Internship Report on

A Review of the Water Supply and Sanitation Sector of Bangladesh In the Context of Millennium Development Goals vis-à-vis Sector Financing

Submitted to:
Dr. Tanbir Ahmed Chowdhury
Associate Professor
Department of Business Administration
East West University

Submitted by:
Lutfa Nuresh Shams
ID: 2002-3-10-151
Spring Semester 2006
Department of Business Administration
East West University

East West University

Abbreviations and Acronyms

ADB	Asian Development Bank
ADP	Annual Development Programme
APSU	Arsenic Policy Support Unit
BAMWSP	Bangladesh Arsenic Mitigation Water Supply Project
CBO	Community Based Organisation
Danida	Danish International Development Assistance
DPHE	Department of Public Health Engineering
GoB	Government of Bangladesh
GDP	Gross Domestic Product
GNP	Gross National Product
HHE	Health & Hygiene Education
HRD	Human Resource Development
HTW	Hand pump Tubwell
ITN	International Training Network
LG	Local Government
LGD	Local Government Division
LGI	Local Government Institution
MDGs	Millennium Development Goals
MLGRD&C	Ministry of Local Government, Rural Development and Co-operatives
MoF	Ministry of Finance

MoWR	Ministry of Water Resources
NAMIC	National Arsenic Mitigation Information Centre
NGO Forum	NGO Forum for Drinking Water Supply and Sanitation
NGO	Non-Government Organization
NPSWSS	National Policy for Safe Water Supply and Sanitation 1998
NWP	National Water Policy 1998
PLC	Public Limited Company
PRSP	Poverty Reduction Strategy Paper
PSP	Private Sector Participation
PSU	Policy Support Unit
PWSS	Pourashava Water Supply Section
SACOSAN	South Asian Conference on Sanitation
SDF	Sector Development Framework
SDP	Sector Development Programme
SIP	Sector Investment Plan
SST	Shallow Shrouded Tubewell
TA	Technical Assistance
TW	Tubewell
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme
UNICEF	United Nations Children Fund
UP	Union Parishad

UPDF	Union Parishad Development Fund
UPI	Unit for Policy Implementation
USAID	United States Agency for International Development
USD	U.S. Dollar
VSC	Village Sanitation Centre
VSS	Very Shallow Shrouded Tubewell
WARPO	Water Resources Planning Organisation
WASA	Water Supply and Sewerage Authority
WATSAN	Water Supply and Sanitation
WB	World Bank
WHO	World Health Organisation
WSP	Water and Sanitation Program
WSP	Water Safety Plan
WSS	Water Supply and Sanitation
WSSD	World Summit on Sustainable Development

Acknowledgement

With support, assistance, guidance and encouragement from many of my well wishers I could initiate, undertake and successfully complete my Internship report. At this point of time I would like to take opportunity to express my deepest appreciation to all those who have provided their support and assistance to me during undertaking my study.

I am extremely delighted to express my heartiest gratitude and profound respect to my respected advisor Dr. Tanbir Ahmed Chowdhury, Associate Professor of Department of Business Administration, East West University, for his thoughtful suggestion, invaluable guidance, constant & enthusiastic encouragement and inspiration at all stages for preparing my Internship report. His guidance, support and assistance were all the way extremely useful for me to conclude my study. I am very much grateful to him for his taking care in imparting pertinent knowledge to me, which was crucial for undertaking the study with confidence.

I am also very thankful to my respected supervisor K. M. Minnatullah, senior Water and Sanitation specialist, World Bank, Dhaka, for providing me valuable guidelines and directions throughout the progress of this work. My deepest sense of gratitude also goes to my supervisor, for providing me the opportunity to do my Internship under such a renowned organization, World Bank and providing me encouragement during my work.

I would also like to remember and extend my gratitude to my friends, teachers, well wishers, parents and other family members for their cooperation, blessings and longstanding encouragement, which were constant source of inspiration that immensely helped to accomplish this task.

Above all I am grateful to my almighty Allah, for enabling me to complete my Internship work successfully and smoothly without any sort of difficulties.

Executive summery

In case of Water supply & Sanitation sector, proper sector financing renders services effectively and sustains with continued growth and development. In this context this study is carried out just to assess the present situation, its future role, and identify problems and formulate a strategy for gradual and sustainable development of "Water supply & Sanitation sector" in financing perspective.

In Bangladesh, a significant number of studies were done by the Government of Bangladesh (GOB) and NGOs to promote the water supply and sanitation sector situation in rural and urban areas. The Government of Bangladesh has already set the target of achieving sustainability and total sanitation by the year 2010 as a fulfillment of MDGs (Millennium Development Goals).

For a sustained growth in near future, the study recommended to undertake the following steps without any further delay:

- Formulate some policies related with improvement in financing sector
- Ensuring some policies to support for its overall development
- Formulate some strategies for ensuring gradual and sustained development in financing sector
- Developing action plan that facilitating growth
- Ensuring resource allocation for undertaking those activities indicated above

From the present perspective, it is expected that in the near future "Water Supply & Sanitation Sector" will be able to maintain its sustainable development with the desired help of proper financing.

And it is a positive sign that awareness, realization and perception about health, hygienity, environment and safety is gradually increasing among the people. So, it can be concluded from the prevailing trend that achieving total water supply and sanitation sustainability by 2010 is a must. And no doubt, for ensuring the cherished sustainability, proper financing is the most important thing.

A Review of the
Water Supply and Sanitation Sector of Bangladesh
In the Context of
Millennium Development Goals vis-à-vis Sector Financing

Table of Contents

List of Tables

List of Figures

Chapter 1
Introduction

Chapter 1

Introduction

1.1 Background of the study:

Bangladesh, with a population of over 140 million living on a total land area of 147,570 square kilometers, is one of the most densely populated countries in the world. Bangladesh has marked considerable progress since independence in 1971 despite its dire initial conditions. Real per capita income is about 60 percent higher now than in 1971.

Safe water and sanitation are essential for the development of public health. The Government's goal is to ensure that all people have access to safe water and sanitation services at an affordable cost. To achieve this goal and to ensure that development, formulation of National Policy for safe water Supply and Sanitation is essential. [14]

Bangladesh, with a population of 127 million is one of the most densely populated countries in the world. Poverty and rapid population growth, combined with the tradition of drinking water from open ponds and poor sanitary habits, contributed in the 1960s and 1970s to a high level of water related morbidity and mortality, especially in the rural areas. [10]

In Bangladesh, a significant number of studies were done by the Government of Bangladesh (GOB) and NGOs to promote the water supply and sanitation sector situation in rural and urban areas. The Government of Bangladesh has already set the target of

achieving sustainability and total sanitation by the year 2010 as a fulfillment of MDGs (Millennium Development Goals). [16]

Bangladesh has one of the most vulnerable economies, characterized by extremely high population density, low resource base and high incidence of natural disasters. [2]. But it is a positive sign that awareness, realization and perception about health, hygienity, environment and safety is gradually increasing among the people. But for achieving water supply and total sanitation sustainability by 2010, proper financing is a must and the most important thing. So, it can be concluded from the prevailing trend that achieving total water supply and sanitation sustainability by 2010 is a must. [16]. And no doubt, for ensuring the cherished sustainability, proper financing is the most important thing.

An estimated 80 percent of all diseases and over one third of deaths in developing countries are caused by the consumption of contaminated water, and on average as much as one tenth of each person's productive time is sacrificed to water related diseases. [15]

Bangladesh, primarily an agrobased country, lies in the north eastern part of South Asia. It is almost surrounded by India, except for a short south eastern frontier with Burma and a southern deltaic coast fronting the Bay of Bengal. [5]

Safe, adequate and accessible supplies of water, together with people sanitation are basic needs and essential components of primary health care. Inadequate provision of safe drinking water and sanitation are directly and indirectly related to diseases, health risk, poor health and environmental pollution. The direct benefits of water supply and sanitation can be exemplified by the reduced incidences of waterborne and water related

diseases. Sanitation is particularly effective in protecting water and soil and controlling worm infections. The indirect benefits include improvement of hygienic conditions and promotion of a state of well being conductive to social development. Economic benefits result from good health, low incidence of diseases and increased life expectancy. [16]

Water Supply & Sanitation (WSS) is under the Physical Planing Water Supply & Housing Sector (PPWS&H) of the Government of Bangladesh. Development activities are carried out through Annual Development Programmes (ADP)under Five Year Plan (FYP) structure. A number f public sector agencies are involved in carrying out the sector activities (WSS).In addition to that, many private sector institutions, NGOs are also participating in the sector (WSS) development. [5]

Access to water supply and sanitation is a fundamental need and a human right. The global water supply and sanitation assessment by World Health Organization (WHO), United Nations Children Fund (UNICEF), Water Supply and Sanitation Collaborative Council (WSSCC) revealed that at the beginning in 2000, two fifths of the world's population (2.4 billion) was without access to improved sanitation and water supply situation. And no doubt, here proper financing is the must for the overall development of WSS sector. [16]

The World Summit on Sustainable Development in Johannesburg, South Africa, in September 2002, greatly emphasized on safe water and sanitation and urged that the population without sanitation in developing countries be reduced to half by the year 2015. [16] Recognizing that, although much has been achieved in last decade, the overall picture of sanitation in South Asia still remains in an unsatisfactory position.

The study revealed that the sanitation situation of rural areas of Bangladesh is going to be sustainable slowly but surely because of the rapid behavioral changes of people towards sanitation. This comment is also supported by the quick progresses achieved in sanitation just within two years from 2003 (sanitation coverage, 33%) to 2005 (sanitation coverage, 59%). And, it is a positive sign that awareness, realization and perception about health, hygienity, environment and safety is gradually increasing among the people. So, it can be concluded from the prevailing trend that achieving total sanitation and sustainability by 2010 is a must. [16]

1.2 Objectives of the Study:

The prime objective of the study is to assess the present scenario of the World Bank assistance in 'Water & Sanitation sector' and to formulate strategies for further development of financing for WSS sector. Main objectives of this report are:

1. To present an overview of World Bank supported projects in Bangladesh;
2. To appraise the present scenario of WSS in Bangladesh;
3. To identify the factors that promote hygienic and unhygienic sanitation practice;
4. To identify the sanitation strategy to meet with the national target and Millenium Development Goals (MDGs) target;
5. To identify and monitor the sustainability of the sanitation programs / system in socio–economic and socio–cultural perspectives;
6. To identify the problems of WSS; and
7. To suggest remedial measures focusing on financial aspect for the development of WSS

1.3 Scope & Methodology of the study

In order to carryout the research study, certain approach and methodology are required to be followed. Methodology of this study includes different research approach like questionnaire survey, monitoring and reviewing of previous work. Descriptive statistics were applied for data analysis. Interpretation and recommendation were drawn on the basis of the statistical analysis.

The methodology applied was firstly a critical review of the secondary sources of information particularly, sector programmed and project documents, evaluation studies, review reports, policy documents etc. In order to bridge information gap and also to substantiate information gathered from the secondary source, the study methodology included data collection from primary sources through field survey and consultation process or e field survey and consultation process or expert opinion survey of sector specialist. Data analysis, correlate with the previous data sheet, establishes indicators for measuring sustainability and finality result & discussion (findings) and recommendation.

The following approach and methodology were followed in carrying out the research study:

Research method:

At the very outset the study or research method is to be set. This will help in carrying out the study in a systematic manner following logical sequence. This often is better explained through a pictorial flow diagram. Figure 1 clearly shows the study methodology. The very initial task is to develop an information base or database.

Analysis and review of database followed by interpretation, conclusion and finally recommendations are set as the research/study method in this case.

Building Information or Data Base:

The very first step it to have a desk review to see what kinds of data are readily available and what kinds of data are to be generated. In general all data come from two kinds of sources. These are 'Primary Sources' and 'Secondary Sources'.

Information from Primary Sources:

Primary data in this study have been developed through consultative process. Contact with concerned persons and institutions are used as a means of this process. Apart from that, information has been collected through a kind of field survey.

Information from Secondary Sources:

Secondary data in this study have been developed through literature survey and very importantly through an Internet search.

Data Analysis and Review:

Information thus gathered through primary and secondary sources are reviewed and analyzed for further use such as making interpretations.

Study Methodology :

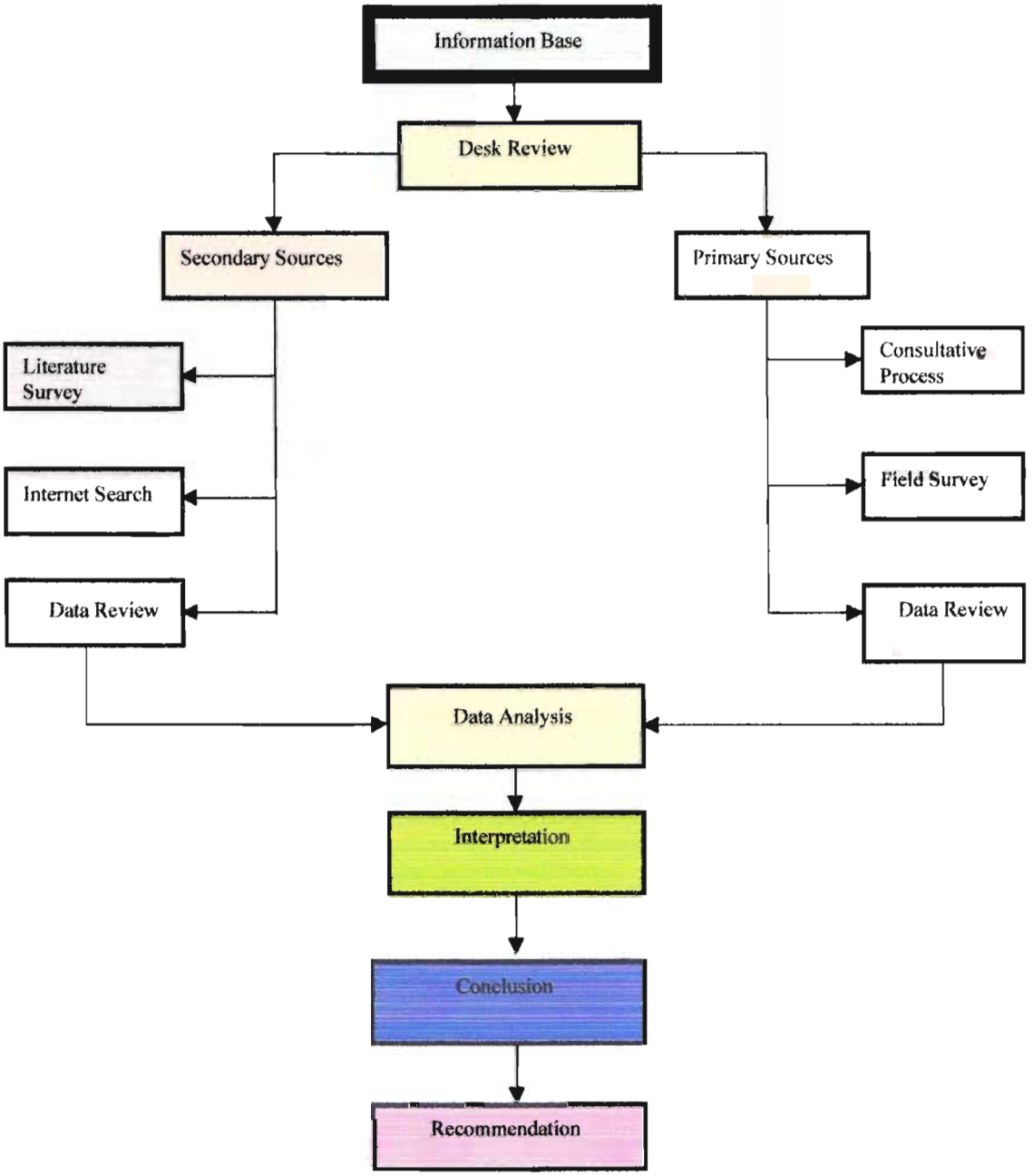


Figure 1: Showing study methodology

1.4 Organization of the Report

The entire report is structurally divided into seven chapters including Executive Summary and a short Introduction. The chapters on Development Pace & Sector Financing, Overview of World Bank activities, appraisal of Water Supply & Sanitation comprise the major part of the report where current situation has been studied and consequently issues and areas of concern have been identified. Identifying problems of WSS and corresponding suggestions for the development of WSS seemed necessary and accordingly incorporated as different chapters. Finally conclusions have been drawn.

1.5 Limitations of the study

The study experienced a number of limitations. Of these, the most important one is the shortage of data. Personnel of many institutions are not well acquainted with the concept of proper financing of WSS sector at present. They are reluctant to share information to the outsiders. The study also faced limitations of shortage of time.

Chapter 2
Development Pace & Sector Financing

Chapter 2

Development Pace and Sector Financing

2.1 Historical trend of Sector Financing

If we discuss about the water supply and sanitation sector, then have a clear perception about its historical trend of sector financing is an important factor. The Sector Development Plan (SDP) is mainly shows the sequential development of the water supply and sanitation sector (WSS) policies and strategies.

In this case, the most significant thing is the formulation of the National Policy for Safe Water Supply and Sanitation 1998 by the Government of Bangladesh. The Policy suggests that sector strategies should be prepared for further definition and implementation of the Policy guidelines. Consequently, there has been some encouraging policy and strategy related advancement in the sector in recent times.

In 2004 a Sector Development Framework (SDF) was prepared to further interpret the 1998 Policy guidelines. The National Policy for Arsenic Mitigation 2004 has been formulated specifically, to address the problem of widespread ground water contamination with arsenic and thus creating awareness among general people for using safe water. In 2003 the Government of Bangladesh, declared the target of achieving 100% sanitation by 2010 and a National Sanitation Strategy was prepared in 2005. The Government is also committed to achieve the Millennium Development Goals (MDG) related to WSS. Recently the government has formulated the Poverty Reduction Strategy Paper (PRSP) where sanitation and water is considered as a critical element.

The progress in sanitation is much slower as compared to water supply in Bangladesh. The Department of Public Health Engineering (DPHE) undertook an action research program in collaboration with WHO in 1954 to develop the overall sector. In 1962, DPHE – UNICEF collaboration introduced new ideas with free of cost to the community in selected areas.

In 1979, BUET and UNICEF collaborated on an action research to further development. Greater emphasis on water and sanitation was put during International Drinking Water Supply and Sanitation Decade (IDWSSD) during 1980 – 1990. Despite a lot of efforts by DPHE and UNICEF, the sanitation coverage could not reach more than 16% at the end of the decade in 1990.

A positive aspect in rural sanitation is that more and more households are investing their own capital for purchasing of sanitary latrines. As many as 95% respondents indicated that they paid from their own funds for purchase of latrines. This may be because more and more people are appreciating the use of sanitary latrines. [16]

An estimated 80 percent of all diseases and over one third of deaths in developing countries are caused by the consumption of contaminated water, and on average as much as one tenth of each person's productive time is sacrificed to water related diseases. [15]

In 1991, a 10 year national sanitation strategy was formulated and the country wide sanitation programs move with a much higher progress. The social mobilization approach

known as SOCMOB was launched in 1993 and sanitation week was introduced at the national level down to the union level, which was later discontinued in 1998. School sanitation program was also launched in phases in 44 districts during 1992 – 2000 to promote sanitation involving school management committee with technical support from DPHE and UNICEF.

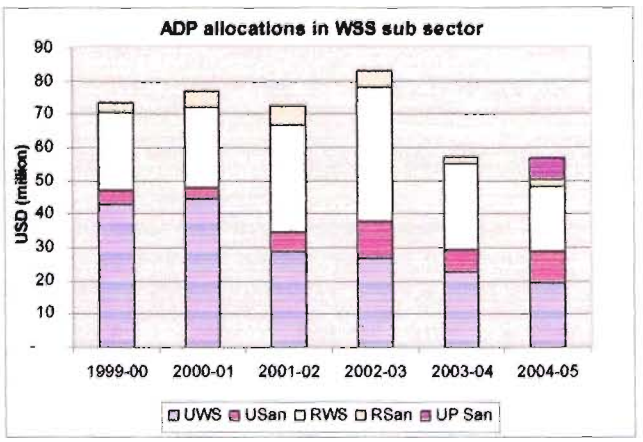
The current sanitation situation of Bangladesh –

- In Bangladesh only 40.3% family use hygienic sanitation.
- In rural areas 37.4% family use hygienic latrines.
- In urban area 65.1% family use hygienic latrines.
- Around 39.8% families of Bangladesh use hanging latrines.
- Around 24.5% families are used to defecate at open places.
- Around 50% of the government and other registered primary schools of Bangladesh have no supply of pure water supply and hygienic sanitation.

The dissimilarities of hygienic sanitation coverage:

- In 13 districts: 0.00 – 24%
- In 28 districts: 25% - 48%
- In 23 districts: 50% - 75%

Investment in the WSS sector is done by various partners - the government, donors, NGOs and by the private sector or private individuals. The government's support to the development projects undertaken by government agencies comes in the form of Annual Development Programme (ADP) allocations. The donors also finance NGOs directly.



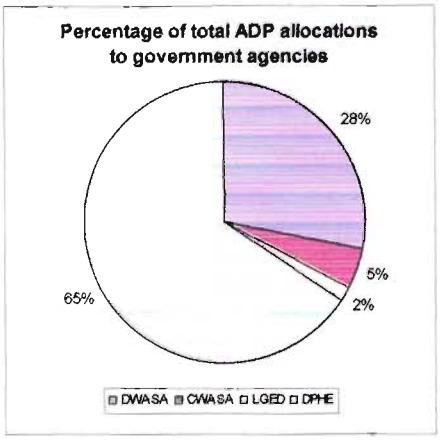


Figure 2.1 (a) Total ADP allocations in the four WSS sub sectors during the last 6 years. (UP Block allocation for sanitation is shown for 2004-5, which is additional to the ADP allocations to government agencies).	Figure 2.1 (b) Percentage of total ADP allocations (average of last 6 years) to different government agencies

[1]

Figure 2.1 (a) shows the ADP allocations per financial year (July to June) over the last 6 years (1999-2005). It is observed that among the four sub sectors, the highest proportion of the total allocations is for the urban water supply, average 45%, followed by rural water supply (40%). Both urban and rural sanitation receive very low allocations, only 10% and 5%, respectively. The recent central governments block grant to Union Parishad (UPs) for sanitation (only starting from 2004-05) provided additional 2% for rural sanitation. It also shows that the last two years ADP allocations were substantially lower than previous years.

Figure 2.1 (b) shows the agency-wise ADP allocation. The highest (65%) goes to Dhaka WASA, followed by DPHE (28%), Chittagong WASA (5%) and LGED (2%) who only

carry out some urban sanitation works as a part of few donor funded urban infrastructure development projects.

Proper sector financing is now become the most essential part for reaching the Millennium Development Goals (MDGs). If we discuss about the sector financing, then it can be noticed very easily that among the three domains of investments, NGO activities are generally financed directly by donors and occasionally by government and by NGO themselves. Individuals contribute by –

(i) Directly purchasing goods and services from the market and by

(ii) Their matching contribution for Government – or NGO sponsored facilities. The Public domain is the responsibility of the government.

Table 2.1.1Year wise allocation for PPWSH and WSS sector according to GOB Annual Development Plans

Total Allocation					**Tk. In Million**
Year	**Total RADP / ADP**	**PPWSH Sector**	**WSS Sector**	**WSS as a % of Total ADP**	**WSS as a % of PPWSH**
2000-2001	180420	11872	4722	2.6	39.8
2001-2002	160000	11764	4520	2.8	38.4
2002-2003	171000	11158	4458	2.6	40.0
2003-2004	190000	10958	4607	2.4	42.0
2004-2005	220000	10358	3277	1.5	31.6
GOB Allocation					**Tk. In Million**
Year	**Total RADP / ADP**	**PPWSH Sector**	**WSS Sector**	**WSS as a % of Total ADP**	**WSS as a % of PPWSH**
2000-2001	105684	6949	2078	2.0	29.9
2001-2002	91800	6418	2521	2.7	39.3
2002-2003	107407	7445	2555	2.4	34.3
2003-2004	120000	7619	2649	2.2	34.8
2004-2005	145750	7500	1823	1.3	24.3
Foreign Allocation					**Tk. In Million**
2000-2001	**Total RADP / ADP**	**PPWSH Sector**	**WSS Sector**	**WSS as a % of Total ADP**	**WSS as a % of PPWSH**
2001-2002	74736	4923	2644	3.5	53.7
2002-2003	68200	5346	1999	2.9	37.4
2003-2004	63593	3713	1903	3.0	51.3
2004-2005	70000	3339	1958	2.8	58.6
	74250	2858	1454	2.0	50.9

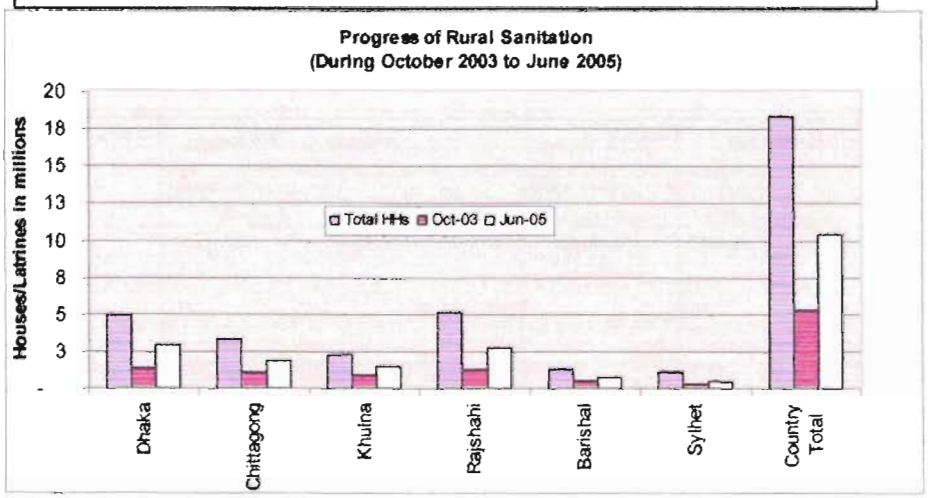
PPWSH = Physical Planning, Water Supply & Housing

WSS = Water Supply & Sanitation

2.2 Development Plans and Resource Constraints

Bangladesh has one of the most vulnerable economies, characterized by extremely high population density, low resource base and high incidence of natural disasters. [2]. Bangladesh has marked considerable progress since independence in 1971 despite its poor initial conditions. Real per capita income is about 60 percent higher now than in 1971. The Sector Development Programme (SDP) for the water and sanitation sector in Bangladesh assembles all the relevant national and international policies, strategies and targets and draws framework for development and cooperation in the sector that reflect the real needs and aspirations of the general people.

Figure: 2.2.1 Progress of rural Sanitation



[1]

General awareness regarding sanitation is important to gain maximum health benefit. It is positive to note that there are large numbers of examples of total sanitation of communities and villages implemented by government and non-government organizations in different parts of the country. The basic steps adopted by different

organizations include survey, mobilization of community, preparation of action plan and implementation of the plan and monitoring of the process.

The most important activities of the process are health and hygiene education campaigns promote hygiene practice followed by construction and installation of hygiene latrines to enhance awareness and knowledge base, change attitude towards sanitation and monitoring of progress of those installation and behavioral change. The chairman and members of Union Parishad, influential member of the community, health workers, cultural and children groups formed for the campaign played the key roles in achieving total sanitation. The GOs and NGOs, worked as facilitators in the process for achieving total sanitation. While it is possible to attain total sanitation, the big challenge remains how to scale up the examples to national level. A national strategy is needed to transform the small-scale successes into national level achievements. The experience in Bangladesh

Areas	According to Baseline Survey, October 2003			Status as of June 2005	
	Total number of families	Total No. of families using Sanitary Latrines	Percentage of families using Sanitary Latrines	Total No. of families using Sanitary Latrines	Percentage of families using Sanitary Latrines
Rural	18,326,332	5,274,810	29%	10,457,039	57%
Pouroshavas	1,851,337	983,025	53%	1,368,902	74%
City Corporations	1,216,424	850,527	70%	907,797	75%
Country Total:	21,394,093	7,108,362	33%	12,733,738	60%

[1] Table 2.2.1 Baseline Survey

shows that when the people are fully aware of the ill effects of poor sanitation and water supply then they are convinced for the change. It was interesting to note that the well off people of community to achieve total sanitation supported even the poor.

The formulation of such strategy requires consensus and participation of all concerned agencies to ensure coordination and cooperation in implementing this huge task. No

single agency can tackle this alone. A recent joint assessment conducted by sanitation stakeholders including the government, NGOs, Micro Finance Institutions, and development partners has confirmed that there are now over 1000 villages with total environmental sanitation.

Bangladesh, with a population of 127 million is one of the most densely populated countries in the world. Poverty and rapid population growth, combined with the tradition of drinking water from open ponds and poor sanitary habits, contributed in the 1960s and 1970s to a high level of water related morbidity and mortality, especially in the rural areas. [10]

The required amount of cost sharing by the users is specifically mentioned in the WSS Policy 1998 and in the recent Pro-Poor Strategy 2005. The WSS Policy 1998 in its policy principles recognizes the economic value of water and the need for eventual full cost recovery of water and sanitation services. The cost sharing by the communities for rural water supply options has been stated as percentage of the investment costs, which is 50% for shallow tubewells, 25% for deep set pump tubewells and 20% for deep tubewells and other alternative technologies.

Water Supply & Sanitation (WSS) is under the Physical Planing Water Supply & Housing Sector (PPWS&H) of the Government of Bangladesh. Development activities are carried out through Annual Development Programmes (ADP)under Five Year Plan (FYP) structure. A number of public sector agencies are involved in carrying out the sector activities (WSS).In addition to that, many private sector institutions, NGOs are also participating in the sector (WSS) development. [5]

The users should bear the full cost of rural sanitation but for hard-core poor, the government may subsidize fully or partially. The communities are fully responsible for the operation and maintenance costs of both rural water and sanitation services. The WSS Policy, 1998 also states that urban water supply should be delivered at cost (meaning operation and maintenance cost) and full cost should be aimed for in near future (not further specified). Although not specifically mentioned, the same cost sharing principle applies for urban sanitation.

The Pro-Poor Strategy 2005, further defines the cost sharing by hard-core poor by stating that the hard-core poor would pay only 50% of what is required as cost contribution by non hard-core poor users with an upper ceiling of Taka 500 per household. This arrangement implies that there is cross-subsidy for operations and maintenance costs.

A Technical Assistance (TA) programme for duration of at least 5 years should take forward the above-mentioned institutional developments in the WSS sector. The WSS sector institutional development cost is estimated to be USD 6.2 million, the breakdown is given in Table 2.2.1.

Table 2.2.1 Cost estimate for institutional development of the WSS sector

Item	Quantity (months)	Unit Costs (USD/month)	Total (million USD)
International Consultants	50	30,000	1.5
National Consultants	200	4,000	0.8
Running Cost consultants' office	60	1,500	0.9
Rural sector support activities (RWS inventory, studies, etc.)	LS	LS	1.5
Urban Sector support activities (UWS inventory, preparation of regulatory framework, legal analysis, studies, etc.	LS	LS	1.5
Total			6.2

[1]

The organizational development in this section addresses the development and reform needs of the three key sector organizations which are under direct government's authority: (i) the local government institution (UP) in rural sub sector, (ii) the autonomous WSS utilities in urban sub sector and (iii) DPHE as the main sector agency. The subsequent sections also describe the development of systems and procedures, for effective functioning of the sector organizations.

Table 2.2.3Estimated Costs of Programmes for the Towns and Rural Areas

Costs (Tk. M mid 2000)

Name of the Programmes / Project	Short Term	Medium Term	Long Term	Residual	Total
Urban Water supply	2939	13500	26055	2000	44494
Rural Water Supply	10163	30522	32234	2500	75419
Total	**13102**	**44022**	**58289**	**4500**	**119913**
Urban Sanitation / Flood Protection	10910	29502	65038.3	7903.8	113354.1
Rural Sanitation	5500	14750	10372	1000	31622
Total	**16410**	**44252**	**75410.3**	**8903.8**	**144976.1**
Grand Total	**29512**	**88274**	**133699.3**	**13403.8**	**264889.1**

Source: National Water Management Plan

In addition to the WSS works the Union Parishads (UPs) are also involved in other sector development activities. Although a greater role of the UPs is recommended for all sectors, this report only recommends the development required for the WSS sector. The rural piped water systems are expected to be managed by small-scale private enterprises and they themselves would be responsible for their organizational development. However, the government may provide training support to their staff to build a critical mass of the relevant capacity within the sector.

Table 2.2.4Budget Allocation for WSS sector 2005 – 2006 (in millions of BDT)

	GOB	Donor	ADP Total	NGO	Overall Total
Urban City	1,302.30	150.90	1453.20	80.80	1534.00
Urban Pourashava	259.20	50.00	309.20	0.00	309.20
Urban Total	**1561.5**	**200.90**	**1762.4**	**80.80**	**1843.20**
Rural Total	**253.60**	**483.60**	**737.20**	**244.54**	**981.74**
Other WSS	**13.40**	**76.20**	**89.60**	**0.00**	**89.60**
Total	**1828.50**	**760.70**	**2589.20**	**325.34**	**2914.54**

[7]

Table 2.2.5 Budget Allocation for WSS sector 2003 – 2004 *

	GOB**	Donor **	NGO ***	Total
Urban City	1004	420	90	**1514**
Urban Pourashava	484	291	-	**775**
Urban Total	**1488**	**711**	**90**	**2289**
Rural Total	**1487**	**909**	**229**	**2625**
Total	**2975**	**1620**	**319**	**4914**

[11]

*All figures are in millions of Taka

** GOB / Donor budget figures are from the Annual Development Plan (2003 – 2004)

*** NGO budget is not included in ADP, figures are obtained through individual communications or estimated by dividing total project budgets by project period

The drinking water source in the rural areas particularly in the study area varies according to the income level. It is generally agreed that the higher income level population in the

villages are more conscious and use safe drinking water sources. All villagers mostly lower and middle income groups use ponds for their daily activities. More than 100% prosperous villagers use tube wells for drinking water and among them 50% use shallow tube well and the rest of 40% use deep tube wells. there is a well traditional water collecting system in rural areas that dwellers collect water from one tube well which is assigned well as it is free from arsenic, iron, phosphate etc. [16]

The government of Bangladesh conducted a countrywide extensive survey of existing sanitation situation throughout the country under national sanitation campaign engaging local government institutions (LGIs). It is a commendable work completed by the local government division to acquire baseline data for area wise planning of sanitation programs to achieve the national target.

Observing the situation of increase in population coverage by sanitation during last decades it has been noticed that a sharp increase in sanitation coverage occurred during the decade (IDWSSD) and beyond while social mobilization (SOCMOB) program was active and then showed a lower rate of increase in the rate 90s. There is no increase in sanitation coverage after discontinuation of SOCMOB in 1998. It appears from the baseline survey that sanitation coverage has in fact decreased after discontinuation of social mobilization program. [16]

2.3 Millennium Development Goals (MDGs) and Resource Inputs

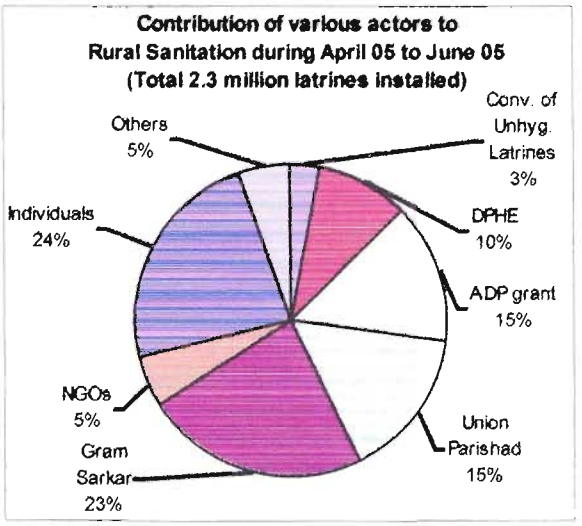
In the year 2000 (UN Millennium Summit) most countries of the world agreed on working together to achieve some specific goals which is known as the Millennium Development Goal (MGD). Goal 7, target no. 10, was formulated as "to halve, by 2015, the proportion of people without sustainable access to safe drinking water". Later in 2002 (World Summit Sustainable Development) the words "and basic sanitation" were added. [1]

Bangladesh is also committed to achieving the targets of the Millennium Development Goals (MDG). The Government is in a process of preparing a cost sharing strategy for water and sanitation services. The international development targets for sanitation along with subsequent endorsements are:

- By 2015 to reduce by one half the proportion of people without access to hygienic sanitation facilities, which was endorsed by Second World Water Forum, 2000 and adopted in World Summit on Sustainable Development (WSSD) declaration. 2002.
- By 2025 to provide sanitation to all MDGs with their focus on reducing child morality and ensuring environmental sustainability have direct relation with sanitation. For this target to achieve needed decreasing poverty which is directly related with sanitation. [16]

Governments of the people's republic of Bangladesh based on the response of the renewed sanitation campaign in the country has set the target to achieve the total sanitation by 2010, far ahead of international development goal of achieving sanitation for all in the year 2025. Water supply and total sanitation is the most desirable approach

to maximize health benefits but achieve of total sanitation 2010 for all and sustainability of achieved coverage are big challenges for Bangladesh. [16]



[1]

Box 2.3.1 Annual average investments in the WSS sector by different partners (in USD million)

Financing Sources	Average annual investments
Through governmnet's ADPs	
GOB	*37*
Project Aid (donor)	*32*
Total through ADPs	***69***
UP Block (sanitation)	6
NGOs	4
Individuals	29
Total	108

The annual average investments by the different partners along with that by the government are given in Box 2.3.1.

But unfortunately the resource that are prevailing in this current period is not enough to fulfill the cherished desire. For this reason proper financing is a must in this case because without it, the overall development is not at all possible for a developing country like Bangladesh. All public and private sectors at the same time should come forward with the necessary help for ensuring the ultimate target. [1]

The World Summit on Sustainable Development in Johannesburg, South Africa, in September 2002, greatly emphasized on safe water and sanitation and urged that the population without sanitation in developing countries be reduced to half by the year 2015. [16]

2.3.1 Required Financial Resources to meet Millennium Development Goals (MDGs)

For Proper development in Water Supply & Sanitation Sector (WSS), and to reach the Millennium Development Goals (MDGs), proper financing and necessary investment is so needed immediately. Total sector investments for different components can be divided into three main domains with respect to sector stakeholders. The domains are:

(i) Public, which includes the contributions from the government, donors, the WSS utilities and any private sector investments.

(ii) NGOs, and

(iii) Individuals, who buy services like tube wells directly from the market place.

Table 2.3.1: Sources of supply of low cost sanitary latrines:

Sources	**Percentages (%)**
Public sector production centers	15
Private producers / sellers	55
NGOs run production centers	18
Home made	12
Total	**100**

[16]

Out of the total sector investment requirement of USD 4886 million, the public domain accounts for the maximum cost, about USD 3,821 million, (78%) while NGO share is USD 324 million (7%) and individuals USD 741 million (15%).

Presently, the relatively small Pourashava systems face numerous challenges to their ability to provide reliable, high quality and affordable water services to their local customers on a sustainable basis. Regionalization or scaling-up is often seen as the solution for sustainability problems of small water supplies. It has the following advantages:

Economies of scale: Spreading fixed capital, operation, and maintenance costs over a larger population will most likely lead to lower per unit costs and subsequent lower rates for customers. Additional efficiencies can be experienced by lower total costs stemming from combined financial, administrative, personnel, and equipment resources.

Increased financial opportunities: Access to capital can be a problem for small Pourashava systems. Aggregation will create a stronger income basis and can facilitate the access to capital.

Table 2.3.2

Cost estimate for Technical Assistance (TA) Project for DPHE Organizational Development

Item	Quantity (months)	Unit Costs (USD/month)	Total (million USD)
International Consultants	100	30,000	3.0
National Consultants	200	4,000	0.8
Running Costs	48	1,500	0.2
Training of DPHE staff	LS	LS	1.0
Total			5.0

[1]

2.3.2 Proposed Sector Financing

The Financing of the WSS investments falls into three main groups, the public sector financing, NGO funding and private investments mainly in household WSS facilities. The public sector investments have been allocated mainly to DPHE and to the WASAs and some minor parts to the sanitation and waste management sub sectors in municipalities. The public sector investments are at the level of 3,600 million Taka per year based on the average expenditures in the sector over the past 5 years.

Table 2.3.3 Sources of public domain financing

The sources of public domain financing (the box in left shows the expected percentage of total public domain cost shared by donors and the private sector investments).

Items (during 2005-10)	Public Domain Financing Sources					% of total cost	
	GOB	WSS Utilities	Donors	Private Sector	Total	*donor*	*private sector*
WSS sub sector investments							
Rural Water Supply	133		100	17	249	*40*	*7*
Rural Sanitation	57		38		94	*40*	
Urban Water Supply	214	11	338		563	*60*	
Urban Sanitation	223		670		893	*75*	
O&M of UWS	11	25			36		
Sub sector investments	***637***	***37***	***1145***	***17***	***1836***		
Capacity Building	***3***		***27***		***30***	*90*	
TOTAL SECTOR (2005-10)	**640**	**37**	**1172**	**17**	**1866**		
annual investment	*128*	*7*	*234*	*3*	*373*		
%	34%	2%	63%	1%	100%		

Items (during 2010-15)	Public Domain Financing Sources					% of total cost	
	GOB	WSS Utilities	Donors	Private Sector	Total	*donor*	*private sector*
WSS sub sector investments							
Rural Water Supply	151		60	87	298	*20*	*29*
Rural Sanitation	72		18		90	*20*	
Urban Water Supply	34	333	24	98	490	*5*	*20*
Urban Sanitation	299	128	640		1067	*60*	
O&M of UWS		62			62		
Sub sector investments	***557***	***523***	***743***	***185***	***2007***		
Capacity Building	***2***		***19***		***21***	*90*	
TOTAL SECTOR (2010-15)	**559**	**523**	**762**	**185**	**2029**		
annual investment	*112*	*105*	*152*	*37*	*406*		
%	*28%*	*26%*	*38%*	*9%*	*100%*		

[1]

The total NGO funding for the WSS sector amounts to approx. 225 million Taka per year. No accurate statistics are available for the private investments in water and sanitation, however based on the rough estimates the yearly investment could be in the area of 1,800 million Taka.

The future funding needs in the WSS sector in Bangladesh are large. The recent NWMP identifies the investment needs in the short term (2000 – 2005), in the medium term

(2006 – 2010) and in the long term (2011 – 2025). In the medium term the predicted investment needs are 4 times the present level of investment. [10]

Proper sector financing is now become the most essential part for reaching the Millennium Development Goals (MDGs). If we discuss about the sector financing, then it can be noticed very easily that among the three domains of investments, NGO activities are generally financed directly by donors and occasionally by government and by NGO themselves. Individuals contribute by –

(iii) Directly purchasing goods and services from the market and by

(iv) Their matching contribution for Government – or NGO sponsored facilities. The Public domain is the responsibility of the government.

The present urban service delivery mechanism is inadequate to meet the present needs, and inadequate to mention about the huge future requirements for water and sanitation when the urban population will be much increased. Other drawbacks are inadequate cost recovery due to low tariff and poor collection efficiency, ineffective service provision with huge unaccounted-for water and small number of service connections frustrating the economics of scale. Moreover, the works procedures are outdated. [1]

One of the main aspects of the strategy is defining the one hundred percent sanitation, which is popularly known as "Total Sanitation", basically meaning total sanitary condition for healthy living.

Establishing direct financing mechanism

It is expected that the sector agreement will also reach a decision on creating a central fund and financing the UPs directly. Works on further elaboration of the funding mechanism can start once the sector agreement is reached. It is suggested that the functioning of the newly established UP Development Fund (UPDF) be reviewed during the designing of the financing mechanism.

Some elements of the national strategy to improve the sanitation condition are given below.

- *Creating effective demand through health education and hygiene promotion*

  This is considered as the most important strategy. Public awareness will eventually increase the demand for appropriate sanitation facilities and improved hygiene practices.

- *Ensuring individual and community actions*

  Communities are to be center of all activities - planning, designing and implementation. It has to be perceived as a community problem, not only individual one. From health point of view, it is not enough that individual families practice proper sanitation, as diseases easily spread to the whole community from one unhygienic latrine.

- *Key roles of local bodies*

  Experience in Bangladesh had shown the proactive roles of UP and Upazilas had been instrumental in achieving total sanitation in many villages and Unions, and in some upazilas. Capacities of the LGIs need to be increased and effective

collaboration between LGIs, NGOs and CBOs and the private sector to be established.

- *Reaching the poor*

  The national strategy supports that the individuals install hygienic latrines by their own cost. However, the most difficult to reach is the poor community because of their low buying power and low educational and motivational levels. To address this issue, the LGD has formulated a Pro Poor Strategy, 2005 where the hard-core poor are defined and they would be provided sanitary latrines free of costs. As mentioned earlier the government had allocated 20% of its Annual Development Program (ADP) grant for sanitation.

The lack of autonomy of the utilities (staff employment, tariff setting, etc.) is considered one of the major factors in affecting the service provision. [1]

These above disparate efforts, however successful they might be, will have insignificant impact on the country's waterborne diseases, water resources and ultimately on the quality of life, unless scaled up nation wide. The experiences of the total sanitation in the village scale show that the national program should include the following guiding principles:

- A target of total (100%) environmental sanitation in every Union Parishad
- A demand based sanitation through awareness and hygiene education

- Minimum requirement and adopt an incremental improvement of technology over time.
- Villagers should plan, implement and monitor under direct leadership of the Union Parishad / local government.
- NGOs should act as facilitators, including orientation of UPs, mobilization of communities
- The Department of Public Health and Engineering (DPHE) as the lead agency should provide technical oversight and coordinate the national program [16]

The above principles should be incorporated into a national sanitation program; however in order to ensure a sound approach for scaling up nation wide, the initial program should have a process of learning, adaptation, and refinement.

Based on current lessons at the village level where NGOs provided direct support to the community organizations and successfully motivated the community, made provisions for cheap management for poor people, thereby significantly improving the community sanitation environment. The Government of Bangladesh (GOB) during the Nation Sanitation Campaign in October 2003 adopted this total sanitation for its National Sanitation Program. GOB has formed a core team to internalize the lessons on a large scale with adaptive and structured learning mechanisms through the establishment of a monitoring and learning cell.

The demonstration program will adopt a decentralized service delivery structure with the Union Parishad responsible for implementing the total sanitation. The ministry will closely monitor the activities of 20-30 Upazilas, where the NGOs will partner with the UPs to implement total sanitation. To have a representative sample of villages and Unions the spread of the Upazilas/Unions should be based on geographical and other socio-economic consideration. Lessons from these 20-30 Upazilas is expected that will be systematically analyzed and the GOB will review lessons from the field and refine the strategy accordingly for nationwide application.

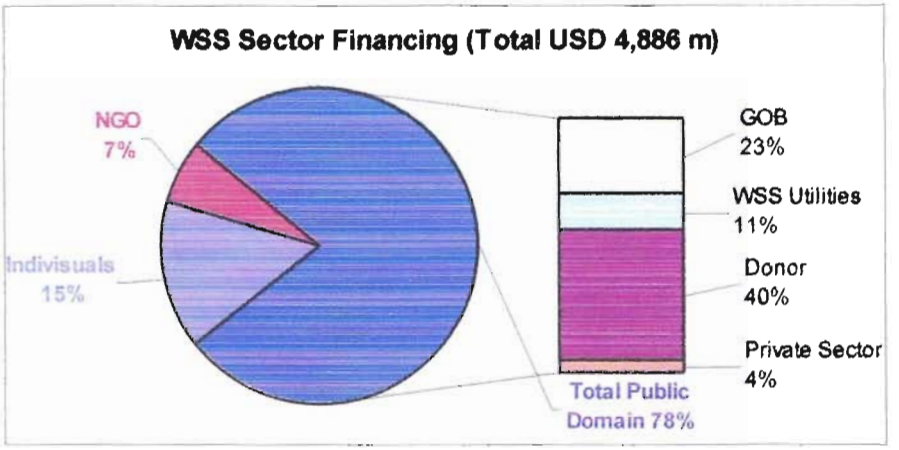
From the study it is evident that the private producers of sanitation sector would be the obvious choice as supply source. These are more readily available with better quality. The other reasons for selecting the private sector are easy availability, cheap, better quality and service, product varieties, installment payment, credit sale etc. And no doubt, proper financing is the most important thing as without this support, it is not possible to ensure proper development and thus fulfill cherished desire of the nation. [16]

In 26 November 2002, UN Commission on Economic Social and Cultural Rights agreed a general commitment on the right of water. The right to water puts an obligation on governments to gradually extend access to sufficient, affordable, accessible and safe water supplies and to safe sanitation services to all citizens without discrimination. There is explicit recognition that water should be treated as a social and cultural good, and not primarily as an economic good. [16]

Governments have an obligation to progressively extend safe sanitation services, particularly to rural and deprived urban areas. Sustainable community managed integrated water, sanitation and hygiene promotion programs will impact on national poverty reduction efforts. [16]

The Government of Bangladesh has taken up an extensive program of 'National Sanitation Campaign' in order to ensure construction of sanitary latrines, its use and personal hygiene practice by 100% of the population by the year 2010. The aims of this campaign are to

- Change the attitude and practice of population towards use of sanitary latrine by creating awareness through cooperation and collaboration of the government and non-government organizations (NGOs)
- Development partners and better-off people of the society with full political commitment at all level
- Encourage setting out targets by local government institutes (LGIs) and NGOs in three phases for the years 2005, 2008 and 2010 to achieve the goal of 100% sanitation coverage. [16]



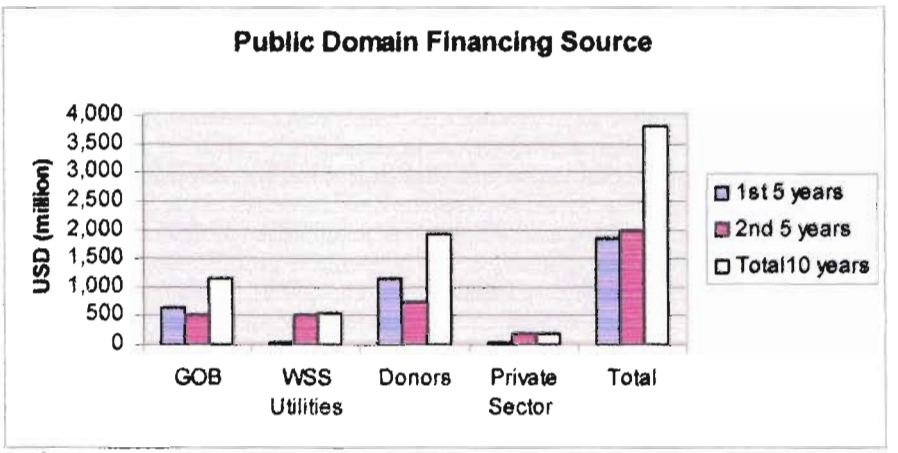


Figure: 2.3.2 The contribution of various financing sources during the first and second five year periods

Provide importance to maintenance of personal hygiene and capacity building of the population:

- Local Government Division of the Ministry of the Local Government, Rural Development and Cooperatives has allocated 20% of its budget for sanitation
- Observance of 'sanitation month' in each year as part of national sanitation campaign
- Task forces / WATSON Committees with define terms of reference have formed in the national, City Corporation District, Hill District Municipality, Upazilas and Union levels to implement objectives of the national sanitation program
- Government of Bangladesh has completed the nation wide baseline sanitation survey and acquired relevant information to prepare a comprehensive plan to achieve the goal. [16]

The following matrix summarizes the possibility of securing the total finance required as per the suggested investment scenarios.

Table 2.3.4 WSS Sector investment components

WSS Sector investment components	**Possibility of securing finance**
Rural Water Supply	Good
Rural Sanitation	High
Urban Water Supply	Good
Urban Sanitation	Low
Sector Capacity Building	High

[1]

Chapter 3
An Overview of World Bank Assistance & WSS in Bangladesh

Chapter 3

An Overview of World Bank activities & WSS in Bangladesh

3.1 Historical Development Scenario of WSS

For have a clear discussion about World Bank activities and corresponding WSS sector in Bangladesh first of all we have to focus upon its overall historical development of recent years. Bangladesh has one of the most vulnerable economies, characterized by extremely high population density, low resource base and high incidence of natural disasters. [2]. Recognizing that, although much has been achieved in last decade, the overall picture of sanitation in South Asia still remains in an unsatisfactory position.

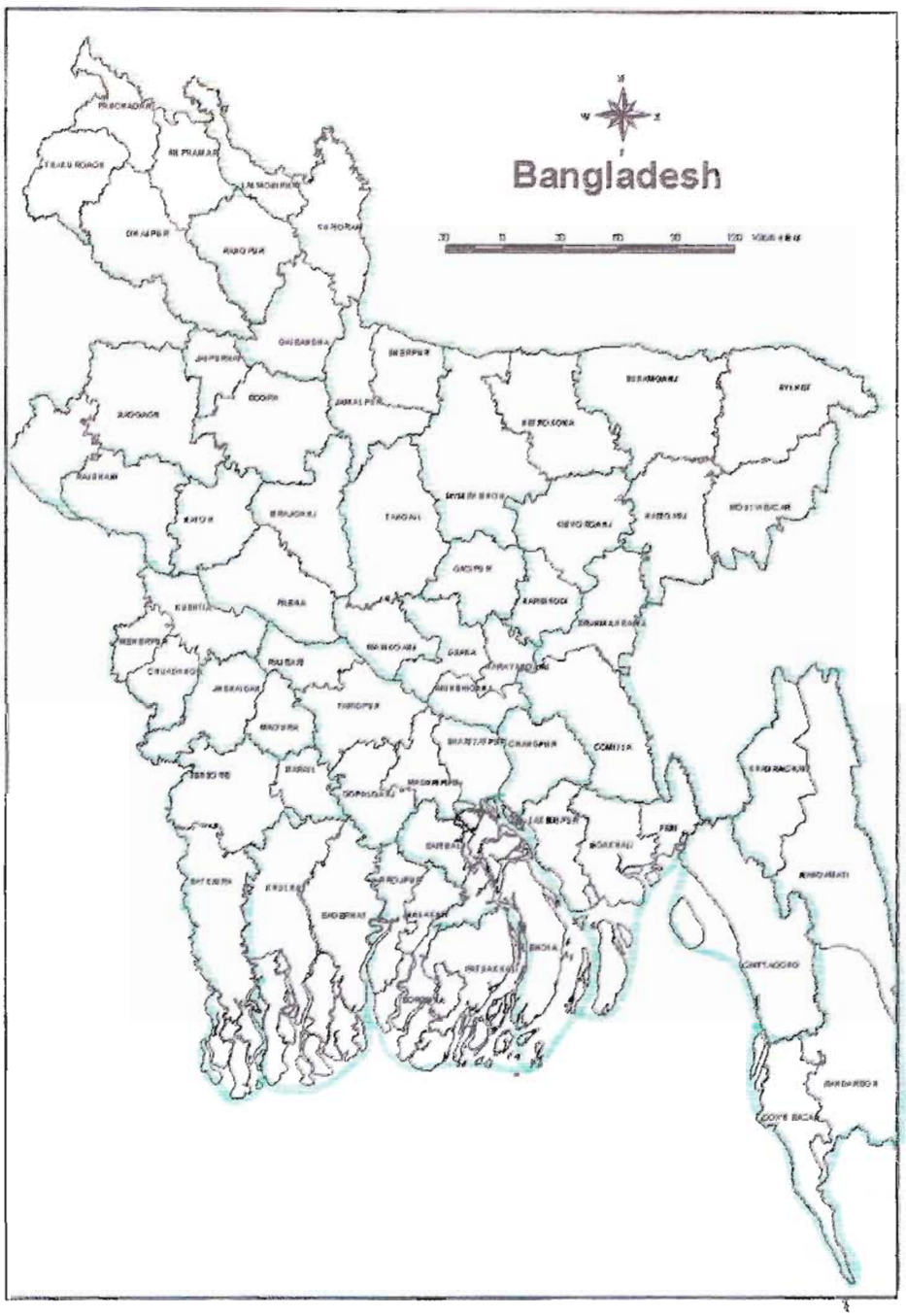
Bangladesh, primarily an agrobased country, lies in the north eastern part of South Asia. It is almost surrounded by India, except for a short south eastern frontier with Burma and a southern deltaic coast fronting the Bay of Bengal. [5]

To formulate the sector investments plan it is suggested to follow a sequence of activities. The first set of activities would be: (i) feasibility analysis of the technological choices, (ii) the service levels, (iii) the rate of increase in coverage and service levels, and (iv) preliminary estimation of the total investment costs including capacity building costs. [1]

An estimated 80 percent of all diseases and over one third of deaths in developing countries are caused by the consumption of contaminated water, and on average as much as one tenth of each person's productive time is sacrificed to water related diseases. [15]

The national annual development program (ADP) in Bangladesh allocated about 2.9% of the total development fund to water and sanitation sector in 2002 – 2003 (ADP, 2002). Water supply and Sanitation is not a full sector, rather a sub sector in the ADP document. Allocation of fund within the sector deprives water and sanitation sub sector. Again water

Map showing the boundaries of regional WSS Utilities



[1]

supplies always receive priority over sanitation in respect of resource allocation at the project level. [16]

Behavioral changes among the villagers were observed to an amazing rate which, lead them to be conscious about their health, environment and safety. The study revealed that peoples are now using sanitary latrines and conscious about their food and water hygienity. The rate of education is increasing in the rural areas and so is the awareness among the children and the aged persons.

Budget Allocation for WSS sector 2003 – 2004 *

	GOB**	**Donor ****	**NGO *****	**Total**
Urban City	1004	420	90	**1514**
Urban Pourashava	484	291	-	**775**
Urban Total	**1488**	**711**	**90**	**2289**
Rural Total	**1487**	**909**	**229**	**2625**
Total	**2975**	**1620**	**319**	**4914**

[11]

*All figures are in millions of Taka

** GOB / Donor budget figures are from the Annual Development Plan (2003 – 2004)

*** NGO budget is not included in ADP, figures are obtained through individual communications or estimated by dividing total project budgets by project period

Table 3.1 Total allocation in Urban and Rural WSS 1999 – 2000 to 2004 - 2005

		GOB	Donor	NGO	Total
1999 - 2005	Urban City	5187	3723	245.24	**9155.24**
	Urban Pourashava	2492	2718.3	0	**5210.3**
	Urban Total	7679	6441.3	245.24	**14365.54**
	Rural Total	6333.47	5950.5	1231.27	**13515.24**
	General	98.3	303.86	0	**402.16**
	Total	**14110.77**	**12695.66**	**1476.51**	**28282.94**

[2]

Observing the situation of increase in population coverage by sanitation during last decades it has been noticed that a sharp increase in sanitation coverage occurred during the decade (IDWSSD) and beyond while social mobilization (SOCMOB) program was active and then showed a lower rate of increase in the rate 90s. There is no increase in sanitation coverage after discontinuation of SOCMOB in 1998. It appears from the baseline survey that sanitation coverage has in fact decreased after discontinuation of social mobilization program. [16]

The sanitation coverage in City Corporations and Paurasavas (Municipalities) are comparatively better than rural sanitation coverage in Bangladesh. Sanitation coverage decreases from city corporations to small towns and to rural areas. [16]

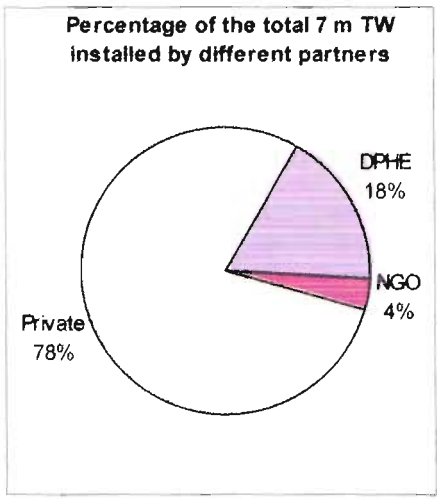


Figure 3.1.1 Tubewells installed by DPHE, private sector and NGOs [1]

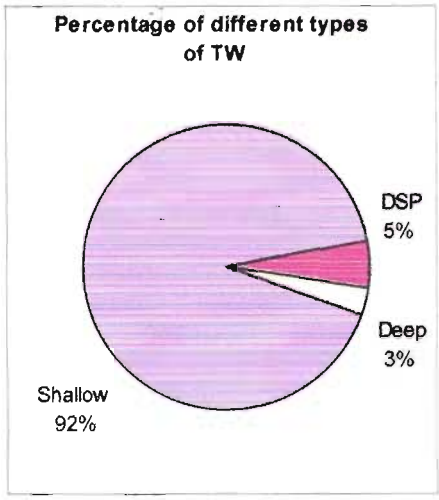


Figure 3.1.2 Percentage of Shallow, DSP and Deep tubewells.

3.1.1 Rural Water Supply :

Three rural water supply scenarios are formulated, all of them aim at achieving 100% coverage by the same basic level of services by the end of the first five-years period but the scenarios have different service levels during the second five-year period. The first scenario continues with the basic level during the second five-year period while the second and the third scenario consider moderate and accelerated growths, respectively in service levels during the same period.

Table: 3.1.1 Rural water supply coverage in 2005 by different type of technologies

Type of Technologies	Population in 2005	Population covered		Percent Coverage	
		DPHE standard	Policy standard	DPHE standard	Policy standard
Shallow Tubewell	41,100,383	41,100,383	41,100,383	100%	100%
DSP Tubewell	29,992,171	21,324,136	11,436,851	71%	38%
Deep Tubewell	9,997,390	9,997,390	9,936,316	100%	99%
Arsenic Mitigation Technologies	24,438,066	615,125	615,125	3%	3%
Special Problem Technologies	5,554,106	1,978,250	1,978,250	36%	36%
Total Pop & Coverage	**111,082,117**	**75,015,284**	**65,066,924**	**68%**	**59%**

[1]

In rural water supply, the basic level of service is mostly achieved except for arsenic problem areas and in the low water table areas. There is a strong commitment from the government to mitigate the arsenic and other problems; donors like Danida, UNICEF and the World Bank had committed funds. In general, people now demand higher levels of services for which the capacity is already available. As such the scenario of accelerated growth is selected for which the estimated cost for the 10-year period is USD 882 million. [1]

3.1.2 Rural Sanitation:

For rural sanitation, only one scenario is considered as the government had already set the target of achieving 100% sanitation coverage by 2010, formulated National Strategy for Sanitation in 2005, initiated institutional reforms and allocated financial resources, notably to the local government form the ADP Block allocation to UPs.

The sector partners are geared by and the country is expected to achieve the ambitious national target. The SDP, however, looks beyond the first five years when 100% sanitation is expected to be achieved. In the second five years efforts should be given to improve the level of services with about the same amount of allocation from the government as in the first five years. The total investment cost for rural sanitation is estimated to be USD 358 million. [1]

3.1.3 Urban Water Supply:

For urban water supply four different scenarios were prepared, using two variables namely (i) the growth in coverage and (ii) increase in the service levels. Scenarios are described as moderate or high coverage increase and moderate or high service levels. Urban water supply needs major reform and efficiency improvements.

The present urban capacity is very low. Although the investment costs are similar for the four scenarios in the long run (2025), the less ambitious scenario of moderate coverage and moderate service levels, which has lower investment costs during the initial years, is selected. The estimated cost is USD 1,069 million. [1]

3.1.4 Urban Sanitation:

In urban sanitation, at first two scenarios for investments is developed. The first one uses conventional sanitation options of the water-borne sewer, and the second one uses relatively less expensive small-bore technology for water-borne system. The percentage of waterborne systems in the long run (2025) for Pourashavas and city corporations is taken from what is suggested in the NWMP. It was found that in both the two scenarios,

there is a huge gap between the present coverage and the desired 100 % coverage in the five years and the investment needs are very high.

Table: 3.1.4 National Sanitation coverage [1]

Areas	According to Baseline Survey, October 2003			Status as of June 2005	
	Total number of families	Total No. of families using Sanitary Latrines	Percentage of families using Sanitary Latrines	Total No. of families using Sanitary Latrines	Percentage of families using Sanitary Latrines
Rural	18,326,332	5,274,810	29%	10,457,039	57%
Pouroshavas	1,851,337	983,025	53%	1,368,902	74%
City Corporations	1,216,424	850,527	70%	907,797	75%
Country Total:	21,394,093	7,108,362	33%	12,733,738	60%

Thus, a third scenario has been developed that defers the full coverage target date of the second scenario from 2010 to 2015. There is a major lag in urban sanitation in terms of coverage and capacity. The less ambitious deferred target scenario is selected. The estimated cost for urban sanitation is he highest, USD 2,428 million. From the analysis done in the report, it is clear that against the present level of investments of USD 75 Million, annual investment of USD 382 Million will be required, leaving an annual-gap in the Sector Investment Plan is USD 307 Million. Of this annual gap of USD 307 Million, the maximum gap is for Urban Sanitation to the extent of USD 190 Million. Unless this gap is minimized at least in the short run, the Sector Development Programme cannot be effectively executed for the urban areas.

In the rest, it looks easier to bridge the gap. From the point of view of sources of finance, the maximum annual gap of USD 160 Million is from Donors. Linking this with the sub-sector wise gap, it is mainly in the Urban Sanitation. In view of low possibilities of

securing finance for urban sanitation in the way it is planned, we will have be to minimize the cost of Urban Sanitation, by using the least cost feasible options first and later improve the service levels by using higher technological options. The major emphasis in proposed plan is on increasing sewerage and small bore systems.

By revising this strategy to first cover the entire urban population by household and public latrines, the annual resource gap for Urban Sanitation has been reduced from USD 190 Million to USD 3.2 Million. Consequently, the annual resource gap of USD 307 Million will be reduced to USD 121.2 Million, in the short run for achieving 100 % urban sanitation coverage by 2010. Subsequently, efforts will be made to bridge the resource-gap for coverage sewerage systems and higher and improved service level achieved. The major resource gap, however, remains in the Urban Water Supply, which will have to bridged by Private Investments and Credit from financial institutions under Public Private Partnerships, which would supplement the government and donor investments.

Sources of drinking water and usage of sanitary latrines vary greatly according to the income level of the villagers. It is quite impressive that cent percent wealthy villagers use tube well as the sources of drinking water. Among them 50% uses shallow tube well while rest of them uses deep tube wells. But 60% population of the middle income group uses tube wells. [1]

3.2 Principle activities

This realization gathered some countries of South Asia in Dhaka in SACOSAN – 2003. Some collaborative efforts, guidelines, objectives towards achieving the MDGs in

sanitation taken and formulated. Because sanitation govern different parts of Environment and have pronounced effect upon the health of ecosystem.

3.3 Scenario of Public Sector Outlay in WSS

The Public domain will include the government's own fund (commonly known as GOB fund), the expected investments by WSS utilities generated out of tariff (that is investment cost recovery), donor contributions and private sector investments.

Financing of the WSS investments mainly comes from the public sector. The average overall annual WSS sector investments over the last five years are as follows:

Table 3.3.1 Average overall annual WSS sector investments over last five years:

Source	**Annual amount in Million Taka**	**Percentage of total**
Public sector	3,600	64%
Private sector	1,800	32%
NGO sector	225	4%
Total	**5,625**	**100%**

[2]
Source: Institutional Review WSS sector, UPI Summary Report, UPI, LGD, September 2004

This study experienced that the private sector has responded well to the demand generated in rural sanitation primarily through the demonstration effect of the public sector programs. Today private sector is contributing significantly in the development of

water supply and sanitation in rural Bangladesh. Private sector involvement in this sector will thus add a new and important dimension to future program activities in rural Bangladesh and in other regions of similar socio-economic context. [16]

3.4 Scenario of Private Sector Investment in WSS

From the study it is evident that the private producers of sanitation sector would be the obvious choice as supply source. These are more readily available with better quality. The other reasons for selecting the private sector are easy availability, cheap, better quality and service, product varieties, installment payment, credit sale etc.

A lot more to be done for a sustainable and full scale development of sanitation in the country. This aspiration can be translated into reality only when the private sector is in a position to play a greater role and participate more actively. To achieve sustainability in sanitation and water supply, special emphasize should be given on the behavioral change of people towards hygienic sanitation. This study revealed that, private sector contribute a lot in that purposes. [16]

From the study it becomes evident that the private producers of latrines would be the obvious choice as supply source. These are more readily available with better quality. The other reasons for selecting the private sector as supply source are:

- Easy availability
- Cheap
- Better quality
- More options to select
- Better service [16]

This study experienced that the private sector has responded well to the demand generated in rural sanitation primarily through the demonstration effect of the public sector programs. Today private sector is contributing significantly in the development of water supply and sanitation in rural Bangladesh. Private sector involvement in this sector will thus add a new and important dimension to future program activities in rural Bangladesh and in other regions of similar socio-economic context. [16]

Isolated initiatives for development of water and sanitation services generally lead to waste of resources. To ensure best use of limited resources for effective development, coordination is necessary among all tires of the government, local government bodies, NGOs and other related parties including private sector. Many functions of the water supply and sanitation sector can be undertaken by private organizations. This will promote increased service coverage and thereby lessen the burden on the government. It is necessary to strengthen an administratively and financially enabling environment for the private sector to participate and contribute to sector development. Involvement of the private sector is essential to establish a closer relationship between the quality of services of the sector and its financial viability. [14]

Chapter 4
An Appraisal of the Water Supply & Sanitation Sector (WSS)

Chapter 4
An Appraisal of the Water Supply & Sanitation Sector (WSS)

4.1 Overview of the Water Supply & Sanitation Sector (WSS)

Bangladesh has achieved a remarkable degree of success in the water supply sector. It is reported that over 97% of the population have access to tube-wells. However the discovery of the widespread arsenic contamination of ground water has undermined this commendable success and effectively lowered safe drinking water coverage to only 74% of the population. [2], [16]

Bangladesh, primarily an agrobased country, lies in the north eastern part of South Asia. It is almost surrounded by India, except for a short south eastern frontier with Burma and a southern deltaic coast fronting the Bay of Bengal. [5]. Bangladesh has one of the most vulnerable economies, characterized by extremely high population density, low resource base and high incidence of natural disasters. [2].

Bangladesh, with a population of 127 million is one of the most densely populated countries in the world. Poverty and rapid population growth, combined with the tradition of drinking water from open ponds and poor sanitary habits, contributed in the 1960s and 1970s to a high level of water related morbidity and mortality, especially in the rural areas. [10]

Recognizing that, although much has been achieved in last decade, the overall picture of sanitation in South Asia still remains in an unsatisfactory position.

A large number of people use unsafe sources of water for personal and domestic needs, due to lack of awareness about the safety of the water used for these purposes. This is

alarming because at present the nation is looking for alternative sources of safe water to mitigate the arsenic problem in ground water.

Table 4.1 Average overall annual WSS sector investments over last five years:

Source	**Annual amount in Million Taka**	**Percentage of total**
Public sector	3,600	64%
Private sector	1,800	32%
NGO sector	225	4%
Total	**5,625**	**100%**

[2]
Source: Institutional Review WSS sector, UPI Summary Report, UPI, LGD, September 2004

In Bangladesh, 13.5% of rural households use sanitary latrines. Overall sanitary access is officially stated to be 43.4%, for combined rural and urban communities with an increase of about 1% per annum. At this rate it will take nearly 60 years to cover the entire country with safe sanitation facilities. In many areas the sanitation coverage is much below the national coverage figure. In Water Aid's rural partner organizations working areas, the pre intervention coverage is only 5-7%. As a result the more realistic coverage is approximately 15%.

Hygiene related diseases in Bangladesh cost 5 billion of Taka (US$ 80 million) each year, for treatment alone. In this case building awareness is the most important thing among the general people regarding safe water supply and proper sanitation facilities and needs.

Sources of drinking water and usage of sanitary latrines vary greatly according to the income level of the villagers. It is quite impressive that cent percent wealthy villagers use tube well as the sources of drinking water. Among them 50% uses shallow tube well while rest of them uses deep tube wells. But 60% population of the middle income group uses tube wells.

An estimated 80 percent of all diseases and over one third of deaths in developing countries are caused by the consumption of contaminated water, and on average as much as one tenth of each person's productive time is sacrificed to water related diseases. [15]

The Department of Public Health Engineering (DPHE) of the Government of Bangladesh and UNICEF began collaborating in the water and sanitation sector in rural Bangladesh in 1972. Much of the early work centered on rural water supply using low cost tube well technology. During the early 1980s, UNICEF assisted DPHE, and government run centers to manufacture and distribute other components related with water supply and sanitation sector. By the late 1980s, the government began promoting lower cost options as well. By 1990, household access to sanitary sectors had risen to 16%, a notable achievement from 1 percent coverage in 1971 (DANIDA, 1999). Still much more would need to be done to reach the government's goal of 80% sanitation coverage by 2000. DPHE and UNICEF began to put more emphasis on behavioral change and social mobilization, as well as limited support to encourage the private sector. The budget allocation for social mobilization increased from 0.6 percent in 1988 to 15% by 1992. In 1992, a three year intensive social mobilization program was launched by DPHE and UNICEF. The activities were organized through NGO forum, an umbrella organization of

non-governmental organizations in the water and sanitation sector. Almost 500 people were hired under the project, mostly to go door-to-door to convince people. Numerous group discussions were organized in villages and local committees were formed to plan ways to achieve 100 percent coverage. Flip charts, diagrams, and videos were all used to promote sanitation. The results were encouraging. In a survey it has been noticed that the use of proper water supply and sanitation increased to 91 percent. The project concluded that further advances could be made if intensive social mobilization was extended to all sectors in the country. However despite the success, the plan was dropped because the cost was so high. Currently UNICEF began to emphasize collaboration with other government institutions such as the health and education departments, as well as Girl Guides and Boys Scouts to mobilize communities and families in village level.

DPHE was slow to recruit staff for the specific task of coordinating and mobilizing different partners. Field level engineers and tube well mechanics were often overloaded with work related to water supply, leaving little attention and priority for non-engineering work (DANIDA, 1999). Other high profile events marked this period. In 1994, the Prime Minister launched the first annual National Sanitation Week. These weeks were meant to stimulate widespread media coverage and public interest, and generate a popular movement for sanitation. However, it was difficult to sustain momentum for the rest of the year once the week was over. Social mobilization continued during 1997 – 1999 in 32 of country's 64 districts. A series of work shops were held to involve different levels of Government, and efforts were made to include NGOs more directly in implementation. However, the entire momentum for social mobilization was lost in 1998 when severe flood was occurred. [16]

Estimated Actual Expenditure in WSS Sector (all figures are in millions of Taka)

	GOB	Donor	NGO	Total
		2002 – 2003		
Urban City	935	440	22	1397
Urban Pourashava	352	276	-	628
Urban Total	**1287**	**716**	**22**	**2025**
Rural Total	**1499**	**1257**	**193**	**2949**
Total	**2786**	**1973**	**215**	**4974**
		2001 – 2002		
Urban City	760	940	22	1722
Urban Pourashava	346	517	-	863
Urban Total	**1106**	**1457**	**22**	**2585**
Rural Total	**1223**	**1147**	**193**	**2563**
Total	**2329**	**2604**	**215**	**5148**
		2000 - 2001		
Urban City	767	1300	22	2089
Urban Pourashava	337	471	-	808
Urban Total	**1104**	**1771**	**22**	**2897**
Rural Total	**921**	**820**	**185**	**1926**
Total	**2025**	**2591**	**207**	**4823**
		1999 – 2000		
Urban City	532	630	8	1170
Urban Pourashava	312	614	-	926
Urban Total	**844**	**1244**	**8**	**2096**
Rural Total	**1262**	**602**	**187**	**2051**
Total	**2106**	**1846**	**195**	**4147**

Source: This table has been prepared using information from the revised Annual Development Plans (2000/2001, 2001/2002, 2002/2003, and 2003/2004) and information provided by the NGO projects.

Currently over 97% of the population in the country has access to improved water sources. In the urban areas, over 99% of the population has access to improved water against 97% population in the rural areas. Despite this improvement in the availability of improved water sources, 30-35 million people of Bangladesh are exposed to drinking water that contains harmful concentrations of arsenic. This arsenic poisoning from drinking water in Bangladesh in Bangladesh has been recognized as the largest mass poisoning of a population in history. In comparison to the water sector, sanitation situation in the country is still far behind as access to improve sanitation is still low.

Overall, the percentage of people having access to improved sanitation is only 43%. In the rural areas it is only 40.2% while it is about 71% in the urban cities of the country concentrations of arsenic. [16]

The Government of the People's Republic of Bangladesh has set a target to achieve 'Total Sanitation by 2010" shortening the initial target of 'Total Sanitation by 2015'. The target was rescheduled observing enthusiastic response to renewed 'National Sanitation Campaign' launched in the country. The Government, NGOs and development partners have joined hands to bring the entire country under sanitation coverage. [16]

In order to achieve this target, the population coverage by sanitation has to be increased about 9% per annum as compared to 2.5% increase envisaged to achieve the global target. The increase in sanitation coverage at a rate 3.5 times higher than the global rate of achievement is a challenging task but not impossible to achieve. There is an indication

of success in past achievement in Bangladesh. The target can be achieved, if the annual increase in sanitation coverage as achieved in early phase of the social mobilization can be maintained throughout the remaining period of 7 years. This will require a massive sanitation campaign from national to village levels. [16]

4.2 Millennium Development Goals in Water Supply & Sanitation Sector (WSS)

In the year 2000 (UN Millennium Summit) most countries of the world agreed on working together to achieve some specific goals which is known as the Millennium Development Goal (MGD). Goal 7, target no. 10, was formulated as "to halve, by 2015, the proportion of people without sustainable access to safe drinking water". Later in 2002 (World Summit Sustainable Development) the words "and basic sanitation" were added. [1]

The international development targets for sanitation along with subsequent endorsements are:

- By 2015 to reduce by one half the proportion of people without access to hygienic sanitation facilities, which was endorsed by Second World Water Forum, 2000 and adopted in World Summit on Sustainable Development (WSSD) declaration. 2002.
- By 2025 to provide sanitation to all

MDGs with their focus on reducing child morality and ensuring environmental sustainability have direct relation with sanitation. For this target to achieve needed decreasing poverty which is directly related with sanitation.

Governments of the people's republic of Bangladesh based on the response of the renewed sanitation campaign in the country has set the target to achieve the total sanitation by 2010, far ahead of international development goal of achieving sanitation for all in the year 2025. Water supply and total sanitation is the most desirable approach to maximize health benefits but achieve of total sanitation 2010 for all and sustainability of achieved coverage are big challenges for Bangladesh. [16]

But unfortunately the resource that are prevailing in this current period is not enough to fulfill the cherished desire. For this reason proper financing is a must in this case because without it, the overall development is not at all possible for a developing country like Bangladesh. All public and private sectors at the same time should come forward with the necessary help for ensuring the ultimate target.

The World Summit on Sustainable Development in Johannesburg, South Africa, in September 2002, greatly emphasized on safe water and sanitation and urged that the population without sanitation in developing countries be reduced to half by the year 2015. [16]

Water Supply & Sanitation (WSS) is under the Physical Planing Water Supply & Housing Sector (PPWS&H) of the Government of Bangladesh. Development activities are carried out through Annual Development Programmes (ADP)under Five Year Plan (FYP) structure. A number f public sector agencies are involved in carrying out the sector

activities (WSS).In addition to that, many private sector institutions, NGOs are also participating in the sector (WSS) development. [5]

Recognizing that, although much has been achieved in last decade, the overall picture of sanitation in South Asia still remains in an unsatisfactory position. Concerned that about one million children under age 5 in the South Asia region die each year due to water and sanitation related diseases. Being aware of the need to pursue common strategies under a common definition of sanitation, to accelerate the progress of good sanitation and hygiene promotion in South Asia in order to improve people's quality of life and reduce child mortality is the most important factor. And thus fulfill the millenium development goals (MDGs) and the commitments made in the world summit on sustainable development (WSSD in Johannesburg. [16]

4.3 GOB Goals and Targets in Water Supply & Sanitation sector (WSS)

To address the present sanitation, new strategic approach supported by adequate financial resources is required to achieve the goal of sanitation coverage by the year 2010. [16]

The successes attained in the sanitation sector in late 80s and early 90s may be attributed to the collective efforts of Government and non-government organizations (NGOS) and to the integration of social mobilization and hygiene education in the sanitation program. The present trend of sanitation sector suggests that a renewed and intensive campaign involving the following elements is required to achieve the ultimate goal of total sanitation coverage:

- An integrated approach combining, sanitation and hygiene education is needed for achieving overall success
- Awareness campaign and motivation is required to reverse unhygienic sanitation practice
- Community participation is essential for the success of sanitation program where individual sanitation program is not affordable
- CBOs, NGOs and private sector should be involved effectively in sanitation program and they should be promoted
- Improved understanding of sanitation as adverse impacts of improper sanitation and the benefits of improved sanitation is and capacity building is the prerequisite for a successful sanitation program
- Cost of sanitation facilities and their operation and maintenance should be affordable to the poor people [16]

The government of Bangladesh conducted a countrywide extensive survey of existing sanitation situation throughout the country under national sanitation campaign engaging local government institutions (LGIs). It is a commendable work completed by the local government division to acquire baseline data for area wise planning of sanitation programs to achieve the national target. [16]

Realising the importance of having a consistent and comprehensive policy on safe water supply and sanitation, the GoB through the LGD, with the approval of the Cabinet, declared in October 1998 a National Policy for Safe Water Supply and Sanitation (NPSWSS). The objectives of the policy are *'to improve the standard of public health*

and to ensure improved environment'. For achieving these objectives, steps will be taken for:

- Facilitating access of all citizens to basic level of services in water supply and sanitation;
- Bringing about behavioural changes regarding use of water and sanitation;
- Reducing incidence of water borne diseases;
- Building capacity in local governments and communities to deal more effectively with problems relating to water supply and sanitation;
- Promoting sustainable water and sanitation services;
- Ensuring proper storage, management and use of surface water and preventing its contamination;
- Taking necessary measures for storage and use of rainwater; and
- Ensuring storm-water drainage in urban areas. [1]

4.4 Policy Environment related to Water Supply & Sanitation sector (WSS)

The major consideration for the provision of improved sanitation and its sustainability can be grouped into institutional and socio-economic groups:

Institutional Consideration:

- Adequate institutional frameworks involving Government departments, local Government Institutions, NGOs and CBOs;
- Promotion of private sector in production of sanitary components along with government production as easily available in all areas;

- Inter-sectored collaboration and cooperation

Socio-economic Consideration:

- Social mobilization and political commitment;
- Promotion of hygiene education and capacity building at local level;
- Provide sanitation options affordable to users [16]

Several gaps (addition and modification requirements) in the above evaluated policies and strategies were identified to address the present and future challenges as follows:

i. The Policies in general address the outstanding issues in the sector. However, when it comes to implementation of those policies they are usually not followed by a concrete timeframe, financial allocations and government directives.

ii. The WSS Policy gives coverage targets for rural water supply in terms of average coverage of the number of users per tubewells; for urban areas overall coverage percentages are given. This does not address the service coverage gaps in many areas..

iii. NWMP gives target dates for specific coverage levels but these are considered highly ambitious in the context of prevailing sector capacity and financial requirements. WSS Policy 1998 gives targets for coverage levels but without any timeframe.

iv. Decentralization of administrative and financial authorities to the Local Government Institutions is mentioned in almost all policy but the actual modalities for decentralization are not drawn.

v. Although a general requirement for a regulatory framework for groundwater abstraction (for irrigation) has been proposed in NWMP, the requirement of a regulating authority especially for the water supply and sanitation sector is not mentioned in any policy although this is urgently needed.

vi. The institutional arrangements between the national government agencies (DPHE, LGED) and LGI (UPs, Pourashavas and City Corporations) are suggested but not clearly defined.

vii. A mechanism for well-defined coordination among different partners at community to central levels is absent.

viii.The WSS Policy 1998 was formulated before the emergence of rural piped water supply as a viable technology for rural areas and also before the discovery of widespread arsenic contamination. As such there is no specific direction and cost sharing arrangement are given for rural piped water and arsenic mitigation technologies. The policy quantifies cost sharing arrangements for other different technologies and systems in rural and urban areas but again without any timeframe. It

may be mentioned here that, realizing this need the Local Government Division is currently preparing a Cost Sharing Strategy [1]

Roles in case of Rural Water Supply:

- local government bodies in village, union and thana shall have a direct role in planning, implementation and maintenance of rural water supply
- communities shall be the focus for all water supply activities; all other stakeholders including the private sector and NGOs shall provide coordinated inputs intot the development of the sector with DPHE as the lead agency.
- User communities shall be responsible for operation and maintenance of water supply facilities
- the experience gained by DPHE, NGOs, CBOs with the different technology options will be shared for appropriate program development
- DPHE shall store enough materials and spare parts to take immediate action for reparing or installing tube wells in collaboration with local bodies, NGOs and CBOs during natural disasters

Roles in case of Urban water supply :

- WASAs shall be responsible for sustainable water supply in metropolitan areas where WASAs exists[1]. In other urban areas the Pourashavas with the help of DPHE shall be responsible for the service;

- WASAs and Pourashavas shall be empowered to set tariffs, bylaws, appointment of staffs, etc. according to their needs and in accordance with the guideline laid down by the government;
- WASAs and Pourashavas shall improve their operational efficiency including financial management;
- In urban areas DPHE will be responsible for assisting the Pourashavas and City Corporations (except in the cities of Dhaka and Chittagong) through infrastructure development and technical assistance as may be necessary;
- Efforts shall be made to upgrade the capacity of the Pourashava and WASAs for planning, designing, implementation, management and human resource development and the DPHE shall have appropriate institutional linkage for this;
- WASAs and relevant agencies shall support and promote any collective initiative in slums and squatters in accessing water supply services on payment[2].
- the private sector participation will be promoted through 'Build-Own-Operate' or 'Build-Operate-Transfer' and other arrangements. For this purpose opportunities will be created for involving the private sector in billing and collection. A guideline on private sector participation in the sector will be prepared by the government.
- Monitoring of water quality will be the responsibility of DPHE, DOE, BSTI, Atomic Energy Commission and CBOs and they will send their report to the water quality control committee in the Local Government Division

- For future planning and strategy formulation regarding development projects LGD's Monitoring, Evaluation and Inspection Wing shall monitor the activities of the sector. Their capacity shall be increased for this purpose.

Roles in case of Rural Sanitation :

- Local Government and communities shall be the focus of all activites relating to sanitation. All other stakeholders including private sector and NGOs shall provide inputs with DPHE ensuring coordination.
- the experience gained by DPHE, NGOs, CBOs with the different technology options will be shared for sustainable program development
- Behavioral development and changes in user communities shall be brought about through social mobilization and hygiene education in coordination with the Ministries of Health, Education, Social Welfare, Information, Women & Children Affairs and DPHE, NGOs, CBOs, local government bodies and other related agencies

Roles in case of Urban Sanitation :

- public latrines will be set-up by City Corporation/Pourashava and leased out to private sector for maintenance
- DPHE will be responsible for assisting the Pourashavas and City Corporations (except in the cities of Dhaka and Chittagong) through infrastructure development and technical assistance as may be necessary [1]

Chapter 5
Problems of Water Supply & Sanitation Sector (WSS)

Chapter 5
Problems of Water Supply and Sanitation Sector (WSS)

Present civilization facing the challenges of twenty first century. Former century made modern life more dynamic and productive at the same time made the life and existence questionable. Environmental scientists assume extreme environmental degradation in this century. [16]. Bangladesh has one of the most vulnerable economies, characterized by extremely high population density, low resource base and high incidence of natural disasters. [2].

The provision of sanitation is intended to improve environment and quality of life. However, improper design and maintenance of sanitation facilities can cause environmental pollution. [16]

Safe, adequate and accessible supplies of water, together with people sanitation are basic needs and essential components of primary health care. Inadequate provision of safe drinking water and sanitation are directly and indirectly related to diseases, health risk, poor health and environmental pollution. The direct benefits of water supply and sanitation can be exemplified by the reduced incidences of waterborne and water related diseases. Sanitation is particularly effective in protecting water and soil and controlling worm infections. The indirect benefits include improvement of hygienic conditions and promotion of a state of well being conductive to social development. Economic benefits result from good health, low incidence of diseases and increased life expectancy. [16]

About 2.4 billion people globally still lack adequate sanitation, of which 1.5 billion live in Asia. And the depicted picture of South Asia including Bangladesh is awful where only 39% people acquire adequate sanitation amenities. [16]

Inadequate and poor sanitation directly and indirectly related with different diseases. Only 33% people of the country are now under sanitation, which is really depressing for along time after independence. [16]

Bangladesh, with a population of 127 million is one of the most densely populated countries in the world. Poverty and rapid population growth, combined with the tradition of drinking water from open ponds and poor sanitary habits, contributed in the 1960s and 1970s to a high level of water related morbidity and mortality, especially in the rural areas. [10]

In water and sanitation sector, drinking water supply received greater attention as compared to sanitation during last few decades. As a result, the population coverage by proper sanitation remains low. The efforts of providing safe water without adequate sanitation could not create expected health impact in Bangladesh. This is primarily because of inadequate and unhygienic sanitation and poor hygiene practice, which can cause continued transmission of diseases through many routes even after supplying of safe drinking water. [16]

In rural water supply sub sector, the main problem is arsenic mitigation for which the highest proportion of the investment is required. The government and the donors (that is The World Bank) have a high commitment to solve this issue. Next requirement is for the

DSP technologies, to address the rapid lowering of groundwater in some parts of the country.

Water Supply & Sanitation (WSS) is under the Physical Planing Water Supply & Housing Sector (PPWS&H) of the Government of Bangladesh. Development activities are carried out through Annual Development Programmes (ADP)under Five Year Plan (FYP) structure. A number of public sector agencies are involved in carrying out the sector activities (WSS).In addition to that, many private sector institutions, NGOs are also participating in the sector (WSS) development. [5]

An estimated 80 percent of all diseases and over one third of deaths in developing countries are caused by the consumption of contaminated water, and on average as much as one tenth of each person's productive time is sacrificed to water related diseases. [15]

Sanitation is the primary intervention, which protects the water, air, soil and food from contamination. While water supply is the secondary intervention that protects population from ingestion f large number of pathogens. Higher population coverage by water supply indicates that people give preference to protect themselves over protection of the environment. However the reasons for low population coverage by sanitation can be cited as follows:

- Lack of awareness;
- Lower priority;
- Financial inability (affordability);
- Disparity in fund allocation and utilization;

- Inappropriate approaches, etc. [16]

The national annual development program (ADP) in Bangladesh allocated about 2.9% of the total development fund to water and sanitation sector in 2002 – 2003 (ADP, 2002). Water supply and Sanitation is not a full sector, rather a sub sector in the ADP document. Allocation of fund within the sector deprives water and sanitation sub sector. Again water supplies always receive priority over sanitation in respect of resource allocation at the project level.

While it is possible to attain total sanitation, the big challenge remains how to scale up the examples to national level. A national strategy is needed to transform the small-scale successes into national level achievements. The experience in Bangladesh shows that when the people are fully aware of the ill effects of poor sanitation and convinced for the change. It was interesting to note that the well off people of community to achieve total sanitation supported even the poor. The formulation of such strategy requires consensus and participation of all concerned agencies to ensure coordination and cooperation in implementing this huge task. No single agency can tackle this alone. [16]

Recognizing that, although much has been achieved in last decade, the overall picture of sanitation in South Asia still remains in an unsatisfactory position. Concerned that about one million children under age 5 in the South Asia region die each year due to water and sanitation related diseases. Being aware of the need to pursue common strategies under a common definition of sanitation, to accelerate the progress of good sanitation and hygiene promotion in South Asia in order to improve people's quality of life and reduce

child mortality is the most important factor. And thus fulfill the millenium development goals (MDGs) and the commitments made in the world summit on sustainable development (WSSD in Johannesburg. [16]

The results of baseline survey of 21.08 million household in 64 districts, 278 Paurasavas (Municipalities) and 6 city corporations show only 32% of households uses sanitary latrines, 25% uses unhygienic latrines. It has also been found that 31% of the households cannot construct latrine for financial inability, about 5% do not have any land to construct latrine (GOB 2003). [16]

It has been noticed that the present sanitation coverage as compared to 2000 situation has decreased. It may be due to the fact that some facilities build earlier have deteriorated to the extent that they can no longer be considered as sanitary latrine from the list of sanitary latrine in the base line survey carried out in 2003 (GOB 2003).

The baseline survey revealed that about 31% of the households may need subsidy or some short of financial help and about 5% of the population will need community latrines to bring those under sanitation coverage. [16]

The population coverage by sanitation is much lower than the coverage by water supply in all Asian countries. [16]

The main reasons for inadequate, ignored and poor quality sanitation are poverty. More than 80% people live under poverty and 60% of them are land less. 75% people of Bangladesh are illiterate by whom it is difficult to play role by knowing the merits and

demerits of sanitation. More over the natural disaster, the inflexibility of rich, poor technology, political instability, failing to keep the commitment, lower mentalities are some main reasons of poor sanitation. [16]

Chapter 6
Suggestions for the Development of WSS in Bangladesh

Chapter 6

Suggestions for the Development of WSS in Bangladesh

From the study it is evident that the private producers of sanitation sector would be the obvious choice as supply source. These are more readily available with better quality. The other reasons for selecting the private sector are easy availability, cheap, better quality and service, product varieties, installment payment, credit sale etc.

Improvement in sanitation is a change in practice and needs people's acceptance and urge to build and sustain. In case of sanitation, proper operation / use and maintenance are most important for sustainability of the overall system. [16]

An estimated 80 percent of all diseases and over one third of deaths in developing countries are caused by the consumption of contaminated water, and on average as much as one tenth of each person's productive time is sacrificed to water related diseases. [15]

Bangladesh, with a population of 127 million is one of the most densely populated countries in the world. Poverty and rapid population growth, combined with the tradition of drinking water from open ponds and poor sanitary habits, contributed in the 1960s and 1970s to a high level of water related morbidity and mortality, especially in the rural areas. [10]

Behavioral changes among the villagers were observed to an amazing rate which, lead them to be conscious about their health, environment and safety. The study revealed that

peoples are now using sanitary latrines and conscious about their food and water hygienity. The rate of education is increasing in the rural areas and so is the awareness among the children and the aged persons.

For our personality, lucidity of society as well as the advancement of the nations and for standard life and healthiness, sanitation is the unavoidable factor, which is the pre requisite for the sustainable environment, resolve the disagreement of modern life and development with environmental stability and proceed with further improvement.The World Summit on Sustainable Development in Johannesburg, South Africa, in September 2002, greatly emphasized on safe water and sanitation and urged that the population without sanitation in developing countries be reduced to half by the year 2015. The following points are raised in the incase of supply and demand:

- Community Led Total Sanitation (CLTS) was a strategy that had proved to be effective by penetrating remote areas, creating new demands and reducing the cost of water supply and sanitation
- Limitations in public sector investments in sanitation have aided private sector growth in the field
- Public sector activities can work as a base for training the private sector and thus bring about improvements
- Household needs or demands are major factors for the development and promotion of sanitation in the community. This in turn will lead to the development of private sector involvement in the area.
- Incentives for efficient work can increase significantly the role of the private sector in sanitation.

- Hygiene education is still very necessary as a precursor to the production of sanitation and introduction of sanitation promotion programs. [16]

Water Supply & Sanitation (WSS) is under the Physical Planing Water Supply & Housing Sector (PPWS&H) of the Government of Bangladesh. Development activities are carried out through Annual Development Programmes (ADP)under Five Year Plan (FYP) structure. A number f public sector agencies are involved in carrying out the sector activities (WSS).In addition to that, many private sector institutions, NGOs are also participating in the sector (WSS) development. [5]

The major consideration for the provision of improved sanitation and its sustainability can be grouped into institutional and socio-economic groups:

Institutional Consideration:

- Adequate institutional frameworks involving Government departments, local Government Institutions, NGOs and CBOs;
- Promotion of private sector in production of sanitary components along with government production as easily available in all areas;
- Inter-sectored collaboration and cooperation

Socio-economic Consideration:

- Social mobilization and political commitment;
- Promotion of hygiene education and capacity building at local level;
- Provide sanitation options affordable to users [16]

The following areas requiring attention in water supply and sanitation in Bangladesh:

- The poorest segment of the population having least access to safe water supply and sanitation should receive the most support from Government and development partner agencies;
- Total sanitation and hygiene promotion campaign should mounted to achieve the real benefit;
- Water supply and sanitation services should reach the urban low income communities through public private partnership;
- Local Government should be strengthened to work with communities in creating awareness and ensuring equitable service delivery;
- The resources for the water and sanitation sector should be increased and investment should be rationalized taking into account the existing poor-rich and rural-urban inequalities
- Recognizing that significant improvement in the situation of sanitation and safe water will have large positive impacts on poverty reduction by increasing health and productivity and therefore should have a central role in country's poverty reduction strategies
- Understanding that some Government organizations, NGOs and small scale private initiatives in generating demand and delivering door to door services have demonstrated remarkable achievements regarding sanitation.
- Should recognize the need for community subsidies for promotion, awareness, capacity building and the creation of funding mechanisms for scaling up sanitation and hygiene programs

- Should focus on understanding and creating demand, sustaining attitudinal and behavioral change and encouraging wider community participation.
- Should create an enabling environment for small scale private providers and innovative technical and financial mechanisms to be mainstreamed to promote better, faster and cheaper serviced delivery
- Should encourage local governments to engage in strategic partnerships with community based organizations (CBOs), NGOs and other concerned actors,k so as to facilitate scaling up overall situation. [16]

To address the present sanitation, new strategic approach supported by adequate financial resources is required to achieve the goal of sanitation coverage by the year 2010. [16]

For sanitation and hygiene practice it is important to have continuous follow up and awareness generation. It is important to generate awareness about the hygiene latrine and the incremental development of the sanitation practice. It is appreciable that awareness viewed to the population as educational rate and GDP is increasing gradually.

- Building political will
- Developing schools and institutes as vehicles for expanding the out reach of the program and for improving the hygiene behavior development
- Expanding the scope of the program to include the both rural and urban areas
- Building and institutionalizing human resource capital
- Developing total sanitation approaches to achieve visible results
- Coordinating monitoring and evaluation with health, education and other sectors to measure benefits and impact on quality of life.
- Ensuring overall improvements in water and sanitation sector

- Make fund available for social mobilization activities from both the central and local development funds
- Provide loan, credit and other facilities to encourage local private producers.
- All welfare NGOs should promote and facilitate WS issues appropriately. For example, those that provide loans should encourage people to install and use sanitary latrines.

In all rural primary schools and institutes centers, building adequate capacities by developing a network of resource centers at national, regional, state and district level, developing and putting in place efficient monitoring mechanisms at all levels. Simple awareness and motivation will bring 25% household with unhygienic latrines and remaining 7% without any latrine into sanitation coverage. [16]

Good health is the main capital of the poor people to earn their livelihoods. Water, sanitation and hygiene are mentioned as priority issues in community consultation (those facilitated by Water Aid partner NGOs) and consultations with other Water and Sanitation sector actors including relevant donors and government agencies. [16]

In Bangladesh the main force for setting the goals and targets are the Millennium DEvelop0ment Goals (MDGs). The MDG recognized the importance of access to water and sanitation in relation to poverty reduction and human development. [16]

Ensure effective and equitable access to water and sanitation services for all and sustainable improvements in hygiene behavior among the whole population of the country with special emphasis on rural and urban poor communities in challenging geographical socio-economic and technical contexts in Bangladesh. [16]

National policy for water supply and sanitation, 1998 –

- Development of framework for implementation national policy
- Decentralization of DPHE
- Local government representative in Union Parishad and Paurasava with responsibility for improved water, sanitation services with appropriate resource allocation
- Increased separate budget for water, sanitation and hygiene promotion/education
- Incorporation of hygiene education in primary school curriculum
- Massive campaign for hygiene education
- Pro-poor strategy to ensure water and sanitation service to hard core poor
- Policy declaration for urban poor in informal settlement to establish their right on water and sanitation [16]

The water and sanitation sector is not a separate sector in the 'Infrastructure Development' section. Beyond the traditional boundaries of the health sector, such as in water and sanitation, that the people have a poor understanding about the link between poor hygiene and disease; that 40 of the 50 diseases prevalent in Bangladesh are water and sanitation related. And that hygiene related diseases in Bangladesh costs 5 billion Taka (US$ 80 million) each year, fore treatment alone. In the full PRSP there is a need to emphasize preventive health care approaches regarding water and sanitation sector.

Chapter 7
Conclusions and Recommendations

Conclusions

Government of Bangladesh has set the target to achieve total sanitation by 2010, far ahead of international development goal of achieving sanitation for all in the year 2025. Total sanitation is the most desirable approach to maximize health benefits but achievement of total sanitation by 2010 for all rural areas and sustainability of achieved coverage are big challenges for Bangladesh. Recognizing that, although much has been achieved in last decade, the overall picture of sanitation in South Asia still remains in an unsatisfactory position.

Bangladesh, primarily an agrobased country, lies in the north eastern part of South Asia. It is almost surrounded by India, except for a short south eastern frontier with Burma and a southern deltaic coast fronting the Bay of Bengal. Bangladesh has one of the most vulnerable economies, characterized by extremely high population density, low resource base and high incidence of natural disasters.

Bangladesh, with a population of 127 million is one of the most densely populated countries in the world. Poverty and rapid population growth, combined with the tradition of drinking water from open ponds and poor sanitary habits, contributed in the 1960s and 1970s to a high level of water related morbidity and mortality, especially in the rural areas. [10]

The World Summit on Sustainable Development in Johannesburg, South Africa, in September 2002, greatly emphasized on safe water and sanitation and urged that the

population without sanitation in developing countries be reduced to half by the year 2015. [16]

It is understood that health benefits are not ensured without the combined protective cover of safe water, hygienic latrine, and cleanliness and overall health consciousness. An integrated approach is highly essential to get the benefit from the increased coverage of water supply and sanitation. [16]

The successes attained in the sanitation sector during 1990 – 98 in Bangladesh may be attributed to the collective efforts of governments and non – government organizations (NGOs) and to the integration of social mobilization and hygiene education in the sanitation program. The present trend of sanitation sector suggests that renewed and intensive campaign is required for further increase in sanitation coverage. [16]

A lot more to be done for a sustainable and full scale development of sanitation in the country. This aspiration can be translated into reality only when the private sector is in a position to play a greater role and participate more actively. To achieve sustainability in sanitation and water supply, special emphasize should be given on the behavioral change of people towards hygienic sanitation. This study revealed that, private sector contribute a lot in that purposes. An estimated 80 percent of all diseases and over one third of deaths in developing countries are caused by the consumption of contaminated water, and on average as much as one tenth of each person's productive time is sacrificed to water related diseases.

The use of sanitary latrines is found gradually to be higher in rural areas where intensive social mobilization activities were undertaken in quite a good number of rural areas particularly in Union & villages with support from NGOs and CBOs. [16]

This study experienced that the private sector has responded well to the demand generated in rural sanitation primarily through the demonstration effect of the public sector programs. Today private sector is contributing significantly in the development of water supply and sanitation in rural Bangladesh. Private sector involvement in this sector will thus add a new and important dimension to future program activities in rural Bangladesh and in other regions of similar socio-economic context.

The study revealed that the sanitation situation of rural areas of Bangladesh is going to be sustainable slowly but surely because of the rapid behavioral changes of people towards sanitation. This comment is also supported by the quick progresses achieved in sanitation just within two years from 2003 (sanitation coverage, 33%) to 2005 (sanitation coverage, 59%). And, it is a positive sign that awareness, realization and perception about health, hygienity, environment and safety is gradually increasing among the people. So, it can be concluded from the prevailing trend that achieving total sanitation and sustainability by 2010 is a must.

Behavioral changes among the villagers were observed to an amazing rate which, lead them to be conscious about their health, environment and safety. The rate of education is increasing in the rural areas and so is the awareness among the children and the aged persons. [16]

All Union WATSAN members should be given proper orientation / training on their expected roles regarding water supply and sanitation sector.

The role of proper financing for any sector development is very important. The same understanding is true for the sector of Water & Sanitation sector. In the coming years, there will be resource constraint, rather the development sectors will compete with each other for precious resources which often will be limited. The Water & Sanitation sector though considered to be one of the most important sectors will also face challenges coming from resource constraint. Proper financing in this sector can play a vital role to optimize the benefit resulting from the resources to be invested. This will help inculcate efficiency in the operations of the organizations and individuals involved in the sector activities. In nutshell it can be concluded that proper financing in the Water & Sanitation sector offers a wide vista of opportunity, as it possesses vast importance.

Recommendations

Realising the importance of having a consistent and comprehensive policy on safe water supply and sanitation, the GoB through the LGD, with the approval of the Cabinet, declared in October 1998 a National Policy for Safe Water Supply and Sanitation (NPSWSS). The objectives of the policy are *'to improve the standard of public health and to ensure improved environment'*. For achieving these objectives, steps will be taken for:

- Facilitating access of all citizens to basic level of services in water supply and sanitation;
- Bringing about behavioural changes regarding use of water and sanitation;
- Reducing incidence of water borne diseases;
- Building capacity in local governments and communities to deal more effectively with problems relating to water supply and sanitation;
- Promoting sustainable water and sanitation services;
- Ensuring proper storage, management and use of surface water and preventing its contamination;
- Taking necessary measures for storage and use of rainwater; and
- Ensuring storm-water drainage in urban areas. [1]

For a sustained growth of financing in Water & Sanitation sector (WSS) it is recommended that following steps are taken without any further delay:

- Special emphasize should be given addressing water and sanitation with hygiene promotion
- Improved water supply, sanitation services and hygiene practices need to be emphasized as a major element for building up human capability in the poverty reduction strategy for Bangladesh
- To enable sustainable, integrated community for managing water supply and sanitation sector, so that more locally appropriate approaches can be developed.
- Investments in water and sanitation should be considered as investments for the nation for building human capability to reduce the overall poverty of the country
- Special effort is needed for overall awareness building.
- Formulate a policy of proper financing in WSS sector ensuring government's policy support for its development.
- Formulate a strategy to ensure gradual and sustained development of financing in WSS.
- Following strategies, develop an action plan to facilitate the growth of financing in WSS.
- Launch awareness building initiatives on the importance of proper financing in WSS.
- Develop mechanism to provide support to the private sector in WSS.
- Put efforts towards financial management in case of WSS sector.
- Ensure resource allocation to undertake the activities indicated above.

Annexes

▼ About the MDGs

▼ Millennium Indicators Database

Country profiles
Data series
Definitions
Sources

Goals, targets and indicators
World and regional trends
Regional groupings
Key documents and links

[Français]
[Español]

▼ Progress towards the MDGs, 1990-2005

Millennium Development Goals: 2005 Progress Chart

18 January 2006

Millennium Development Goal Indicators Database

NEW! Assessment of countries' capacity to monitor MDG indicators. See related papers presented at the Statistical Commission, 7-10 March 2006 (**E/CN.3/2006/14, E/CN.3/2006/15** and related **background documents**)

The Millennium Development Goal Indicators Database shows the latest available data as of April 2005.

Goals, targets and indicators

A framework of 8 goals, 18 targets and 48 indicators to measure progress towards the Millennium Development goals was adopted by a consensus of experts from the United Nations Secretariat and IMF, OECD and the World Bank. (Road Map towards the Implementation of the United Nations Millennium Declaration, A/56/326 [PDF, 450KB])
Each indicator below is linked to millennium data series as well as to background series related to the target in question.
For a description of the monitoring process, see About the Millennium Development Goals.

Goal 1. Eradicate extreme poverty and hunger

Target 1.
Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day

Indicators

1. Proportion of population below $1 (1993 PPP) per day (World Bank)[a]
2. Poverty gap ratio [incidence x depth of poverty] (World Bank)
3. Share of poorest quintile in national consumption (World Bank)

Target 2.
Halve, between 1990 and 2015, the proportion of people who suffer from hunger

Indicators
4. Prevalence of underweight children under five years of age (UNICEF-WHO)
5. Proportion of population below minimum level of dietary energy consumption (FAO)

Goal 2. Achieve universal primary education

Target 3.
Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Indicators
6. Net enrolment ratio in primary education (UNESCO)
7. Proportion of pupils starting grade 1 who reach grade 5 (UNESCO)[b]
8. Literacy rate of 15-24 year-olds (UNESCO)

Goal 3. Promote gender equality and empower women

Target 4.
Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015

Indicators
9. Ratio of girls to boys in primary, secondary and tertiary education (UNESCO)
10. Ratio of literate women to men, 15-24 years old (UNESCO)
11. Share of women in wage employment in the non-agricultural sector (ILO)
12. Proportion of seats held by women in national parliament (IPU)

Goal 4. Reduce child mortality

Target 5.
Reduce by two thirds, between 1990 and 2015, the under-five mortality rate

Indicators
13. Under-five mortality rate (UNICEF-WHO)
14. Infant mortality rate (UNICEF-WHO)
15. Proportion of 1 year-old children immunized against measles (UNICEF-WHO)

Goal 5. Improve maternal health

Target 6. Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio

Indicators
16. Maternal mortality ratio (UNICEF-WHO)
17. Proportion of births attended by skilled health personnel (UNICEF-WHO)

Goal 6. Combat HIV/AIDS, malaria and other diseases

Target 7
Have halted by 2015 and begun to reverse the spread of HIV/AIDS

Indicators
18. HIV prevalence among pregnant women aged 15-24 years (UNAIDS-WHO-UNICEF)
19. Condom use rate of the contraceptive prevalence rate (UN Population Division)[c]
19a. Condom use at last high-risk sex (UNICEF-WHO)
19b. Percentage of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS (UNICEF-WHO)[d]
19c. Contraceptive prevalence rate (UN Population Division)
20. Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years (UNICEF-UNAIDS-WHO)

Target 8.
Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

Indicators
21. Prevalence and death rates associated with malaria (WHO)
22. Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures (UNICEF-WHO)[e]
23. Prevalence and death rates associated with tuberculosis (WHO)
24. Proportion of tuberculosis cases detected and cured under DOTS (internationally recommended TB control strategy) (WHO)

Goal 7. Ensure environmental sustainability

Target 9.
Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

Indicators
25. Proportion of land area covered by forest (FAO)
26. Ratio of area protected to maintain biological diversity to surface area (UNEP-WCMC)
27. Energy use (kg oil equivalent) per $1,000 GDP (PPP) (IEA, World Bank)
28. Carbon dioxide emissions per capita (UNFCCC, UNSD) and consumption of ozone-depleting

CFCs (ODP tons) (UNEP-Ozone Secretariat)
29. Proportion of population using solid fuels (WHO)

Target 10.
Halve, by 2015, the proportion of people without sustainable access to safe drinking water and sanitation

Indicators
30. Proportion of population with sustainable access to an improved water source, urban and rural (UNICEF-WHO)
31. Proportion of population with access to improved sanitation, urban and rural (UNICEF-WHO)

Target 11.
By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers

Indicators
32. Proportion of households with access to secure tenure (UN-HABITAT)

Goal 8. Develop a global partnership for development

Indicators for targets 12-15 are given below in a combined list.

Target 12.
Develop further an open, rule-based, predictable, non-discriminatory trading and financial system. Includes a commitment to good governance, development and poverty reduction - both nationally and internationally

Target 13.
Address the special needs of the least developed countries.
Includes: tariff and quota-free access for least developed countries' exports; enhanced programme of debt relief for heavily indebted poor countries (HIPC) and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction

Target 14.
Address the special needs of landlocked developing countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly)

Target 15.
Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term

Some of the indicators listed below are monitored separately for the least developed countries (LDCs), Africa, landlocked developing countries (LLDCs) and small island

developing States (SIDS)

Indicators

Official development assistance (ODA)

33. Net ODA, total and to LDCs, as percentage of OECD/Development Assistance Committee (DAC) donors' gross national income (GNI)(OECD)
34. Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe water and sanitation) (OECD)
35. Proportion of bilateral ODA of OECD/DAC donors that is untied (OECD)
36. ODA received in landlocked developing countries as a proportion of their GNIs (OECD)
37. ODA received in small island developing States as proportion of their GNIs (OECD)

Market access

38. Proportion of total developed country imports (by value and excluding arms) from developing countries and from LDCs, admitted free of duty (UNCTAD, WTO, WB)
39. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (UNCTAD, WTO, WB)
40. Agricultural support estimate for OECD countries as percentage of their GDP (OECD)
41. Proportion of ODA provided to help build trade capacity (OECD, WTO)

Debt sustainability

42. Total number of countries that have reached their Heavily Indebted Poor Countries Initiative (HIPC) decision points and number that have reached their HIPC completion points (cumulative) (IMF - World Bank)
43. Debt relief committed under HIPC initiative (IMF-World Bank)
44. Debt service as a percentage of exports of goods and services (IMF-World Bank)

Target 16.
In cooperation with developing countries, develop and implement strategies for decent and productive work for youth

Indicators

45. Unemployment rate of young people aged 15-24 years, each sex and total (ILO)[f]

Target 17.
In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries

Indicators

46. Proportion of population with access to affordable essential drugs on a sustainable basis (WHO)

Target 18.
In cooperation with the private sector, make available the benefits of new technologies, especially information and communications

Indicators
47. Telephone lines and cellular subscribers per 100 population (ITU)
48. Personal computers in use per 100 population and Internet users per 100 population (ITU)

Footnotes:

[a] For monitoring country poverty trends, indicators based on national poverty lines should be used, where available.

[b] An alternative indicator under development is "primary completion rate".

[c] Among contraceptive methods, only condoms are effective in preventing HIV transmission. Since the condom use rate is only measured amongst women in union, it is supplemented by an indicator on condom use in high-risk situations (indicator 19a) and an indicator on HIV/AIDS knowledge (indicator 19b). Indicator 19c (contraceptive prevalence rate) is also useful in tracking progress in other health, gender and poverty goals.

[d] This indicator is defined as the percentage of population aged 15-24 who correctly identify the two major ways of preventing the sexual transmission of HIV (using condoms and limiting sex to one faithful, uninfected partner), who reject the two most common local misconceptions about HIV transmission, and who know that a healthy-looking person can transmit HIV. However, since there are currently not a sufficient number of surveys to be able to calculate the indicator as defined above, UNICEF, in collaboration with UNAIDS and WHO, produced two proxy indicators that represent two components of the actual indicator. They are the following: (a) percentage of women and men 15-24 who know that a person can protect herself from HIV infection by "consistent use of condom"; (b) percentage of women and men 15-24 who know a healthy-looking person can transmit HIV.

[e] Prevention to be measured by the percentage of children under 5 sleeping under insecticide-treated bednets; treatment to be measured by percentage of children under 5 who are appropriately treated.

[f] An improved measure of the target for future years is under development by the International Labour Organization (ILO).

▼ About the MDGs

▼ Millennium Indicators Database

Country profiles
Data series
Definitions
Sources

Goals, targets and indicators
World and regional trends
Regional groupings
Key documents and links

[Français]
[Español]

▼ Progress towards the MDGs, 1990-2005

Millennium Development Goals: 2005 Progress Chart

ST/ESA/STAT/MILLENNIUMINDICATORSDB/WWW
28 October 2002

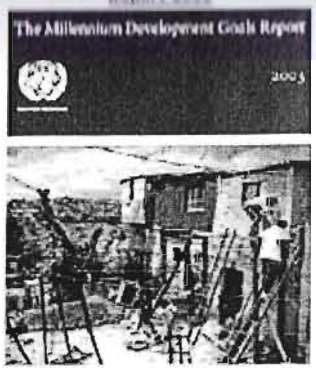
Monitoring progress towards the achievement of the Millennium Development Goals

In September 2000 147 heads of State and Government, and 189 nations in total, in the United Nations Millennium Declaration [A/RES/55/2] committed themselves to making the right to development a reality for everyone and to freeing the entire human race from want. They acknowledged that progress is based on sustainable economic growth, which must focus on the poor, with human rights at the centre. The objective of the Declaration is to promote "a comprehensive approach and a coordinated strategy, tackling many problems simultaneously across a broad front."

The Declaration calls for halving by the year 2015, the number of people who live on less than one dollar a day. This effort also involves finding solutions to hunger, malnutrition and disease, promoting gender equality and the empowerment of women, guaranteeing a basic education for everyone, and supporting the Agenda 21 principles of sustainable development. Direct support from the richer countries, in the form of aid, trade, debt relief and investment is to be provided to help the developing countries.

To help track progress, the United Nations Secretariat and the specialized agencies of the UN system, as well as representatives of IMF, the World Bank and OECD defined a set of time-bound and measurable goals and targets for combating poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women [See Road Map towards the Implementation of the United Nations Millennium Declaration (PDF, 450KB)]. International experts also selected relevant indicators to be used to assess progress over the period from 1990 to 2015, when targets are expected to be met. Each year, the Secretary-General will prepare a report on progress achieved towards implementing the Declaration, based on data on the 48 selected indicators, aggregated at global and regional levels.

In close collaboration with United Nations agencies and funds, the World Bank, IMF, and OECD, the United Nations Statistics Division coordinates data analysis and maintains the database containing



the series related to the selected indicators, as well as other background series intended to supplement the basic 48 Millennium indicators, for more in-depth analysis.

The figures presented in the database are from international series compiled by the various agencies. The availability of data necessary to calculate the indicators in each country depends on the capacities of the national statistical services. In many instances-when country data are not available or are affected by serious quality problems- estimates are used.

In order to help focus analysis and assessment of progress at the country level, the Millennium indicators and background data series are also organized and presented by country in Millennium country profiles.

Country-level monitoring is an indispensable element in assessing progress towards the MDGs and in mobilizing resources to assist developing countries in meeting the targets. The United Nations Development Programme, assisted by other agencies and the United Nations Secretariat, is coordinating efforts and supporting the preparation of national monitoring reports in countries.

Back to top| Statistics Division Home| Contact Us| Search| Site Map

▼ About the MDGs

▼ Millennium Indicators Database

Country profiles
Data series
Definitions
Sources

Goals, targets and indicators
World and regional trends
Regional groupings
Key documents and links

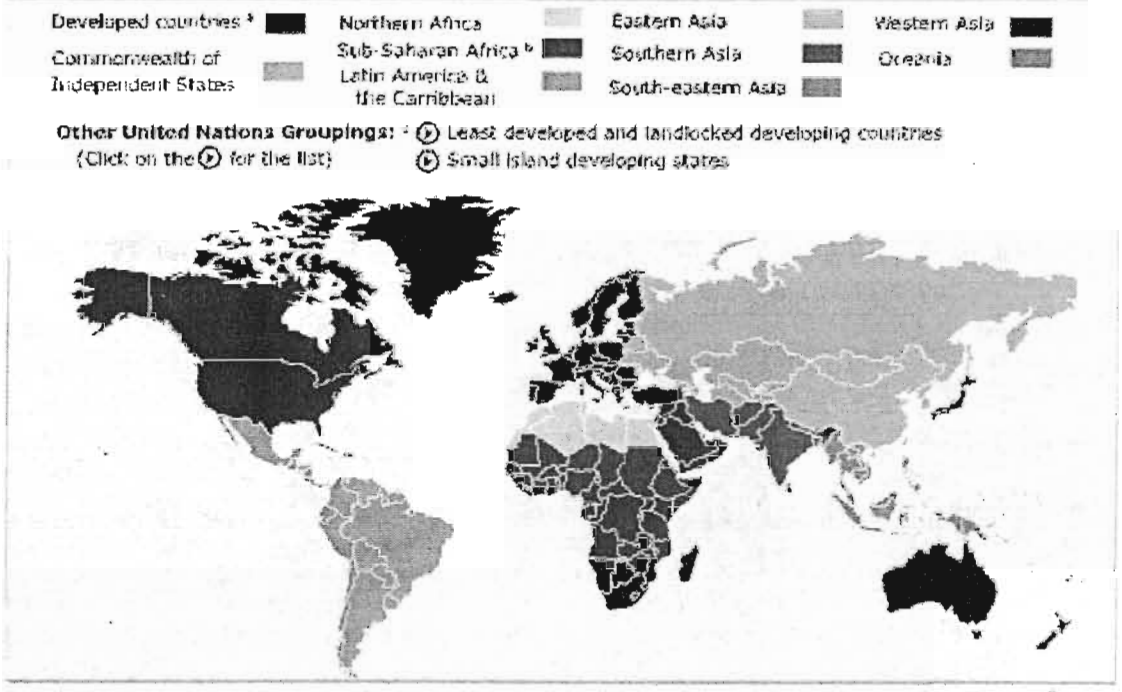
[Français]
[Español]

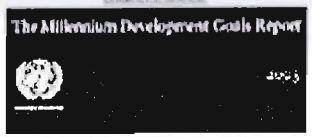
▼ Progress towards the MDGs, 1990-2005

Millennium Development Goals: 2005 Progress Chart

Millennium Development Indicators: World and regional groupings

Click on a "Region" or country below for detailed listings





Notes:

The designations employed and the presentation of country or area names in these listings do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The user of any particular dataset should consult the dataset documentation to determine the exact coverage of statistics for the country or area entities in the dataset. Various datasets may or may not include coverage of outlying and overseas areas, depending on the type of data and source. For further information refer to Standard Country or Area Codes for Statistical use (United Nations publications, Sales No. 17.98.XVII.9), table 2, updated at ST/ESA/STAT/SER.M/49/Rev.4 http://unstats.un.org/unsd/methods/m49/m49regin.htm (17 October 2002).

a There is no established convention for the designation of "developed" and "developing" countries or areas in the United Nations system. In common practice, Japan in Asia, Canada and the United States in northern America, Australia and New Zealand in Oceania, and Europe are considered "developed" regions.

b The designation sub-Saharan Africa is commonly used to indicate all of Africa except northern Africa, with the Sudan included in sub-Saharan Africa.

c For further information, please refer to the website of the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States

Back to top| Statistics Division Home| Contact Us| Search| Site Map

Series Water, percentage of population with access to improved drinking water sources, rural (WHO-UNICEF) [27910]

Years 1990-2005 Region or country group All countries or areas

Download results Printer friendly results

Water, percentage of population with access to improved drinking water sources, rural (WHO-UNICEF)

Data last updated on 10 Nov 2004

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Afghanistan													11			
Albania	95												95			
Algeria	92												80			
Andorra	100												100			
Angola	40												40			
Anguilla													60			
Antigua and Barbuda													89			
Argentina	73															
Armenia													80			
Aruba	100												100			
Australia	100												100			
Austria	100												100			
Azerbaijan	49												59			
Bahamas													86			
Bangladesh	68												72			
Barbados	100												100			
Belarus	100												100			
Belize													82			

Benin	54	60
Bhutan		60
Bolivia	48	68
Bosnia and Herzegovina	96	96
Botswana	88	90
Brazil	55	58
British Virgin Islands	98	98
Bulgaria	100	100
Burkina Faso	35	44
Burundi	67	78
Cambodia		29
Cameroon	32	41
Canada	99	99
Cape Verde		73
Central African Republic	35	61
Chad	13	32
Chile	49	59
China	59	68
Colombia	78	71
Comoros	85	96
Congo		17
Cook Islands	87	88
Costa Rica		92
Cote d'Ivoire	66	74
Cuba		78
Cyprus	100	100
Democratic Republic of the Congo	24	29
Denmark	100	100
Djibouti	67	67
Dominica		90

Iraq	50	50
Israel	100	100
Jamaica	86	87
Japan	100	100
Jordan	91	91
Kazakhstan	72	72
Kenya	30	46
Kiribati	33	53
Korea, Democratic People's Republic of	100	100
Korea, Republic of		71
Kyrgyzstan		66
Lao People's Democratic Republic		38
Lebanon	100	100
Lesotho		74
Liberia	34	52
Libyan Arab Jamahiriya	68	68
Luxembourg	100	100
Madagascar	27	34
Malawi	34	62
Malaysia		94
Maldives	99	78
Mali	29	35
Malta	100	100
Marshall Islands	97	95
Mauritania	57	45
Mauritius	100	100
Mexico	54	72
Micronesia, Federated	85	94

States of		
Mongolia	30	30
Montserrat	100	100
Morocco	58	56
Mozambique		24
Myanmar	40	74
Namibia	43	72
Nepal	67	82
Netherlands	99	99
New Zealand	82	
Nicaragua	42	65
Niger	35	36
Nigeria	33	49
Niue	100	100
Northern Mariana Islands	100	97
Norway	100	100
Occupied Palestinian Territory		86
Oman	72	72
Pakistan	78	87
Palau	99	94
Panama		79
Papua New Guinea	32	32
Paraguay	46	62
Peru	42	66
Philippines	82	77
Qatar	100	100
Republic of Moldova		88
Romania		16
Russian Federation	86	88

Rwanda	57	69
Saint Kitts and Nevis	99	99
Saint Lucia	98	98
Saint Vincent and the Grenadines		93
Samoa	89	88
Sao Tome and Principe		73
Saudi Arabia	63	
Senegal	50	54
Serbia and Montenegro	86	86
Seychelles		75
Sierra Leone		46
Slovakia	100	100
Solomon Islands		65
Somalia		27
South Africa	67	73
Sri Lanka	62	72
Sudan	57	64
Suriname		73
Swaziland		42
Sweden	100	100
Switzerland	100	100
Syrian Arab Republic	64	64
Tajikistan		47
Thailand	78	80
Timor-Leste		51
Togo	37	36
Tokelau	96	89
Tonga	100	100
Trinidad and	89	88

Tobago		
Tunisia	57	60
Turkey	65	87
Turkmenistan		54
Turks and Caicos Islands	100	100
Tuvalu	89	92
Uganda	40	52
Ukraine		94
United Republic of Tanzania	27	62
United States	100	100
Uruguay		93
Uzbekistan	84	84
Vanuatu	53	52
Venezuela		70
Viet Nam	67	67
Yemen	68	68
Zambia	27	36
Zimbabwe	69	74

Back to top| Statistics Division Home| Contact Us| Search| Site Map

Goal 7. Ensure environmental sustainability

Indicator
30. Proportion of population with sustainable access to an improved water source, urban and rural (UNICEF-WHO)

Series name and code
Water, percentage of population with access to improved drinking water sources, rural (WHO-UNICEF) [code 27910]

View data (Data last updated on 10 Nov 2004)

Code	Source (click for details)
65	World Health Organization and United Nations Children's Fund. Water Supply and Sanitation Collaborative Council. Global Water Supply and Sanitation Assessment, 2000 Report, Geneva and New York. Updated data available at www.childinfo.org

Classification	Category
Urban and rural residence	Rural

Code	Definitions (click for notes)
107	population total
127	rural population
248	water, access to improved drinking supply

Dominican Republic	72	85
Ecuador	54	77
Egypt	92	97
El Salvador	47	68
Equatorial Guinea		42
Eritrea	36	54
Ethiopia	16	11
Finland	100	100
French Guiana		71
French Polynesia	100	100
Gabon		47
Gambia		77
Georgia		61
Germany	100	100
Ghana	36	68
Grenada		93
Guadeloupe		93
Guam	100	100
Guatemala	69	92
Guinea	32	38
Guinea-Bissau		49
Guyana		83
Haiti	43	59
Honduras	78	82
Hungary	98	98
Iceland	100	100
India	61	82
Indonesia	62	69
Iran (Islamic Republic of)	83	83

References

References

1. Sector Development Programme

   Water & Sanitation Sector in Bangladesh

   Volume I

   Volume II

2. Country Report

   Evaluation of Danish Support to Water Supply & Sanitation

3. Scaling up Rural Sanitation in South Asia WSP

4. National Strategy for Accelerated Poverty Reduction

5. Sector Position Paper-June 1991, Regional Water & Sanitation Group-South Asia (RWSG-SA), The World Bank, (Unpublished document)

6. Sector Study-Water Supply & Sanitation Sector (1986)

   Department of Public Health Engineering, Government of Bangladesh

   (Study carried out with the financial assistance of Dutch Government)

7. Final Consolidated Progress Report-2005, Sector Progress Support (SPS) for Water Supply & Sanitation, Bangladesh

8. A National strategy For Economic Growth, Poverty Reduction and Social Development – Economic Relations Division, Ministry of Finance, Government of the People's Republic of Bangladesh, March 2003

9. Annual Development Programme (FY 2005 – 2006) – Planning Commission, Programme Division, Government of the People's Republic of Bangladesh

10. Current Situation – Institutional Review, Water Supply and Sanitation Sector, Bangladesh, Final Summary Report, September 2004

11. Water Supply & Sanitation Sector, Project Database, 2003 – 2004. – Prepared by Unit for Policy Implementation (UPI) on behalf of Local Government Division, Ministry of Local Government – Rural Development & Co-operatives, October 2003

12. International Workshop on – Arsenic Mitigation on Bangladesh, 14 – 16 January, 2002, Alternative Water Supply Options for Arsenic Affected Areas of Bangladesh – M. Feroze Ahmed Ph.D., with contributions from K.M Minnatullah, A. J. Shamsuddin, S. A. Ahmed.

13. Towards a more Effective Operational Response, Arsenic Contamination of Groundwater in South and East Asian Countries – The World Bank.

14. National Policy for Safe Water Supply & Sanitation 1998, Local Government Division, Ministry of LGRD & Co-operatives.

15. United Nations Sustainable Development – Agenda 21

16. A Precise Study on Determination of Sustainability of Rural Sanitation Particularly Water, Environment, Sanitation And Monitoring Behavioral Change, Management Strategies And Mitigation, Dhamrai, Dhaka – Md. Tajuddin Sikder, Dept. of Environmental Science, Jahangirnagar University