004, WSSD GR of March 2011), every source has to be tested four times for bacteriological fitness and one time for chemical fitness (twice if possible). This would mean about 1,124,000 bacteriological samples and 282,000 chemical samples should be tested every year, for the current number of sources.

Figure 6.3: Structure of RWSS Institutions within ZP



The ZP is headed by an elected President and various committees help in overall activities of the ZP. The DWSM is the committee to decide on district-level policies and guide the district on its implementation. The DWSM is headed by the President, ZP. The administration of the ZP is managed by a CEO, usually an officer from the Indian Administrative Services. The CEO is supported by Heads of various departments. The following units within the ZP manage the RWSS sector:

12. **DWSM*:*** The DWSM is headed by the President of the ZP, and lays the overall governing role within the district for schemes and finances under its jurisdiction and limits.

Rural Water Supply (RWS) Division: This is the technical wing within the ZP to provide all planning and technical support to GPs for water supply aspects and management of regional water supply schemes. This is the main unit implementing the NRDWP program of GoI. The unit is headed by an Executive Engineer, deputed from MJP. The district unit is called 'divisional office'. Each divisional office has about 30 people: (i) Executive Engineer; (ii) one Deputy Engineer; (iii) three geologists; (iv) three junior engineers; (v) one draughtsman; and (vi) administration, accounts and other support staff.

O&M Units: WSSD created O&M units in all the divisional offices. However, these are not fully operational and need to be activated. The terms of reference for this unit and required staffing needs will be designed and put in place by GoM through NRDWP funds. The unit

will be responsible for overseeing/ managing complaint rederssal systems'[68] In addition the unit will also establish and manage an O&M helpline for GPs/VWSCs.

RWS Sub-Division Level: The units below district level offices are called 'sub-divisions'. There are 173 sub-divisions for the 351 blocks. Each sub-division has about 10-12 staff, mainly: (i) one Deputy Engineer; and (ii) six junior engineers. The other members look after administrative and accounting activities.

4,000 positions have been sanctioned for all the 33 divisional offices and 173 sub-division offices, out of which, 1,673 posts (41 percent) are technical. Almost a quarter of these positions (24 percent) are vacant.[69] The vacancies in the technical cadres are higher at 27 percent. Amongst the technical posts, vacancies in the mechanical engineering cadres are very high, close to 50 percent (49 percent of Deputy Engineer Mechanical and 42 percent of Junior Engineer Mechanical are vacant). This high level of technical vacancies adversely affects the quality and quantum of work and, hence, there is an urgent need to fill up the vacancies.

As there is a freeze of recruiting permanent staff, WSSD allowed the districts to hire engineers on contract,[70] since 2009. The salary for the junior engineer was fixed at INR 10,000 to 12,000 per month. This is below market salary in today's conditions and WSSD is in the process of revising it.[71] However, recruiting, training and retaining this level of expertise is not going to be easy and, hence, appropriate HR systems need to be put in place for effective recruitment, training, performance reviews and retention of the contract staff.

DWSM Unit: WSSD created a new unit within ZPs in November 2012[72] to equip the districts with skills and personnel to exclusively work on the entire range of NBA and support activities for both the NRDWP and NBA, such as IEC, capacity building, human resources development, and monitoring. This is seen as **the district-level WSSO** and will support the activities of the BRC, explained below. A team of 10-12 experts, previously working within different units, are pooled under this cell. The cell will be headed by a full-time Deputy CEO, a new position created under JS-II program. It might take some time (about an year) before the new Deputy CEO comes on board and, in the interim, the Deputy CEO, Village Panchayats, shall handle the charge.

This unit will be strengthened with support from the Program:

- ***By recruiting a full time Deputy CEO for this cell. While this position will be supported by the Program for six years, it will be continued by GoM after the Program ends; and***

[68] WSSD designed and initiated an online complaint redressal system called E-Paani (electronic water), in August 2011. However, this system is not well used and needs some corrections

[69] Based on data from 26 districts compiled by the Program preparation team in November 2012

[70] As per GR dated September 9, 2009, WSSD authorized districts to hire one Junior Engineer for works costing up to INR 20 million.

[71] A new Government Order shall be issued by WSSD detailing terms and conditions of employment, salary structure, and performance evaluation systems, and so on. In the current system, there is no appropriate performance evaluation system for staff taken on contract.

[72] This unit is newly created in November 2012 and is yet to be operationalized. World Bank support is envisaged in operational-zing and strengthening it.

- ***Building expertise on the following issues: solid waste management, liquid waste management (both these are under the NBA portfolio), water quality monitoring, evaluations and social audits.***

13. **Block Level Panchayat Samitis**

A block is a sub-division of the district and there are 351 blocks in the state, with about 11 blocks, on an average, per district. The Panchayat Samiti is the elected council at the block level (second in the three tiers of PRIs) and is headed by a President. The Panchayat Samiti is close to villages, coordinates most of the activities of ZPs, and supports villages. The BDO is the head of the administrative structure in the Panchayat Samiti and reports to the CEO at the ZP, President of the Panchayat Samiti and also coordinates with various Heads of Departments at the ZP. The BDO also coordinates with various block-level offices such as the sub-division office. The current role of the Panchayat Samiti in the RWSS sector is to monitor the various activities entrusted to it such as: formation of various committees at the GP level, monitor expenditure made by GPs and their accounts, coordinate with the Public Healthcare centers on water quality testing, coordinate with sub-division office on technical matters, certify the toilet constructions/ NGP applications of GPs and pass on to ZPs for subsidy release. The BDO's office does not have full-time dedicated staff to support him/her on RWSS activities. The BRCs, established in 2011 with funds from NRDWP, fill this gap of the functions of BRCs are detailed below.

14. **Block Resource Centre:** As per the NRDWP Guidelines, BRCs have been established to strengthen the capacity of blocks in guiding, supporting and monitoring RWSS activities in villages. BRCs are expected to provide continuous support to GPs on a range of issues related to: awareness generation, community mobilization, capacity building, O&M, and so on. The BRCs are designed to act as permanent support organizations.

The key functions of the BRC are:

- Conduct awareness generation in village and schools;
- Train/refresh village-level functionaries and committee members, using training material developed by WSSO and/or district teams;
- Conduct baseline and/or other surveys, as needed;
- Support/guide VWSCs in preparing village action plans and implementing them;
- Support VWSCs in water quality monitoring and taking appropriate actions; and
- Assist in obtaining information for MIS.

The BDO is the overall in-charge for the management of the BRCs. The BRC team consists of a block coordinator and two or three cluster coordinators[73]. The DWSM team members at the ZP will provide necessary technical guidance and supervision to the BRCs. Of 1,250 positions for BRCs in 351 blocks in the state, 1,076 positions have been already recruited and trained. The cost of BRCs is met from 5 percent funds available under the support component of NRDWP.

[73] One block co-coordinator and one cluster coordinator for a block with a population less than 70,000. One block co-coordinator and two cluster coordinators for a block with a population between 70,000 to 1.5 lakhs.

While the creation of BRCs is a very positive step in strengthening the support structures, efforts should be continued to support and nurture the staff hired in the BRCs to perform their functions well. This includes: appropriate office space, computers and internet facility, transport facilities to travel to villages, performance reviews, exposure to good practices, and so on. The team will be strengthened through adding: one water quality monitoring officer, and one accountant coordinator in each RWS sub division.

15. **Village Level GP**

The GP is the place where most action happens in terms of WSS infrastructure creation and day-to-day service delivery. There are 28,674 GPs in the state as of 2012. A GP is headed by an elected Sarpanch and consists of other elected members (nine-16 members depending on the population). The GP is supported by a Gram Sevak (Village Development Officer) appointed by the ZP. The VHNWSC, also referred to as VWSC), supports the GP on RWSS issues. The current responsibilities of the GP/VWSC are:

- Formation of committees at the GP level and below as needed (village level and habitation level);
- Conduct Gram Sabhas (village assemblies) and record their resolutions;
- Through committees:
- Undertake needs assessments
- Develop options for schemes and seek Gram Sabha approval for the most desirable and affordable option
- Mobilize community contributions (cash and kind)
- Execute schemes (water supply, sanitation, solid waste, liquid waste, and so on)
- Mobilize the community through appropriate means
- Design a water user charge fee structure and get approval from the Gram Sabha
- Day-to-day O&M of infrastructure, collect tariffs for O&M
- Seek community participation and apply for various awards (Sant Gadge Baba, NGP).

Most of the above activities are carried out through voluntary time of GP members, committee members or through part-time para professionals. Usually the GP hires a part time multi-purpose worker for pump operations, bill collection, chlorination, and so on. This person is designated as Jal Surkshak (water protector) and is provided incentives by WSSD for regularly performing water quality management functions (facilitate testing, chlorination, and so on), in addition to the salary paid by the GP.[74]

The GP appoints some workers for sanitation-related works such as street cleaning, solid waste collection, cleaning of gutters, and so on.

In some cases, the GP outsources some services to local civil society organizations such as women's Self Help Groups, youth associations, cooperatives.

For regional rural water supply and large schemes, above INR 50 million, while MJP/ZP implements the schemes, the GPs are mainly responsible for O&M of intra-village

[74] GR dated March 30, 2011, issued by WSSD, GoM.

infrastructure. The bulk infrastructure is usually maintained by MJP/ZP/a special committee of a group of GPs benefiting from the scheme.

GPs/VWSCs have demonstrated ability to deliver infrastructure with adequate levels of community participation. However, there are a few key issues that need to be addressed to enable smooth and effective functioning of VWSCs across the state, based on the experiences shared by several ZP- and state-level officers during consultations and field visits. The following are the key issues:

- Delays in mobilizing community contributions leading to delays in execution of projects;
- VWSCs do not take an interest in O&M of schemes and, hence, the responsibility shifts entirely to GPs, in most cases;
- As the office-bearers of VWSC need not be the Sarpanch and Gram Sevak, there are several instances where they do not report, in time, to block/ ZPs. This is seen by GoM as a weakening of the administrative control over VWSCs (mainly for accounting funds transferred to them). Hence, there is a proposal by WSSD to change the bye-laws of VWSCs to make the Sarpanch as the chairman of the VWSC and the Gram Sevak as the secretary of the VWSC; and
- In order to enhance transparent contracting, WSSD made it mandatory to procure contractors through web based e-procurement systems of the state.

While monitoring and support to GPs/VWSCs is reasonably good, it is weak during O&M phases. It is important to develop appropriate O&M protocols and enable them for sustained and higher levels of service delivery. Another important aspect is regular capacity building of VWSC members and staff appointed by GPs. This need would be high in larger villages and places where higher levels of service delivery are aimed at. The BRCs and O&M unit of WSD in ZPs would be very critical from this angle. MEETRA's plan of developing certificate courses for water operators and other grassroots-level staff and imparting quality training is also very vital.

16. Civil Society Organizations

GoM recognized some civil society organizations as Key Resource Centers (KRCs) at the ZP level, for conducting training and periodic assessments. There are 73 listed KRCs, all working on the sanitation agenda only. Civil society engagement in the water supply sub-sector is almost absent, mainly due to limited technical experience on drinking water issues.

17. Institutions Strengthening Plan

Table 6.4: Institutions Strengthening Plan

Unit	Proposed Activities	By When
State Level		
Key Program stakeholders	• Training and exposure to good practices within country and abroad	• Over the first two years of the Program
PMU/WSSO	• Hiring of additional skills as agreed. • State HR policy for all units in the sector	• Within 6 months of the Program start • 1st year of the Program

Unit	Proposed Activities	By When
GSDA	• -Strengthen groundwater monitoring plan and MIS systems • strengthen capacity for improved groundwater monitoring • Strengthening of 6 labs for testing water quality samples	• 1st year of the Program • Over the first two years of the Program • 2nd year of the Program
MJP	• Strengthening MEETRA	• As per the plan to be developed by consultants hired
ZP level		
DWSM unit	• Hire additional skills identified and train all team members • Resolve office space, communications and mobility issues • Strengthen MIS systems, evaluation plans and social auditing processes • Hire and manage activities of Support Organizations	• 1st year of the Program • 1st year of the Program • Over the first two years of the Program • 1st year of the Program and monitoring through the Program
Laboratory strengthening (by PHD)	• -Strengthening of DPHLs • -Upgrading of mini-labs to sub-division labs • -MIS systems for improved data capture	• Over the first two years of the Program-1st to 3rd year of the Program • -1st year of Program
BRCs	• Hire additional skills as planned and resolve space and commuting issues • Provide MIS systems at BRC level • Refresher training as needed	• 1st year of the Program • 2nd year of the Program • periodic during the Program period
GPs	• Amend VWSC composition and bring clarity on O&M responsibility • Develop protocols for O&M of various types of schemes • Train VWSC/operators on the same • Train all operators, starting with bigger villages, on operations • Appoint a coordinator in all Program villages	• Over the first two years of the Program • first year of the Program • in batches over first two years • With the start of village-level activities

Funds available with GoM through NRDWP and NBA grants are adequate to address most of the staffing and capacity-building aspects. The Program will support GoM on certain critical areas, especially those that are one time. It is also assumed that wherever staff positions are supported by the Program, WSSD would make arrangements to continue the support after the completion of the Program also.

It is expected that these improvements would enhance the institutional capacity to deliver improved services to rural citizens and improve transparency and accountability of the sector institutions to citizens.

Annex 7: RWSS Devolution in Rural Maharashtra

INDIA: Maharashtra Rural Water Supply and Sanitation Program

Historical Background

GoI appointed a committee headed by Mr. Balwantrai G. Mehta (known as the Balwantrai Mehta Committee) in January 1957 to examine the working of the Community Development Programme (1952) and the National Extension Service (1953) and to suggest measures for their better working. The Committee submitted its report in November 1957 and recommended the establishment of the scheme of 'democratic decentralization', which finally came to be known as Panchayati Raj. The main aim of the Panchayati Raj system is to resolve local problems locally and to make the people politically conscious. The key recommendation of the Committee was the establishment of the three-tier PRIs, organically linked through elections, with specific roles and responsibilities. The state should transfer such functions, funds and functionaries necessary for their effective functioning. These recommendations were accepted by the National Development Council in January 1958, paving the way for devolution in India.

The newly formed Maharashtra government[75] adopted these recommendations and passed the Maharashtra Zila Parishads and Panchayat Samitis Act, 1961, paving the way for decentralized governance in the state. Maharashtra also empowered the villages through the Mumbai Village Panchayat Act, 1961, giving appropriate roles and responsibilities to GPs in the state. The three tiers of PRIs, that is, ZP (District Council), Panchayat Samiti (Block Council) and GP were established through these Acts, as early as 1962, and provided appropriate roles and responsibilities for local development activities. These Acts have been amended from time to time to reflect the needs of the times.

Rural decentralization in the country received a fillip in 1992-93 through the 73rd Constitutional Amendment, providing ***constitutional status to the PRIs as 'local self-governments.'*** This amendment gave the rural local self-governments the powers to function with constitutional legitimacy and political justification, and mandated the transfer of 29 functions to PRIs (Attachment 7A). The amendment also provided for: (i) the Gram Sabha for a village or group of villages; (ii) state finance commissions to review the status of finances of Panchayats; (iii) auditing of accounts of Panchayats; (iv) reservation of seats in Panchayats; and (v) district planning committee for integrated planning (Article 243 Z).

Current Status of Rural Devolution in Maharashtra

The PRI Structure and Roles in Maharashtra: There are 35 districts in Maharashtra, of which two districts are classified as fully urban[76] and the remaining 33 districts have a mix of

[75] Maharashtra was formed in 1960 after bifurcating the erstwhile Mumbai state into two separate states, Maharashtra and Gujarat, as per the Mumbai State Bifurcation Act.

[76] The two districts with 100 percent urban population are: Mumbai district and Mumbai Suburbs district. There are no ZPs for these two districts.

rural and urban population. The political units and administrative units for the PRIs in Maharashtra are listed in Table 7.1.

Table 7.1: PRI Details

Classification	Number of Units	Political/ Administrative unit	Legal Governance Instrument
District	35	ZP	Maharashtra Zila Parishads and Panchayat Samiti Act (1961)
Block	351	Panchayat Samiti	Same as above -
GP	27, 952	GP	Bombay Village Panchayat Act (1958)

These units were created in Maharashtra from 1962 onwards and elections at the three levels are regularly held since then. The broad structure and role of the three levels of PRIs are described below.

Zila Parishad: The ZP is responsible for overall rural development activities within the district and, hence, is required to prepare development plans, budgets and utilize resources for the planned activities. The governing structure consists of an elected body (about 40-60 members). The ZP is headed by a President, equivalent to a Deputy Minister. The ZP appoints a Standing Committee and about eight subject committees: (i) Finance Committee; (ii) Works Committee; (iii) ;Agricultural and Energy Committee; (iv) Animal Husbandry, Dairy, Poultry and Fisheries Committee; (v) ;Education and Adult Education Committee; (iv) Health Committee; (vi) Women and Child Welfare Committee; (vii) Water Supply And Sanitation Committee; and (viii) Social Forestry Committee.

The CEO is the administrative head of the ZP and is an officer from Indian Administrative Services cadres.[77] The CEO is responsible for overseeing and guiding the working of the ZPs. The CEO is assisted by an Additional CEO and Heads of Departments. Overall, there are about 13 departments within the ZP and each department is headed by a senior officer of Grade-I or Grade-II cadre from the Maharashtra Civil Services. These officers are appointed by the state government and can be transferred across the state. The department heads are supported by their officers and assistants. The ZP appoints the Grade III and Grade IV staff. This staff cannot be transferred beyond the district. The average staff in a ZP in the state is about 30,000-50,000 depending on the size of the district.

The ZP is the main unit where all the devolved funds are transferred for their use or passing down to the Panchayat Samiti and/or GP for end use. The PRIs receive funds from four sources: (i) local body grants, as recommended by the Central Finance Commission; (ii) funds for implementation of centrally sponsored schemes; (iii) funds released by the state

[77] In some states, both offices –ZP and District Collectorate -- are headed by the same person, usually called the Collector or District Magistrate while, in some states like Maharashtra, these positions are separated to provide better role clarity and focus. Both the District Collector and CEO of the ZP are from the Indian Administrative Services cadre but the Collector is usually a senior officer in comparison to the CEO.

governments; and (iv) taxes imposed by them for water, pilgrimage and special tax on land and buildings.

Panchayat Samiti: The Panchayat Samiti is the intermediate PRI unit and is an extension arm of the ZP. It does not raise any resources on its own and is dependent on grants transferred to it. The members of the Panchayat Samiti are elected and its President is a member of the standing committee of the ZP. The subject committees are formed to review and manage the implementation of these activities.
The BDO, a Grade I or II level Maharashtra Civil Services cadre, is the administrative head of the Panchayat Samiti. The BDO is supported by the Block Education Officer, Block Health Officer, Child Development Project Officer, Livestock Development Officer, and Extension Officers for 11 subjects and other support staff.

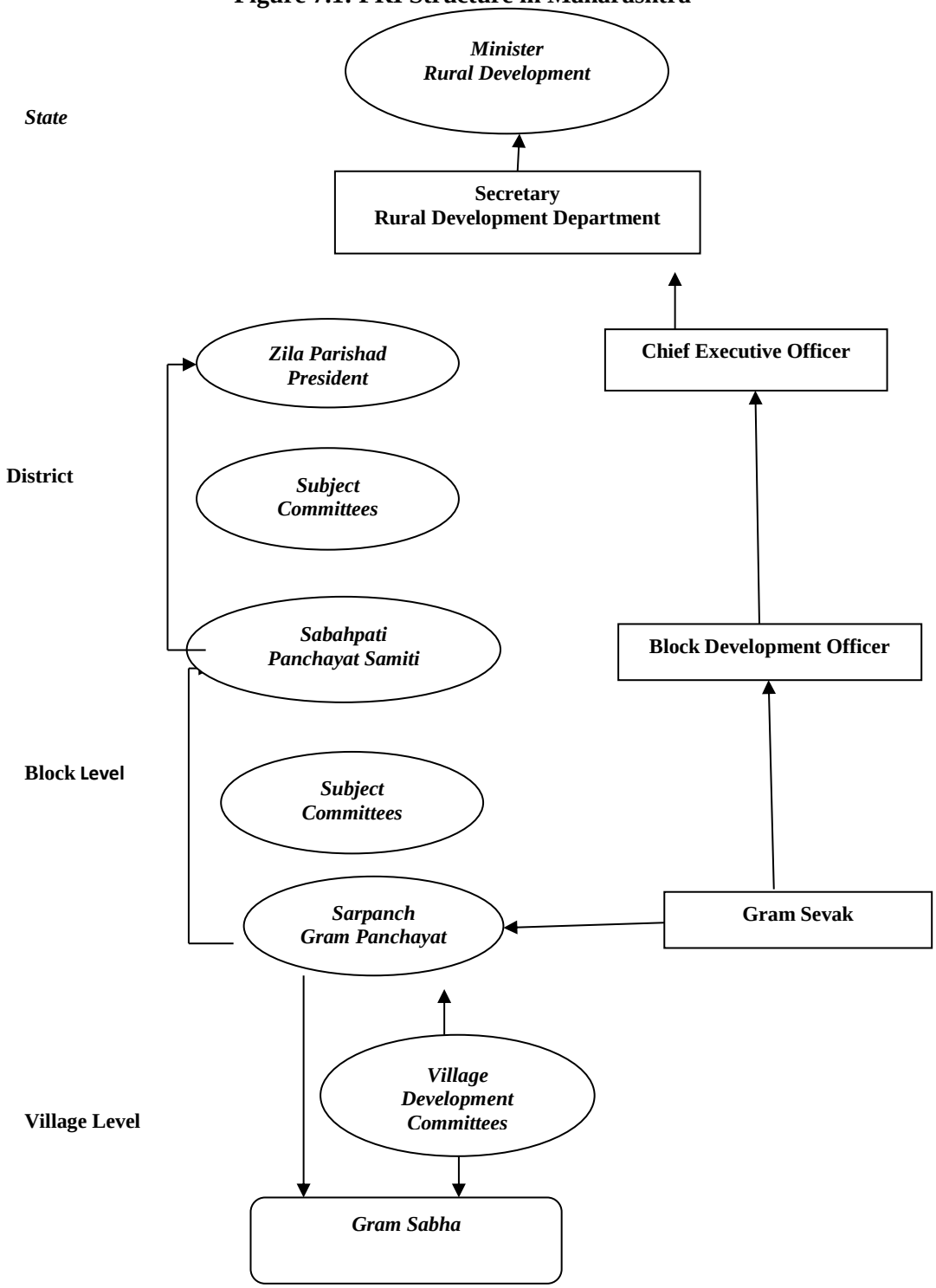
Gram Panchayat: The lowest tier of PRIs and the closest to the rural citizens is the GP. The key elements of the institution of GP are:

- **Elected representatives,** headed by a Sarpanch;
- **Development Committees**: As per the Bombay Village Panchayat Act, the GPs can form five to six development committees to assist them in their duties. The VHNWSC is one such committee. The committees should have one-third women members, one-third Scheduled Caste/Tribe representatives, representatives of all habitations and representatives of local community based organizations, besides elected representatives. This is to encourage equity and inclusiveness in the formation and implementation of development activities. Each committee can consist of 12-16 members;
- **General Gram Sabha:** Gram Sabha is the people's forum of the citizens who are eligible to vote. The GP and the development committees are accountable to the Gram Sabha for all actions and expenditure, and require approvals from the Gram Sabha. GPs should organize six Gram Sabha meetings in a year;
- **Women's Gram Sabha:** In order to encourage the voice of women, GoM has made it compulsory for the GP to organize special Women's Gram Sabha before every general Gram Sabha is conducted. The opinions expressed and resolutions taken in the women's Gram Sabha are binding on the general Gram Sabha; and
- **Government officers:** There are only a few government officers working at the village level. The main person is the Gram Sevak (also called as village development officer) who helps the GP in record keeping, accounts, issuing certificates and managing its activities. **Out of the sanctioned 18,431 posts of Gram Sevaks, only 17,093 posts are filled.[78] This implies that each Gram Sevak is handling the work load of 1.75 GPs.[79]** The other government staff at the GP level is: (i) Anganwadi worker for managing the day care centers; (ii) Accredited Social health Activists to assist women and children in health promotion; and (iii) Multi-Purpose Worker from the health department to coordinate primary health activities. Most of these people are either part-time workers or workers with limited skills and limited mandates.

[78] Audit Report (Local Bodies) for the year ended March 2010, Comptroller Audit General of India (CAG).
[79] While there is one Gram Sevak for 1.75 GPs in Maharashtra, an average GP in Kerala has about 10-12 staff under the GP. While an average size of the GP in Kerala is about 25,000 people, in Maharashtra also there are some large villages (15,000 people and above). There is a need to review the staffing issues at GP level in Maharashtra to suit different sizes of the GPs.

- The GPs are allowed to raise taxes -- property tax, betterment charges, pilgrim tax, taxes on fairs/ entertainment/festivals, taxes on vehicles, shops. The overall PRI structure in the state is depicted in Figure 7.1.

Figure 7.1: PRI Structure in Maharashtra



It can be seen that the GP is the most accountable unit to the citizens in the PRI structure, as it is closest to the people and most of the action happens in villages. A lot of emphasis has been laid on 'inclusive and participatory' approaches through the power and authority vested in the Gram Sabha and the village development committees. While there seems to be an improvement in the overall decision-making and there are some excellent examples of a few GPs (Hivre Bazar, Zada), the same is not true across the state and across the devolved sectors. While there is substantial information on some good examples, there is not much documented evidence of the functioning of the devolution processes and impacts on the ground. The Watershed Organization Trust studied the working of PRIs in 12 villages in three regions in Maharashtra and published a report, *Panchayati Raj on the Ground-Issues in Village Level Panchayati Raj Operations*, in 2009. Excerpts from the report on a few critical aspects are reproduced below:

Gram Sabha: Focused Group Discussions revealed that villagers possess little awareness about the role, functions and powers of the Gram Sabha. There is a complete lack of awareness about the Gram Sabha as a body that can make the GP and government accountable and that empowers the village community to have self-governance.

Village Development Committees: All GPs have display boards with the names of different committees and their respective members. However, it was evident during the study that the committee system is quite weak and unable to take decisions; hence the decision-making processes in the village are dominated by the Sarpanch and Gram Sevak in combination. The representation in committees is more symbolic than substantial, as most of the members of the committees were not able to describe their duties, role and responsibilities. There is **lack of subject-specific expertise and skills** among the committee members of almost all villages. Very few committee members have received subject-specific training.

Gram Sevak: Gram Sevaks and clerks are overburdened with preparation and maintenance of too many (27 registers and five important files) registers, of which much of the information that is collected is not very useful. Obviously, the Gram Sevaks are reluctant to mobilize schemes and development projects which would only bring them additional burden.

While one cannot generalize these aspects for the entire state, the findings provide pointers to where the systems can be improved to strengthen devolution in the state.

Overall Devolution Status in the State: Maharashtra is a leading state in the country with respect to devolution of PRIs and has **transferred 18 subjects out of the 29 listed in the 73rd**

Amendment.[80] Water supply and sanitation functions are fully transferred to PRIs in the state. Details of the transferred subject are provided in Attachment 7A.

In order to understand the extent and quality of devolution to the PRIs in the country and encourage greater empowerment, the Ministry of Panchayati Raj, GoI, initiated an incentive scheme – the Panchayat Empowerment and Accountability Incentive Scheme (PEAIS) - from 2006. The measurement is done on the following criteria:

- Framework criteria: to measure the four fundamental constitutional requirements: (a) establishment of a State Election Commission; (ii) holding of elections to PRIs; (iii) setting up of the State Finance Commission; and (iv) the constitution of District Planning Committees;
- Cumulative assessment of devolution: The devolution process is measured against the devolution of the three 'F's. The key issues measured are:
- Functions: number of functions transferred to PRIs, involvement of PRIs in important schemes, functioning of the Gram Sabha, transparency in PRIs
- Finances: empowerment of PRIs to impose and collect revenues, funds made available to PRIs, release of National Finance Commission grant to PRIs, system of fiscal management, monitoring and evaluation
- Functionaries: accountability of functionaries to PRIs, PRI's own officials, capacity building of elected representatives and functionaries; and
- Incremental achievement from 2009: This was designed to reward states, starting with a lower baseline, but making substantive progress in the last few years.

In the PEAIS rating by the Ministry of Panchayati Raj, GoI, in the year 2010-11, Maharashtra stood fifth in the overall devolution achievement and third in the incremental devolution since 2009.[81] Details of the ratings are provided in Attachment 7B. This indicates a strong devolution process and political willingness to strengthen the process.

Financial Devolution: The second State Finance Commission recommended devolution of 40 percent of the state budget to local governments (in 2002). However, GoM is not following this recommendation, for various reasons. **The extent of financial devolution in the state is elaborated in Table 7.2.**

Table 7.2: Financial Devolution to PRIs[82]

Head	2005-06 INR in Mn	2006-07 INR in Mn	2007-08 INR in Mn	2008-09 INR in Mn	2009-10 INR in Mn
State revenue (tax and non-tax)	394753	476175	644764	618199	674590
Allocation to PRIs	74728	73212	80073	105020	117266
% of allocation	**18.93**	**15.38**	**12.42**	**16.99**	**17.38**

The percent of state revenues devolved to PRIs has reduced from 18.93 percent in 2005-06 to 17.38 percent in 2009-10. However, the actual finances given to PRIs from state revenues

[80] State-wise devolution to PRIs, study by PRIA, 2004 and other references.

[81] As per information available on the website of the Ministry of Panchayati Raj, GoI. The top five states in achieving higher order of devolution are: Kerala (rank1, 70.01 percent score), Karnataka (rank 2, 62.39 percent score), West Bengal (rank 3, 59.56 percent score), Rajasthan (rank 4, 53.89 percent score), Maharashtra (rank 5, 53.58 percent).

[82] As per details given in the report by CAG, GoI, on Accounts and Finances of PRIs in Maharashtra, 2010.

increased by 57 percent during the same period. The total finances received and spent by ZPs during the same period are captured in Table 7.3

Table 7.3: Receipts and Expenditure by ZPs[83]

Year	Receipts (INR Mn)					Expenditure (INR Mn)		
	Own Revenue	Govt. Grants	Other Revenue	Capital Receipts	**Total Receipts**	Revenue	Capital	**Total**
2005-06	1540	73940	1810	22670	**99960**	74950	19840	**94970**
2006-07	1440	77840	1880	26910	**108070**	81610	23140	**104750**
2007-08	1610	82460	1830	25210	**111110**	84940	19230	**104170**
2008-09	5420	118250	4430	30660	**158760**	116610	31180	**147790**
2009-10	4810	152400	2780	35730	**195720**	153090	33650	**186740**
Total	**14820**	**504890**	**12730**	**532440**	**673620**	**511200**	**127040**	**638240**
% of Total	**2%**	**75%**	**2%**	**21%**		**80%**	**20%**	

The following are the key issues emerging from Tables 7.2 and 7.3:

- The average annual budget of a ZP is INR 5,930 million in 2010 which increased by 95 percent over the last five years;
- Of the total receipts to ZPs in the last few years, only 2 percent is internally generated through taxes. This grew from 1.5 percent in 2005 to 2.4 percent in 2010. Government grants and capital receipts account for 96 percent income to ZPs. While the expenditure on capital works by ZPs seems low, it is difficult to comment on it, as only finances of 18 subjects have been transferred to the ZPs and the money on other subjects is spent by the state agencies;
- Average funds received by a ZP in Maharashtra are INR 5,930 million in 2010. This increased from INR 3,030 in year 2005-06, a 95 percent increase in five years; and
- About 80 percent of the total funds received are revenue expenditure and only 20 percent is spent on capital works. While revenue expenditure grew by 104 percent over the last five years, the capital expenditure grew by only 69 percent over the last five years.

The funds received and spent at the village level are shown in Table 7.4.

Table 7.4: Funds Received and Spent at GP Level[84]

Head	Receipts (INR Mn)					Total Expenditure (INR Mn)	% Funds Spent
	Govt. Grants	**Taxes**	**Contributions**	**Other Receipts**	**Total**		
2005-06	2930	3810	1120	720	8580	8200	96
2006-07	3760	4300	1130	710	9900	9380	94
2007-08	3770	4820	1310	690	10590	10750	102
2008-09	5240	5060	1150	1620	13070	12520	96
2009-10[85]	6270	5250	1550	2850	15920	13590	85
Total	21970	23240	6260	6590	58060		
% of Total	**37.8**	**40**	**10.8**	**11.4**			

[83] ibid
[84] As per details given in the report by CAG, GoI, on Accounts and Finances of PRIs in Maharashtra, 2010.
[85] The data for 2009-10 is for 31 districts only, excepting Ratnagiri and Jalgaon districts.

The salient issues emerging from the analysis of the above data are:

- The amount available at the disposal of a GP increased from INR 0.28 million in 2005-06 to 0.43 million in 2008-09;
- About 40 percent of the total receipts are generated through taxes by GPs;
- GPs are spending almost all the resources they have every year; and
- Almost all the expenditure by GPs is revenue expenditure only.

Recent Initiatives to Strengthen PRIs: GoM has undertaken a few key initiatives to strengthen the functioning and governance of the PRIs in the last few years. Details are given below:

ISO 9001:2000 Certification to ZPs: To improve work culture and public accountability of ZP members and officers, GoM has decided to certify ZPs with ISO 9001:2000 standardization. The main object is to improve the quality of services rendered to rural people. The ISO certification of 29 ZPs was completed by September 2008 and work on the remaining four ZPs (Aurangabad, Parbhani, Beed and Washim) is in process.[86]

Web-based Accounting: The Ministry of Panchayati Raj and the national e-governance program developed web-based accounting software called PRIA (Panchayati Raj Institutions Accounting). Based on the recommendations of the Comptroller Audit General, GoI, this software is designed on a four-tier simple model accounting format, incorporating double-entry principles. GoM has adopted this software throughout the state, across all tiers of PRIs. All GPs have been provided computers, software, necessary training and data entry operators. While all ZPs/ Panchayat Samitis/GPs have accounts on PRIA, about 28 ZPs, 155 Panchayat Samitis and 1,249 GPs started voucher entries, as of June 2012.[87]

RWSS Devolution

The RWSS devolution in the state benefited from the overall devolution momentum in the state. The RWSS devolution gained speed and depth from early 2000 due to the following factors:

- To address water scarcity in the state, Maharashtra prepared a White Paper in the early 1990s and implemented a large number of schemes through state public health engineering agency: MJP. Despite the large investments, the state did not notice commensurate impact on the water supply and sanitation situation by end of the 1990 decade. This led to a review of the situation in the form of the Sukhtankar Committee, headed by Mr. Sukhtankar, ex-Chief Secretary of the state;
- The Sukhtankar Committee report recommended devolution of the RWSS functions fully to the PRIs;
- GoI started the new 'Sector Reform Program' in the water sector with a strong focus on devolution. It started in 1999 in 73 districts across the country out of which four districts were in Maharashtra;
- Based on the prevailing situation assessments, recommendations of the Sukhtankar Committee and the guidance provided by GoI through the Sector Reform Program ,

[86] As per information available on the GoM website.
[87] As per information on PRIA software: website-accountingonline.gov.in.

GoM modified its policy in 2001 to encourage devolution and community-driven management of the RWSS schemes and service delivery;

- Bi-lateral agencies -- the World Bank group, KfW and UNICEF -- also supported GoM in piloting and scaling up devolution in the RWSS sector. The World Bank-financed Jalswarajya project had a major impact in demonstrating models for community-managed RWSS service delivery and capacity building of sector actors;
- ZPs and GPs play a major role in the needs assessment, design, execution, O&M and service delivery for the water supply and sanitation services. The roles of the different tiers of the PRIs and state agencies in the management of the RWSS sector are given in Table 7.5.

Table 7.5: Maharashtra Rural Water Supply - Roles and Responsibilities

Project Cycle Activities	GP	Block Panchayat	ZP	State Agencies[88]
Plan, Design and Execution of Water Supply Infrastructure				
Water supply needs identification				**For large[89] schemes**
Community mobilization	❖			
Design of scheme	❖			
Single-village	❖		❖	
Multi-village	❖		❖	
Contracting	❖			**For large schemes**
Payments to contractors/ suppliers[90]	❖		❖	**For large schemes**
Supervision during construction	❖			
Single-village	❖		❖	
Multi-village	❖		❖	
Regular water quality testing	❖		❖	
O&M Responsibility				
Single-village				
Multi-village				**For schemes not handed over to PRIs**
Water tariff finalization				
In village water distribution				
Bulk water supply				**-do-**
Water tariff payment collection				
In village water distribution				
Bulk water supply				**-do-**
Monitoring and Grievance Redressal				
Capacity building of GPs				
Monitoring		❖		

[88]The state agencies are: MJP, the state Public Health Engineering Department and GSDA mainly working around groundwater source issues (source identification, certification, strengthening).

[89] As per GoM current norms, the design and construction of schemes costing below INR 5 million are fully managed by GPs, schemes costing between INR 5 to 50 million are managed by ZPs and schemes above INR 50 million are managed by MJP. The MJP also manages design and construction of multi-village schemes. Once constructed, the O&M of all single-village schemes is managed by GPs and that of multi-village schemes is managed by ZPs. MJP manages the O&M of those schemes that are not handed over to the ZP.

[90] In principle, the GP is empowered to make payments to the contractors after they are satisfied with the works. However, the practice on the ground is different. The bills of the contractors are checked and approved by the ZP. The GP releases the payments to contractors only after the approval of the bills by the ZP.

Staff in ZPs for RWSS functions: The Water Supply Department (WSD) in the ZP is the nodal unit for managing all the RWS schemes in the ZP. The WSD is headed by an Executive Engineer and supported by officers in the head office and sub-division offices. For 33 ZPs, 4,000 positions have been sanctioned, given in Table 7.6. Out of this, 1,673 posts (41percent) are technical. There are no data available on how many sanctioned positions have been filled. Almost all the technical posts in the ZPs are filled with staff deputed from MJP and GSDA.

Table 7.6: Details of Staff in ZPs

			District HQ	Sub-Divisions	Mechanical Sub Divisions	New O&M Division	New Sub Divisions
1	Executive Engineer	33	33	0	0	0	0
2	Dy.Engr (Civil)	206	33	162	0	0	11
3	Dy. Engr (Mech.)	66	0	0	33	33	0
4	Asst. Geologist	33	33	0	0	0	0
5	Jr. Geologist	66	66	0	0	0	0
6	Jr. Engineer (Civil)	1170	132	972	0	0	66
7	Jr. Engineer (Mech.)	99	0	0	33	66	0
8	Asst. Accts Officer	33	33	0	0	0	0
9	Other Support Staff	2294	693	1128	396	33	52
	TOTAL	4000	1023	2262	462	132	129

Source: GoM GR dated March 4, 2011, * GoM GR dated March 25, 2011.

Rural sanitation activities are taken care of by the Village Panchayat Unit (headed by Deputy CEO- Village Panchayat) in the ZP, who is supported by six technical experts hired with funds from the TSC program. There is no staff at Panchayat Samiti level, exclusively for supporting WSS activities.

The GP is responsible for O&M of the WSS facilities. The GP hires ‘staff’ as required for O&M of the schemes, usually one part-time semi-skilled worker. The GoM encourages GPs to hire staff for water quality monitoring (Jal Surkshak) and offers incentives for regular water quality monitoring. The GP usually nominates the existing caretaker as ‘Jal Surkhsak’. There is no record of the staff at the GP level for WSS service management.

Attachment 7A: The Eleventh Schedule (Article 243G)

Sr. No	Function	Current Status of Devolution in Maharashtra	
		Devolved	**Not Devolved**
1	Agriculture, including agricultural extension	Yes	
2	Land improvement, implementation of land reforms, land consolidation and soil conservation.		Yes
3	Minor irrigation, water management and watershed development	Yes	
4	Animal husbandry, dairying and poultry	Yes	
5	Fisheries		Yes
6	Social forestry and farm forestry		Yes
7	Minor forest produce		Yes
8	Small-scale industries, including food processing industries		Yes
9	Khadi, village and cottage industries	Yes	
10	Rural housing	Yes	
11	***Drinking water***	***Yes***	
12	Fuel and fodder		Yes
13	Roads, culverts, bridges, ferries, waterways and other means of communication	Yes	
14	Rural electrification, including distribution of electricity		Yes
15	Non-conventional energy sources	Yes	
16	Poverty alleviation program		Yes
17	Education, including primary and secondary schools	Yes	
18	Technical training and vocational education		Yes
19	Adult and non-formal education	Yes	
20	Libraries	Yes	
21	Cultural activities.	Yes	
22	Markets and fairs	Yes	
23	***Health and sanitation, including hospitals, primary health centers and dispensaries***	***Yes***	
24	Family welfare	Yes	
25	Women and child development	Yes	
26	Social welfare, including welfare of the handicapped and mentally retarded	Yes	
27	Welfare of the weaker sections, and in particular, of the Scheduled Castes and Scheduled Tribes	Yes	
28	Public distribution system		Yes
29	Maintenance of community assets		Yes
	Total	**18**	**11**

Attachment 7B: Devolution Index (Cumulative) and Sub-indices, 2010-11[91]

Overall Rank	State/Union Territories	Framework	Functions	Finances	Functionaries	Devolution Index Overall
1	Kerala	86.21	79.07	66.58	63.14	70.01
2	Karnataka	54.16	68.20	78.53	39.73	62.39
3	West Bengal	76.56	59.52	66.24	45.00	59.56
4	Rajasthan	52.07	70.00	52.31	45.86	53.89
5	**Maharashtra**	**48.15**	**64.67**	**49.97**	**52.83**	**53.58**
6	Tamil Nadu	68.46	67.69	38.55	58.82	53.45
7	Madhya Pradesh	74.50	71.19	35.14	56.65	52.74
8	Gujarat	45.22	73.54	41.35	40.04	47.78
9	Andhra Pradesh	50.41	63.64	43.80	41.33	47.69
10	Chhattisgarh	51.61	54.56	41.76	49.60	47.66
11	Haryana	56.31	55.83	39.10	40.18	44.49
12	Himachal Pradesh	45.06	53.79	41.80	29.50	40.83
13	Odisha	63.22	40.35	18.35	61.01	40.03
14	Uttar Pradesh	54.37	48.35	23.17	22.83	31.22
15	Puducherry	17.01	40.51	36.20	19.17	30.03
16	Uttarakhand	25.82	26.80	30.05	27.50	28.21
17	Bihar	54.69	54.78	20.56	3.33	25.65
18	Goa	32.56	24.67	16.34	18.33	20.23
19	Jharkhand	35.00	12.00	2.00	16.67	11.70
	North East States					
1	Sikkim	70.60	65.58	41.96	50.88	60.22
2	Tripura	60.90	42.50	32.77	33.00	45.60
3	Manipur	57.54	34.70	36.54	13.33	39.31
4	Assam	38.35	29.20	33.51	0.00	31.08
5	Arunachal Pradesh	12.81	11.97	17.56	3.33	19.70
	National Average	51.32	50.55	37.67	34.67	42.38

[91] Ministry of Panchayati Raj, Government of India, 2012.

Annex 8: Program Action Plan Implementation

Action	Due Date	Responsible Agency	Completion Measurement
Cross-Cutting Actions			
1. Strengthen existing complaint and grievance redress and vigilance mechanisms within WSSD at the state level to handle complaints related to procurement, financial management, service delivery, environmental and social aspects, and fraud and corruption issues under the Program. Information on complaints received and remedial actions taken will be aggregated annually and publicly disclosed.	Establish system by Year 2, then monitor annually.	WSSD	• Database is maintained on complaints and actions taken. • Report on complaints and actions taken is prepared annually and publicly disclosed. • WSSD's vigilance function strengthened/codified/formalized along with consolidation of information on vigilance issues. • Grievance redress mechanism (E-Pani) more accessible and comprehensive, and captures and handles allegations of fraud and corruption.
2. Prepare and implement an Annual Capacity Development Plan for key sector institutions (WSSO, DWSM and BRCs) focused on developing both individual competencies and collective capabilities (resources, tools and assets).	Annually, starting from Year 1.	WSSO	• Annual Capacity Development Plan prepared and implemented focusing on individual staff competence and collective capabilities (resources, tools and assets) in key sector institutions (WSSO, DWSM and BRCs).

Action	Due Date	Responsible Agency	Completion Measurement
Technical & Institutional Actions			
3. Strengthen RWSS planning processes in Year 1 and review their effectiveness in Year 3 and Year 5.	Year 1, Year 3 and Year 5	WSSD	• Strategic Sector plan is prepared in Year1 and disseminated to all districts. • Guidelines for improving the process and quality of district-level planning are prepared and disseminated to all districts in Year 1. • Improved quality and consistency of district annual plans, in line with the strategic plan. • Strategic sector plan and effectiveness of district-level planning reviewed in Year 3 and Year 5.
4. Establish and institutionalize technical and administrative back-up support mechanism for GPs/VWSCs.	Year 2	WSSO	Report on the technical/administrative back-up model established. Annual report on the extent of adoption of sustainable O&M mechanisms by GPs issued.
5. As part of the state's M&E system, establish a system to monitor the "schedule performance" (extent of completion within time schedules) of completed rural water supply schemes.	Establish system in Year 2, then monitor annually.	WSSO	Annual report on the schedule performance of completed rural water schemes.
6. Strengthen institutions to better manage the sanitation program of the	Year 2	WSSO	• Assessment required to roll out NBA completed by Year1.

state, assess areas of weakness (particularly in relation to ODF slip back), and take mitigation actions as needed.			• Identification of institutional strengthening and mitigation actions completed by Year 2. • Annual implementation. • NBA integrated in peri-urban areas where improving drinking water supply services are planned.
Policy Actions			
7. Prepare and adopt a comprehensive HR policy for the sector to attract and retain talent/skills, and review and revise O&M policy based on comprehensive diagnostics of affordability and complexities of schemes	Year 2	WSSO	• Policies reviewed and revised as needed by Year1. • Actions implemented and monitored from Year 2 onwards.
Fiduciary Actions			
8. Compile rules and procedures on procurement, including for selection of consultant services, into a comprehensive procurement manual for the RWSS sector and adopt it.	Year 1	WSSD	• Manual prepared by Year1. • Put to use from Year 2 onwards.
9. Conduct procurement post-review on a regular basis, covering at least 15% of contracts issued every year in the RWSS sector.	Annual	WSSD	Report on annual procurement post-review.
10. Establish double-entry	Year 2	MJP	Double-entry accounting

accounting system at all levels in MJP, including simplification of formats for annual audited financial statements, and development of entity Financial Management Manual.			system is established and implemented.
11. Establish a system to report information on expenditure at GPs/ VWSCs; carry out district-level and GP-level audits as per a specific ToR.	Establish system in Year 2, then monitor annually.	WSSD	Reports on expenditures at GP/VWSC levels.
Environmental and Social Actions			
12. Implement strengthened environmental and social management rules and procedures for the Program, supported by necessary capacity building measures for sector institutions.	Ongoing	WSSD, MJP, GDSA ZPs	• Environmental checklist included in the Environment Management Manual is utilized and integrated into the detailed scheme reports of all schemes/interventions under the Program. • EDDPs are implemented for schemes/interventions identified as requiring them. • Appointment/assignment of environmental management specialists at the state and district levels (end of Year 1). • Training and IEC activities on environmental management are implemented as per an annual training and IEC

			calendar. • Social processes planned and implemented for all schemes under the Program. • Social development specialist, communication specialist and Support Agency mobilized. • Capacity building implemented in accordance with the training calendar.

Annex 9: Economic Analysis

The Program's economic analysis is based on a hypothesis of changes in beneficiary (Gram Panchayat and villagers) conditions that can be expected from the activities proposed to be undertaken. In the CBA, an attempt has been made to analyze how this hypothesis is likely to unfold, and on that basis to quantify the benefits that beneficiaries are likely to realize. Other programs of similar type have been referred to, so impact estimates for other similar programs serve as an approximation for the benefits that may be anticipated from the proposed program.

The forecast of costs and benefits for The Program has been taken for 15 years for Aquifer management and water harvesting schemes and 30 years for peri-urban water supply and sullage schemes. The program is expected to generate direct benefits of improving access to reliable and quality, increased water supply to the rural and peri-urban communities and the consequent improved quality of life, reduction in coping costs/time and reduction in cost of illnesses borne by the community. For the government there is a reduction in money to be spent on tankers and increase in availability of ground water through aquifer management endeavours.

Based on these key benefits, at a program cost of US$ 235 million, the projected ERR for the program is calculated at 19.14%. In any program of this nature, the benefits are far reaching and some are not quantifiable. It can be said that the actual benefits and returns will surpass the financial calculations.

Sources of data

Data collected from 6 villages in Maharashtra during field visits: Raitale Kharamba, GP Jawhar, District Thane; Wadi, Besa-Beltarodi and Butibori in Nagpur District; Pipri and Umri in Wardha District. The profile of the villages was largely peri-urban where the pressure of urbanisation is putting pressure on the limited civic amenities of the village. The data covered aspects such as population, number of households, demographic profile, means of employment for men and women, daily wage rate, reliability, quality, quantum and hours of water supply (wherever piped water supply exists), nature, incidence and monthly expense on water borne illnesses, days of work compromised due to self and family illness, existing and desired level of water supply, ability and willingness to pay for reliable and quality water, extent of tanker supply in dry season, condition of existing water supply assets, need for O&M and replacement, coping costs in terms of purchase of utensils for storage of water and less hours at work, water tariff and collection efficiency.

Social and Environmental Assessment data collected by MJP in 60 GPs in Maharashtra has also been used.

As per GoM, target population of 2, 97,000 households (average household size of 5) will benefit from JS2. The same has been assumed for the CBA analysis. Other assumptions used in the analysis are summarized in Section-3 below.

1. Summary of Economic returns of the program

Projections for economic benefits of JS 2 have been drawn out for 30 years including 6 years of program implementation. The program will have direct benefits of improving access to water to rural and peri-urban communities and reduction in coping costs/time and reduction in cost of illnesses borne by the community. There will be generation of incremental water in the system, reduction of non-revenue water, benefits due to aquifer management and improved monitoring and evaluation.

Based on these key benefits, at a program cost of US$ 235 million, the ERR for the program is estimated at 19.14%. The NPV of the program (at an assumed discount rate of 12.5%) is calculated at INR 5230 million which is US$ 95 million (at INR 55 to a US$). For programs such as JS 2, the impact and actual scale of benefits would be higher than the financially computed return. The detailed worksheet of Economic Analysis is attached as Attachment-1 to this Annex 9.

	Estimated
Program cost (US$ million)	235
ERR (%)	19.14
NPV INR million US$ million	 5230 95
Exchange rate (US$ to INR)	55

2. Detailed Analysis

2.a Overall details

Total population	14,85,000
Average size of household	5
Number of households	2,97,000
Target level of water supply (LPCD)	70
Existing level of water supply (LPCD)	40
Source: GoM	

2.b. Components of Economic Analysis

1. **Program cost:** The total program cost would be US$ 235 million. At an exchange rate of 55 INR to a dollar, the total investment into the program is estimated at Rs. 12925 million. The cost during the implementation period of 6 years has been apportioned at 3%, 35%, 44%, 10%, 3% and 5% for each of the years. A standard conversion factor of 0.9 (norm for developing countries) is applied to project costs for program evaluation.

2. It is assumed that there will be no time and cost overrun in implementation of the program. The M&E system instituted as part of the program is likely to ensure on time program implementation and some savings in program costs.

3. **Benefits from the program**: Improvement in water supply facilities would result in improved quality of life, time saving for households in not having to store water, health benefits from drinking better and safe water, reduction in capital and O&M expenses on slip back schemes, reduction in the incidence of water borne diseases and those borne from poor sullage facilities. The program will also support aquifer management, water harvesting and improvement in M&E. These benefits have been quantified to build the analysis.

4. **Basis of analysis**: The following section discusses the basis used in the analysis against each benefit referred in paragraph 2 above.

a. **Time saving for households in collection of water**: During field trips, it was observed that collection and storage of water in most rural and peri-urban households is shouldered by women; this analysis has therefore been done for time saved by men and women separately. The percentage of time saved devoted to various activities is assumed based on Handbook for the Economic Analysis of Water Supply, Chapter 6, Asian Development Bank, 1997.

b. Time saved by men: On an average, daily time saved by men per household in helping their wives for water collection is about 10 minutes (primary data from field visit). This is discounted for the actual time put to economic use out of the total time saved and multiplied by the average daily wage rate earned by them.

c. Time saved by women: Time saved by women is about one hour per day per household. The remaining formula for computing value of benefits remains the same.

6. **Incremental water**: Existing water supply is at an average of 40 LPCD. Program design is for delivery of 70 LPCD. Existing population is benefitting from the increased water supply of design capacity. As the program will be implemented in six years and it is designed for a capacity of 70 LPCD for future population, the incremental water availability will be more initially and will decrease gradually over the years post program completion.

Due to decreasing marginal value of water the incremental water availability would have a lower value per unit than that of non-incremental water supply (replacement of existing system). The incremental water is therefore valued at an average between the current and future costs of water supply.

Based on current cost per capita of Rs. 2200 in NRDWP for 40 LPCD for 15 years life span, the present cost of water is Rs. 55/capita/litre. The future cost at Rs. 3400 per capita is based on GoM estimate for peri-urban for 70 LPCD for a life span of 30 years.

7. **Reduction in household coping costs due to better WSS**: Households spend on assorted coping costs of inefficient water supply such as purchase of storage utensils (plastic

and metal), small storage tanks in some cases, cost of water purification (boiling/purifier/filter/chlorination), missing of school and work to fill and store water, missing of school and work due to illness resulting from lack of hygiene from inadequate/unclean water. During visits, it was found that on an average, households spend about Rs. 400 per month on such coping costs. It is assumed that about 40% saving in these monthly costs would be achieved. Better sullage would help about 75% of households save about Rs. 150 per month currently being spent on clearing ponding and foul smell, mosquito net/repellent etc.

8. **Reduction in household cost of illness**: On an average, a rural/peri-urban household's monthly cost of illness resulting from poor hygiene due to inadequate/unclean water and sub optimal sullage conditions is about Rs. 500 (includes travel cost to the nearest centre in some cases to access medical facilities). It is estimated that JS2 would help reduction of about 40-50% in the above cost, 40% has been assumed as a conservative estimate.

9. Benefits of Aquifer Management: Based on Maharashtra Water Sector Improvement Project Report (Community Based Groundwater Management in Pilot Aquifer, Jalna district), groundwater extraction goes down by 12-15% once aquifer management measures are implemented. Also, demand for tankers in most villages goes down. This suggests that water resources are preserved and need for expensive water through tankers (especially in dry season) is reduced, thus saving the Gram Panchayat reasonable amount of money. In the CBA exercise, benefits from aquifer management have been linked to reduction in usage of tankers and funds saved thereby. As per GoM estimates, 30 aquifers are proposed under JS2 and approximately 10 settlements on an average will benefit from each. Aquifer management has a life span of 15 years, the benefits have been therefore limited to that period (including implementation period).

10. **Benefits of improved monitoring and evaluation**: Improved M&E is likely to benefit both during program implementation by preventing cost and time overrun and during operations by saving O&M costs. It is assumed that rigorous M&E instituted in the initial stages of the program would help optimise hardware capital costs to the extent of about 1% and during operations would help economise O&M costs by about 15% (DFID: M&E Framework, Breaking the cycle: saving lives and protecting the future. The report does not specify percentages saved but builds on the advantages of mid-term and final evaluation that results in more effective and transparent utilisation of program funds).

11. **Benefits through rainwater harvesting**: Rain water harvesting is proposed in about 250 settlements, which are currently tanker, fed during times of scarcity. Average cost of tankers per settlement p.a (based on total cost for Maharashtra) is used to arrive at the benefit likely to accrue from replacement of tanker water supply with rainwater harvesting. Rain water harvesting has a life span of 15 years, the benefits have been therefore limited to that period (including implementation period)

12. **Benefits of water quality improvement interventions**: As per GoM, 330 settlements are identified under "slip back" category due to water quality issues. Average per capita norm of correcting the situation has been multiplied with the benefitting population. A

one-time benefit is taken for ERR working, however, settlements slipping back at a later stage will also benefit from the interventions.

13. **Intangible benefits** (which are not used in the analysis):

i. Governance and accountability is likely to be strengthened through better M&E systems and processes.

ii. Creation of new job opportunities due to program activities, better health and reduced mortality, environmental sustenance due to aquifer management and rainwater harvesting. Such intangible benefits are real and reflect true values. They do not, however, lend themselves to valuation. It is difficult to derive a figure for the long-term value of a human life saved, or for the increased comfort of a population spared a preventable, debilitating disease or the improved quality of life due to increased quantity of water available per capita for longer hours per day.

2.c. Sensitivity Analysis

A sensitivity analysis has been performed for various cases and the summary is as listed below.

	EIRR (%)	NPV (Rs. '000)	B/C Ratio
Base case	19.14	5230167	1.81
10% capital cost overrun	17.68	4399138	1.65
USD-INR@ 65	16.62	3692471	1.54
Population growth @ 2.5%	20.22	6374765	1.96
Inflation @ 7.5%	20.64	7130481	2.06
Inflation @ 10%	22.52	10220674	2.45

3. Assumptions used for the analysis

Exchange rate US$ to INR	55
Population growth rate p.a	1.6%
Inflation	5%
Standard conversion factor	0.9
Number of working hours in a day	8
Number of days a person is gainfully employed	250
Daily wages for men, 2013 (based on Labour Bureau data for 2009)	INR 170
Daily wages for women	INR 170
Annual increase in wages	5%
Benefits from improved M&E during implementation	1%
Benefits from improved M&E during operations	15%
Social discount rate for NPV workings	12.5%

Abbreviations used:

ERR	Economic Rate of Return
DFID	Department of International Development
GoM	Government of Maharashtra
GP	Gram Parishad
INR	Indian Rupee
LPCD	Litres per captia per day

Population growth rate

Decadal growth rate 2001-2011	%	%
Total	Rural	Urban
15.99	10.3	23.67

Source: Census of India

Daily wage rate

		Rs.
Average Daily Wage Rates in Non-agricultural Occupations in Rural India during October, 2009 (Maharashtra)		166.5
Average Daily Wage Rates in agricultural Occupations in Rural India during October, 2009 (Maharashtra)		112.5
Average wage rate	2009	139.5
	2010	146.5
	2011	153.8
	2012	161.5

Source: Labour Bureau of India

Rain water harvesting - benefit workings

Average tanker cost for the state for the last 3 years			
Rs. cr.			
	2009-10	2010-11	2011-12
cost/year	43.18	9.41	96.89
no. of wadis/villages	3605	1286	6172
cost/settlement	0.012	0.007	0.016
average tanker cost per settlement			
Rs. '000	116.64		

Source: Government of Maharashtra

Life span of schemes

Life span	years
Peri-urban schemes	30
Sullage	30
Aquifer	15
Water harvesting	15

Source: Government of Maharashtra

Benefits from Water quality interventions

Per capita norms for the water supply schemes under quality-affected habitations vide GR dtd. 13.08.2012 of GoM			
			Rs.
WSS under Notified Hilly Area			3180
WSS with more than 30m static lift			2685
WSS with less than 30m static lift			2085
Average per capita cost			2650

Source: Government of Maharashtra

Attachment-1: Detailed workings of Economic Analysis

Jalswarajaya 2

Working hours and wage rate	
No. of days of employment p.a	250
No. of working hours	8

Economic parameters	
Exchange rate USD (used by GoM)	55
Population growth p.a	1.6%
Inflation p.a	5%
Standard conversion factor (NWDA	0.9

Assumptions on Value of Time		
Percentage of time saved devoted to economic a	30%	
Value of time spent on economic activities	100%	of market wage rate
Percentage of time saved devoted to household	16%	
Value of time spent on household activities	50%	of market wage rate
Remaining time	54%	
Value of remaining time	25%	
Weighted Average	52%	of market wage rate

Source: Handbook for Economic Analysis of Water Supply , Chapter 6, ADB, 1997;p 149

Capital cost phasing	
	USD mn
Hardware	189
Software	46
Year	%
1	0.03
2	0.34
3	0.44
4	0.10
5	0.03
6	0.05

235

Target Population			
Year	No. of HHs	HH size	Population
6	297000	5	1485000

Time Taken for Water Collection		
% women working in hh	30%	
Time taken by men	0.17	hrs/hh/day
Time taken by women	1.00	hrs/hh/day

Cost of Water per year (based on estd span)		
Current Cost of Water	55	Rs./capita/litre
Future Cost of Water	49	Rs./capita/litre
Incremental Cost of Wate	52	Rs./capita/litre

Software cost benefits	
Improved M&E - during project implementation	1%
Improved M&E - during operations	15%

Improved Sanitation benefits	Rs./month
Reduction in monthly cost due to better sanitation	150
Percentage of households likely to benefit	75%

Availability of water		
Current	40	Lpcd
Design	70	Lpcd

Medical expense	Rs.pm/hh
Current expense	500
Expected reduction	40%

Coping costs	Rs.p.m/hh
Current expense	400
Expected reduction	40%

O&M costs	
% of hardware cost	0.5%

COST BENEFIT ANALYSIS

	Costs in Rs'000				Benefits in Rs.'000									Benefits		Other inputs		
Year	Hardware cost	Software cost	O&M	Total Costs	Value of time saved by men	Value of time saved by women	Value of Incremental water	Health Benefits	Reduction in coping costs (better WSS)	Benefits from Aquifer Management	Value of improved M&E (capital & O&M cost saved)	Savings through water quality interventions	Savings through rain water harvesting	Total Benefits	Net Benefits	Population served	Households served	Incremental water consumption
1	258,769	62,981		321,750											-321,750	50,000	10,000	
2	3,224,662	784,838		4,009,500							32,247			32,247	-3,977,253	125,000	25,000	
3	4,140,306	1,007,694		5,148,000							41,403			41,403	-5,106,597	250,000	50,000	
4	955,455	232,545		1,188,000							9,555			9,555	-1,178,445	445,500	89,100	
5	298,580	72,670		371,250	98,515	177,327		427,680	582,714	38,493	2,986	1,049,400	29,161	2,406,276	2,035,026	891,000	178,200	
6	477,728	116,272		594,000	172,401	310,322		712,800	971,190	40,417	4,777		29,162	2,241,070	1,647,070	1,485,000	297,000	
7			46,778	46,778	183,916	331,048	1,872,041	724,198	986,719	42,438	7,017		29,163	4,176,541	4,129,763	1,508,745	301,749	61
8			49,116	49,116	196,199	353,159		735,778	1,002,497	44,560	7,367		29,164	2,368,725	2,319,609	1,532,870	306,574	
9			51,572	51,572	209,304	376,746		747,543	1,018,527	46,788	7,736		30,623	2,437,266	2,385,694	1,557,381	311,476	
10			54,151	54,151	223,283	401,909		759,496	1,034,813	49,128	8,123		32,154	2,508,905	2,454,754	1,582,283	316,457	
11			56,858	56,858	238,196	428,752		771,640	1,051,360	51,584	8,529		33,761	2,583,822	2,526,964	1,607,584	321,517	
12			59,701	59,701	254,105	457,389		783,979	1,068,171	54,163	8,955		35,449	2,662,211	2,602,509	1,633,289	326,658	
13			62,686	62,686	271,076	487,937		796,515	1,085,251	56,871	9,403		37,222	2,744,275	2,681,589	1,659,405	331,881	
14			65,821	65,821	289,181	520,526		809,251	1,102,604	59,715	9,873		39,083	2,830,234	2,764,413	1,685,939	337,188	
15			69,112	69,112	308,496	555,292		822,191	1,120,235	62,701	10,367		41,037	2,920,318	2,851,206	1,712,897	342,579	
16			72,567	72,567	329,100	592,380		835,338	1,138,147		10,885			2,905,850	2,833,282	1,740,287	348,057	
17			76,196	76,196	351,080	631,944		848,695	1,156,346		11,429			2,999,495	2,923,300	1,768,114	353,623	
18			80,005	80,005	374,529	674,152		862,265	1,174,836		12,001			3,097,783	3,017,778	1,796,386	359,277	
19			84,006	84,006	399,543	719,178		876,053	1,193,622		12,601			3,200,997	3,116,991	1,825,110	365,022	
20			88,206	88,206	426,229	767,212		890,061	1,212,708		13,231			3,309,440	3,221,234	1,854,294	370,859	
21			92,616	92,616	454,696	818,453		904,293	1,232,099		13,892			3,423,434	3,330,818	1,883,944	376,789	
22			97,247	97,247	485,065	873,117		918,753	1,251,801		14,587			3,543,323	3,446,076	1,914,068	382,814	
23			102,109	102,109	517,462	931,432		933,444	1,271,817		15,316			3,669,472	3,567,362	1,944,674	388,935	
24			107,215	107,215	552,023	993,642		948,369	1,292,153		16,082			3,802,270	3,695,056	1,975,769	395,154	
25			112,576	112,576	588,893	1,060,007		963,534	1,312,815		16,886			3,942,135	3,829,559	2,007,362	401,472	
26			118,204	118,204	628,225	1,130,804		978,941	1,333,807		17,731			4,089,507	3,971,303	2,039,460	407,892	
27			124,115	124,115	670,183	1,206,330		994,594	1,355,134		18,617			4,244,859	4,120,744	2,072,071	414,414	
28			130,320	130,320	714,945	1,286,900		1,010,497	1,376,803		19,548			4,408,694	4,278,373	2,105,203	421,041	
29			136,836	136,836	762,696	1,372,852		1,026,655	1,398,818		20,525			4,581,546	4,444,710	2,138,865	427,773	
30			143,678	143,678	813,636	1,464,544		1,043,072	1,421,185		21,552			4,763,988	4,620,310	2,173,066	434,613	
	9,355,500	2,277,000	11,632,500															
PV at 12.5	6683593	1626695	504615	8559199	2022683	3640829	1664037	5737722	7817646	272954	114607	932800	185289	15513036	5230167			
												ERR	19.14%					
												NPV	5,230,167	95094				
												NPV B/C R	1.81					