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**SANITATION, HEALTH AND HYGIENE  
IN WORLD BANK RURAL WATER SUPPLY  
AND SANITATION PROJECTS**

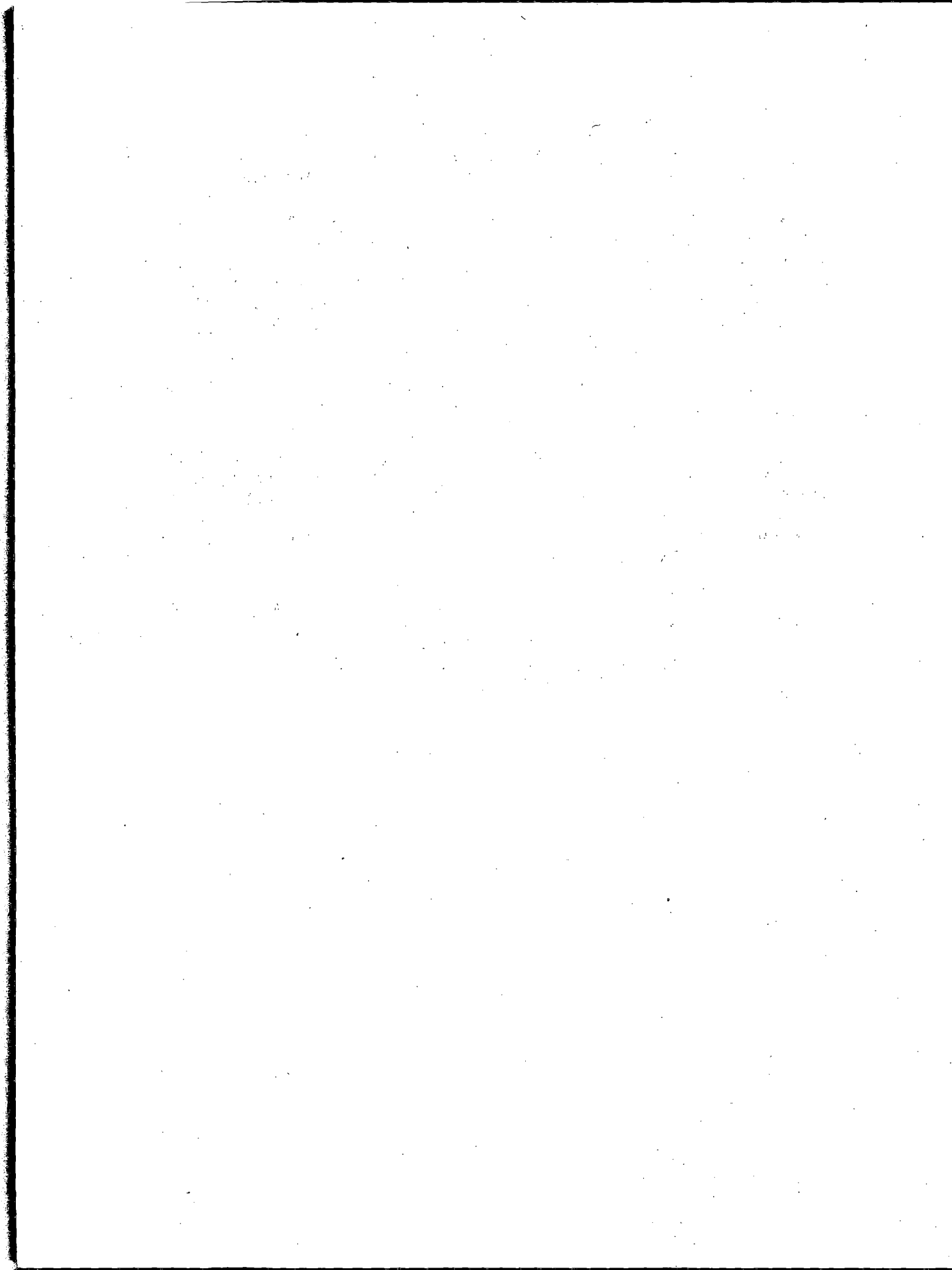


EUROPE AND CENTRAL ASIA REGIONAL STUDIES PROGRAM

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**SANITATION, HEALTH AND HYGIENE**  
**IN WORLD BANK**  
**RURAL WATER SUPPLY AND SANITATION PROJECTS**



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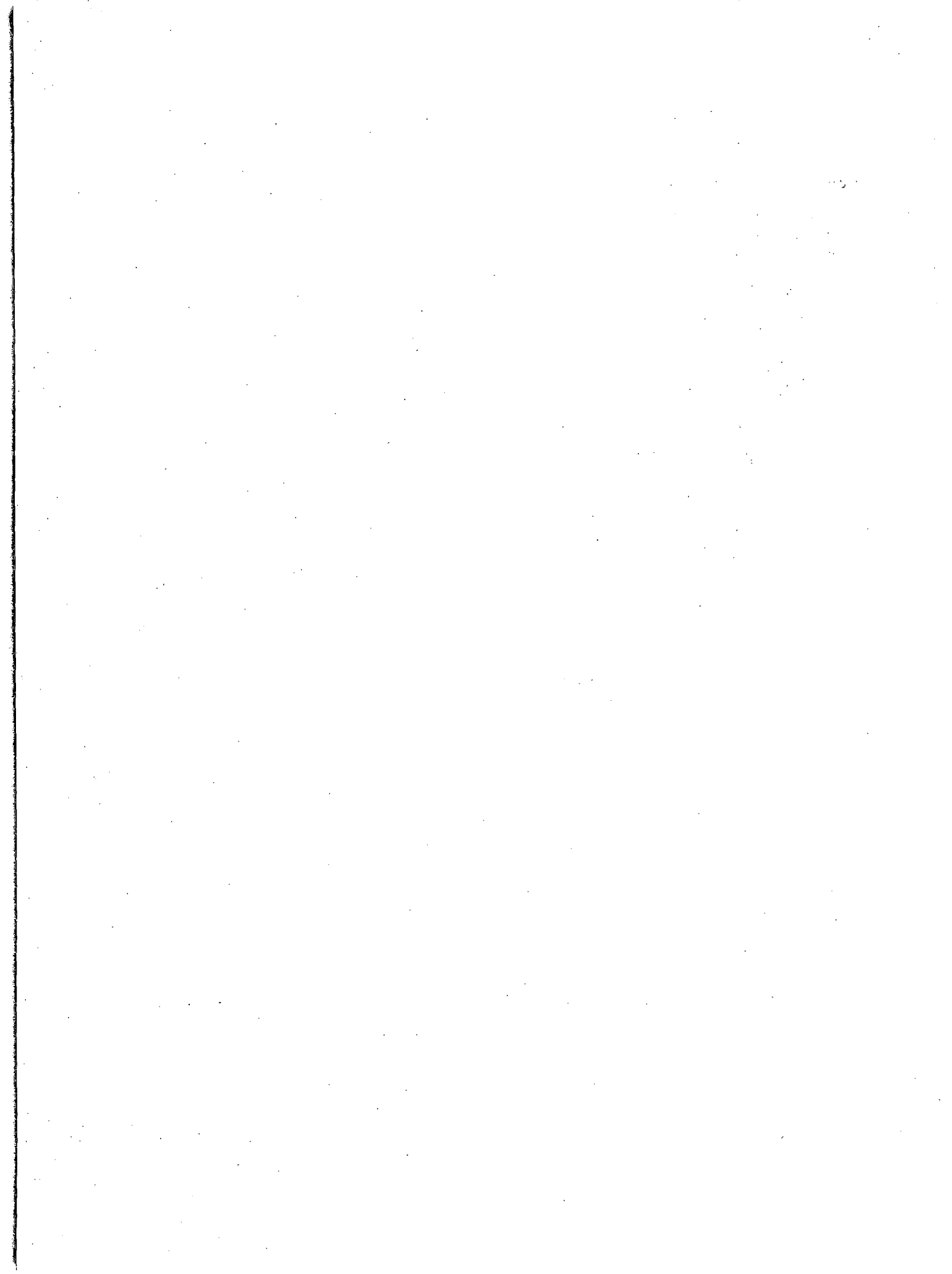
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## **EXECUTIVE SUMMARY**

(i) A review of World Bank investments in rural water and sanitation (RWSS) since 1977 suggests that the Bank is missing an opportunity to turn these investments into improvements in health among project beneficiaries. The Bank has put increasing emphasis on rural water and sanitation (RWSS): 15 such projects have been completed; 21 are being implemented; and 19 are in the pipeline. However, these stand-alone projects represent only part of the total RWSS picture. Many RWSS investments are in non-stand-alone projects or project components funded through social investment or agriculture development funds or implemented in conjunction with urban water and sanitation infrastructure projects. These "other" RWSS investments total 94: 24 completed, 49 in implementation, and 21 in the pipeline. The Bank's Office of Evaluation and Development (OED) (1999) estimates that these investments are worth \$3,452 million. Often they are planned and implemented essentially apart from the Bank's health and water and sanitation sector. Responsible task managers may be unaware of the body of knowledge about the relationship between water and sanitation and health and not well-versed in ways to design and implement RWSS projects so that health effects are likely to be obtained.

(ii) The crux of the matter is that RWSS projects will not achieve the health effects that one might assume would result from the provision of safe drinking water and sanitation unless these projects include hygiene, sanitation, and health interventions leading to key improvements in personal, household, and community hygiene behavior. Water and sanitation infrastructure by itself does not bring health benefits; although it brings other valuable benefits and creates conditions favorable to health.

### **PURPOSE AND METHOD**

(iii) The review was carried out by the Europe and Central Asia (ECA) Regional Studies program for the express purpose of making RWSS projects more health-results oriented. The number of "other" RWSS projects or project components is particularly high in the ECA region: of a total of 14 projects, three are stand-alone and 11 fall into the "other" category. As the ECA region expands its work in RWSS, there is a need to educate and support bank project staff. In addition, a survey of Bank staff, conducted by the Rural Water Supply Thematic Group in May 1997, identified a strong interest among a range of professionals working in RWSS to determine the best design, implementation, and monitoring procedures for the hygiene, sanitation, and health components of RWSS projects. Finally, ECA health-sector studies have noted that RWSS interventions that promote improved hygiene may be the most cost-effective



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way to improve the poor health of rural populations, particularly with respect to water-borne diseases.

(iv) The authors of the study reviewed professional literature on best practices and lessons learned in RWSS and all available reports on the World Bank RWSS projects or project components. They interviewed Bank task managers on the current status of activities in implementation as well as internationally recognized experts in research and training outside the Bank. Finally, fieldwork was conducted to assess the performance of the hygiene, sanitation, and health component of a well-designed RWSS project in implementation (the Ghana RWSS).

## WSS AND HEALTH

(v) The United Nations designated the 1980s as the International Drinking Water Supply and Sanitation Decade to respond to severe deficiencies in water and sanitation coverage in developing countries. At the outset of the Decade, 1.2 billion out of a total Third World population of 2.2 billion (China was not included in the statistics at the time) were without access to safe drinking water; 1.7 billion had no proper means of excreta disposal. As a result, an estimated 10 million people a year were dying from diseases directly related to poor sanitation. The Water Decade realized significant achievements—water-supply coverage was extended, some water-related diseases declined steeply, and low-cost technologies were developed—however, sanitation did not fare so well. Advances in sanitation coverage did not keep pace with population growth during the Decade, and since 1990, rural sanitation coverage has declined (to 34% in 1994). Today, according to the World Health Organization, 3 billion people are without adequate means of excreta disposal; 3.3 million die every year from diarrheal diseases, and, at any one time, 1.5 million suffer from parasitic worm infections stemming from human excreta and solid wastes in the environment.

(vi) Countries in the ECA region face problems with RWSS coverage. In most Central and Eastern European countries and in the newly independent states of the former Soviet Union, water is piped into the homes of 90% of urban dwellers, but rural coverage is much lower, as is rural sanitation. For example, only 45% of the rural population of Kyrgyzstan has access to running water, and, even in urban areas, one-third of the extremely poor are not connected to piped water, and sanitation facilities are even more limited. Moving westward, rural water supply coverage is 32% in Romania and only 18% in Moldova. Because the ECA region deals largely with developed countries, complacency may set in regarding the impacts of adequate water and sanitation on health. However, Murray and Lopez (1977) have shown that poor water, sanitation, and hygiene are still among the ten most important risk factors for burden of disease throughout the ECA region.

(vii) Water supply and sanitation improvements affect health primarily by interrupting or reducing the transmission of disease agents. Increasing the quantity of water allows for better hygiene (for example, hand washing, food washing, and household cleaning.) Improving the quality of water reduces the ingestion of pathogens. Providing a safe means of excreta disposal reduces the number of pathogens in the environment and is of utmost importance—more important than improvements in water supply. In fact, improvements in sanitation and hygiene

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have been shown consistently to result in better health, as measured by less diarrhea, reduction in parasitic infections, increased child growth, and reduced morbidity and mortality (Feachem et al. 1983; Esrey et al. 1991; Hutley et al. 1997).

(viii) The level of sanitation in a given community is extremely important. It is the community level of sanitation that has an impact on individual health, rather than an individual's possession of a safe excreta removal system (Ahmed et al. 1994). Sixty to 75% coverage is recommended for optimal health effect. Likewise, the whole community should practice safe hygiene practices. Unsafe practices of a few can threaten an entire community.

(ix) Research also shows that an increase in the *quantity* of water has a greater impact on health than improved water *quality*. This is so because an improved water supply makes it possible (or at least a lot more feasible) for people to adopt safe hygiene behaviors (Cairncross 1992). However, improvements in the quantity and quality of water supply—as well as improved sanitation—do not automatically result in improved health. The addition of hygiene education is often required to see health impacts (Esrey 1994). The most critical hygiene behaviors to target are safe disposal of feces (especially for young children), hand washing techniques and timing, and safe source selection, transport, and use of water (Bateman and Smith 1991).

(x) Studies of 144 WSS interventions (Esrey et al. 1990) found that WSS improvements were associated with a median reduction of 22% in diarrhea incidence and 65% in the rate of deaths due to diarrhea. Improved excreta disposal and hand washing were associated with reduced mortality rates of 60% for children under five and reductions of schistosomiasis by 77%, ascariasis by 29%, and trachoma by 27-50%.

(xi) RWSS investments are cost-effective. Each dollar spent in a rural water system provides four times the population coverage afforded by an investment in urban water (OED 1999). Furthermore, the hygiene components of water and sanitation projects are highly cost-effectiveness in preventing diarrheal disease. A recent study estimated that hygiene behavior change interventions, carried out in communities where people already have access to adequate water and sanitation, cost \$3 per case of diarrhea averted, \$700 per death averted, and \$20 per DALY (disability-adjusted life year—a measure that combines deaths and cases averted) saved.

(xii) Over twenty years of development experience by the Water and Sanitation for Health (WASH) project sponsored by the U.S. Agency for International Development pointed to the need to link water, sanitation, hygiene. Any temptation to delink these components should be resisted as long as health improvement is a goal. In the absence of improved sanitation and hygiene practices, there is very little chance that a RWSS project will significantly impact health.

### **ESSENTIAL PROJECT DESIGN ELEMENTS**

(xiii) Much more evidence is available, but it has taken time for the results of research to impact project design. During the Water Decade, service coverage and construction were emphasized, and performance monitoring focused on infrastructure targets. It is now clear,

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however, that sanitation and hygiene behaviors are equally—if not more—important in disease prevention. A RWSS project should no longer be measured solely by numbers of standpipes, household connections or pit latrines (the hardware of the project). Hygiene and sanitation and social and individual behaviors (the software of the project) should also be monitored to ensure that health objectives are met. Because hygienic practices are so important for achieving lasting health benefits and thus maximizing project impacts, WSS projects should not confine their objectives to provision of infrastructure but should include hygiene, sanitation, and health activities.

(xiv) The most basic means of assessing the success of any RWSS program is evidence of sustained improvements in health (Cairncross 1992). On the basis of experience, it is possible to identify the strategies that increase the likelihood of sustainability.

- An effective program of health promotion should be aimed at creating an environment enabling people to live in healthier surroundings and to adapt healthier lifestyles. This kind of program includes information, education, and communication (IEC) as well as advocacy activities to bring about changes in policy, legislation, and economic and other incentives.
- Because the health promotion component of RWSS falls within the scope of the ministry of health and often the ministry of education, inter-sectoral collaboration is called for. Likewise, RWSS projects can benefit generally if Bank infrastructure, environment, and health departments cooperate.
- Community participation leading to community empowerment on issues that concern residents is another key strategy. Participatory activities should involve women, men, girls, and boys from different socioeconomic and cultural groups, should extend to planning and implementation, and should inform health promotion approaches.
- A demand-responsive approach is now the preferred alternative to the traditional supply-side approach. It may be thought of as an extension of community participation. In this approach, citizen demand guides key decisions, including investments to be made. Sustainability appears to be higher in communities where a demand-responsive approach was used and where demand was expressed directly by household members, not traditional leaders or community representatives.
- Setting goals and monitoring progress toward them is essential, but it is not an easy matter. International organizations have struggled for years with the difficulty of measuring health effects. The International Research Centre (IRC) for Water Supply and Sanitation advocates the decentralization of monitoring and evaluation so that responsibility is placed with those who have a vested interest in positive change. It stresses the need to use simple indicators, limit their number, and retarget monitoring when necessary and to plan for the use of monitoring from the beginning—including the orientation and training of those involved. Other organizations and the Bank's OED have also developed recommended objectives and monitoring indicators.

**REVIEW OF BANK RWSS PROJECTS**

- (xv) The study reviewed 44 of the Bank's 149 completed, ongoing, or planned RWSS projects or projects with rural water supply project components. The 44 included 12 projects carried out between 1977 and 1986 and evaluated by the Bank's Office of Evaluation and Development (OED), none of which were from ECA. The study reviewed 32 projects prepared or implemented between 1991 and 1999. Of these 32, 16 are from ECA. Of the 16 ECA projects reviewed, three are stand-alone RWSS projects (Kazakhstan, Turkmenistan and Uzbekistan RWSS projects); and two are pilot RWSS projects conducted under preparation of the Kazakhstan and Uzbekistan RWSS projects. The remainder of the 16 ECA projects reviewed, i.e. eleven projects, are ECA non-water sector projects with rural water supply (and sometimes sanitation) components. These are generally rural development projects and social funds. Non-water sector projects with RWSS components in regions other than ECA were not reviewed. The annexes of the study include brief descriptions of most of these projects.
- (xvi) Of the ECA projects reviewed, the stand-alone projects are very new; none is up and running. The "other" projects, non-water sector, are also relatively new with none completed. However, because non-sector projects account for roughly 50% of the ECA investments in RWSS, they warrant investigation. All were thoroughly reviewed, with special attention to choice and application of key performance monitoring indicators; the degree to which community-based approaches to gathering information and evaluating performance have been applied; design and implementation of hygiene, sanitation, and health activities; and monitoring and evaluation. Non-ECA RWSS projects were reviewed for key policies; hygiene, sanitation, and health components; service and financial options; training investments; and participation. The annexes of the study include detailed descriptions of the ECA projects.
- (xvii) The key findings of the review are listed below.
- Examples of completed World Bank RWSS projects with documented health impacts are very rare. Most projects report improved health as an impact but very few have baseline information or monitoring sufficient to make this claim. Several factors account for this. World Bank RWSS projects have multiple objectives, such as poverty reduction, institutional reform, utility efficiency, cost recovery, improved service delivery, and health improvements. Non-water sector projects with RWSS components, by definition, have multiple sectoral objectives and thus an added layer of performance monitoring indicators. Since task managers are required to limit performance monitoring indicators to around six, monitoring indicators related to sanitation, hygiene, and health may not be included. This is true for those RWSS projects with and those without a hygiene, sanitation, and health component.
  - Non-water sector, "other," projects with RWSS components are often well placed to implement the hygiene, sanitation, and health promotion activities that would enhance the benefits of the water supply investment. They tend to adopt approaches to project design and implementation that differ from traditional RWSS projects. For example, social development projects utilize demand-responsive approaches; community-based activities,

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and public awareness and educational promotion. However, the review found only one social fund in the ECA region, Moldova, which proposed hygiene, sanitation, and health activities.

- Most of the Bank's RWSS projects now in implementation with hygiene, sanitation, and health components include the key ingredients for success with the exception of a well-defined monitoring and evaluation program.
- Participation of beneficiaries and stakeholders and use of the demand responsive approach have been increasing in the World Bank RWSS projects.
- Bank RWSS projects typically allocate about 10% of the total project cost to the hygiene, sanitation, and health component. No information was found on the cost to implement the monitoring and evaluation program for any RWSS project or its components.
- Bank-wide, it is very rare for policy issues or training related to strengthening of the public health policies, institutions, and staff to be included in RWSS projects. ECA is in the forefront with three RWSS projects (stand-alone and "other") emphasizing training and institutional capacity building of the public health services, including surveillance and health and water quality monitoring.
- In ECA region projects, when there was a public health specialist on the RWSS project (stand alone and "other") team, the project had a hygiene, sanitation, and health component and health indicators. When there was no public health presence, even for projects of a very similar nature, there was no hygiene/sanitation component.
- RWSS project design in the ECA region has been significantly guided by the results of social needs assessments. Pilot projects that further investigated issues uncovered by such assessments and that demonstrated new community-based approaches to RWSS were also very useful in preparation of ECA RWSS projects.

### RECOMMENDATIONS

(xviii) The study's recommendations focus on improving the hygiene, sanitation, and health aspects of RWSS.

(xix) **The first recommendation is directed to operational staff at the Bank: *if health benefits are an objective of a RWSS project or component, include hygiene, sanitation, and health interventions.*** This demands that you think about health from the start. Get good baseline information and include health specialists on the project team. Related recommendations are listed below.

- Conduct social analyses and use pilot projects to guide project design.
- Include the ministry of health as a key partner.
- Include institutional strengthening, capacity building, and training aimed at the public health sector, in the project.

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- Look for opportunities to link the RWSS project with other Bank- or donor-financed activities to build on the impact of one another. .
- Conduct a careful institutional analysis, including the health sector, during preparation to ensure that the project scope does not become unrealistic and overly ambitious.
- Follow the guidelines for project design found in the annex of this report or the references provided.

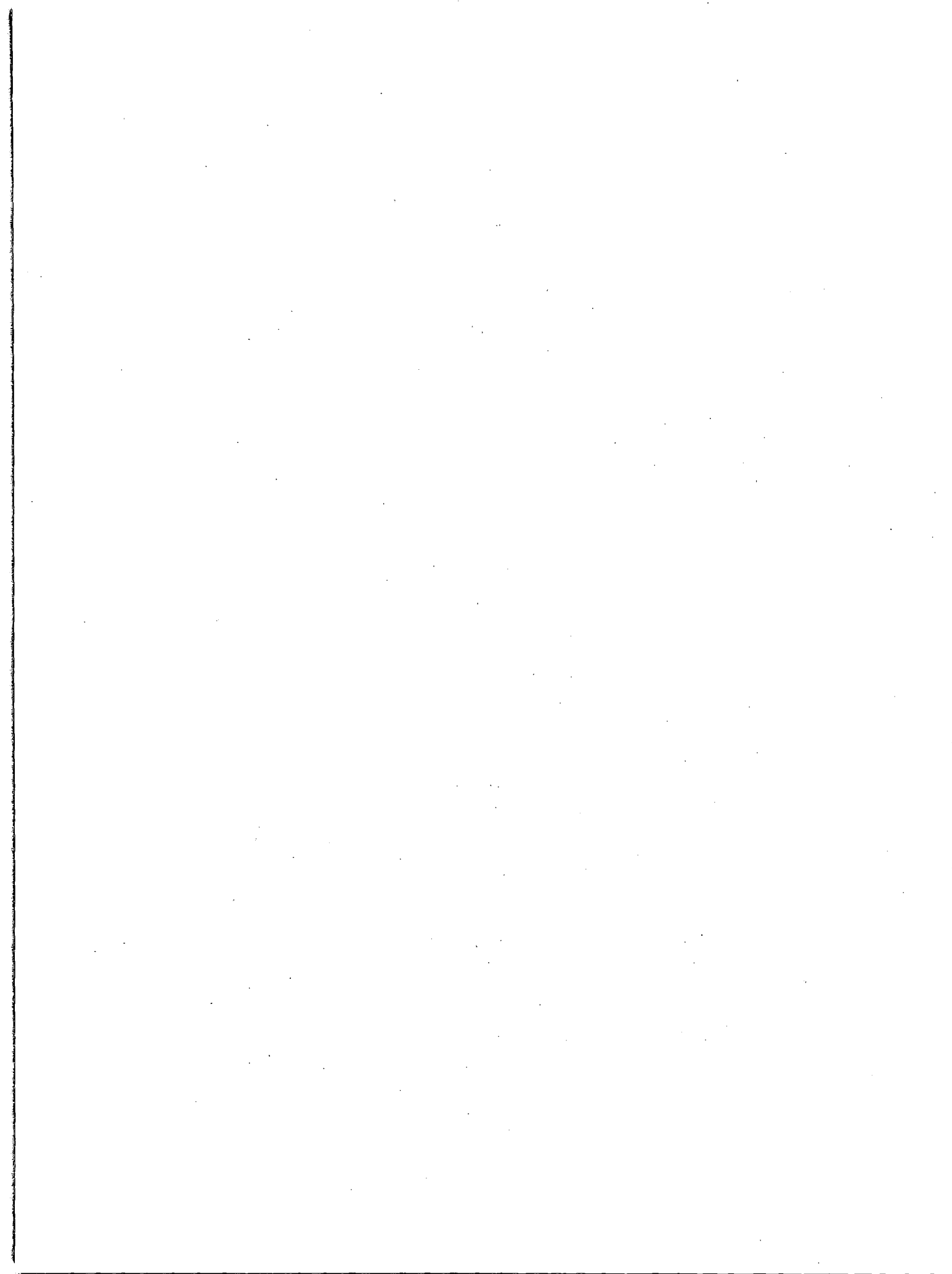
(xx) The second recommendation, also directed to operations staff, underlines the importance of monitoring and evaluation: *when the project gets underway, immediately set up a monitoring and evaluation program.* This implies a number of related recommendations.

- Establish baseline information on knowledge, attitudes, and practices related to water supply and sanitation, and on health status during project preparation.
- Monitor and evaluate health impacts using a combination of quantitative and qualitative methods. Health statistics are fine if you have them but hygiene and health behaviors can be used as proxies effectively, and at less expense.
- Consider using a two-tier approach to performance monitoring. The first tier is the half dozen indicators for the entire project. The second tier is more detailed and is used by the borrower staff and managers to monitor a wider range of inputs, outputs, and activities.
- For many projects, a community-based monitoring program is the best choice of methodology. It should be participatory, and beneficiaries need to understand the reason for monitoring.
- Document project impacts in project files

(xxi) The third major recommendation is addressed to the Bank as an institution: require that all projects with significant investments in rural water supply and a goal of improved health, include hygiene, sanitation, and health interventions.. Related recommendations follow.

- Provide clinics for staff new to water, sanitation, hygiene, and sanitation.
- Include staff from non-water sector, "other," projects with RWSS components in Bank committees and working groups on the topic.
- Make tools for designing and implementing hygiene, sanitation, and health interventions readily available.
- Support the use of interdisciplinary teams.
- Conduct a Bank-wide review of the non-water sector, "other," projects with rural water supply investments and investigate the use, and impact, of hygiene, sanitation, and health interventions.

(xxii) The authors of the study hope that the findings and recommendations will spur discussion of these important issues and lead to adoption of approaches to RWSS that will insure greater health impacts from Bank investments.



## **CHAPTER 1: RATIONALE, OBJECTIVES, AND METHODS**

1.1 Every year, millions of the world's poorest people die from preventable diseases caused by inadequate water supply and excreta disposal, or sanitation, services. Women and children are the main victims. Burdened by the need to carry water long distances every day, sometimes up to eight hours, they must also endure the indignity and sickness that result from a lack of hygienic sanitation. Unreached by public services, people in rural areas make their own inadequate arrangements or pay excessively high prices to water vendors for meager water supplies of dubious quality. Their poverty is aggravated and their productivity impaired, while their sickness puts severe strains on health services and hospitals.

1.2 Human waste is a major polluter of surface and ground water resources. Scarcity of water is a major consideration throughout the world. Industrialization, tourism, and food security may be threatened, unless water resources are protected and conserved. These and other environmental and economic considerations provide a solid rationale for improving water and sanitation services for the poor. However, the present study focuses on health considerations—the potential impact water supply and sanitation programs can have on the health conditions of beneficiaries.

### **STUDY OBJECTIVES**

1.3 Thus, the goal of the study, which is funded by the World Bank's Europe and Central Asia (ECA) Regional Studies Program, is to improve the design and implementation of World Bank rural water supply and sanitation (RWSS) projects in order to achieve greater health benefits. ECA health-sector studies have noted that RWSS interventions that promote improved health and hygiene practices may be the most cost-effective way to improve poor health conditions of rural populations, particularly with respect to waterborne diseases. These findings accord with the professional literature (see Chapter 2), which emphasizes that full health benefits from water and sanitation projects can be attained only if hygiene and sanitation are an integral part of such projects.

1.4 The study meets a need expressed by Bank personnel. A survey of Bank staff interests in RWSS, conducted by the Rural Water Supply Thematic Group in May 1997, identified a strong interest among a range of professionals working within the RWSS field (including those in the



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ECA region) to determine the best design, implementation, and monitoring procedures for hygiene, sanitation, and health components of RWSS projects.

1.5 Within the ECA region the RWSS portfolio is relatively new but growing with new stand-alone RWSS projects, as well as new Social Fund or Rural Development projects or larger urban projects that have a RWSS component. As ECA expands its work in RWSS, there is a need to educate and support project staff. This need has arisen, not only because there are more projects; other factors also come into play: the unsatisfactory performance of a number of RWSS projects bank-wide; the increased attention to RWSS in ECA and the unique characteristics of ECA countries where RWSS projects have been implemented; the recent development of new tools that can be used to measure health impacts (e.g., Disability-Adjusted Life Years—DALYs); and the developing body of ECA experience/expertise with social and behavioral aspects of RWSS projects.

1.6 Around the world, policymakers and practitioners seek to deal with the enormous need for WSS, in part by building on knowledge and experience that are already available. It may sometimes be difficult for practitioners to find and share information on the lessons and experiences encountered in the WSS sector—particularly if they come from a non-WSS sector background. This study is one attempt to bring together the Bank's experience in WSS—with an emphasis on rural programs—in a useful format for staff.

### THE HISTORICAL SETTING

1.7 WSS moved up on the development agenda more than 20 years ago. The 1977 United Nations Water Conference in Mar del Plate, Argentina, recommended that the 1980s be proclaimed the International Drinking Water Supply and Sanitation Decade (IDWSSD). Interagency collaboration in WSS also started in the 1980s, specifically through the Water Supply and Sanitation Collaborative Council, the World Water Council, and the Global Water Partnership. At the time, the picture was dismal: 1.2 billion people out of a total Third World population of 2.2 billion (China was not included in the statistics at the time) were without access to safe drinking water; 1.7 billion had no proper means of excreta disposal. As a result, an estimated 10 million people a year were dying from diseases directly related to poor sanitation.

1.8 The launch of the IDWSSD in 1980 gave WSS a publicity boost and led to concerted efforts to speed up progress. However, it would have required enormous investments to reach the Decade's targets of 100% coverage of WSS by 1990. Nevertheless, the past two decades of investments in the rural and urban water and sanitation sector in developing countries have led to notable improvements in coverage. During the IDWSSD, one billion people obtained safe drinking water and 750 million gained access to improved sanitation facilities. Significant progress has also been made towards eradication of diseases directly linked to water supply, e.g., dracunculiasis (Guinea worm disease). Benefits related to an improved quality of life have been realized through WSS. For example, the time and energy spent by women and girls in collecting water have been reduced, and sanitary latrines have provided privacy. However, because extending WSS coverage has not kept pace with population growth, the percentage of people unserved has not changed substantially.

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1.9 Global coverage for water supply was 61% in 1990 for rural and urban areas combined, but only 50% for rural areas. By 1994, rural coverage globally reached 70%. However, sanitation did not make similar gains. Sanitation coverage fell in the 1990s from 36% in 1990 to 34% in 1994, globally. According to World Health Organization estimates, more than 3 billion people are without adequate means of excreta disposal, 3.3 million people die every year from diarrheal diseases, and at any one time 1.5 million suffer from parasitic worm infections stemming from human excreta and solid wastes in the environment.

1.10 On a more positive note, the 1990s saw the development of low-cost water and sanitation technologies—providing affordable systems is a key strategy for increasing coverage. A shift in WSS projects also became evident in the early 1990s, more notably outside of the Bank than within, from an emphasis on infrastructure (or “hardware”) to hygiene, sanitation, and health promotion and education (“software”). The role of the community and participatory approaches were also developed during this period. A cautious transition to informed user choice, coupled with a wider range of options to choose from, can also be noted. In principle, poorer communities and households should be able to install and use a service they can manage and maintain, without depending totally on government.

1.11 As community participation gained in importance in WSS, gender issues emerged as critical elements. Programs such as PROWESS (Promotion of the Role of Women in Water and Environmental Sanitation) and research carried out by the International Research Center (IRC) in The Hague have addressed gender-specific needs. The IRC’s Internet journal, “Women, Water and Sanitation,” is a particularly rich source of information on the topic. (<http://www.irc.nl/products/publications/ajw/index.html>)

1.12 Past efforts have also resulted in better quality design and system performance, leading to greater use of facilities, and involvement of women in water management. While more is known about how to overcome practical gender constraints, real changes in strategies are rare: much of women’s participation in maintenance and management consists largely of contributing labor and time, not exercising control. However, many participatory water systems have been in place for ten years or more and it is now possible to assess what effect real participation has on the sustainability of services (VanWijk-Sijbesma 1998). For more information on research on this topic, see <http://www.irc.nl/home/pben/pbengend.htm>.

### **THE WSS SITUATION IN ECA**

1.13 Bank work in the health, environment, and water sectors has found that ECA countries face problems with RWSS coverage. All National Environmental Action Plans (NEAPs) completed in the former Soviet Union have identified RWSS as one of the top environmental priorities. Many of the NEAPs in other ECA countries have also found that RWSS is a top priority. The National Environmental Health Action Plans, where they have been conducted within the health sector, also have identified inadequate supplies of clean drinking water and sanitation as a top public health priority (for example, in the Krygyz Republic).

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1.14 In most Central and Eastern European (CEE) countries, and in the Newly Independent States of the Former Soviet Union (NIS), more than 90% of urban households have access to piped water supplies, but the coverage in rural areas is much less. Likewise, sanitation coverage is much less in rural areas. As an ECA example, in the Kyrgyz Republic, social infrastructure is seriously lacking in rural areas and in many parts of urban areas. Only 45% of the rural population has access to running water, and, even in urban areas, one-third of the extremely poor are not connected to piped water. Sanitation facilities are, if anything, more limited. The rural population, poor and non-poor, use latrines, as do the majority of the poor in urban areas as well (Scott 1998). In Tajikistan, the majority of rural people, which make up 60% of the total population, obtain water from open irrigation canals for about nine months, when the systems are operational, and pay for trucked supplies for the remainder of the year. Formerly, some state farms had their own pumps and treatment plants, but many of these have collapsed. The problems are not just in Central Asia. Moving westward, rural water supply coverage is 32% in Romania and only 18% in Moldova (WHO 1999) with similar conditions experienced in other Eastern European countries.

1.15 Are there any unique features in the ECA region that might be important to note concerning RWSS? Few data provide direct insight into the impact that the economic and social transition process has had on drinking water quality. Most water pollution is localized and often linked to discharges of human wastes, rather than to industrial or other economic activities. High nitrate levels in rural drinking water supplies have been suggested as environmental health problems in Belarus, Bulgaria, Hungary, Lithuania, Slovakia, Estonia, and Kazakhstan (Hughes et al. (draft) 1999) but their impact is limited to infants and young children. On the other end of the spectrum, the transition may have had some positive impacts on drinking water quality. It is expected that non-point source agricultural pollution has declined. While this does not translate into immediate improvements in water quality, people who rely on shallow ground water sources may benefit from such declines in pollution. However, improvements related to declined economic activity may be elusive for several reasons: (i) the accumulation of pollutants in sediments and their subsequent release diminishes the effects of relatively short-term emission reductions; (ii) declining capital stock may defer operations and maintenance measures; (iii) pollution abatement efforts may slack due to the general economic crisis; and (iv) environmental management and regulation may be weakened. No doubt the transition period has seen times of weakened public health services that would also contribute to the negative impacts on health. Furthermore, for 70 years, the former Soviet Union countries regarded water as a free good. This perception has shaped the attitudes of authorities, water producers, and consumers alike.

1.16 The Environmental Action Program (EAP) for Central and Eastern Europe (1993) points to the negative health impacts of environmental degradation as a criteria for setting action priorities. Because the ECA region deals largely with developed countries, complacency may set in regarding the impacts of inadequate WSS on health. Some may tend to discount the true health—as well as environmental and economic—impacts of environmental conditions. However, Murray and Lopez (1997) have shown that poor water, sanitation, and hygiene are still among the ten most important risk factors for burden of disease throughout the ECA region.

## METHODS

1.17 To meet the objectives of the study, the authors (i) reviewed professional literature; (ii) reviewed documentation on 44 World Bank-financed RWSS projects (see list in Annex 1) covering two decades (1977-1997); (iii) interviewed Bank task managers and specialists outside the Bank; and (iv) facilitated a field assessment of a successful Bank-financed RWSS project in Ghana.

1.18 Works consulted for the *literature review* of best practices and lessons learned in RWSS and hygiene, sanitation, and hygiene included:

- professional literature on health impacts of WSS and hygiene and health promotion interventions;
- publications from other development institutions, including from UNICEF (the United Nations Children Fund), IRC in The Hague, USAID's Environmental Health Project, and CARE;
- the Bank's literature on RWSS and hygiene, sanitation, and health ;
- the Bank's Strategic Sanitation Guidelines (for urban sanitation);
- Sanitation Guidelines produced by WHO/UNICEF/USAID; and
- documents on RWSS projects sponsored by other organizations, to identify best practices that have contributed to positive health impacts and sustained outcomes.

1.19 *Review of 44 Bank-financed stand-alone RWSS projects or projects with RWSS components* included 12 projects carried out between 1977 and 1986 and evaluated by the Office of Evaluation and Development (OED)<sup>1</sup> and 32 projects prepared and/or implemented between 1991 and 1999. Of these 16 are from the ECA region. The authors reviewed all available reports on the 44 projects, i.e., the World Bank's OED reports (12 OED reports from 1977-1986), Project Performance Audit Reports (PPARs), Project Completion Documents (PCDs), Staff Appraisal Reports (SARs), Impact Evaluation Reports (IERs), Form 590 (for Bank Portfolio Project Status Reports), and the Bank's Project Supervision Format (Form 590 and A-M tables). Task managers were interviewed for first-hand information on the current status of these projects in terms of performance monitoring updates. The 12 OED-reviewed projects were scanned for project development objectives; key indicators of development outcome/impact; and identification of other performance indicators (see Annex 2). The 32 Bank-financed RWSS projects were reviewed for their main development objectives and the key indicators of development outcome/input.

1.20 The review of the ECA region RWSS projects included the three stand-alone RWSS projects (see Annex 4) as well as eleven non-water sector projects; either social funds or rural

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<sup>1</sup> The OED review process is as follows. Once an Implementation Completion Report (ICR) has been sent to the Board of Directors, it is evaluated by the OED, which validates or adjusts the evaluation ratings based on the information provided in the completion report and other operational documents. The OED summarizes its findings in an ICR Review-Evaluation Summary.

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development projects that include RWSS components (see Annex 5). The methodology for review was different for the ECA projects because (i) the stand-alone projects are very new and none is fully up and running, (ii) the non-water sector projects are also relatively new with none completed to date, and (iii) the non-sector projects account for roughly 50% of the ECA investments in RWSS and thus warrant investigation (this may be true for other regions but the study focuses on ECA). All 11 projects were reviewed for:

- consistency of project objectives, inputs, processes, and outputs;
- their choice and application of key performance monitoring indicators ;
- the degree to which community-based approaches to gathering information and evaluating performance have been applied;
- key policy issues;
- design and implementation of hygiene, sanitation, and health activities;
- service and financial options;
- training investments;
- participation; and
- monitoring and evaluation.

1.21 *Consultations and reviews outside of the Bank* included internationally recognized experts in research and training.

1.22 *Field work was conducted to analyze the performance of the hygiene, sanitation, and health component of an existing World Bank-financed RWSS project. The project was selected because it met the following selection criteria.*

- health improvement was its objective;
- it utilized a demand-based approach for the sanitation component;
- it had been in implementation sufficiently long to see results; and
- it was located in a region where other donors are active in RWSS (so that other approaches could be analyzed).

1.23 The field work was carried out in two and a half weeks in November 1998. The methodology and instruments used for the survey were focus group discussion; interviews; review of results; and site visits and observations. Bank-financed RWSS projects in Ghana are coordinated with projects financed by Danida and WaterAid. To obtain a total picture of RWSS, the consultant preparing the assessment visited 13 communities (8 participating project communities [three funded by Danida, two by WaterAid, and three by the Bank] and 5 non-participating communities. Thirty-eight stakeholders at the national, regional, and district levels were interviewed. A separate report of the field study was prepared and is available through the Europe and Central Asia Environmentally and Socially Sustainable Development Unit (ECSSD). The major findings are interwoven in this report.

## **ORGANIZATION OF THE REPORT**

1.24 The report is organized as follows. Following this introductory chapter, which lays out the goals and methods and provides context and background, Chapter 2 presents the results of the authors' review of professional literature on the relationship between health and WSS activities. Chapter 3 discusses the strengths and weaknesses of World Bank RWSS projects—both stand-alone those with a RWSS component. Conclusions and recommendations are given in Chapter 4. The report concludes with lists of useful references and websites—including the 22 best books for WSS specialists—and a number of annexes: Annexes 1-5 summarize useful information about the approaches of the Bank's RWSS projects reviewed for this study; Annex 6 lists RWSS performance monitoring indicators; and Annex 7 presents Bank guidelines for RWSS projects or project components.

## CHAPTER 2. THE CONTRIBUTION OF RWSS TO IMPROVED HEALTH

2.1 Water supply and sanitation improvements affect health primarily by interrupting or reducing the transmission of disease agents. Increasing the quantity of water allows for better hygiene, i.e., hand washing, food washing, and household cleaning. Improving the quality of water reduces the ingestion of pathogens.

2.2 The findings of research on RWSS are somewhat counter-intuitive. Most people think that it is clean drinking water which has the greatest impact on health, when, in fact, research has consistently shown that health benefits from improved water are less pronounced than those for sanitation. Benefits from improved water occur only when sanitation is improved and only when optimal water is present (Esrey 1996). The safe disposal of feces (sanitation) is of primary importance in the interruption/reduction of disease transmission. Improvements in sanitation and hygiene have been shown consistently to result in better health, as measured by less diarrhea, reduction in parasitic infections, increased child growth, and reduced morbidity and mortality (Feachem et al. 1983, Esrey et al. 1991; Hutley et al. 1997). Research also shows that increases in the *quantity* of water has more of an impact on improved health than improved water *quality*—again because of the improved hygiene which accompanies the increased water quantity (Cairncross 1992). However, improvements in the quantity and quality of water supply and sanitation do not automatically result in improved health. The addition of hygiene education is often required to see health impacts (Esrey 1994). Research has identified the most critical hygiene behaviors to target: safe disposal of feces, especially for young children; hand washing techniques and timing; and safe source selection, transport, and use of water (Bateman and Smith 1991).

2.3 A major lesson from the International Water and Sanitation Decade was the extremely important role of hand washing in reducing water-related diseases. Results of studies of 144 WSS interventions (Esrey et al. 1990) revealed that demonstrable health impacts affecting all age groups in most of the developing world can be expected from improved levels of water supply, sanitation services, and hygiene education. They found that improvements in WSS were associated with a median reduction of 22% in diarrhea incidence and 65% in the rate of deaths due to diarrhea. The studies also showed that improved excreta disposal and hand washing can reduce mortality rates for children under five years of age by 60% and can reduce cases of schistosomiasis by 77%, ascariasis (intestinal worms) by 29%, and trachoma by 27-50%. Numerous other recent studies have also stressed the role of improved hygiene in reducing disease transmission (Curtis 1997). Many studies have shown that, because they facilitate hand washing and other important hygiene behaviors, in-house water supplies are associated with reduced rates of diarrhea (Boot and Cairncross 1993).

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2.4 Review of the literature revealed that international organizations active in RWSS (e.g., USAID's Environmental Health Project, UNICEF, IRC, CARE, and a number of bilateral RWSS programs) all include sanitation and hygiene in their RWSS projects. While these organizations may use different perspectives and approaches, all proceed from the common objectives of reducing child mortality and morbidity due to water-related diseases and providing more equitable access to and effective use of water supply, sanitation, and health services. A review of the experience of worldwide RWSS projects substantiates the research and shows that it is essential to link water supply and sanitation with health and hygiene education. Only when all these components are in place will real and lasting results follow.

2.5 At one time RWSS focused almost exclusively on infrastructure interventions, but gradually the role of the health sector has increased markedly, as our knowledge of water-related disease transmission has grown and as more emphasis is placed on improved sanitation and hygiene. However, the health sector's role in promoting associated hygiene behaviors and providing health education has varied widely by institution and has evolved over the past 20 years. Often the driving force in the health sector's agenda is improving child survival.

2.6 Investments in rural water are cost-effective. Each dollar spent in a rural water system provides four times the population coverage afforded by an investment in urban water (OED 1999). The cost-effectiveness of WSS as an intervention for child survival has also been well demonstrated (Varley 1998). The cost-effectiveness of a health intervention is the cost of producing a unit of effect using a specific intervention. The most common units of effect have been deaths averted and cases averted, to compensate for data that focuses only on death rates. The disability-adjusted life year, DALY<sup>2</sup>, which was first presented in the World Development Report (WDR) (1993), combines deaths and cases averted. The WDR concluded that child survival programs in developing countries should include only those interventions that cost around \$150 or less per DALY saved.

2.7 Recent work has clearly demonstrated the cost-effectiveness of hygiene components. One recent study (Varley 1998) has shown that hygiene behavior change, when provided to people who already have access to adequate WSS, is a cost-effective health intervention at \$3/case averted; \$700/death averted; and \$20/DALY saved. When hygiene behavior change programs are implemented without safe drinking water and sanitation, the costs per case averted, DALY saved, and death averted are all more than twice that seen when hygiene is added to existing infrastructure, but still the cost is \$45 per DALY saved, thus also meeting the WDR criteria. This finding argues strongly for the adoption of an intersectoral approach to WSS projects in order to realize maximum impacts from investments in infrastructure.

2.8 A study carried out in Mexico (Fundacion Mexicana para la Salud 1996), which ranked 120 health interventions by cost-effectiveness, placed the monitoring of water quality first and water chlorination third, while provision of water ranked 111<sup>th</sup>. As indicated by this study, health benefits drawn from water supply infrastructure come at a steep cost to the health care system, while water quality monitoring and water chlorination can save many lives at a very low-cost.

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<sup>2</sup> DALY (Disability Adjusted Life Years): years of life lost due to illness or premature death. It is a standard measure of the burden of disease used widely in international comparisons.



2.9 It has taken time for the results of research to impact project design. During the Water and Sanitation Decade, service coverage and construction were emphasized, and performance monitoring focused on infrastructure targets. This was based on the thinking at the time that access to clean drinking water and sanitation facilities alone would achieve a health outcome. Based on numerous studies that have definitively shown that sanitation and hygiene behaviors are equally important, if not more so, in disease prevention, than infrastructure (Esrey et al. 1990; Macy and Lochery 1997), it is clear that a successful RWSS project should no longer be measured solely by a targeted number of stand pipes, household connections, or pit latrines—the hardware of the project. Rather, hygiene and sanitation, social and individual behaviors—the software of the project—should be measured and monitored to ensure that a project objective of improved health is met.

2.10 Because hygienic practices are so important for achieving lasting health benefits and thus maximizing project impacts, the development objectives of sanitation improvement programs can never be confined to the provision of infrastructure, e.g., toilets, by government agencies or program implementing agencies (WASH 1993). Projects increasingly include activities to motivate people to use latrines (through hygiene and health education) and to make sure that the latrines are suitable for local conditions and that people are willing to pay for them, participate in their construction, and to manage and maintain them in good working order. Past water and sanitation implementation experiences emphasize that people must be convinced of the need for sanitation so that they will invest their own resources in such improvements.

#### APPROACHES TO RWSS INTERVENTIONS

2.11 The most basic means of assessing the success of any RWSS program is evidence of sustained improvements in health of the population (Cairncross 1992). Many strategies have been developed by the World Bank and other development organizations to ensure sustainability in RWSS programs. Several basic principles underlie these strategies: the development of demand-driven programs, a focus on expanding participatory hygiene education and health promotion activities (involving women, men, girls, and boys from different socioeconomic and cultural groups), user-oriented financial management (Samanta and Van Wijk 1998), and proper institutional arrangements established through the use of local experts in implementing both pilot and full-scale projects, thereby enhancing community participation and responsibility for operations and maintenance (Minnatullah et al. 1998 and McCommon et al. 1990). Strategies built on these principles have proven to be successful in improving project impact and health conditions among beneficiaries.

2.12 By the early 1980s, the Bank had come to understand that for RWSS projects to be successful across a range of objectives, community participation had to extend from the initial collection of baseline data and identification of user preferences, through the design and construction stage, to the continued operation and maintenance of the facilities. Behavior change, community participation, and a communication strategy for sanitation and hygiene education became integral parts of project design, implementation, and monitoring. UNICEF and the

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World Health Organization (WHO) led the way in investigating effective strategies. Box 1 summarizes their recommendations.

**BOX 1. HAPPY, HEALTHY AND HYGIENE**

Positive Behavior	Sustainability	Replicability	Partnership	Responsiveness
<ul style="list-style-type: none"> <li>• Be people-centered</li> </ul>	<ul style="list-style-type: none"> <li>• Create demand</li> </ul>	<ul style="list-style-type: none"> <li>• Use local institutions</li> </ul>	<ul style="list-style-type: none"> <li>• Establish clear rules</li> </ul>	<ul style="list-style-type: none"> <li>• Be flexible and adaptive</li> </ul>
<ul style="list-style-type: none"> <li>• Use enabling approaches</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate local ownership</li> </ul>	<ul style="list-style-type: none"> <li>• Scale-up and multiply results</li> </ul>	<ul style="list-style-type: none"> <li>• Clarify responsibilities and commitments at the start</li> </ul>	<ul style="list-style-type: none"> <li>• Take the community perspective from the start</li> </ul>
<ul style="list-style-type: none"> <li>• Rely on local people</li> </ul>	<ul style="list-style-type: none"> <li>• Be environmentally holistic</li> </ul>	<ul style="list-style-type: none"> <li>• Be realistic</li> </ul>	<ul style="list-style-type: none"> <li>• Clarify the time frame at the start</li> </ul>	<ul style="list-style-type: none"> <li>• Learn from experience</li> </ul>
<ul style="list-style-type: none"> <li>• Use local knowledge and practices</li> </ul>	<ul style="list-style-type: none"> <li>• Cover the costs</li> </ul>	<ul style="list-style-type: none"> <li>• Develop simple, standard management systems</li> </ul>		

Source: Curtis, V., and B. Kanki. "Happy, Healthy and Hygiene: How To Set Up a Hygiene Promotion Program: A Manual for UNICEF, WHO." London, UK: London School of Hygiene and Tropical Medicine, 1998.

**COVERAGE**

2.13 In recent years, the concept of WSS "coverage" has shifted from an individual to a community focus. Research has shown that it is the community level of sanitation coverage that has an impact on individual health, rather than an individual's possession of a safe excreta removal system (Ahmed et al. 1994). Studies range from demonstrating that 75% community sanitation coverage accomplishes a health impact (Batemen et al. 1991) to recent work at the World Bank which found that health benefits are realized at a 60% community service level for sanitation. Whatever the number, the message is clear—community sanitation behavior has an equal or even greater impact on improved health than individual sanitation behavior. The potential health benefits will not be fully realized by a sanitation program unless it achieves a high degree of coverage in a given community and a high degree of use by households with the improved facilities. If 90% of a given community owns latrines, the transmission of excreta-related disease may be maintained by the promiscuous defecation of the 10% who do not, or even

by those members of latrine-owning families who do not always use their latrines (Cairncross 1992).

## **WATER SUPPLY, SANITATION AND HYGIENE**

2.14 As described above, the main health benefits of improved water supply and sanitation result from a reduction in fecal-oral diseases, which are spread through a multitude of routes—most of which can be interrupted through improved sanitation and hygiene. For a number of reasons, the demand for water supply is stronger than that for improved sanitation—on both the government and community level. Hence, in the short term, it may seem expedient to address only the water supply side of WSS. However, over 20 years of development experience by USAID's Water and Sanitation for Health (WASH) Project pointed to the need to link water, sanitation and hygiene has become extremely clear (WASH 1993). Any temptation to delink these components should be resisted as long as health improvement is a goal. In the absence of improved sanitation and hygiene practices, there is very little chance that a rural drinking water supply project will significantly impact health.

2.15 In sum, then, promoting good sanitation is more than the installation of facilities.. It also includes the promotion of skills and practices for healthy living for individuals, families, and communities: (i) safe disposal of fecal, solid, and liquid waste; (ii) safe collection and storage of water, especially for drinking; (iii) good personal, domestic, and community hygiene; and (iv) the control of insects, rodents, and other vectors that can spread disease through water, food, and soil (WHO 1995, WASH 1993).

2.16 UNICEF Sanitation Guidelines prepared with the assistance of EHP (1997) point out that there is no single paradigm for a good sanitation program. However, experience indicates that to be successful, programs must meet certain criteria. They should improve the health of beneficiary groups; achieve financial, organizational, and political sustainability; maximize the benefits of investments by reaching the greatest number of people; enhance local institutional and community capacity for organization and management; and protect the environment.

## **HEALTH, SANITATION, AND HYGIENE**

2.17 Improved hygiene is not a natural by-product of increased supplies of water and the presence of a latrine or toilet. Newly installed sanitation facilities have to be used and maintained properly for a health impact to be realized (IRC 1998). Hygiene education aims to ensure the proper use and maintenance of facilities by motivating people to change their behavior. It is a technical tool for sanitation promotion to be applied when the physical infrastructure of toilet facilities, water supply, and disposal of domestic wastewater is being upgraded.

2.18 Experiences with hygiene education indicate that health impacts due to behavior change programs take time to materialize. This is so because it is not only the potential users of facilities

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who need to change their behavior; behavioral changes are needed at all levels—household, neighborhood, and the entire community. Politicians also need to recognize the importance of improving hygiene and work to create a favorable political environment. Implementing agencies need to allocate adequate resources to put policy into practice. Field workers need to be willing and able to understand people's hygiene behavior and to build on existing motives to encourage people to change where needed (Cairncross 1992, Curtis 1997).

2.19 Lessons learned by the World Bank concerning the sustainability of the sanitation component of RWSS projects are based partly on the experience of the Second Paraguay Rural Water Supply and Sanitation Project (World Bank 1991). This project identified a number of needs that must be met for a sanitation program to have a good operation and maintenance: (i) a suitable institutional mechanism should be built in to ensure that funds and technology will be available for major system repairs; (ii) the transitional gap between the implementation of a pilot and full-scale project should be bridged, (iii) procurement issues should be dealt with early in project preparation, and problems which arise during execution should be promptly resolved; and (iv) adequate and timely supervision and project performance monitoring inputs should be maintained throughout the project life, regardless of the status of disbursements.

### **HEALTH PROMOTION**

2.20 Improvements in social and individual health and hygiene behaviors to realize the health benefits of improved WSS require the use of health promotion and education strategies. Health promotion aims to create an enabling environment (physical, social, political, and economic) that increases available choices and enables people to live in healthier environments and adopt healthier lifestyles (if they choose to do so). Health promotion includes information, education, and communication (IEC) as well as advocacy activities to bring about changes in policy, legislation, and economic and other incentives. According to WHO (Nakajima 1992), health promotion includes:

- advocacy of health-supportive policies next to decision- and opinion-makers, as well as the general public, including mobilization of resources;
- empowerment of people with the knowledge and skills for making positive health choices, and the ability to act individually and collectively on their informed decisions; and
- social support to individual and social change.

2.21 Traditionally, health education interventions aim to change individual behavior through IEC. For some people, the concept of health promotion or health education is still identified with persuading individuals or target groups to adopt healthier behaviors. However, this approach has had poor results mainly because a gap between knowledge and practices was found. Individuals were regarded as passive targets of (sometime foreign) health knowledge, attitudes, and practices, rather than as actors in a change process that would relate to them and ultimately affect them, as well as society.

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2.22 People were also expected to adopt new behaviors in quite adverse environments. For example, they might be asked to improve hygiene practices in the absence of an adequate water supply or to avoid abortion as the main method of family planning when contraceptives were not readily available or to quit smoking in a smoking-promoting environment or to decrease alcohol consumption when other cheap sources of calories and/or heat were not easily available. Additionally, frequently, people were asked to change their behavior and lifestyle when they lacked the prospect of a fulfilling future and thus the motivation to invest in it.

2.23 Nowadays, health promotion carried out by ministries of health aims at improving health through restructuring, regulation, education, and facilitation strategies to manage social change, rather than through preaching and manipulation to achieve individual change. Health promotion is based on a health model focusing on social responsibility with a goal of social change, rather than on a medical model focusing on individual responsibility with a goal of individual change. Health promotion aims at changes in policies, legislation, socioeconomic incentives, and available choices, as well as at improving health-related knowledge, attitudes, and practices. While the target groups for IEC were mainly mothers and children, patients, groups at risk, and school children, health promotion targets a varied group of stakeholders with an interest in the process of change: decision- and opinion-makers, health professionals, school children, communities, consumers, and groups at risk.

2.24 Extensive research has shown that health promotion may bring about social and individual changes in knowledge, attitudes, and practices regardless of the epidemiological stage of a country. IEC campaigns and activities, combined with other interventions, such as regulation and taxation of products, may contribute to significant improvements in health status.

2.25 Health promotion is a broad concept. In part, it is supposed to do for health what marketing does for a product. Marketing is not only advertising, but also developing a good product that buyers want to buy, putting a price on it, and making it widely accessible. Health promotion should follow this model by developing its product (health), creating socioeconomic incentives for consuming it, promoting it, and making it accessible first to those most in need—groups with poorer health.

2.26 In general, promotion pays off, as is shown by the resources that the private sector assigns to it, though the relationship between investments in marketing (paid and free advertising, sales promotion, and direct sales) and sales or returns is not entirely clear. For example, European countries invest about one percent of their gross national products (GNPs) on advertising, and the investment grows at the same rate of the GNP. However, the advertising elasticity is low (less than 0.1) (Lambin 1992).

2.27 Marketing social products, ideas, or causes, such as public health or fire prevention, is more difficult than marketing soap, and the results are more difficult to measure. Some promotion programs or campaigns have had good results, while others have not. The success of a promotion program depends not only on the specific program, but also on the socioeconomic context and society's readiness for change. This is why it is important that a promotion program/campaign does not aim only at changing individual behaviors, but also at simultaneously changing the socioeconomic context, through policy, legislation, and economic changes that create an enabling environment for health.

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2.28 The experience of the World Bank's ECA region in health promotion within RWSS and health projects (Godinho 1998) is still limited, but some conclusions and lessons can be drawn from experience in project preparation and implementation. The majority of projects follow a modern approach to health promotion, rather than a health education or IEC approach solely. The focus is not only on changing knowledge, attitudes, and practices, but also on changing physical and socioeconomic environments.

2.29 Financing is arguably the most innovative contribution some of these projects have made to the health promotion field. This may reflect both the need for innovation and sustainability in a situation of severe scarcity of resources and the competitive advantage of the Bank in this area. However, Bank projects in the ECA region, as well as in others, need to have a better understanding of the impact of macroeconomic issues on health and of the sociology of the political environment. In addition they need to further develop links between country health and assistance strategies and health promotion components and projects, with special attention to lagging sanitation efforts.

2.30 There are not many examples to date of successful health promotion components or activities, as measured by decreases in mortality or morbidity or improvements in knowledge, attitudes, and practices. Most projects are under implementation (some in the initial stages), but also there are problems with evaluation. The move from mega-projects or components to more modest—even pilot or experimental—projects and components may provide the client and the Bank with the necessary experience in health promotion and with more visible—albeit less grandiose—results.

2.31 Listed below are the lessons learned to date from Bank-financed projects with health promotion components in ECA.

- Develop health promotion activities in the context of a health strategy with defined and achievable targets.
- Establish specific, measurable, and modest health promotion objectives.
- Guarantee the sustainability of the health promotion activities by setting clear and workable financing mechanisms but allocate more modest budgets to health promotion activities.
- Include both top-down approaches, such as policy initiatives, and bottom-up approaches, such as community-based activities and demand-driven initiatives.
- Design more modest and operational implementation arrangements and
- Back up innovative mechanisms, such as intersectoral or expert committees, by a reliable administrative structure that will ensure that the mechanism works.

2.32 Clearly the health promotion component of a RWSS project falls within the scope of the ministry of health and often the ministry of education. This illustrates the inter-sectoral collaboration that is required for a RWSS project to be successful. The collaboration expected of Bank clients should be modeled by the project team. RWSS projects, once considered the domain of infrastructure, now are more broadly seen as inter-sectoral projects. Indeed, some international organizations situate their RWSS projects in the health sectors of their

organization, e.g., USAID. The early development of stand-alone RWSS projects in ECA, as will be discussed later, demonstrated the benefits to project design of cooperation between infrastructure, environment, and health departments within the Bank.

## COMMUNITY PARTICIPATION

2.33 Participation is a way to empower people, and it may be accomplished in different degrees. In demand-driven approaches, citizen- or consumer-expressed needs guide key decisions, including decisions on investments. A specific change process may be participatory, but not demand-driven. Recently, World Bank projects have been integrating three participatory modes for increased stakeholder participation in project preparation and implementation: (i) information sharing, (ii) consultation, (iii) and collaboration. Some of the ECA health promotion components have improved stakeholder participation to the point of developing partnerships.

2.34 Arnstein (1969) identified the following eight rungs on the ladder of citizen participation: (i) manipulation; (ii) therapy; (iii) information; (iv) consultation; (v) placation; (vi) partnership; (vii) delegated power; and (viii) citizen control. The first three could be considered non-participatory. To manipulate is to influence, especially with intention to deceive. By therapy, the author meant the classical model where one is told what to do to improve health. Information is a one-way process, and therefore the degree of participation is low. Even when citizens are provided with information, they may not receive it or understand it; and they do not have the possibility of giving feedback. However, citizens may be empowered if they receive, understand, and accept the information provided.

2.35 The next three rungs on the ladder—consultation, placation, and partnership—imply increasing degrees of participation: the various stakeholders may at least have a say (consultation) in decisions that concern them; they may be called to negotiate some decisions (placation); or they may become partners in decision-making and other steps of the process. On the last two rungs of the participatory process—delegated power and citizen control—citizens hold power. The concept of empowerment, which is one of the main tenets of health promotion, refers to the six upper rungs. Citizens are empowered by having more information on issues that concern them and by being able—cognitively, verbally, economically, and socially—to participate or take the lead in processes that will ultimately impact on them.

2.36 CARE (1993) has summarized its experience with community participation. The organization found that for long-term benefits and sustainability of the hygiene and sanitation component, social preparation is essential. Social preparation is a process of creating increased awareness of the health benefits associated with WSS, facilitating behavior and attitude change; educating the community to accept the WSS system along with all its social, institutional, health, and technical implications; and initiating the functions of a WSS committee and training members to be responsible for long-term operations and maintenance before the facilities construction phase begins. What CARE calls social preparation is what this paper describes as health promotion.

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2.37 CARE's experience has led the organization to identify approaches that lead to success. These seek to

- Encourage and enable community members and health officials to participate in planning, implementing, and managing the WSS services and facilities, with field officers acting as facilitators rather than implementers;
- Increase facilitators' emphasis on health promotion through health education at the community level and at institutional levels in every stage of the project;
- Identify and build local leadership skills as a way to enhance participation and help transmit community development and health promotion activities and messages to beneficiaries;
- Recognize the need for and encourage the broad participation of all groups within a community, especially women, children, and socially marginalized groups;
- Maximize the use of local resources, and develop community skills in identifying, managing, and mobilizing resources;
- Include communities in construction activities, and train community members in the technical and health requirements of operations and maintenance;
- Encourage a community sense of ownership and commitment to its WSS facilities; and
- Build-up community capacity through training that focuses on skills development to encourage and maintain transparency in financial management (e.g., tariff collection) and to monitor facility sustainability throughout the project life cycle.

**COMMUNITY CHOICE: THE SWAJAL PROJECT**

2.38 The Swajal Project is an example of best practice and hands-on experience with an approach in which the community decided whether or not to participate in a WSS project (Parameswaran 1998). This rural water supply and environmental sanitation project in Lucknow, India, implemented by the UNDP-World Bank Water and Sanitation Program, South Asia, New Delhi, is the first test of a truly demand-responsive approach. In the Swajal Project, trained support organizations, usually NGOs, explain the rules of the game to potential communities, which then indicate their interest. The rules call for the community to provide 10% of the capital costs, 100% of the funding for operations and maintenance, and overall management responsibility. This process of explanation and decision-making is known as a "pre-feasibility" study in project parlance. Some communities stay away, not interested in the project approach.

2.39 Most communities approached do express interest and are then selected for the planning phase. However, admission to the planning phase does not guarantee that the community will receive a water supply scheme. To be eligible to enter the implementation phase, a community first has to achieve outputs, such as raising its up-front cash contribution and preparing community action plans. The only snag in the initial village selection process is that, even when all the project criteria are fulfilled, it has been somewhat NGO-driven. To overcome this problem, the fourth batch of communities has been contacted directly by the project authorities, through a communication campaign, and asked whether they are interested in the project. This action, hopefully, will take the demand-responsive approach to its logical conclusion—where the communities select the support organization and not the other way round.



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2.40 Choice of technology is an integral feature of the Swajal Project. One of the key outputs of the 12-month planning phase is successful completion of the feasibility process, where communities determine, on the basis of informed choice, which technology is most feasible for them. The engineer from the support organization presents at least three alternative technology options to the Village Water and Sanitation Committee members and other interested villagers. The presentation is made by means of illustrations. Indicative capital and operations and maintenance costs for each technology option are also given. The dialogue goes on for a week or so until the community finally decides which technology it wants. The main factor influencing its choice is cost, especially the cost of operations and maintenance. In one case, the community initially wanted a relatively expensive technology (power pump, overhead tank, and distribution system) but, after learning of the prohibitively high annual operations and maintenance cost, decided finally to select the cheaper option of protected dug wells. In order to make the community's decision on technology choice more broad-based, the Village Water and Sanitation Committee's selection is endorsed at a community wide "Agree To Do" meeting.

2.41 One of the problems the Swajal Project faced is that not all support organizations present alternate technologies in a user-friendly way. Further, in rare cases, it is the support organization, not the community, that selects the technology. Cost calculations presented to the community also need to be refined, and the project authorities are working on this. One of the strong points of the Swajal Project is that the user communities actually make the investment decisions and manage the construction funds. At present, communities manage the funds jointly with their support organization (all construction funds are transferred in allotments to a village bank account on the basis of a tripartite agreement among the Project Management Unit, the support organization, and the concerned Village Water Supply Committee), but there are plans to empower communities to manage funds independently in phase four of the project.

2.42 Procurement decisions are also made by the communities, with the assistance of the support organization. All contracting is managed jointly by the community and the support organization, and no rigid procedures have been imposed. They are free to contract for materials, goods, and services from anywhere (in one case, women from a remote hill village traveled 300 kilometers to buy quality pipes) as long as the rates are market determined and the material conforms to accepted standards. There have been very few delays in procurement so far with this system. In some cases, however, the support organizations have been more involved in contracting than the communities. Therefore, the project authorities are moving towards empowering the community to undertake all contracting independently in the fourth phase of the project.

2.43 Finally, transparency is one of the strengths of the Swajal Project. Having communities managing funds is itself a serious attempt at transparency, but, more than that, most project villages have prominently displayed details of all project costs, funds received and disbursed, so that the whole community knows what is going on. The net effect has been that project communities now insist that all other government development funds controlled by the *pradhan* (village headman) should also be dealt with transparently as in the Swajal Project.

## **DEMAND-RESPONSIVE APPROACH**

2.44 The demand-responsive approach for RWSS projects, which has been articulated by the World Bank and implemented by many international organizations, is an alternative to the traditional supply-side approach. Its core characteristics are community participation, capacity building, and realistic approaches to cost sharing. In the demand-responsive approach, citizen demand guides key decisions, including investments to be made at the community level. By helping to identify and express local demands for water, from an economic, political, and social standpoint, the demand-responsive approach can clarify the potential roles and obligations of individuals, communities, and the state and non-state actors in the provision of RWSS.

2.45 This approach was developed especially for RWSS projects. Participants at the 1992 International Conference on Water endorsed a set of principles advocating the concept of water as an economic as well as a social good that should be managed at the lowest possible level. As Katz and Sara (1997) note, the demand-responsive approach "advocates that to manage water as an economic good, projects should let consumer demand guide key investment decisions. Specifically, projects should adopt clear and transparent rules that allow users to select the level of service, technology, and location of facilities that best fit their needs, with a clear understanding of the costs and responsibilities that these options bear".

2.46 Katz and Sara found that sustainability is higher in communities where a demand-responsive approach was employed and where demand is expressed directly by household members, rather than by traditional leaders or community representatives. Training, community organization, construction quality, and technology also contribute to sustainability. It is especially important to have a community organization in charge of organizing the process or service and/or operating the system, such as a water committee in the case of WSS projects.

2.47 Experiences world-wide in utilizing the demand-driven approach in sanitation were the subject of an international electronic conference May 17 to July 1, 1999. The three-phase conference workshop covered characteristics of demand-responsive approaches; how they operate at the community level; and the role of the state and NGOs in the transition to demand-responsive approaches. Very broadly, lesson learned, as reported in the conference, are that successful WSS projects rest on the ability of stakeholders to enhance, reinvigorate, or build inclusive local institutions that can mediate conflicts, facilitate the flow of information, and handle the intricacies of ongoing administration. Detailed results of the workshop are available on the web ([www.oneworld.org/thinktank/water/darep.htm](http://www.oneworld.org/thinktank/water/darep.htm)).

## **PERFORMANCE MONITORING INDICATORS**

2.48 Like all development efforts, RWSS projects need impact and monitoring indicators and monitoring systems to evaluate their outcomes. Research has shown that in order to determine the success of the hygiene and sanitation component of a WSS project it is essential to have good criteria, strategies, and indicators for monitoring (Samanta and Van Wijk 1998). IRC has also found that performance monitoring should be carried out in collaboration with the community

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and that information should be disseminated to other communities so that what is learned from the success or failure of one project activity can be used in the design and implementation of others.

2.49 That being said, the impact of the hygiene and sanitation component of RWSS is difficult to measure. Although health statistics are generally the best reference, attributing cause and effect is not always reliable. Health improvements are not always clearly manifested in reductions in disease. Reductions in morbidity and mortality of children under five are a classic measure, but new or emerging diseases may have caused other health changes. In areas where there are multiple factors affecting the health of residents, it is difficult to quantify health improvements of hygiene and sanitation programs (Cairncross 1990). Often it is impossible to disaggregate data for a specific project area from the national or regional health data available. The UNICEF Sanitation Guidelines (EHP 1997) point out an additional complication. Efforts to evaluate and monitor sanitation and hygiene have been deficient, particularly regarding (i) the link between individual projects and the overall place of sanitation improvement in the national context, (ii) methods for measuring demand for sanitation, (iii) indicators of facility utilization, (iv) financing, (v) identification of beneficiary groups' baseline surveys of hygiene beliefs and practices, and (vi) inter-sectoral linkages.

2.50 International organizations have struggled with the difficulty of measuring the impacts, particularly the health impacts, of RWSS projects for the past 20 years. Their recommendations represent years of research and evaluation. The following paragraphs highlight recommendations of two organizations regarding HES design and monitoring—IRC and EHP. Annex 6 Section B gives more examples of these two organizations' indicators.

2.51 IRC plays a lead role internationally in training for monitoring and evaluation of RWSS projects. Its annual training course "Monitoring for Effectiveness: Improving Community-Based Water Supply and Sanitation Projects" synthesizes the body of knowledge on the topic. IRC advocates the decentralization of monitoring and evaluation so that responsibility is placed with those who have a vested interest in positive change. The IRC monitoring and evaluation approach

- Emphasizes the need for consultation with users and service managers;
- Defines indicators based on knowledge of problems faced, and "real" concerns, or objectives and targets;
- Stresses the need to keep monitoring simple and cheap—use simple indicators, limit their number—and to retarget monitoring;
- Focuses on the collection, analysis, and use of data by individuals or groups at the lowest practical level;
- Limits information flow to what is needed for referral or use at higher levels;
- Promotes the extensive use of checks and balances to maintain transparency; and
- Emphasizes the need to plan for the use of monitoring information from the beginning and for the orientation and training of those involved.

2.52 IRC criteria and indicators for the design and performance monitoring of the HES component of RWSS project are shown in Box 2.

**BOX 2. CRITERIA AND INDICATORS FOR A SUCCESSFUL ENVIRONMENTAL SANITATION PROGRAM**

Criteria	Indicators <sup>3</sup>
1. Package addressing critical domains of sanitation behavior according to local assessment.	% observed reduction in high-risk practices of human excreta disposal: <ul style="list-style-type: none"> <li>• no or inadequate hand washing at critical occasions</li> <li>• collection, storage and drawing of drinking water</li> <li>• wastewater disposal at source and home solid waste disposal.</li> </ul>
2. Upgrading strategy with flexible technology.	% increase in users of different sex and class who know about and install a facility they can pay for, use, and maintain.
3. Small or no subsidy.	% of subsidy given to % of population consistently using facilities.
4. Hygiene promotion for all; infrastructure for high-risk populations.	% of men, women, children reached by hygiene promotion, leading to observed and sustained reductions in unsafe conditions and practices; and % of high-risk environments where programs are carried out.
5. Gender- and class-specific community participation in planning and implementing interventions.	% of men and women in each socioeconomic level and cultural group consulted on needs and demands and given informed choice on and access to affordable and adequate <sup>4</sup> solutions.
6. Environmentally friendly approach.	% of facilities with no new risks to environment and environmental health through: <ul style="list-style-type: none"> <li>• soiled facilities, water pollution, soil pollution, mosquito, fly and rodent breeding, and excessive water use.</li> </ul>
7. Sufficient and socioeconomically specific change.	Critical mass <sup>5</sup> adoption of hygienic practices by women, men, children of different socioeconomic and cultural groups.

Source: Samanta, B. B., and C. A. Van Wijk. "Criteria for Successful Sanitation Programs in Low Income Countries: Health Policy and Planning, 13 (1)." 1998.

2.53 The USAID-funded Environmental Health Project (EHP) contributed to the development of a set of WSS impact and monitoring indicators for use by USAID's Food and Nutrition

<sup>3</sup> All indicators would be measured in a sample of households and schools in a specific area in a specific timeframe. Comparison with a control area would allow for control for intervening variables.

<sup>4</sup> Adequacy in technical, sociocultural and environmental terms to be defined locally.

<sup>5</sup> Esrey (1994) gives 75% adoption of safe sanitation practices as critical mass for health impact, at least in densely settled areas.

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Technical Assistance Project as part of a series of guides for NGOs. The "Water and Sanitation Indicators Measurement Guide" (Billig et al. 1999) is aimed at NGOs implementing projects with water or sanitation components. It suggests appropriate indicators and sources for data; describes how to calculate the indicators, and discusses programmatic uses and issues related to each indicator. The impact indicators are:

- Percentage of children under 36 months with diarrhea in the last two weeks, where diarrhea is defined as more than three loose stools passed in a 24-hour period.
- Quantity of water used per capita per day where all the water collected by or delivered to the household and used for personal purposes is considered.
- Percentage of child caregivers and food preparers with appropriate hand washing behavior, where appropriate hand washing includes the time at which it is done and the technique used.
- Percentage of population using hygienic sanitation facilities, where a sanitation facility is defined as an excreta disposal facility, typically a toilet or latrine; and hygienic is defined as no feces on the floor or seat and few flies.

2.54 The guide recommends that one or more of these indicators should be used in reports of WSS projects and should be collected at baseline, mid-term, and final year evaluations. The guide also presents indicators for annual monitoring and reporting as shown below. The primary purpose of collecting and reporting data on these monitoring indicators is to improve program management, but they also provide valuable insights into the interpretation of the project's impact on health. The suggested annual monitoring indicators are:

- Percentage of households with year-round access to improved water source, where access means either direct connection to the home or a public facility within 200 meters of the home.
- Percentage of households with access to a sanitation facility.
- Percentage of recurrent costs for water supply services provided by the community, where recurrent costs refer to the full operation and maintenance costs of the water supply system.
- Percentage of constructed water supply facilities maintained by the community served, where the constructed facilities refer to those established by the project.

2.55 The Bank's OED has developed its own set of recommended objectives for RWSS projects as follows. Each would require its own performance monitoring indicators:

- Health benefits;
- Improved household community environmental sanitation;
- Improved hygiene practices;
- Improved coverage;
- Equitable access;
- Hygienic use of WSS services;
- Poverty alleviation by enhancing productivity;
- More efficient use of time saved in collecting water;
- Measures of technical assistance effectiveness; and

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- Sustainable scheme management and maintenance.

2.56 The study found that the mandate of the organization drives monitoring and evaluation. For instance, UNICEF RWSS projects and the RWSS activities of USAID's EHP have a child survival mandate and therefore use predominantly behavioral indicators for diarrheal disease prevention as project monitoring indicators. Some organizations have produced very detailed guidelines for the specific behaviors required to maximize health benefits in sanitation projects (EHP 1999).

### **LESSONS LEARNED FROM RWSS PROJECTS**

2.57 A key lesson of the past regarding successful sanitation programming is that technology is only one small part of the water or sanitation improvement process; human behavior and behavior change are the keys to successful programs. Individual behaviors alone cannot make significant changes in the environment; the entire community must be committed.

2.58 Several organizations have produced some kind of lessons learned document on WSS which incorporates research findings and field experience. USAID's former WASH Project, the predecessor of EHP, compiled thirteen years of lessons learned during the Water and Sanitation Decade (WASH 1993) and more recent RWSS experience (EHP 1996) from all international organizations. In sum, these lessons show that effective sanitation and health programs

- use a participatory planning process that involves all institutional stakeholders;
- stand on their own merit and are not just tacked onto water projects;
- incorporate education programs to change hygienic behaviors;
- fit within a well-understood private and public water and sanitation sector framework;
- can be expanded without loss of effectiveness or sustainability;
- utilize a demand-responsive approach;
- offer a range of technology options;
- share costs among users and public institutions;
- follow sound financial management practices;
- assess sanitation and hygiene beliefs and practices as the basis for planning;
- identify behaviors to be changed; and
- maximize the impact of health education by using participatory techniques, targeting women and children, and using women facilitators.

## **CHAPTER 3. THE WORLD BANK'S ROLE IN RWSS PROJECTS**

3.1 The World Bank has a long history of institutional support to rural infrastructure including WSS. Former World Bank President Robert McNamara focused the Bank's attention on the rural poor, and one of the six essential elements of the then new rural plan was assured availability of water. In 1978, the United National Development Program (UNDP) and the World Bank launched the first global program designed to apply appropriate WSS technologies. The program promotes low-cost national WSS technologies for poor people in rural and peri-urban areas, as an alternative to costly conventional sewerage and piped water systems. Also in 1978, the Paraguay Rural Water Supply Project was approved by the Bank; it was the first stand-alone RWSS project. It and others to follow, demonstrated the Bank's commitment to the UN-sponsored International Drinking Water Supply and Sanitation Decade. During the IDWSSD the Bank became more active in RWSS, and lending volume has steadily increased. Bank lending in the 1980s was on the order of US\$225.5 million. From 1990 through the end of calendar 1998, lending for stand-alone RWSS projects totaled US\$1,130 million (OED 1999).

3.2 RWSS projects, both stand-alone and those which are part of urban/rural infrastructure projects or which this study has identified among Social Development Fund-supported efforts are shown in Table 1. Some of them are described in detail in Annexes 2, 3, 4, and 5.

**TABLE 1. RWSS PROJECTS BANK-WIDE 1977-1998**

Type/Status	Pipeline	%	Portfolio	%	Completed	%
RWSS stand-alone	19	47	21	30	15	38.5
RWSS in Social Funds	10	25	24	34	9	23.5
RWSS in Infrastructure	3	7.5	11	16	2	5
Other with RWSS	8	20	14	20	13	33
<b>Total</b>	<b>40</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>39</b>	<b>100</b>
Projects with Hygiene and Sanitation	13	32	21	30	20	51
Region/Status	Pipeline	%	Portfolio	%	Completed	%
AFR	12	30	27	39	15	38.5
EAP	4	10	5	7	4	10
ECA	3	7.5	11	16	3	8
LAC	12	30	14	20	13	33
Region/Status	Pipeline	%	Portfolio	%	Completed	%
MNA	6	15	6	8	1	2.5
SA	3	7.5	7	10	3	8
<b>Total</b>	<b>40</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>39</b>	<b>100</b>

3.3 About half of the projects in the pipeline are RWSS stand-alone projects; 7.5% of the urban infrastructure WSS projects also have rural components. RWSS components frequently appear in other types of projects—Social Development Funds, Rural and Agriculture Development, and others—accounting for the other half of the projects in the pipeline. These projects are prepared and managed by various departments (Social Development, Human Development, Infrastructure, etc.) and professional staff. The methodologies, rules, and standards of these “other” projects may differ from those of the RWSS stand-alone projects. Further, they are not included in any Bank-wide analysis of RWSS or health promotion projects. The recent OED review of RWSS projects Bank-wide did not include the other projects category. This lack of scrutiny is of concern because the total of these “other” projects with RWSS components was about US\$3,452 million bank-wide (OED 1999).

3.4 The regional breakdown in Table 1 shows that RWSS projects are more numerous in the Latin America and the Caribbean (LAC) and Africa (AFR) regions (30% each in the pipeline), with the Middle East and North Africa (MNA), Europe and Central Asia (ECA) and South Asia (SA) regions being the lowest.

#### **ECA RWSS PROJECTS**

3.5 The authors identified and reviewed 14 ECA projects including RWSS for this study. (Since the review, an additional 7 projects have been designed or were found to have RWSS components, bringing the total to 21.)



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3.6 Three of the 14 are stand-alone RWSS projects in Uzbekistan, Turkmenistan, and Kazakhstan. The total investment for the three is US\$157 million. (An additional stand-alone project is in preparation: RWSS in the Kyrgyz Republic (FY01), a US\$23.6 million investment. Thus, the total investment for the four stand-alone projects is US\$180.6 million.) The stand-alone projects are described in Annex 4.

3.7 As mentioned, investments in RWSS among "other" projects is quite large. ECA has six Social Fund projects that include RWSS, the largest number of such projects by region. The authors reviewed each of these for key policies; health, sanitation, and hygiene components; service options; financial options; training investments; and participation. The results of the review are given in Annex 5. (A seventh Social Fund project with an RWSS component has been initiated since the review for this study.) The total investment for the six Social Fund projects is US\$118 million; adding the new project brings the total to US\$218 million.

3.8 In addition to the Social Fund projects, there are five projects—most of them Rural Development projects—that have water quality improvement as an objective. These are also reviewed in Annex 5. (Since the review, five additional such projects have been identified, bringing the total to ten.) The total investment is US\$276.7 million for the five projects reviewed in this study or US\$526.5 million counting all ten.

3.9 To determine what the total ECA investment in RWSS, an estimate must be made of the percentage of costs of "other" projects that can reasonably be assigned to RWSS. Project documents for non-water sector projects indicate that infrastructure, primarily WSS, account for at least 50% of project costs. A conservative assumption then might be that investments in RWSS activities in other projects total US\$183 for the projects reviewed in this study (50% of the US\$367.8 million). The US\$183 million exceeds the amount for stand-alone RWSS projects (US\$180.6 million, counting the Kyrgyz Republic project in preparation). If all identified "other" projects are counted, the total RWSS investment in non-water sector projects would reach US\$372 million (50% of US\$744.5 million).

3.10 This is a considerable investment, even if the Poland Rural Infrastructure Project, at US\$100 million, is deducted, as skewing the findings. Similar results have been noted in other regions.

### **STAND-ALONE RURAL WATER SUPPLY AND SANITATION PROJECTS:**

#### **THE ARAL SEA BASIN PROGRAM**

3.11 In June 1994, the Bank was party to an agreement to improve drinking water and sanitation conditions in the rural areas of Kazakhstan, Uzbekistan, and Turkmenistan that were designated to be part of the Aral Sea disaster zone. This was the origin of ECA's first stand-alone RWSS projects. The international impetus was concern for the health and economic well-being of people in the region. While health data, like water-quality data may be unreliable, it is clear

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that the chief indicator of poor water supply and sanitation conditions, infant mortality rates (IMR), were higher in the Aral Sea disaster zone than elsewhere in the three countries. The IMRs were very high—often exceeding 50/1,000 births. It was also clear that these unacceptably high IMRs and the generally poor health status of these regions were related to lack of access to water and poor sanitation and hygiene practices. World Bank health sector reviews confirmed these suspicions. In addition, civil unrest has exacerbated the impact of poor WSS conditions and hygiene practices, e.g., in Tajikistan. When this study was designed, it was expected to include findings from the implementation experience of all the Central Asian WSS projects. However, the Turkmenistan RWSS project was delayed due to the Bank's suspension of disbursements to the country; the Uzbekistan project experienced significant delays in 1998 due to problems with procurement and change of the task manager; and the Kazakhstan full-scale project is still under preparation, as is the new project for the Kyrgyz Republic.

#### **SATISFACTORY PERFORMANCE**

3.12 The review carried out by OED (1999) of all Bank stand-alone RWSS projects conducted and completed from 1977 to 1986 comprehensively surveys the successes and failures within the sector and shows a 69% rate of satisfactory performance. Between 1990 and 1996, WSS performance overall was 60% satisfactory; in 1997-1998 it increased to 67%. Thus, RWSS projects perform slightly better than WSS projects overall. The OED report concludes that the RWSS projects studied generally had positive results: large percentages of the target populations gained access to water and, although there were wide variation, generally distance to the water source decreased and time thus saved increased (time spent collecting water decreased dramatically in some cases). Unsatisfactory performance was due generally to inadequate institutional performance.

#### **HEALTH BENEFITS**

3.13 The OED review notes that when beneficiaries rely solely on a new system for drinking water (rather than resorting to alternative water sources), positive health outcomes are more likely to be found. People continue to use other, less-safe sources range because they lack information or training, because the new source is farther away than the old, or because there are other social and economic incentives for continuing with alternative water sources. The OED study indicates health benefits by users of Bank-financed water systems in Karnataka (India), Kerala (India), Paraguay, and Sri Lanka. In Paraguay, deaths due to diarrhea were seven times higher in villages not yet served by Bank-financed projects. Cholera epidemics are thought to have been averted in Paraguay in part due to the project's activities in hygiene education, sanitation, and the provision of safe drinking water. An analysis of the Kerala WSS project found that mortality and morbidity due to water-related diseases were declining in project areas. In Karnataka, more than half of the households surveyed reported improvement in family health since using the new water schemes, and, in Sri Lanka, project beneficiaries reported improvement in health in 34% of the households surveyed.

3.14 In contrast, the OED study showed that health improvements were illusory in Mali. Health conditions in the project areas remained largely unchanged and similar to those in the unserved areas. Instead of using improved sources, people relied on traditional ones when surface water was seasonally available; in many villages, people were not routinely drinking the potable water made available under the Bank-financed project; and safe water was contaminated by being transported in unclean vessels and by being stored in homes where domestic animals could come into contact with it. These findings demonstrate that health improvements are not likely to be obtained unless hygiene and health training is an integral part of water infrastructure construction or improvement in rural areas. The OED also found that improved household health is more likely in communities that pay careful attention to the design and construction of water facilities and among households that have enrolled in a hygiene class. Participating in a hygiene class was also a significant and positive determinant of improved health in Sri Lanka and Maharashtra. The findings from the OED review is further evidence that RWSS projects should devote as much attention to their sanitation and hygiene components as they do to the technical components, if health impact is a development objective.

3.15 However, the OED-reviewed projects did not identify health as a development objective, with one exception—a project that mentioned the goal of improving public health services. An interesting case of a spin-off effect not intended in project design was the China Project (1985). In this project, although health was not a development objective, the WSS and hygiene project activities led to striking health benefits, which were widely publicized and which thus presumably created a demand for improved services where there had been none before.

3.16 Of the projects reviewed for this study, about half aim at improving health, suggesting that more recent projects have this development objective. In ECA, all stand-alone RWSS projects in Central Asia aim at improving health through improving water supply and sanitation and carrying out health promotion.

### STRATEGIC CHOICES

3.17 Among the OED-reviewed projects deemed effective, the strategic approaches used include supply-driven mechanisms, community participation, and institutional capacity building. Project development objectives/impacts were focused mainly on providing the rural population with (i) improved coverage and access to safe water supplies and adequate sanitation facilities; (ii) poverty alleviation through the improvement of living conditions; and (iii) providing technical assistance through governments for improving the financial and institutional management and operations and maintenance of their rural water supply and sanitation services and for implementing subsequent projects. In some projects, the implementation of the sanitation component was given low priority or was ignored entirely (Burundi 1986, Kenya 1978). Most of the projects were the first of their kind in the country (Nicaragua 1978, Paraguay 1977). Some projects (China 1985, Paraguay 1981, and Zambia 1983) indicated health benefits as one of the project impacts (with no justifiable data to back this up, however), even though health impact objectives were not included among the project's development objectives. With

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the exception of Kenya 1978 and Tunisia 1982, the rest of the projects were successful in accomplishing their physical and institutional objectives.

3.18 The more recent projects reviewed by this study used approaches similar to those mentioned above. Typical development objectives include: (i) health benefits through improved household/community sanitation and hygiene practices; (ii) improved coverage, equitable access and hygienic use of water supply and sanitation services for rural populations, (iii) poverty alleviation by enhancing productivity through more efficient use of time saved in collecting water and through improving health conditions; and (iv) providing technical assistance to governments to improve their financial and institutional resources, to train community-level operators and administrators in sustainable management and operations and maintenance of rural systems, and to assist in implementing subsequent projects. Because most projects used indicators that focused on the infrastructure to be built and the number of beneficiaries (e.g., Indonesia 1993, China 1992, Bolivia 1996), it is difficult to monitor or assess the expected health impact. However, some projects did use health indicators—for example, the hygienic upkeep of water and sanitation facilities and percentage decrease in disease incidence (Ghana 1994, India-Karnataka 1993, India-Maharashtra 1991, and India-Uttar Pradesh 1996).

#### KEY POLICIES

3.19 Most projects reviewed aim to improve water supply, while only about a third aim to improve sanitation. Other development objectives include health and hygiene improvements, institutional development, community involvement in cost-sharing and decisions on operations and maintenance, poverty reduction (especially Social Development Fund projects), and ensuring project sustainability. Some projects have the goal of reforming national WSS policy. There is not a high level of success in meeting this goal, but some do achieve significant results. For example, the OED report (1999) notes that the Brazil RWSS project (1985) was instrumental in formulating a national policy for providing WSS in rural areas covered by the Ministries of Social Action and Health. This new policy helped to promote sector reorganization and to increase attention to RWSS.

3.20 Policy developments include, for example, (i) adoption of a long-term water supply investment strategy; (ii) transfer of policymaking for RWSS to the rural development department; and (iii) increased government investment in water supply or environmental sanitation either in absolute terms or a specific percentage of increase (India-Maharashtra Project 1991 and India-Karnataka Project 1993).

3.21 In ECA, the stand-alone RWSS projects and “other” non-water sector projects that have RWSS components focus mainly on poverty alleviation and improving living conditions of the rural poor. The three stand-alone projects were historically part of the Aral Sea Basin Program and were viewed as emergency-type responses to the Aral Sea disaster. As such, they did not incorporate some elements of the demand-response approach. The key policies supported by the ECA Social and Rural Development Funds to alleviate poverty are decentralization, community participation, employment opportunities, private sector involvement in the development process, and institutional reforms and strengthening.

## SANITATION AND HYGIENE

3.22 While half of the projects reviewed include health as a development objective and/or include health and hygiene activities, it is rare for a project to consider strengthening public health policies and institutions. Also, only a third of the projects include sanitation activities. At best, the lack sanitation and hygiene components in RWSS projects is a missed opportunity; at worst, it can jeopardize the realization of health goals. Certainly, the inclusion of a well-designed, appropriate hygiene and sanitation component in a water supply infrastructure program could achieve positive health impacts and possibly address environmental concerns as well.

3.23 All RWSS projects in Central Asia have health components that are designed to improve sanitation, hygiene, and health education and promotion. Construction of low-cost water and sanitation solutions is coupled with hygiene and health education and promotion activities, with the goal of improved knowledge, attitudes, and practices related to water and sanitation. In addition, the ECA stand-alone RWSS projects emphasize institution-building activities to enable the Ministry of Health's Sanitary and Epidemiological Services to improve water quality monitoring and sanitation and hygiene surveillance. These projects, and their health promotion components, especially the Uzbekistan RWSS project, also incorporate participatory approaches.

3.24 The hygiene and sanitation component of ECA RWSS projects is designed to create an enabling environment, as well as to change personal and household-level behaviors. Activities focus on creating structures at local and regional levels to carry out health promotion and disease prevention activities and on building skills in areas such as disease prevention and community mobilization.

3.25 The review carried out for this study found that, of the non-water sector projects in ECA, only the Moldova Social Investment Fund includes hygiene and sanitation among its subprojects or health improvements among its development objectives. The Moldova project health development objective states "the infrastructure microprojects will be integrated with programs to improve primary health care programs and public health and hygiene education." This finding is not surprising, given that Social Fund projects are demand-driven and focused on sub-projects identified by communities as their major priorities. Sanitation and hygiene education are not priorities for rural community members, although water supply infrastructure projects are. However, all Social Fund projects include public communication campaigns to increase awareness of their activities, thus providing the opportunity for health promotion about the importance of sanitation and hygiene. It is also interesting to note that the identification teams for the four RWSS projects in ECA with hygiene and sanitation components (Kazakhstan, Moldova, Turkmenistan, and Uzbekistan) included either a World Bank public health specialist or a UNICEF environment health specialist (Turkmenistan).

## PARTICIPATION

3.26 In the late 1980s, perhaps as a result of lessons learned from the IDWSSD's international experience, the World Bank began to incorporate participatory approaches in more of its projects. Community-based RWSS projects typically include: (i) community involvement in the design, implementation, and management of WSS facilities; (ii) government promotion rather than provision of services, (iii) cost recovery of at least part of the capital cost and all normal operations and maintenance and repair costs; (iv) private sector provision of goods and services; (v) maximization of health benefits by integrating water, sanitation, and hygiene education; and (vi) a special focus on women as users, planners, operators, and managers of water schemes. It should be noted that, during and since the IDWSSD, improved drainage to reduce the risk of exposure to pathogens and to eliminate breeding grounds for vectors has been emphasized as part of environmental sanitation for communities. These participatory practices are now typically found in World Bank RWSS projects.

3.27 The study found that World Bank RWSS projects utilize numerous methods to monitor participation, particularly women's participation. These include monitoring the percentage of communities involved in a project; of individuals in a community involved in project management, operations and maintenance, and decision-making; of women holding key positions; and of village committees whose membership is at least one-third feminine.

3.28 Interestingly, newer RWSS projects are incorporating the concept of a community approach to monitoring and evaluation. For instance, the India-Uttar Pradesh 1996 RWSS project has adopted community performance in carrying out monitoring and evaluation as a project monitoring indicator. Specifically, the indicator asks if time savings and health homes surveys have been undertaken. Similarly, the RWSS Nepal Project 1996 asks if a time savings assessment has been undertaken by communities. This interesting approach is recommended as a best practice.

3.29 The three stand-alone RWSS projects in ECA emphasize the role of the community in planning new systems and operating and maintaining them. The Social Investment/Development Fund programs in the "other" category promote participation in project activities, especially in selection of communities, project design, implementation, and management and are more proactive in ensuring the participation of women. For example, participation of women on community management committees is often a criterion for project appraisal.

## SOCIAL ASSESSMENTS

3.30 Social assessments are one of the participatory tools most frequently used in project design. Social analysis is key in designing RWSS projects, for it often uncovers areas that need further investigation. A social analysis supplies information about household needs and preferences; willingness to pay; knowledge, attitudes, and practices regarding water and

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sanitation-related issues; WSS coverage; basic health data, etc. It should be remembered that social assessments should not be carried out only once—at project identification or preparation—but should be an interactive process with new surveys added as needed. As part of the supervision plan, they should be carried out throughout project implementation.

3.31 Investing in a social assessment to analyze prevailing social capital, particularly the number and character of active civic associations, may also have an economic justification. All other things being equal, investing in water systems in communities with high levels of social capital within a target region will yield a higher expected economic return.

3.32 All three stand-alone RWSS projects in ECA conducted needs and social assessments and carried out pilot projects to demonstrate community-based approaches to WSS. The task managers believe that the project design benefited considerably from these activities. Often the assessment results contributed directly to the design. For example, in Uzbekistan, a social assessment determined that many residents were relying on water vendors for all of their drinking water needs. Subsequently, during project preparation, a study of usage determined that 60% of the survey sample relied on water vendors and that 85% of the water supplied by vendors came from unsafe water sources. Consumers were paying as high as 10% of their income for this service.

3.33 The social assessment and pilot project, which guided the design of the Uzbekistan RWSS project, yielded other interesting findings.

- There was a high willingness among the rural population to improve their current sanitation practices.
- Households were willing to make substantial financial contributions for the construction of improved latrines.
- Capacity building was needed for health services, data collection (specifically the Sanitary and Epidemiological Services and Centers of Health), and the coordination of relevant sectors.
- Health education materials and methods needed improvements, and community health workers required training in participatory methods.

3.34 The first two findings were unexpected, although they had significant implications for the project. Findings on sanitation and health led to the design of the community-based sanitation and health pilot project and the subsequent inclusion of a sanitation and hygiene component in the Uzbekistan RWSS project—thus demonstrating the critical importance of social analysis. This component supports the construction of improved latrines, installation of hand washing facilities, and health promotion and hygiene education. Based on assessments carried out during the pilot, the Uzbekistan RWSS Project designed a demand-driven financing scheme for sanitation and health, which will be managed by municipalities in cooperation with the farm committees, and a grant system to promote community-based activities on a competitive basis, which will be managed by a Regional Center of Health (formerly the Health Education Services). These financial schemes are expected to contribute to the development of sanitation and health promotion services in the public, private, and NGO sector.

3.35 Other social assessments not directly related to a RWSS project can effectively contribute to project design. For instance, Morocco 1997 utilized results of a women-in-development study that revealed the high priority women attached to the provision of potable water close to their homes and its significant impact on the attendance of girls in elementary school. This important link between RWSS and education was woven into the RWSS project (one of its development objectives is to "provide complementary assistance to Morocco Basic Education Project Loan, ... to achieve enrollment target of 46% and retention rate of 65% by 2001 in ten rural provinces." The Morocco RWSS project already has had an impact on increasing school attendance and is a best-practice example of utilizing opportunities to create spin-off effects from a RWSS project.

### **PILOT PROJECTS**

3.36 Globally and in ECA, there is some experience to show that pilot projects are an effective means to guide project design and promote community participation. For example, early preparation of a project in Sri Lanka, through a pilot, prepared the community and the support organizations (NGOs) to work together and achieve positive results. Pilots may be used to test innovative community-based approaches for providing RWSS services. Pilot activities have promoted the concept of participation in project preparation and implementation in the three stand-alone RWSS projects in the Aral Sea Region, including the Uzbekistan Community-Based Pilot Rural Sanitation, Health and Hygiene Project and the Kzyl-Orda Pilot Sanitation and Health Project.

3.37 In these projects, social assessments had revealed that the lack of well-designed and maintained sanitation facilities and poor hygiene practices were significant threats to health. The pilots were designed to test low-cost appropriate sanitation technologies and also to promote demand for better sanitation and hygiene practices. The pilots raised awareness among public officials about the relevance of improved sanitation and hygiene and willingness to co-finance low-cost sanitation technologies. They also highlighted some policy areas that need to be addressed—for example, current legislation makes it difficult to form small enterprises that could provide materials needed for WSS, e.g., latrine slabs.

3.38 The pilot rural community sanitation project developed during the preparation of the Uzbek RWSS Project identified the lack of well-designed and maintained sanitary facilities and of good hygiene practices as the most pressing threats to the population's health. The pilot project combined the construction of improved on-site sanitary facilities with a campaign to inform and educate the population about the proper use and maintenance of those facilities. Health specialists assisted the farm committees to develop and implement health promotion and education activities. Through the farm committees, rural communities made decisions and were involved in health promotion and education activities. The pilot project showed that there is high willingness among the rural population to improve their current sanitation practices.



## INSTITUTIONAL DEVELOPMENT

3.39 The study found that many RWSS projects pay attention to service delivery, utility performance, and management practices. For example, a performance monitoring indicator from Nepal 1996 was the "reduction of unaccounted for water (UAW) from the current rate of 70% to 40% by the year 2000," with UAW as a proxy for management performance. There is a long tradition of including cost recovery in project objectives. The review of projects for this study found that a typical performance monitoring indicator in RWSS projects is "water charges sufficient to cover operation and maintenance and depreciation." Monitoring and evaluation of service delivery can use proxies such as "average time lapse between breakdown and repairs" (Indonesia 1993) to indicate the increased capacity of the institutions.

3.40 However, RWSS projects were less successful in institutional development. According to the OED, less than half of the projects achieved substantial institutional development impact and only about 38 % were likely to sustain their benefits. Several obstacles to successful institutional development were identified. An important obstacle for RWSS is that often no single government agency is responsible. NGOs therefor often fill the gap, becoming necessary support organizations. Thus, there is no possibility of building governmental capacity.

3.41 The role of NGOs in RWSS was debated during the electronic conference mentioned previously. Practitioners expressed a range of views. In some instances, NGOs were considered effective players in the RWSS sector, complementing government activities and providing services in regions far beyond the reach of the state or seen as a poor risk by the private sector. NGO strengths typically mentioned were capacity building and training, facilitating and disseminating organizational technologies, strengthening community institutions, and promoting micro-finance and income-generating activities. Conference participants suggested that NGOs can also play an active role in advocacy, applied research, and policy development, but only when they have clear links to a grassroots constituency. On the other hand, some in the RWSS community felt that NGOs should leave RWSS to the public and private sector and stick to their "core business" of community organizing, education, and complementing government services. NGOs were cautioned against trying to bypass or "replace" governments, especially at local levels.

3.42 These comments focused on the role of NGOs in providing services. NGOs have been used in RWSS projects in ways that clearly match their special skills: community education and monitoring environmental and health conditions in the community. An excellent example of the effective use of NGOs the Bank's Uganda Nutrition and Early Childhood Development Project, which is being implemented by a network of NGOs contracted by the government to motivate communities and provide health education. The lead NGOs train community-based organizations that in turn carry out the monitoring and evaluation activities. The ongoing participatory monitoring and evaluation developed for the project is considered a best practice in the World Bank (PREM 1999) and can serve as a useful example to the RWSS sector.

3.43 Bank-wide, institutional development of public health services is seldom included in project design. In the ECA region, the strong public health heritage of the former Soviet Union,

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as evidenced in the performance of the Sanitary and Epidemiological Service (SES), does not seem to have influenced the design of RWSS projects. Only the stand-alone projects strongly integrate the public health agency into their institutional development activities. Aside from them, only one other project so much as mentions the SES. This appears to be another lost opportunity to improve health and reform public health services.

#### **TRAINING INVESTMENTS**

3.44 All Bank-supported projects in ECA provide training. In general, the training focuses on skills necessary to operate and maintain infrastructure investments to ensure sustainability. It is provided at both the community and utility level. The Uzbek and Turkmen RWSS projects have provided technical assistance to train teachers, health educators, and communication specialists, who in turn would develop training activities in schools, health centers, and communities. Almost all projects include study tours. For example, the Aral Sea projects include visits to the Estonia Health Promotion Services.

3.45 Of the "other" projects, only the Moldova Social Investment Fund project includes training of public health staff. Their training covers both health promotion and education as well as environmental monitoring, i.e., water-quality testing. In Social Fund projects, capacity building is often directed towards monitoring impacts on poverty. While many Social Fund projects include a management structure and maintenance plan for each infrastructure project, their approach to operations and maintenance is rather fragmented. They tend to establish operations and maintenance at the local level. The stand-alone projects, in contrast, are able to address operations and maintenance within an institutional framework covering a local or regional program and thus to build institutional capacity. A concern is that the Social Fund approach is not aligned with overall Bank policy regarding institutional capacity building.

#### **MONITORING AND EVALUATION**

3.46 There was a dramatic shift in development objectives and monitoring and evaluation of RWSS worldwide in the late 1980s as project objectives shifted from just providing drinking water to improving sanitation and health as well. With this came the inclusion of health, sanitation, and hygiene components in Bank projects. The first part of Annex 6 (Part A) provides the performance monitoring indicators and their unit of measurement for the 16 World Bank RWSS projects that have clear health, sanitation, and hygiene components. The list documents the evolution in the World Bank from a focus on hardware to consideration of hygiene education and gradual inclusion of health impact as a monitoring indicator. Section B of the annex presents typical performance monitoring indicators used by other development agencies. A comparison of these two lists clearly shows that hygiene behaviors and health impacts are monitored much more rigorously outside than within the Bank. This discrepancy is likely due to the fact that most of the other organizations reviewed have a direct health mandate, e.g., UNICEF, and so, for them, demonstrating health improvements is a necessity.

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3.47 The most common monitoring activities employed in World Bank projects include qualitative assessments (beneficiary and social needs assessments and socioeconomic studies related to poverty) and quantitative assessments (financial disbursements and physical infrastructure, as measured by secondary data from sector ministries and supervision missions). Performance monitoring indicators can generally be categorized as financial, institutional, socio/economic, policy, infrastructure, and health. In most projects, input and infrastructure indicators predominate. They are measured quantitatively, e.g., water schemes completed, boreholes drilled, hand pumps installed, and latrines built.

3.48 Bank monitoring and evaluation components that measure health-related indicators tend to be behavioral and environmental. Health is the implicit objective, but the targets and measures applied are observable personal, household, and community level behaviors. For instance, the China National Rural Water and Sanitation Project 1997 target for the sanitation and health component is to achieve "an average 5% point improvement compared to the baseline period in key water-related health behaviors." The 1993 India-Karnataka RWSS project set the following indicator: "hygiene education management consultant recruited for the project." Newer projects monitor health impacts: India-Uttar Pradesh RWSS 1996 and Nepal 1996 measure health impact through monitoring the incidence of water-related diseases; Morocco RWSS 1997 has the following indicator: "reduce by 50% the diarrhea disease rates in young children within one year of project completion."

3.49 The OED review concluded that monitoring and evaluation were seldom incorporated within RWSS projects implemented in the period 1977-1986. In contrast, most recent projects reviewed for this study did include a monitoring and evaluation system in project design. Whether the RWSS projects are monitoring all relevant factors, however, is a question that has been the subject of several recent World Bank studies. A recent evaluation of the environmental performance of ECA and MNA WSS projects noted a lack of sufficient and adequate performance monitoring indicators (Bruestle 1999).

3.50 Similarly, a review of health projects in the Africa Region (Beerling 1998) found that "the assessment of actual or potential health consequences of projects happens on a limited scale." However, the author states that this shortcoming is understandable for several reasons. "It is very difficult to attribute improvements in health status to separate interventions," and "in the relatively short time span of a project (four to five years) little impact can be measured." In some cases, it is possible to measure the impact of projects, but in RWSS projects it is often difficult to prove a direct cause-effect relationship between specific sanitation and hygiene interventions and improvements in health. In most cases it is possible to show improved outputs and processes, but projects fail to set appropriate measures of success.

3.51 This study found that it is difficult to coordinate and integrate the monitoring and evaluation of physical outputs, (e.g., latrines, piped water systems) and health, sanitation, and hygiene activities. Monitoring of input and some process and output indicators is usually good, but monitoring and evaluation of social and individual behavior change is less well defined, and the use of health data as a monitoring and evaluation instrument is almost nonexistent.

3.52 It is frequently mentioned that, because there are insufficient staff to meet the needs of a monitoring program using health data, different measurements of improved health are

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of their problem. As a result, most implementation completion reports do not effectively assess or systematically document project lessons. Information about other project impacts on beneficiaries may also be lost.

**BOX 3. GHANA COMMUNITY WATER AND SANITATION PROJECT**

**KEY FINDINGS AND LESSONS LEARNED FROM A FIELD REVIEW OF THE HYGIENE EDUCATION AND SANITATION COMPONENTS**

The Ghana Community Water and Sanitation Project (FY94) is a national poverty alleviation program, with an objective to provide basic drinking water facilities and to improve household sanitation and hygiene practices in rural communities. The project, which has followed a demand-responsive strategy with community-based management and participatory approaches, has made positive progress in accomplishing many of its goals. Over 3,000 household latrines had been constructed at the time of the review (November 9–December 4, 1998). Of the 1158 water points to be constructed, 565 were fully complete and 599 were at various stages of completion. Communities had a high sense of ownership and commitment to contribute to construction, management and operation of their facilities. Each project community had a WATSAN committee responsible for the operation and maintenance of the water points and for continuous monitoring of sanitation and hygiene activities.

Despite the positive progress, the project had some shortcomings, according to the review. The full potential and socioeconomic impacts of the projects may not be achieved because behavior change was not one of the main foci of the project at the onset of activities. Further, it will be difficult to assess overall socioeconomic and health impacts because no baseline data was collected at the initial stage of project implementation. Though a management information system was set up to monitor project activities, no monitoring was carried out to detect behavioral, health, or socioeconomic impacts.

Adopting a demand-responsive approach to promote the delivery of sanitation and hygiene activities enhances the demand for improved sanitation, but the approach does not necessarily enhance demand for improved hygiene practices. Though some change in behavior could be observed when served communities were compared with unserved, community members had their own reasons for demanding or not demanding latrines. These related mainly to prestige or convenience or privacy, rather than to improved hygiene.

*Source: Field Review of the HES Components in Ghana Community Water and Sanitation Projects. 1999. World Bank.*

increasingly being used. For instance, the India Karnataka Project 1993 aimed to “create greater community awareness of the causes of water and sanitation-related health problems.” The indicators that relate to this development objective are that hygiene education consultants are recruited and that the percentage of project villages having clean and health environment, as evident through sample surveys, is more than 60%. In India’s Uttar Pradesh project, a development objective is to “deliver sustainable health and hygiene benefits to the rural population through improvements in the rural water supply and environmental sanitation services.” Unlike most other RWSS projects, the Uttar Pradesh performance monitoring indicators do include health status measurements: health impact through incidence of disease. Interestingly, an objective of the Bank’s first RWSS project in Paraguay (1978) was to establish an educational and promotional program in basic public health. Subsequent RWSS projects from the 1970s to the 1980s did not often share this objective.

3.53 Most task managers agree that the existence of established performance monitoring indicators increases the amount of attention managers and supervisors pay to a particular issue. Therefore, whatever the intent of a project, it is important to consider carefully what the development objectives and performance monitoring indicators should be. Most projects with performance monitoring indicators that are related to health status or hygiene behavior also have health development objectives. However, the OED found that some projects with health-related development objectives did not have corresponding health performance monitoring indicators. Of the 14 RWSS projects from the 1991-1997 period, three can be said to have no health objectives or related performance monitoring indicators. If an indicator is in place, the corresponding development objective is at least implicit in the project. On the other hand, it is not advisable for a project to have a development objective related to health—or to any other result—without a corresponding indicator. Only one project (India Maharashtra RWSS 1991) set a health-related objective without a health indicator, but subsequent Indian RWSS projects did include performance monitoring indicators for health, sanitation, and hygiene. Only one project (Indonesia 1993) mentioned an indicator related to the environment. The indicator is “long term environmental benefits” and the unit of measurement is “changes in BOD [biochemical oxygen demand], COD [chemical oxygen demand] levels, and coliform content of water bodies in subproject areas”.

3.54 Two stand-alone RWSS projects (Turkmenistan and Uzbekistan) with well-designed health performance monitoring systems have no health development objectives. Health was a project goal, but given the complexities of the severely degraded environments and the myriad of other disease transmission routes in the Aral Sea disaster zone, the project teams were cautious not to promise too much. These projects include both quantitative and qualitative indicators for health and hygiene practices and behaviors to focus attention on such behaviors and to increase awareness of the links between sanitation and health.

## CONCLUSION

3.55 In conclusion, this study found that only a few World Bank RWSS projects can provide documented and unambiguous information about their impact on health. Project implementation often proceeds without an understanding of the baseline situation of target groups and the nature

## CHAPTER 4. FINDINGS AND RECOMMENDATIONS

### FINDINGS

4.1 *Water supply, sanitation, and hygiene should be intrinsically linked if health is a goal.* The international body of research and project implementation experience in RWSS is vast and spans over 20 years of lessons learned. From this the need to link water supply, sanitation, and hygiene is abundantly clear. WSS activities to improve hygiene behaviors and sanitation have as great an impact on health as the water infrastructure itself. In fact, such activities may have an even greater impact. Therefore, any temptation to de-link water supply from sanitation or hygiene, for instance in the interests of a more simplified project, should be resisted as long as health improvement is a project goal.

4.2 Because sanitation behaviors and hygiene are key to achieving health benefits from improved WSS, the development objectives and performance monitoring indicators should not be confined to the provision of infrastructure, e.g., pit latrines. A successful sanitation program must promote skills and practices for healthy living defined as (i) safe disposal of feces and solid and liquid wastes; (ii) safe collection and storage of drinking water; (iii) practice of good personal, household, and community hygiene; and (iv) control of vectors that transmit disease.

4.3 *Documentation is lacking on health effects of World Bank WSS projects.* A review of completed World Bank RWSS projects provides little information about the projects' impact on health—both those with and those without a hygiene and sanitation component. Documents from completed RWSS projects often mention improved health as a project impact and outcome but usually no documentation in the project files supports this conclusion. This finding does not mean that World Bank experience runs counter to the experience of the international community regarding the linkage between health results and WSS projects. Rather it is indicative of the problems of monitoring and evaluating the impacts of WSS projects in general.

4.4 Scraps of information on World Bank RWSS project substantiate the link between hygiene and health. The Mali RWSS project found that, despite the availability of clean drinking water sources (provided by the project), the health of the beneficiaries did not improve. It was determined that people continued to use a more convenient—though contaminated—traditional water source occasionally. Also, hygiene education was documented to be a significant and positive determinate of improved health in RWSS projects in Sri Lanka and India.

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4.5 Several RWSS projects now in implementation conducted baseline surveys of water and sanitation-related health conditions and have established performance monitoring indicators that measure the incidence of water-related diseases—usually of target groups. It will be very important to capture the results of these projects in order to begin a more systematic analysis of project impacts.

4.6 Bank RWSS projects typically allocate about 10% of the total project cost to the hygiene, sanitation, and health component. No information was found on the cost of implementing the monitoring and evaluation program for any RWSS project or project component.

4.7 *Bank WSS projects present challenges for monitoring and evaluating health results.* Other development organizations active in WSS have produced clear guidelines on monitoring and evaluating hygiene, sanitation, and health components. These are summarized in this report. However, Bank-financed RWSS projects have multiple objectives, such as institutional reform, utility efficiency, cost recovery, improved service delivery, as well as health improvements. Non-water sector projects (for example, those using Social Development Funds, etc.) with RWSS components, by definition, have multiple sectoral objectives and thus an added layer of performance monitoring indicators. Since task managers are required to limit performance monitoring indicators to a reasonable number (roughly six)—it has been difficult to produce meaningful monitoring information related to sanitation, hygiene, and health. Furthermore, there is little consistence among Bank RWSS projects as to their choice of performance monitoring indicators. Monitoring and evaluation methods—if they are described at all—appear to vary greatly as well.

4.8 *Community-based monitoring and evaluation hold promise for Bank projects.* The community-based participatory monitoring and evaluation approach that the IRC recommends for RWSS projects, has not usually been applied in Bank RWSS projects. However, it has been applied—and with success—in the Bank-financed Uganda Nutrition and Early Childhood Development Project. The monitoring and evaluation component of this project (health impacts are monitored) is considered by PREM to be a best practice. Several relatively new RWSS projects are using this approach. The Uttar Pradesh RWSS (India) uses the community's performance in monitoring and evaluation as the performance-monitoring indicator. Will this new approach to monitoring and evaluation be more successful in identifying health and hygiene impacts than past Bank practices? The jury is still out—but the experience of other organizations strongly suggests that the approach can effectively document the impacts of the hygiene, sanitation, and health component.

4.9 *Social Fund projects exhibit strengths in participatory approaches in their RWSS components.* The characteristics of a successful hygiene, sanitation, and health component are well established, based on the experiences of the international development community. Most World Bank RWSS projects with hygiene and sanitation components now in implementation have the key ingredients for success except for well-defined monitoring and evaluation programs. The participation of beneficiaries and stakeholders has been increasing in World Bank RWSS projects. Use of the demand-response approach is increasing, with projects in Ghana and India exemplifying best practices. Social Development Fund projects generally follow demand-driven

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approaches and are highly participatory in nature. Therefore, much can be learned from the experience of this type of investment.

4.10 *ECA RWSS projects more oriented to institutional strengthening than RWSS in other regions.* Bank-wide, RWSS projects very rarely include policy issues or training related to strengthening of public health policies, institutions, and staff. ECA is in the forefront with four RWSS projects (stand-alone and "other") emphasizing training and institutional capacity building of the public health services for surveillance and health and water quality monitoring. Unlike many of the Bank's other client countries, the former Soviet Union had a strong public health system in place before transition. Although the public health system has since been weakened, the ECA region has a strong tradition of public health that should be incorporated into both rural and urban WSS projects.

4.11 *The presence of a public health specialist on project team assures strong hygiene and sanitation component.* In ECA, for both stand-alone and other RWSS projects, when a public health specialist was on the team, a hygiene and sanitation component and appropriate health indicators were a part of the project. Even among projects of a very similar nature, when there was no public health presence, there was no hygiene and sanitation component. Health specialists should be part of the project team if the intent is to achieve and monitor health goals.

4.12 *Needs assessments and pilots improve design of RWSS projects.* The design of RWSS projects in the ECA region has been significantly guided by the results of needs and social assessments. Also useful were pilot projects that further investigated the issues raised by the assessments and demonstrated new community-based approaches to RWSS. Both assessments and pilots should be used in the preparation of RWSS projects.

4.13 Non-water sector projects with RWSS contribute significantly to the Bank's portfolio of RWSS activities but miss opportunities to achieve health goals. Bankwide, non-water sector ("other") projects with RWSS components are a significant contributor to the sector, although often beyond the purview of the sector strategy or review. The ECA region has more "other" projects with RWSS components than any other region. They account for about half of the total ECA region investments in RWSS.

4.14 These Social Fund and Rural Development projects tend to adopt approaches to project design and implementation that differ from traditional RWSS projects. (This is particularly so for Social Development Funds.) For example, Social Development Fund projects utilize demand-responsive approaches, community-based activities, and public awareness and educational promotion. Both Social Development Fund and other projects often include activities that will have a direct or indirect impact on health and hygiene. However, these impacts are frequently not acknowledged either in project objectives or in performance indicators. The "other" projects are often well placed to implement hygiene, sanitation, and health promotion activities that would enhance the benefits of the water supply investments. However, the review found only one Social Development Fund project—Moldova—that proposed hygiene, sanitation, and health activities.



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4.15 Recent RWSS projects strong in monitoring and evaluation. While the older RWSS projects lacked or had weak monitoring and evaluation indicators, all the most recent (post-1990) include monitoring and evaluation systems, sometimes quite complex ones.

### RECOMMENDATIONS

4.16 Recommendations for activities to address the health, sanitation, and hygiene goals of RWSS projects are grouped by topic.

### OPERATIONAL

- *If health benefits are an objective of a RWSS project or project component, hygiene and sanitation activities must be included.*
- *Baseline information on health status and knowledge, attitudes, and practices related to WSS is needed to demonstrate a health impact (or any other impact). This need must be considered from the start. Obtaining a baseline requires some lead time. If health is introduced into the project only in the later stages, when fundamental decisions have already been made, the chances of having adequate baseline information and a well-designed hygiene and sanitation component are greatly reduced.*
- *Social analyses should be used to guide project design and implementation. Since it is necessary to focus on changes at the household level to realize health benefits from improved water supplies, information from social assessments is essential for identifying the behaviors that need to be targeted.*
- *If health benefits are a major justification of a project, it is important that public health specialists be involved from the outset to assess the scope and plausibility of health benefits. It is easier for them to make a solid contribution if they are involved from the beginning.*
- *A careful institutional analysis should be conducted during project preparation to ensure that the project scope does not become unrealistic and overly ambitious.*
- *Ministries of health should be involved in project design and implementation, and institutional strengthening, capacity building, and training of the public health sector should be included as objectives.*
- *An attempt should be made to link the RWSS project with other Bank- or donor-financed activities to increase the impact of both types of activities.*
- *A monitoring and evaluation program should be set up immediately. Supervision missions should coach clients in the use of monitoring as a management tool to collect data, track project performance, and analyze and evaluate the results.*

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- *Bank resources, such as the Rural Water Supply Thematic Team and the Water Help Desk and specialists throughout the Bank should be called upon to assist in project design and implementation.*
- *The guidelines for project design found in this report or in the references provided should be followed. They are based on 20 years of experience world wide and are of proven effectiveness.*

### INSTITUTIONAL

- *All projects with significant investments in rural water supply and a goal of improved health, should be required to include hygiene and sanitation components.*
- *Bank staff new to WSS and hygiene, sanitation, and health should be provided with clinics.*
- *Staff from "other" non-water sector projects with RWSS components should be included on Bank committees and groups working on WSS.*
- *Tools for hygiene and sanitation design and implementation—those produced both by the Bank and other organizations—should be made readily available.*
- *The use of interdisciplinary teams should be supported.*
- *A Bank-wide review of the non-water sector ("other") projects with rural water supply investments should be conducted and the use and impact of health, sanitation, and hygiene components should be investigated.*

### MONITORING AND EVALUATION

- *Baseline information on health status and knowledge, attitudes, and practices related to water supply and sanitation should be established during project preparation.*
- *If health is an objective and there is a hygiene, sanitation, and health component, health impacts should be monitored and evaluated using a combination of quantitative and qualitative methods. Health statistics are relatively easy to monitor if they are available, but that is seldom the case. Hygiene and health behaviors may be used as indicators (see Annex 6). Proxies, such as reduction of unaccounted-for water, may be used to measure "hard to measure" changes like management performance.*
- *A two-tier approach to performance monitoring should be considered. The India Karnataka RWSS developed a two-tier approach largely as a response to Bank guidance that they establish only five to ten performance monitoring indicators. This is generally sound advice,*

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particularly when dealing with novice or weak institutions. It is preferable to have a few, simple, consistent objectives that can be achieved rather than a multitude that remain unfulfilled. The first tier is the half dozen indicators for the entire project. The second, more detailed tier of indicators is used by the borrower staff and managers to monitor a wider range of inputs, outputs, and activities. It would include some or all of the performance monitoring indicators presented at the end of Chapter 2 or in Annex 6.

- *For many projects, a community-based monitoring program is the best methodology. It should be participatory, and beneficiaries need to understand the reason for monitoring. They should decide upon a small set of easily measurable indicators that are relevant for them and that can be linked to the project. Once the system is set up, periodic rounds of monitoring should be conducted with strong local participation. Building in a workshop is advisable, if possible. The data should be analyzed as quickly as possible in the field and the results fed back into the project. The whole process should be repeated ten to twelve months later. In the process, benchmarks that can be used elsewhere in the region will be established.*
- *The results of the monitoring and evaluation activities should be documented in project reports.*

4.17 It is hoped that the findings and recommendations of this report will spur discussion of the important issue of how to obtain health results from RWSS projects and lead to adoption of approaches that will increase the effectiveness of all Bank RWSS projects, both stand-alone and those connected with Social and Rural Development Funds.

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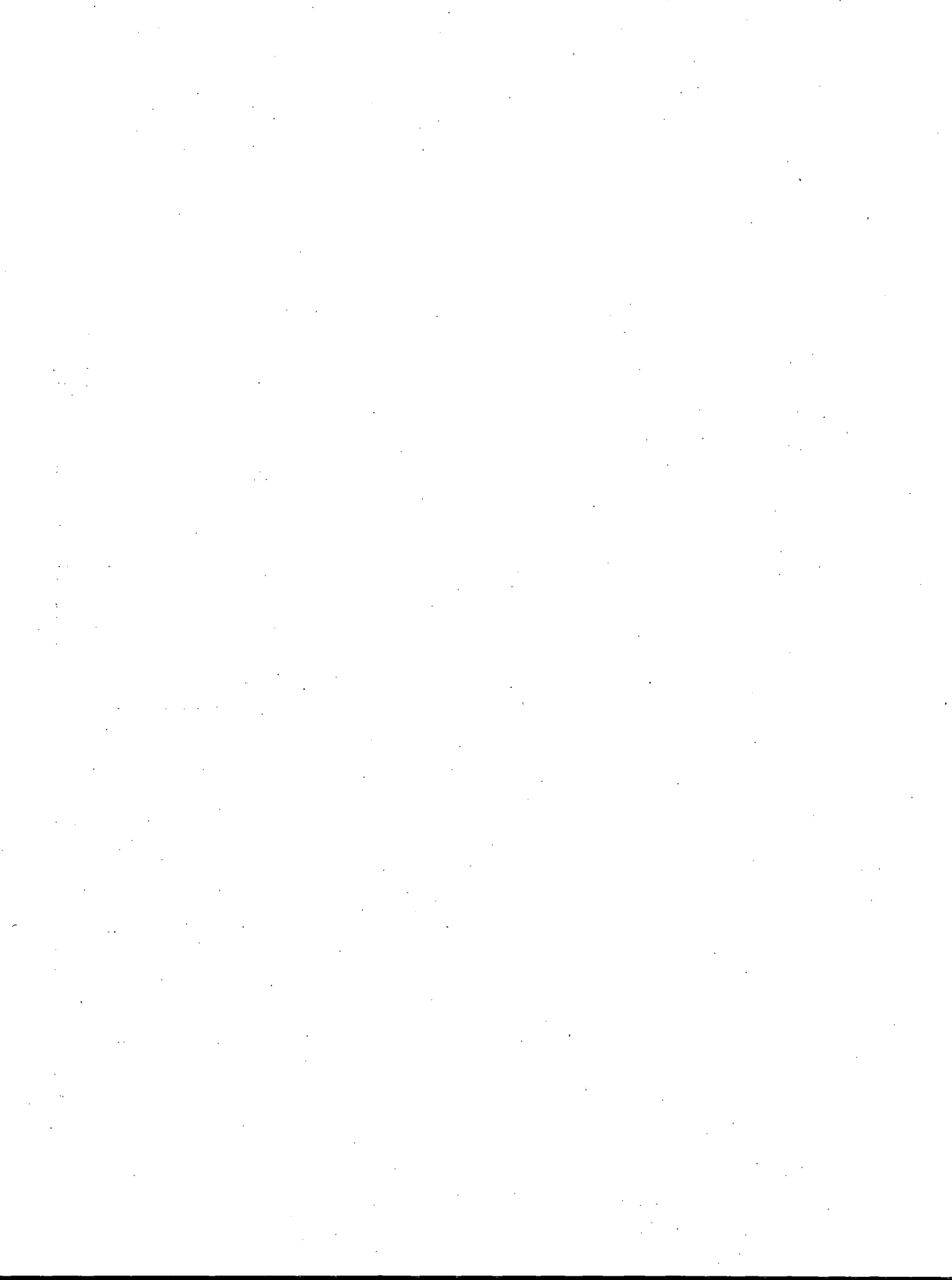
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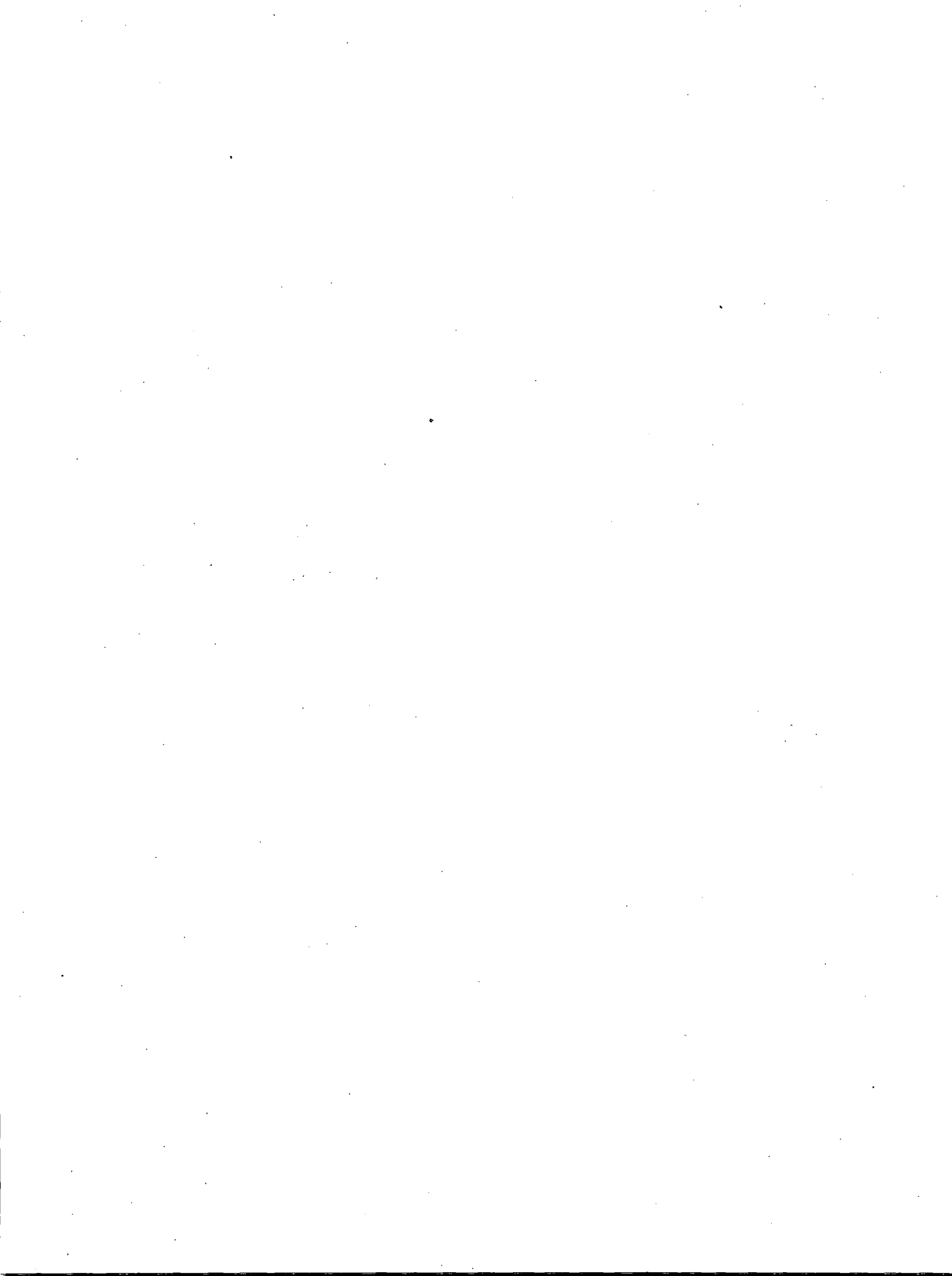
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## ANNEXES

### ANNEX 1: REVIEWED BANK-FINANCED RWS&S PROJECTS

ALBANIA:	Community Works Project, FY99
ALBANIA:	Pilot Poverty Alleviation, FY93
ALBANIA:	Rural Development, FY95
ARMENIA:	Social Investment Fund, FY96
BENIN:	Rural Water Supply and Sanitation Project, FY94
BOLIVIA:	Rural Water and Sanitation Project, FY96
BRAZIL:	Technical Assistance and Pilot Rural Water Supply and Sanitation Project, FY85
BURUNDI:	Rural Water Supply Project, FY91
BURUNDI:	Second Water Supply Project, FY86
CHINA:	Rural Water Supply Project, FY85
CHINA:	Rural Water Supply and Sanitation Project, FY92
CHINA:	National Rural Water Supply Project, FY97
GEORGIA:	Social Investment Funds, FY98
GHANA:	Community Water and Sanitation Project, FY94
INDIA:	Karnataka Rural Water Supply and Environmental Sanitation Project, FY93
INDIA:	Kerala Water Supply and Sanitation Project, FY86
INDIA:	Maharashtra Rural Water Supply and Environmental Sanitation Project, FY91
INDIA:	Uttar Pradesh Rural Water Supply and Environmental Sanitation Project, FY96
INDONESIA:	Water Supply and Sanitation for Low Income Communities Project, FY93
KAZAKHSTAN:	Water, Sanitation and Health Project, FY96
KENYA:	Rural Water Supply Project, FY78
MALI:	Rural Water Supply Project, FY83
MOLDOVA:	Social Investment Funds, FY99
MOROCCO:	Rural Water Supply and Sanitation Project, FY97
NEPAL:	Rural Water Supply and Sanitation Project, FY96
NICARAGUA:	Rural Sanitation Project, FY78
PARAGUAY:	Rural Water Supply Project, FY77
PARAGUAY:	Second Rural Water Supply and Sanitation Project, FY81
PHILIPPINES:	Rural Water Supply and Sanitation Project, FY82
POLAND:	Rural Development Program, FY00
ROMANIA:	Social Development Fund, FY98
TAJKISTAN:	Social Investment Fund, FY97
TUNISIA:	National Rural Water Supply Project, FY82
TURKMENISTAN:	Water Supply and Sanitation Project, FY97
UZBEKISTAN:	Social Transformation Fund, FY00
UZBEKISTAN:	Rural Water Supply, Sanitation and Health Pilot Projects, FY97
ZAMBIA:	Rural Water Supply and Sanitation Project, FY83



**ANNEX 2: REVIEW OF BANK-FINANCED RWSS COMPLETED AND EVALUATED BY  
OED (1977-86)**

**Brazil: Technical Assistance and Pilot Rural Water Supply and Sanitation Project, FY85**

The main project development objectives were: (i) to assist the Government of Brazil in establishing a policy for providing water supply and sanitation in rural areas; (ii) to define sector goals at the Federal and State levels; and (iii) to design institutional responsibilities and help prepare State Programs.

**Key indicators of development outcome/impact:** The efforts of the project helped institutionalize at the state and local level: (i) the promotion and acceptance of cost recovery at local level, based on affordability and the stimulation of interest in rural water supply and sanitation. The project successfully laid the groundwork for attaining its future objectives in determining sound financial policies and affordable tariffs and in fostering community participation. The project was also instrumental in formulating a national policy for providing water supply and sanitation in rural areas, issued by the Ministry of Social Action and the Ministry of Health (thus meeting objective (i)). This helped promote sector reorganization to increase attention to rural water supply and sanitation, which had been neglected in favor of its urban counterparts.

The key indication of success was the promotion of combined objectives of water, sanitation, health and administrative self-sufficiency through cost recovery. Another indicator of performance of this project was the upgrading of the sanitation systems, from latrines to sewerage and treatment, and the installation of water and sanitation facilities in villages at a per capita cost of US\$160, when estimates for water alone were US\$120 and sanitary units US\$300.

*"Brazil: Technical Assistance and Pilot Rural Water Supply and Sanitation Project - Project Completion Report No. 11549." Washington, DC: The World Bank, 1993.*



**Burundi: Second Water Supply Project, FY86**

**The project development objectives were:** (i) to improve the quality and quantity of water provided to the rural population; (ii) to improve the living conditions of the rural population by reducing walking distances to water supply points; (iii) to give the rural population greater responsibility in the area of maintaining its water supply facilities; and (iv) to assist the Government of Burundi make proper institutional and financial arrangements for the rural water supply subsector.

**Key indicators of development outcome/impact:** The project was successful in meeting its: (i) physical objectives to improve access to potable water in the 33 areas covered by the project (ii) by improving the management and organizational structures of the Department of Rural Water Resources and Electricity (DHER) and its capacity to implement subsequent projects and by helping the Government to adopt a policy allocating full responsibility for operation and maintenance of the water supply schemes to the beneficiary population (with oversight involvement from the communes). Thus, the project contributed to the overall development of the rural water supply subsector in Burundi, as well as laying the ground work for the preparation of the next Water Supply Sector Project (C2288-BU, FY91), which covers the whole country.

**Other Performance Indicators Include:** (i) Institutional Performance. The project helped the General Directorate of Rural Water Resources and Energy (DGHER) strengthen its management and its organization. It also paved the way for the Water Supply Sector project (Credit 2288-BU), which covers almost the whole country and is financed jointly by IDA, Belgium (AGCD), Germany (KfW), UNICEF, and NGOs. (ii) Operational Performance. The 33 rural water supply schemes included in the project were rehabilitated and expanded as planned. Also, two additional water systems were financed owing to the appreciation of the SDR against the US dollar.

*"Burundi: Second Water Supply Project - Project Completion Report No. 11982." Washington, DC: The World Bank, 1993.*

**China: Rural Water Supply Project, FY85**

The development objectives of the project were to: (i) provide safe and adequate water supply to some 6 million people in five provinces, residing in about 4,650 villages; (ii) develop planning, implementation, and operating capacities; and (iii) improve cost-effectiveness and financing arrangements.

**Key indicators of development outcome/impact:** The project was successful in meeting one of its major physical objectives. Its coverage targets were exceeded, and about 90% of beneficiaries received piped water of acceptable quality. The project target for household connection was also exceeded by about 15%, allowing over 90% of piped water users to enjoy maximum time savings and health benefits. Numerous small new enterprises are utilizing the water. Public health improvements were reported to be dramatic with hepatitis and typhoid incidences reduced by more than 40%. However, a major omission of the project was not including sanitation on the grounds that "it is not a problem." Thus, with greatly increased water consumption, wastewater disposal does present a problem and adds to the existing chronic water pollution problem.

Major project impact were felt in several areas. From the institutional development perspective, technological and management skills in design, construction, and operation and maintenance of water works and financial planning were enhanced. From the operational performance perspective, the project performed well. The project's scope was changed significantly during implementation. It was expanded to meet strong demand; sub-projects were redesigned into "regional" schemes serving larger numbers of villages/townships and providing "economies of scale;" and benefits and number of non-piped, point sources were significantly reduced, reflecting strong demand for individual connections. During the appraisal of the project, 4,650 villages were being served, but, at the end of the project implementation period, 5,730 villages were being served. At appraisal, 5.93 million people were being served, and at the end of the project, the total was 7.43 million. The health benefits from the project were highly publicized, and there was a strong pressure from the unserved communities for improvements of water facilities -- with the willingness to pay for them and their expressed desire to have household connections as a key investment for their children.

*"China: Rural Water Supply Project - Project Completion Report No. 13281." Washington, DC: The World Bank, 1992.*

*"China: Rural Water Supply Project - Project Performance Audit Report No. 11251." Washington, DC: The World Bank, 1994.*

**India: Kerala Water Supply and Sanitation Project, FY86**

The development objectives of this project were to: (i) help strengthen sector-wide management in the newly created Kerala Water Authority (KWA) and in municipalities operating their own distribution systems; (ii) provide piped water supplies to about one million people in seven rural areas; (iii) increase the supply of water and extend the distribution facilities in one urban area (Quilon) to about 150,000 people; and (iv) undertake a pilot program to introduce low-cost on-site sanitation (LCS) facilities and finance their construction in rural areas and also in 10 urban areas of about 200,000 people.

**Key indicators of development outcome/impact:** The overall impact of the project was unsatisfactory. The project was not fully successful in meeting its objectives because: (i) The physical targets of the project were essentially achieved at the time of the credit closing, but the institutional development and financial management and accounting aspects were faced with inadequate resources during the implementation period, which caused significant delays. Additionally, the ICR classified the detailed engineering preparation as inadequate. (ii) Only two water supply schemes (30% of the project target) had been fully commissioned by the time of the ICR mission in July, 1994. (iii) In the first phase of the LCS, seven of the 10 towns had achieved at least 90% of the proposed target. However, only 75% of the initial target projections were met at the end of the two project phases and only 42% of LCS units planned in the rural areas were constructed. Also, the cost of the facilities exceeded the amount of the subsidy by Rs 2,000, and many rural families doubted their ability to make the required payment.

*"India: Kerala Water Supply and Sanitation Project - Performance Audit Report No. 17922." Washington, DC: The World Bank, 1998.*

**Kenya: Rural Water Supply Project, FY78**

**The development objectives of this project were to:** (i) provide safe water to a rural population of about half a million by implementing 33 schemes; and (ii) assist in strengthening the organization and management capability of the Ministry of Water Development (MWD) to plan expansion programs and operate and maintain rural water supply schemes.

**Key indicators of development outcome/impact:** The overall impact of the project was unsatisfactory. The project failed to achieve its objectives. None of the 33 schemes were completed. Some of the schemes were completed later, utilizing bilateral grant funds. However, the creation of the Project Monitoring Unit as part of MWD's new organizational structure demonstrated its usefulness in the short period after the project restructuring exercise and was retained to implement rural water supply schemes after the Project was terminated.

*"Kenya. Rural Water Supply Project - OED Evaluation Report No. 10782." Washington, DC: The World Bank, 1992.*

Mali: Rural Water Supply Project, FY83

The development objectives of the project were to: (i) supply water to 215 villages in the district of Kita and 15 villages in the districts of Batoulabe and Kenieba; (ii) set up operational and maintenance systems that would encourage self-reliance by villages; (iii) strengthen the Direction Nationale de l'Hydraulique et de l'Energie (DNHE) so that it could more effectively manage the project, cope with the demand for rural water points generally, and provide technical assistance to villages; and (iv) lessen the financial burden of maintaining rural systems on the Central Government by holding the villages responsible for part of the cost of the handpumps and maintenance.

Key indicators of development outcome/impact: The project exceeded the appraisal targets for the number of boreholes and population served. In addition, successful drilling rates exceeded appraisal estimates. The performance audit report rates the project outcome as satisfactory, sustainability as uncertain, and institutional development impact as moderate. Apart from the standard covenants of a typical credit agreement, the other specific covenants regarding employment of consultants, progress monitoring, audits, reporting, establishing the project account, and maintenance of installations and facilities constructed with credits proceeds were all complied with. Covenants regarding participation arrangements with villages prior to the drilling of the borehole were also complied with. The project consultants did an outstanding job, working with technical competence and enthusiasm. However, the quality of the project at the entry level was compromised by excessive cost estimates, and the lack of sufficient arrangements to ensure institutional sustainability.

"Mali: Rural Water Supply Project - Project Completion Report No. 15148." Washington, DC: The World Bank, 1995.

"Mali: Rural Water Supply Project - Project Performance Audit Report No. 16511." Washington, DC: The World Bank, 1997.

Nicaragua: Rural Sanitation Project, FY78

The development objectives of this project were to: improve rural sanitation services in three regions of Nicaragua, through an integrated program of water, sanitation, health education, house improvement and child immunization. The project showed how to provide services to a low-income population in an effective and efficient way. The project was the first Bank operation of its kind in Nicaragua, and the capacity of the borrower to implement the Rural Sanitation Project was overestimated. The project was amended, restructured, and reduced in scope. After the restructuring, project execution improved considerably and coordination among institutions was strong.

Key indicators of development outcome/impact: The number of villages attended to was 170, instead of the 550 envisioned at appraisal, and about 85% of the estimated number of people benefited. The project reached the poorer smaller villages with an average population of about 124 inhabitants and provided an integrated sanitation and related health services program. The latrine project exceeded 84% the appraisal target, but no latrines were rehabilitated. Also, the communities were organized and trained to be responsible for their contribution to the project and the operation and maintenance of the facilities. Village participation and contribution were good, reaching an estimated 20% of the total cost, exceeding the minimum 15% in the appraisal report. Unit costs were higher than estimated at appraisal because of higher than expected inflation rates, project delays, increased costs for health education, and the expanded project area. The following were the key indicators employed to monitor and evaluate the performance of the project: (i) population served with water 21,000 (111,600 were to be served) and the actual number of villages served 170 (325 villages were to be served at appraisal); (ii) number of water supply systems constructed: dug wells 92 (151 were to be constructed), improved wells 10 (115 were to be improved), and aqueducts 28 (32 were to be constructed); (iii) population served with latrines 56,000 (101,000 were to be served); (iv) number of children immunized 72,000 (72,000 were to be immunized).

"Nicaragua: Rural Sanitation Project - Project Completion Report No. 7527." Washington, DC: The World Bank 1988

**Paraguay: Rural Water Supply Project, FY77**

The development objectives of this project were to: (i) improve the level of sanitary services in rural communities in Paraguay; (ii) install piped water supplies and individual waste disposal facilities in 42 communities in three Provinces in Paraguay; (iii) provide equipment, technical assistance and training for the National Service of Environmental Sanitation (SENASA), the executing agency; and (iv) establish an educational and promotional program in basic public health in the project area.

**Key indicators of development outcome/impact:** The project was the first rural water supply project in the region. The service levels attained as a result of the project exceeded expectations: 47 communities benefited from the project, compared to the estimated 42, servicing 82,000 people. The juntas are meeting the financial commitments, from tariffs, which appear to be affordable. The technical assistance required by the Bank as a loan condition did much to improve SENASA's management ability, though accounting was a continuing weak spot. After a major reorganization in 1994, SENASA matured into an effective agency. Because of the attention paid in project planning to community participation, affordable tariffs and financial provision by the juntas towards the costs of operation, maintenance and renewals, the project benefits appear to be sustainable.

*"Paraguay: Rural Water Supply Project - Project Performance Audit Report No. 6873." Washington, DC: The World Bank, 1987.*

Paraguay: Second Rural Water Supply and Sanitation Project, FY81

The development objectives of this project were to: (i) construct about 49 rural water systems to benefit about 60,000 people by 1985; (ii) install individual waste disposal systems; (iii) implement technical assistance to improve the managerial capacity of the project executing agency, the National Service of Environmental Sanitation (SENASA); (iv) and organize and develop the beneficiary communities so they could build and operate the new systems.

Key indicators of development outcome/impact: The project inputs were consistent with the project outcome, and the overall objectives were met. The number of water systems built (51) exceeded the project target (49). Also, the goals established for the sanitation component of the project were fully met. The institutional objectives were also met. SENASA grew as a national organization responsible for the rural water supply and sanitation sector. The beneficiary communities were organized and trained to participate in the project and also to properly run their water and sanitation systems. This project contributed to the improvement of the health and environment of the communities. The project is likely to maintain an adequate level of benefits throughout its economic life. The key factors indicating project performance are highly encouraging. These include: (i) community participation in the operation and maintenance of the water systems and willingness to implement tariff levels sufficient to cover operating costs and debt services; (ii) promising improvements in SENASA's managerial and technical capacity.

"Paraguay: Second Rural Water Supply and Sanitation Project - Project Completion Report No. 09726" Washington, DC, The World Bank, 1991.



**Philippines: Rural Water Supply and Sanitation Project, FY82**

The main development objectives of this project were to: (i) develop and mobilize local resources for the rural water and sanitation sector (by improving the capacity to mobilize and develop local community participation in the planning, implementation, and operation of water supply and sanitation facilities); and (ii) assist with the organization and strengthening of the responsible local institutions.

**Key indicators of development outcome/impact:** The project can be rated successful in accomplishing the physical and some institutional objectives. About 2.75 million people in rural areas benefited from the new or improved water supply systems, and about 450,000 from the installation of sanitary toilet facilities. However, acceptability of Level II for water distribution systems, proved to be limited and resulted in delays in that component of the project.

*"Philippines - Rural Water Supply and Sanitation Project - Project Completion Report No. 10225." Washington, DC: The World Bank, 1991.*

**Tunisia: National Rural Water Supply Project, FY82**

The main development objectives of this project were to: (i) strengthen the financial position of "Societe Nationale d'Exploitation et de Distribution des Eaux" (SONEDE); (ii) expand its rural operations; and (iii) facilitate the provision of credit facilities for house connections to low-income people.

**Key indicators of development outcome/impact:** The overall implementation procedures were consistent with attaining the actual impact of the project objectives. The project exceeded its physical objectives in the urban areas with over 90% of the population served by house connections in 1991. The achievements of the rural component were significant but well below the targeted 150 villages, largely due to initial cost underestimation. The indicators employed for monitoring the performance of the project include: (i) The house connection program, being a routine operation for SONEDE, proceeded smoothly. On the average, 50,000 connections were installed per year, and over 75% of the connection program was financed from the credit facility, confirming the high level of demand by low income borrowers. (ii) Appropriateness of the design, high quality of construction, and efficient management, operation and maintenance of these facilities for the urban communities.

*"Tunisia: National Rural Water Supply Project - Project Completion Report No. 08128." Washington, DC: The World Bank, 1989.*

*"Tunisia: National Rural Water Supply Project - Project Performance Audit Report No. 12928." Washington, DC: The World Bank, 1994.*

**Zambia: Rural Water Supply and Sanitation Project, FY83**

The main development objectives of this project were to: assist in correcting the imbalances identified by the 1973/74 WHO/IBRD study by: (i) providing piped water to an additional 29,000 people in four main towns and point system water supply to an additional 110,000 people in six rural districts in northern Zambia by the construction of 400 wells and 42 boreholes and (ii) strengthening the key sector institution, the Department of Water Affairs (DWA), to a stage where it would become the effectively managed and valuable arm of the Government of the Republic of Zambia (GRZ) for development and implementation of sector policies.

**Key indicators of development outcome/impact:** The overall implementation procedures were not consistent with attaining the actual impact of the project objectives. The project essentially achieved its physical objectives of constructing four piped supply systems and 400 wells. A total of approximately 210,000 people were estimated to have benefited. Also, although the hygiene education component was not implemented, it is nevertheless reported that there was a significant drop in the incidence of water-borne diseases in the project districts apparently due to the provision of better water services. However, only 30 boreholes out of the 42 were constructed, due to diversion of the drilling rig intended for this project to other projects in other parts of the country. Also, the project did not achieve its objectives of instituting improved revenue accounting systems and full recovery of operating and maintenance costs.

Though it was clear that the project was not sustainable because it was part of a system whose revenue does not even meet operation and maintenance expenses, it accomplished its physical objectives. The indicators of the projects performance was measured based on the number of more than 90% completed worked carried out to meet its physical objectives. Indicators employed to monitor the performance of the Health and Sanitation Promotion component include: (i) provided piped water supply at Kawanbwa, Samfya, Isoka, and Mpulungu; (ii) constructed 396 new wells, 30 new boreholes, 19 three-bedroom houses, 380 hand pumps and rehabilitated 223 boreholes and wells; (iii) constructed 84 proper pit latrines; and (iv) provided provisional health centers with water quality testing kits/equipment for simple chemical and bacteriological analyses for drinking water;

*"Zambia - Rural Water Supply and Sanitation Project - Project Completion Report No. 10723." Washington, DC: The World Bank, 1992.*

**ANNEX 3: REVIEW OF BANK-FINANCED RWSS PROJECTS/PROJECTS WITH RWSS COMPONENTS (1991-97)**

**Benin: Rural Water Supply and Sanitation Project, FY94**

The main development objectives of this project were to: (a) maximize the impact and use of safe water supply and sanitation facilities in rural areas and (b) ensure that the future development of the sector will actually respond to the demand of the rural population. The overall objective of the sanitation component is to contribute to improvements in the health of the rural population and the quality of the rural environment through better management and delivery of sanitation services. The specific objectives for implementing the sanitation component included in this project are: (i) to increase the demand for improved sanitation services through extensive marketing and promotion campaigns; (ii) to have trained masons (and small enterprises) who can construct and promote on-site sanitation systems for households, communities, schools and health centers; (iii) to improve the environmental sanitation conditions and hygiene practices in schools and health centers; and (iv) to improve the environmental sanitation and hygiene practices of rural households and communities through integration of appropriate messages and activities in the community mobilization process for the water supply program.

**Key indicators of development outcome/impact:** The project will employ the following procedures to monitor and evaluate the outcome/impact: (i) assessment of the increase in demand (e.g., using willingness to pay as a monitoring tool, using numbers of new facilities constructed); (ii) assessment of the effectiveness of the marketing/promotion campaign based on monitoring several key indicators; and (iii) assessment of the implementation strategy as a whole, also using selected indicators for monitoring (e.g., number of trained artisans, improvement in general environment). Each of these procedures will in turn employ the following measurement of a mix of quantitative and qualitative performance monitoring indicators: (i) effectiveness and sustainability of the decentralized planning process: ability of SRHs and NGOs to use participatory methods, effective use of self-evaluation procedures, effectiveness in mobilizing communities, number of rural systems constructed, number of schools and health centers enrolled in the sanitation program, number of household latrines constructed, share of operating expenditures financed by budget; (ii) development of private sector capacity: number of qualified NGOs, number and performance of local drilling contractors, number and performance of trained masons and well-diggers, unit costs of facilities (water supply and latrines), number and performance of pump mechanics, availability of spare parts and after sale service; (iii) ownership and community management of facilities: number of active WSCs, women's involvement in key positions, availability rate of water systems, cost recovery and revenue collection; (iv) use and impact of facilities: consumption of water dry/rainy season, number of users dry/rainy season, number of users of on-site sanitation facilities, water quality, upkeep of water point surroundings and sullage control; and water hygiene and excreta disposal practices. A brief summary of the current project status indicates satisfactory progress in accomplishing the physical and institution-building of both the rural water and sanitation components.

*"Benin: Rural Water Supply and Sanitation Project - Staff Appraisal Report No. 12860-BEN." Washington, DC: The World Bank, 1994.*

*"Benin: Rural Water Supply and Sanitation Project - Project Status Report, Project ID No. 121." Washington, DC: The World Bank, 1994.*

**Bolivia: Rural Water and Sanitation Project, FY96**

The main development objectives of this project were to: (a) alleviate rural poverty by enhancing productivity through improved health conditions and a more efficient use of time saved collecting water. More specific objectives are to: (b) increase the coverage and sustainable use of water and sanitation services in rural communities; (c) assist local water and sanitation units in developing capacity to provide technical assistance to municipalities; (d) support the sustainability of water and sanitation services through training of community level operators and administrators; and (e) strengthen the capacity of DINASBA to formulate policies, prepare technical standards and mobilize financial resources.

**Key indicators of development outcome/impact:** The project employs the following indicators of development to monitor the outcome/impact:

1. Number of beneficiaries from water projects: 346,040
2. Number of beneficiaries from sanitation projects: 234,832
3. Number of contracts signed for community training (DINASBA/PROSABAR): 119
4. Number of communities benefiting from training and hygiene education: 1,216
5. Number of community operators certified: 2,432
6. Number of water projects approved by SIF: 1,216
7. Average per capita cost of water project: 60 (to be adjusted during MTR)
8. Average per capita cost of sewage facility: 115 (to be adjusted during MTR)
9. Per capita cost of community development: 7

The current project status report rates the project implementation progress as (highly) unsatisfactorily in meeting its development objectives. A brief valuation of the project status report points out the following indicators that have resulted in the current unsatisfactory implementation progress: (i) physical implementation of the project has still not accelerated sharply, and the latrine sub-projects are still not being implemented because demand for latrines has been far less than that for water projects; (ii) the NGO (FIS) responsible for the implementation of this project refuses to construct latrines because these investments lacked sustainability in the past; (iii) FIS acceptance of low-cost technologies, or the use of alternative materials, and technical norms (set by the Ministry) are still lacking; (iv) decentralization is still not very effective; (v) the evaluation, approval, and contracting methods that FIS uses are very cumbersome, resulting in unacceptably long delays between preparation and implementation of sub-projects, thereby putting too little emphasis on the sustainability of the project.

*"Bolivia- Rural Water and Sanitation Project - Project Status Report - Project ID No. 6206." Washington, DC: The World Bank, 1996.*

**Burundi: Rural Water Supply FY91**

The main development objectives of this project were to: (a) improve public health and living conditions by increasing the quality and quantity of potable water provided to the rural population; (b) support the decentralization process initiated by the Government by increasing the responsibility of local communities and population for maintaining their water supply facilities; (c) help the Government and REGIDESO develop and implement appropriate institutional and financial arrangements in the water supply sector; (d) extend the pricing policy to the entire country; and (e) help the Government coordinate donor activity in the rural water supply sector.

**Key indicators of development outcome/impact:** Monitoring indicators were not spelled in the SAR. However, the project performance monitoring indicators should include the following: (a) number of persons served by project facilities; (b) number of operational water user associations

*"Burundi: Water Supply Sector Project - Staff Appraisal Report No. 9185-BU." Washington, DC: The World Bank, 1991.*

*"Burundi: Water Supply Sector Project - Project Status Report, Project ID No. 217." Washington, DC: The World Bank, 1991.*

China: Rural Water Supply and Sanitation Project, FY92

The main development objectives of this project were to: (a) develop long-term strategies to prioritize investments at the county level; (b) develop affordable and sustainable programs; (c) establish and maintain properly staffed institutions and provide technical assistance and training; (d) increase coverage in water supply, sanitation and health/hygiene education; and (e) enhance replicability through development of models, standards, and manuals as well as dissemination of experience and lessons learned.

Key indicators of development outcome/impact: The project employs the following indicators of development to monitor the outcome/impact of the project: (a) adoption of county long-term water supply investment strategy; (b) (i) ability of target beneficiaries to make initial investments and (ii) water charges sufficient to cover water systems operations and maintenance and depreciation or credit repayment; (c) smooth operation of project offices, technical assistance, and supervision activities; (d) (i) total number of people benefiting from new water supply, (ii) total number of people benefiting from sanitation programs, and (iii) total number of people benefiting from health/hygiene education programs; (e) (i) number of new and revised manuals and standards developed and adopted, and (ii) evidence of dissemination of these standards.

The assessment that the project is satisfactorily meeting its development objectives is based on the finding that the beneficiaries of completed works have high levels of satisfaction and participation, and the project continues to implement in a satisfactory manner the policy and institution-building activities agreed on during project formulation. Major monitoring indicators include: project cost estimates, implementation schedule, staffing, status of ICB and LCB procurement, physical progress, affordability analysis, progress of health education, technical assistance and training programs, major implementation issues, as well as proposed solutions and required actions. Proposed monitoring indicators are given in Annex 16 in the SAR.

"China: Rural Water Supply and Sanitation - Staff Appraisal Report No. 10028-CHA" Washington, DC: The World Bank, 1995.  
"China: Rural Water Supply and Sanitation - Project Status Report, Project ID No. 3587" Washington, DC: The World Bank, 1995.

**Ghana: Community Water and Sanitation Project, FY 94**

The main development objectives of this project were to: (a) improve living conditions in rural communities and small towns by providing sustainable water and sanitation facilities; in so doing provide a full-scale demonstration of the proposed National Community Water and Sanitation Strategy; (b) assure that communities effectively plan, manage, and use their water and sanitation facilities: (i) communities demand facilities and prepare Facilities and Management Plans; (ii) communities manage their facilities; and (iii) people adopt improved health and hygiene practices; (c) employ goods and services provided by the private sector: (i) partner organizations and local consultants assist communities to plan and manage their facilities; (ii) contractors construct facilities; and (iii) equipment distribution and maintenance services are established; and (d) facilitate the public sector: (i) District Assemblies provide support to communities through District Water and Sanitation Programs and (ii) Government facilitates the process through a National Community Water and Sanitation Program.

**Key indicators of development outcome/impact:** The project employs the following indicators of development to monitor the outcome/impact of the project: 1) 450,000 people will have improved, sustainable water facilities in 500 rural communities and 30 small towns; 20,000 people will have improved household sanitation facilities. 2a) communities pay 5% of the capital cost before construction and all operations and maintenance costs, 2b) communities decide the type of system they want and how to manage it, 1c) women are actively involved in all stages of planning and managing their facilities; 2c) Communities establish WATSANs and WSDBs, 2d) communities manage their water supply facilities (i.e., operate, maintain, collect revenues, keep records and accounts, evaluate and resolve problems, and enter into service contracts); and 3a) improved water facilities are operational and used by everyone throughout the year, 3b) water outlets are kept clean with no ponded water, 3c) latrines are used, kept clean and adequately separated from water sources, 3d) all individuals in the community use better hygiene and water use practices. 3d) one qualified Partner Organizations per district, 3e) one qualified small towns consulting firm per region, 3f) 4 firms provide bore-hole siting and construction supervision services; 3g) 6 qualified hand dug well contractors per region, 3h) 1 drilling rig per region, 3i) 10 qualified latrine artisans per district; 3j) 800 handpumps supplied, installed and warranted by local distributor with spare parts outlets available in all districts, 3k) 2-3 hand pump mechanics per district trained and equipped, 3l) 2 private piped system operators per region; and 4a) district water and sanitation programs established in all regions, 4b) DA members knowledgeable about their water and sanitation program, 4c) permanent institutional framework (DWST) and budget security, 4d) DWST members competent in their area of specialty, 4e) an autonomous national community water and sanitation organization established with multi-disciplinary teams in all regions, 4f) CWS Organization governed by stakeholder board and able to attract external financing for services provided, 4g) policies and guidelines as well as a sector investment program supported by all stakeholders, and 4h) monitoring and evaluation framework developed to improve the National CWS Program.

The project is exceeding its physical targets for village water supply facilities and household latrines, but not for small town water supplies. Accordingly, about a third of the funds targeted for small town water supply construction are being reallocated to point sources (boreholes and hand dug wells). As a result some 450 more water points, bringing the project total to about 1,600 point sources (compared to 1,000 planned at appraisal), and 20 small town water supply facilities (compared to 30 planned at appraisal) will be constructed by the end of the project. The principle of community management in rural communities and small towns is now well established in Ghana. Communities are enthusiastic about their water supply facilities and have a real sense of ownership, and WATSANs have strong support from the communities, including traditional leaders. Also, women now have a bigger role in decision making and are better empowered to facilitate community action. WATSANs need more training to ensure sound management of their water supply systems and to enable them to better support community-based activities such as improved water use and hygiene practices, excreta and solid waste management, and erosion control.



*Sanitation, Health and Hygiene in World Bank Rural Water Supply and Sanitation Projects*

The private sector is responding well to the opportunities offered under the National CWS Program. District-based NGOs (supported by national NGOs) and local consultants now provide technical assistance to villages and small towns; newly formed geophysical survey companies site boreholes and supervise their construction; and small works contractors construct hand dug wells and household latrines. Bore-hole construction costs have dropped from US\$12,000 to about US\$6,000 due to increased competition. The main concern is the establishment of a sustainable hand pump supply and maintenance system. Currently the project relies on a single supplier.

*"Ghana: Community Water and Sanitation Project - Staff Appraisal Report No. 12406-GH." Washington, DC: The World Bank, 1994.*

*"Ghana: Community Water and Sanitation Project - Project Status Report Project ID No. 924." Washington, DC: The World Bank, 1994.*

**India: Karnataka Rural Water Supply and Environmental Sanitation Project, FY93**

The main development objectives of this project were to: raise the standard of living in rural areas through improved health and productivity resulting from improved access to potable water supply and environmental sanitation facilities. More specifically, to: (i) promote more equitable distribution of safe water; (ii) increase public and private investment in environmental sanitation; (iii) create greater community awareness of the causes of water and sanitation-related health problems; and (iv) improve sustainability of water supply and drainage schemes.

**Key indicators of development outcome/impact:** The project employs the following indicators of development to monitor the outcome/impact of the project: 1) Indicators employed for meeting the development objective to promote more equitable distribution of safe water include: 1a) completion of piped water schemes for 950 villages, 1b) percentage household receiving at least 40 lpcd (liters per capital per day) water supply, to be more than 90%, 1c) percentage households walking less than 150 m to fetch water, to be more than 90%, 1d) percentage households spending less than 1 hour/day in water collection, to be more than 90%. 2) Indicators employed for meeting the development objective to increase public and private investment in environmental sanitation include: 2a) completion of sullage drainage schemes for 800 villages, 2b) completion of 70,000 household latrines, 2c) percentage households contributing to construction of public drainage system, to be more than 70%, 2d) percentage households constructing household latrines under the project, to be more than 10%, 2e) GOK investment in environmental sanitation schemes, to be more by at least 20% over the previous year. 3) Indicators employed for meeting the development objective to create greater community awareness of the causes of water and sanitation related-health problems include: 3a) hygiene education management consultant recruited for the project, 3b) percentage of project villages having clean and healthy environment evidenced through sample surveys, to be more than 60%. 4) Indicators employed for meeting the development objective to improve sustainability of water supply and drainage schemes include: 4a) number of project villages that have received skills and management training, to be more than 90%, 4b) more than 90% village water and sanitation committees (VWSCs) to be functional after 2 years of scheme completion, 4c) more than 90% of project villages collect 100% operation and maintenance costs from user charges/own resources, 4d) more than 50% of VWSCs have at least one-third women members, 4e) in more than 90% of the project villages the water supply down-time to be less than 15 days in a year, 4f) in more than 90% of the project villages, the physical assets to be in good condition.

*"India: Karnataka Rural Water Supply and Environmental Sanitation Project - Staff Appraisal Report No. P5975." Washington, DC: The World Bank, 1993.*

*"India: Karnataka Rural Water Supply and Environmental Sanitation Project - Project Status Report, Project ID No.10418." Washington, DC: The World Bank, 1993.*

**India: Maharashtra Rural Water Supply and Environmental Sanitation Project, FY91**

The main development objectives of this project were to: raise the standard of living in rural areas through improved health and productivity by expanding access to potable rural water supply system and environmental sanitation facilities. More specifically: (i) more equitable distribution of safe water, (ii) improved reliability of water supply and drainage schemes, (iii) increased public and private investments in environmental sanitation, and (iv) greater community awareness of the causes of water-related health problems and the need for a cleaner environment.

**Key indicators of development outcome/impact:** The project employs the following indicators of development to monitor the outcome/impact of the project: Water Supply Component - Handpumps: villages covered (nos.), population benefited (nos.), Water Supply Component - Piped Water Supply: total number of schemes (nos.), number of schemes prepared by consultants (nos.), regional schemes completed and commissioned (nos.), regional schemes taken over by ZP (nos.), regional schemes maintained by management contract (nos.), village level operation for regional schemes taken over by GP (nos.), individual village schemes completed and commissioned (nos.), individual village schemes taken over by GP (nos.), total number of stand-posts provided (nos.), total number of private connections provided (nos.). Sanitation Component: latrines constructed (nos.), population benefited by the provision of latrines (nos.), number of drainage schemes prepared by consultants (nos.), villages participated in construction of sillage drains (nos.), population benefited by construction of sillage drains (nos.), GOM investment in water supply (Rs million), GOM investment in latrine construction (Rs million), private investment in latrine construction (Rs million), GOM investment in sillage drain construction (Rs million), private investment in sillage drain construction (Rs million) no. of villages with VWSC (nos.)

*"India: Maharashtra Rural Water Supply and Environmental Sanitation Project - Staff Appraisal Report No. 2"*  
*Washington, DC: The World Bank, 1991.*

*"India: Maharashtra Rural Water Supply and Environmental Sanitation Project - Project Status Report, Project ID No. 10369." Washington, DC: The World Bank, 1991.*

**India: Uttar Pradesh Rural Water Supply and Environmental Sanitation Project, FY96**

The main development objectives of this project were: (i) to deliver sustainable health and hygiene benefits to the rural population, through improvements in the rural water supply and environmental sanitation services, which will increase rural incomes through time savings and income opportunities for women, test an alternative to the current supply-driven service delivery mechanism, and promote sanitation and gender awareness; (ii) to promote long-term sustainability of the rural water supply and sanitation sector by promoting assistance to GOUP to identify and implement an appropriate policy framework and strategic plan.

**Key indicators of development outcome/impact:** The project employs the following indicators of development to monitor the outcome/impact of the project: 1) Indicators employed for meeting the development objective of delivering sustainable health and hygiene benefits to the rural population through improvements in water supply and environmental sanitation services include: 1a) community organization, mobilization: number of female VWSC members, to be more than one third; number of SC/ST VWSC members, to be more than 20%; number of VWSC accounts with full balance, to be at least 80%; functioning tap-stand committees, to be more than 80%; proportion of VWSC functioning, to be at least 80%; VWSC members per scheme trained, to be at least 90%; at least 90% village maintenance workers trained, time saving assessment undertaken by communities; cross visits to successful schemes undertaken; 1b) hygiene and environmental sanitation awareness training: healthy homes survey undertaken by community; health impact through incidence of diseases; construction of 1,000 water supply schemes; construction of household latrines; construction of catchment protection; construction of drainage systems; SO assistance; rejection rate of SO proposed staff; adoption of demand-driven approach; compliance with planning and implementation phase contractual agreements; PMU management; compliance with eligibility criteria; cost of service delivery; planning phase cost currently below appraisal estimates; and time required to deliver services. 2) Indicators employed for meeting the second development objective include: 2a) promote long-term sustainability: transfer of policymaking for the rural water supply sector to the rural development department.

*"India: Uttar Pradesh Rural Water Supply and Environmental Sanitation Project - Staff Appraisal Report No. 15516-IN." Washington, DC: The World Bank, 1996.*

*"India: Uttar Pradesh Rural Water Supply and Environmental Sanitation Project - Project Status Report - Project ID No. 10484." Washington, DC: The World Bank, 1996.*

<p><b>Indonesia: Water Supply and Sanitation for Low Income Communities Project, FY93</b></p>
<p>The main development objectives of this project were: to (i) provide safe, adequate, cost effective, and easily accessible water supply and sanitation services; (ii) develop sustainability throughout community participation; and (iii) support hygiene and health education, for poor communities in under-served rural villages in the project provinces. Provision of water supply and sanitation, supported by essential hygiene and sanitation education (HSE), will improve the health status and productivity of the poor communities.</p> <p>Key indicators of development outcome/impact: The project employs the following indicators of development to monitor the outcome/impact of the project: 1. Targeting of poor -- number and characteristics of communities and population covered. 2. Community participation -- preparation of Village Action Plans, cost recovery, maintenance. 3. Completed, functioning, WSS systems. 4. Cost per system by type. 5. Knowledge and practice of HSE. 6. Disease rates.</p>
<p>"Indonesia - Water Supply and Sanitation for Low Income Communities Project - Staff Appraisal Report No. 1177-IND" Washington, DC: The World Bank, 1993.</p> <p>"Indonesia - Water Supply and Sanitation for Low Income Communities Project - Project Status Report - Project ID No. 3990" Washington, DC: The World Bank, 1993.</p>

**Kazakhstan: Water, Sanitation and Health Project, FY96**

The main development objectives of this project were to: (i) improve the health of the urban and rural population of the Kzyl-Orda Oblast through the provision of safe drinking water and improved hygiene education and use of sanitation facilities and (ii) to strengthen institutional capacity for the management, operation, and financial performance of the regional water supply and sanitation utilities. The implementation of the full-scale objective was initiated by the pilot water supply project which was aimed at providing better water supply facilities to about 150,000 people living in both urban and rural communities in the project area.

**Key indicators of development outcome/impact:** The project employs the following indicators of development to monitor the outcome/impact of the project: (i) a functioning water supply pumping station, reservoirs, and partial rehabilitation of pipeline and secondary distribution networks; (ii) counterpart funding of US\$388,000 from the Government and Bank provision of loan funds of US\$7.0 million; (iii) improved piped water supply for about 30,000 people living in the project areas water supply; (iv) improved health and economic conditions for 30,000 people in the pilot project area; and (v) facilitating implementation of full-scale project, thereby benefiting people living in the Aral Sea disaster area of Kazakhstan. It is too early to gauge measurable impacts regarding the project implementation activities; however, if implementation progress is improved to date, the main project objectives are likely be achieved. The pilot project for the sanitation component is currently under implementation.

*"Kazakhstan: Pilot Water Supply Project - Staff Appraisal Document - Report No. 15868-KZ." Washington, DC: The World Bank, 1996.*

**Morocco: Rural Water Supply and Sanitation Project, FY97**

The main development objectives of this project were to: (i) improve the health and productivity of rural population, particularly children, who currently have poor access to safe water, through the provision of about 2,000 public water points serving about 600,000 people and (ii) reduce the burden of girls who currently carry water over long distances in rural areas, which prevents them from attending primary schools.

**Key indicators of development outcome/impact:** The project employs the following indicators of development to monitor the outcome/impact of the project: 1. Reduce by 50% the diarrheal disease rates in young children (less than 5 years old) within one year of project completion. About 600,000 additional people will have access to safe water and adequate sanitation by year 2001. 2. Provide complementary assistance to Morocco Basic Education Project (Loan 4024-MOR) to achieve enrollment target of 46% and retention rate of 65% by FY2001 in 10 rural provinces (a follow-up project will cover the remaining three provinces).

*"Morocco - Rural Water Supply and Sanitation Project - Project Information Document No. PIC3736." Washington, DC: The World Bank, 1997.*

*"Morocco - Rural Water Supply and Sanitation Project - Project Status Report - Project ID No. 40566." Washington, DC: The World Bank, 1997.*

**Nepal: Rural Water Supply and Sanitation Project, FY96**

**The main development objectives of this project were to:** raise the living standards in rural areas of Nepal by: (i) delivering sustainable health hygiene benefits to the rural population through improvements in water supply and sanitation; (ii) improving rural real incomes by assisting women identify ways to earn income from time saved in carrying water; and (iii) improving governmental and non-governmental capabilities to undertake and sustain these efforts.

**Key indicators of development outcome/impact:** The project employs the following indicators of development to monitor the outcome/impact of the project: 1. Delivering sustainable health and hygiene benefits to the rural population through improvements in water supply and sanitation: number of female water users committee (WUC) members, WUC accounts with full balances, functioning tap-stand committees, proportions of WUC functioning (i.e., meeting), village maintenance worker trained, healthy homes survey undertaken by community, health impact through incidence of diseases, schemes in operation 1 and 3 years after construction, tap-stands in working condition (1 and 3 years after construction), quantity and quality of source yield after 1 and 3 years, and time saving assessment undertaken by communities. 2. Improving rural real incomes by assisting women identify ways to earn income from time saved in carrying water: cross visits to successful schemes undertaken, number of women participating in skill enhancement training under the project, and number of women gaining access through the project to the formal credit system. 3. Improving governmental and non-governmental capabilities to undertake and sustain these efforts: adoption of demand-driven approach, cost of service delivery, time required to deliver service, rejection rate of support organization proposed staff, identification of best practices, compliance with development and implementation phase contractual agreements, compliance with eligibility criteria, and compliance with time saving eligibility criteria.

*"Nepal: Rural Water Supply and Sanitation Project - Staff Appraisal Report No. 15232." Washington, DC: The World Bank, 1996.*

*"Nepal: Rural Water Supply and Sanitation Project - Project Status Report - Project ID No. 10516." Washington, DC: The World Bank, 1996.*



**Turkmenistan: Water Supply, Sanitation and Health Project, FY97**

The main development objectives of this project were: (i) to improve water supply and sanitation in seven entrap centers (urban) and nine collective farms (rural) in Dashkiovuz velayet and (ii) initiate institutional changes in the water and sanitation sector to ensure that the project is financially and technically sustainable. The project comprises four main components: (i) water supply improvements; (ii) sanitation and health promotion; (iii) institutional strengthening; and (iv) project management and construction supervision.

**Key indicators of development outcome/impact:** The project employs the following indicators of development to monitor the outcome/impact of the project: (i) percent of population served by water supply systems, (ii) number of water supply systems and sanitation facilities -- in schools/market/households -- made operational/replaced/repared per month, (iii) percent of water quality samples meeting bacteriological water quality standards, (iv) percent decrease in incidence of waterborne diseases particularly diarrheal diseases, subdivided by age and sex, (v) number of staff trained for water quality, sanitation, and hygiene surveillance and monitoring, (vi) number of health staff trained to conduct health education and number of epidemiological studies conducted, (vii) number of workshops organized and number of handwashing basins installed, (viii) percent of population receiving health education and percent of population reporting positive attitudes and practices before and after health promotion campaign. The project is currently being held on hold. The status of this project is quite uncertain. The pilot activities undertaken in 1996 to implement the sanitation/health and hygiene component were rated not very satisfactory based on the resources allocated (\$20,000) and other factors. The pilot activities have not yet been monitored to determine their impact.

*"Turkmenistan: Water Supply and Sanitation Project - Staff Appraisal Report No. 16142-TM." Washington, DC: The World Bank, 1997.*

**Uzbekistan: Rural Water Supply, Sanitation and Health Pilot Projects, FY97**

The main development objectives of this project were to: (i) provide for safe drinking water along with improved hygiene education and sanitation facilities for the Republic of Karakalpakstan and Khorezm Oblast and (ii) strengthen institutional capacity for management, operation, and financial performance of the regional water supply and sanitation utilities as well as the health centers in the region.

**Key indicators of development outcome/impact:** The project employs the following indicators of development to monitor the outcome/impact of the project: (i) documented decrease in the incidence of waterborne diseases among the population, particularly diarrheal diseases and acute respiratory infections among children (percent decrease in infant mortality and morbidity); (ii) documented increased access for households and schools to safe water and sanitation services (number of house and yard connections, standpipes, handpumps, and latrines meeting hygienic standards); (iii) documented improved quality of water produced and distributed to the population; (iv) strong and clear institutional structures for the regional water supply and sanitation utilities, with proven financial performance. The pilot project activities undertaken for the sanitation, health and hygiene education component essentially achieved their health promotion and demand creating objectives. The reduction of diseases, as well as increased interest of the population in the project and their willingness to finance the construction of latrines by themselves are a few of the measurable outcomes of that pilot projects.

*"Uzbekistan: Rural Water Supply, Sanitation and Health Project - Aral Sea Program 5.1." Washington, DC: The World Bank, 1996-97.*

**ANNEX 4: ECA REGIONAL FUNDED WSS PROJECTS WITH HYGIENE EDUCATION COMPONENTS**

<b>Kazakhstan: Water, Sanitation and Health Project, FY96</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>• Since this is the first sector operation by the Bank, the key policy of the proposed Kazakhstan (Kzyl-Orda) Aral Sea Community Rehabilitation (KASCR) project does not address sector-wide policies at the national level. Rather, as laid out in the SAR (par. 25) and confirmed by the task manager (in an interview), the project proposes to:</li> <li>• Improve the cost-effectiveness of investments through project design;</li> <li>• Involve the participation of local stakeholders in selecting the most efficient delivery mechanisms and assessing their willingness and ability to pay for improved social infrastructure; and</li> <li>• Improve the management and operation and financial viability of the regional enterprises responsible for delivering these services.</li> <li>• It is important to note that, though this policy is documented in the SAR of the Kazakhstan Pilot Water Supply Project, it applies to the full-scale project. The full-scale project is still under preparation.</li> </ul>
<b>Hygiene Education, IEC, and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>• The hygiene education, information, education, and communication components are necessary to create awareness about the project activities. The hygiene education and public awareness component was also meant to enhance public participation and awareness in managing water and sanitation services and to educate the population about the significance of effective water and sanitation-related hygiene practices for improving their health conditions. The environmental sanitation component, on the other hand, involves providing assistance to urban settlers to build community sanitation facilities and to rural communities to construct improved household onsite latrines.</li> <li>• The software components outlined above are necessary complementary elements for an effective integrated water, sanitation, and health program intended to improve the health conditions of people mostly affected by the Aral Sea crisis.</li> </ul>

*Sanitation, Health and Hygiene in World Bank Rural Water Supply and Sanitation Projects*

<b>Kazakhstan: Water, Sanitation and Health Project, FY96</b>	
<b>Thematic Area</b>	•
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"> <li>• At its initial stage of preparation, a social assessment was conducted utilizing beneficiary assessment tools of conversational interviewing and focus group discussion. Findings from the social assessment provided recommendations to guide project preparation and design.</li> <li>• Currently, as confirmed by the task manager, monitoring and evaluation activities of the project are focused on supervising the physical activities, financial disbursement, and procurements issues to ensure that project implementation is on track. Project performance indicators are also related to the physical and financial activities. The PIU will provide quarterly reports to the Bank covering financial and physical performance of the project (see SAR par. 51-53, 56). Future monitoring and evaluation activities will also include the socioeconomic surveys.</li> <li>• Another aspect of project monitoring and evaluation is the supervision missions undertaken by Bank staffs. With respect to Bank supervision, the SAR proposed that it be undertaken four times in the first year and three times per year in subsequent years (see SAR par. 55).</li> </ul>
<b>Participation</b>	<ul style="list-style-type: none"> <li>• Though the project is supply-driven, it promotes stakeholder participation in project planning. For example, during the project preparation, a major social assessment was conducted. The social assessment activities involved substantial participation by intended beneficiaries as well as by government agencies, local research institutes, and private firms. Further, the task manager confirms that, during the implementation of the Pilot Water Supply Project, stakeholder consultations, (involving NGOs, Bank staff, municipal and local government officials, community, etc) continued.</li> <li>• The task manager also remarked that, community members usually assisted the private (international-Chinese) contractors employed to construct the</li> <li>• water supply systems and distribution networks.</li> </ul>

*Sanitation, Health and Hygiene in World Bank Rural Water Supply and Sanitation Projects*

<b>Kazakhstan: Water, Sanitation and Health Project, FY96</b>	
<b>Thematic Area</b>	•
<b>Service Options</b>	<ul style="list-style-type: none"> <li>• Since this project is focused on poverty alleviation of people mostly affected by the Aral Sea crisis, it is subsidy based and supply-driven. Technology options provided include piped water systems and onsite sanitation to both rural and urban communities. The onsite sanitation facilities are promoted more in the rural communities served by the project.</li> </ul>
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>• The project is subsidy based and intended to reduce the burden of poverty on the people most severely affected by the Aral Sea disaster. The subsidy is also intended to reduce migration of the best educated.</li> <li>• Though the project is fully subsidized by Bank funds, community members contribute in-kind towards the construction aspect of project activities and are responsible for operation and maintenance of the facilities.</li> </ul>
<b>Training Investments (e.g., Capacity Building)</b>	<ul style="list-style-type: none"> <li>• Other important investments provided by the KASCR project are capacity building, technical assistance, and training. The capacity building component is meant to assist the agencies responsible for water supply at Oblast, city, and settlement levels to effectively implement the project. In addition, community members are trained to build onsite latrines; and local contractors to assist with the construction of the piped water systems. The provision of technical assistance and training is meant to enhance the efficiency, cost effectiveness, and financial viability of implementing and municipal agencies. The training of the PIU, or project implementation unit, (e.g., in procurement, etc) is also meant to make them the managerially and financially self-sufficient.</li> </ul>

*Sanitation, Health and Hygiene in World Bank Rural Water Supply and Sanitation Projects*

<b>Turkmenistan: Water Supply and Sanitation Project, FY97</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>• The key policies enforced by the Turkmenistan Water Supply and Sanitation (TWSS) project supports the Government's effort to accomplish the project development objectives. These policies include:</li> <li>• Restructuring of the institutions charged with the delivery of water and sanitation services by creating a regional specialized water and wastewater authority in Dashkhovuz;</li> <li>• Increasing the responsibility and accountability of the management of the water sector; and</li> <li>• Initiation of cost-recovery mechanisms including a tariff-setting policy, whereby revenues would cover the full cost of operation, variations in working capital requirement, and regular preventive measures.</li> <li>• In addition, the Bank, through the TWSS project, supports Government efforts to improve water supplies and sanitation facilities in that part of the country most severely affected by the consequences of the Aral Sea crisis and most poorly serviced with regard to water supply and sanitation. The Bank also supports efforts to strengthen the institutional and policy framework for delivery of potable water supply and sanitation services.</li> </ul>
<b>Hygiene Education, IEC and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>• To achieve full potential health and socioeconomic impacts, the design and implementation of TWSS project is integrated with software programs meant to complement hardware activities. The software component (sanitation and health) has three sub-components including: (a) improvement of sanitation, hygiene and water supply facilities utilizing community based approaches, (b) health promotion and hygiene education in rural areas, and (c) water quality, sanitation, hygiene, and health services in the Dashkhovuz Velayet. Thus, the software component is meant to be a public awareness campaign to inform the population in the project area about improvements in service provision and cost-recovery, as well as to educate the general population about water conservation, safe practices for water collection and storage, linkages between water, sanitation and health, and the role of the household and community in properly operating and maintaining the systems.</li> <li>• Pilots were used for the HSH component. Recommendations from the pilot projects have been incorporated in the full-scale project design.</li> </ul>
<b>Service Options</b>	<ul style="list-style-type: none"> <li>• The TWSS project is subsidy based and supply-driven with an intention to alleviate the burden of poverty through improved health conditions and reduction of migration of the people mostly affected by the Aral Sea crisis. Technology options provided include rehabilitation and expansion of piped water supply systems and distribution system network and on-site sanitation to collective farms in rural communities. Other technology service options include upgrading and installing standpipes. The project will also protect the investments in water systems by providing additional spare parts and other supplies to operate and maintain the water systems.</li> </ul>
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>• Though the project is fully subsidized, community members contribute in-kind towards the construction of project facilities and are also responsible for operation and maintenance of the facilities.</li> </ul>

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<b>Turkmenistan: Water Supply and Sanitation Project, FY97</b>	
<b>Thematic Area</b> <b>Training Investments</b> <b>(e.g., Capacity Building)</b>	<ul style="list-style-type: none"> <li>•</li> <li>• Since this project is one of the first RWSS sector operations by the Bank in Turkmenistan, it should be expected that the government organization responsible for the project will require continuous technical assistance for institutional strengthening and to ensure that organizational changes and project activities meet project requirements. The institutional development component of the project will finance a two-year program of technical assistance, training, and equipment to strengthen the capacity of the government to manage, operate, and maintain the facilities which provide water and sanitation services to the people of Dashkhovuz (see SAR, par. 3.8).</li> <li>• Project investments through the institutional development components include (a) national sector reform studies, (b) establishment of the Dashkhovuz regional water and sanitation authority, (c) institutional strengthening of the regional authority, and (d) a public awareness campaign.</li> </ul>
<b>Participation</b>	<ul style="list-style-type: none"> <li>• The proposed project incorporates an extensive amount of participation by stakeholders at all levels. For example, during project preparation, nine stakeholder workshops were held to discuss the project concept and design and key project issues, including cost recovery, reorganization of the water and wastewater sector, community participation components, and project implementation arrangements (SAR, par. 3.2.). In addition, needs and social assessments were conducted during the project identification, including 790 surveys, inventories of communal water supply and sanitation facilities; and 14 focus group discussions (see SAR, par. 3.2).</li> </ul>
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"> <li>• As indicated in the SAR (par. 4.14), monitoring and evaluation would be carried out in the TWSS project mainly in the following areas: (a) procurement and physical delivery of goods; (b) physical implementation of project activities; (c) impact on service delivery; (d) financial management and control of project funds; (e) capacity building under the project; and (f) water quality, sanitation, hygiene, and health services in the Dashkhovuz Velayet sub-component.</li> <li>• In addition the investment in water quality, sanitation, hygiene, and health services in the Dashkhovuz Velayet sub-component will be used to (a) improve water quality monitoring and sanitation and hygiene surveillance systems, (b) upgrade SES laboratories in Dashkhovuz Velayet, (c) improve data collection, analysis, and reporting, and (d) conduct epidemiological studies (see SAR, page 23). Further, since the Bank has limited sector experience in the country, the TWSS project would require an intensive supervision by the Bank for the first year after the loan is in effect.</li> </ul>

Sanitation, Health and Hygiene in World Bank Rural Water Supply and Sanitation Projects

<b>Uzbekistan: Rural Water Supply, Sanitation and Health Project, FY97</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>• The key policies supporting Uzbekistan Water Supply, Sanitation and Health (UWSSH) include microeconomic stabilization and structural and sectoral reforms; strengthening of market incentives, particularly in agriculture and energy; and protection of vulnerable groups through establishment of an effective safety net and more efficient service delivery. The policies also provide support to ensure or expand access to basic social services focused largely on poverty alleviation.</li> <li>• The Bank's sector policy is also directed at strengthening the government's institutional capacity and acting as a catalyst for aid mobilization.</li> </ul>
<b>Hygiene Education, IEC, and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>• As indicated in the SAR for the UWSSH project, a hygiene/health education, and sanitation promotion (HES) component is included in the overall project design. This integrated approach to project design is specifically meant to help decrease the incidence of waterborne diseases among the population, particularly diarrheal diseases among children.</li> <li>• The HES component is focused on improving household sanitation and hygiene; provision of improved commercial and public toilets; and on health/hygiene education. However, since the Bank has limited experience in implementing integrated water, sanitation, and health programs in rural areas in Uzbekistan, a pilot demonstration project was required to guide project preparation and design. To achieve this, low-cost measures were identified under a PHRD-funded community based demonstration project preparation activity in two rural communities in Karakalpakstan and Khorezm in 1996. Though the full-scale project is subsidy-based and supply-driven, the pilot promoted demand-responsive and community-based participatory approaches in its activities with an intention to identify the most efficient way for the UWSSH to deliver services. The pilot was successfully implemented by a Swiss NGO, Helvetas. An impact assessment study after the completion of the pilot indicated community members were receptive to the HES programs. Some positive health and socioeconomic benefits on the population served were attributed to the pilot activities. In sum, the assessment supports the hypothesis that it is worthwhile to include hygiene/health education, and sanitation promotion components in the UWSSH project to achieve the full potential positive health and socioeconomic impacts. Most important, the findings and recommendations from the pilot project have been incorporated into the design and implementation of the full-scale UWSSH project.</li> </ul>
<b>Service Options</b>	<ul style="list-style-type: none"> <li>• The delivery of services in the UWSSH project is subsidy-based and supply- and demand-driven. Services are being provided (based on willingness to pay for the improved water supply and sanitation) to both urban and rural communities most severely affected by the Aral Sea crisis.</li> <li>• The technology and service provided under the safe water supply component include (i) replacing or, where appropriate, rehabilitating sections of the distribution systems in Karakalpakstan and Khorezm Oblast; (ii) rehabilitating two water treatment plants; (iii) expansion of one treatment plant; (iv) rehabilitation of five ground water sources; (v) building additional trunk pipelines in Karakalpakstan; (vi) rehabilitation of the rural distribution centers in Karakalpakstan and Khorezm; (vii) development of local water supply distribution systems; (viii) provision of spare parts for about 300 desalination units in Karakalpakstan as well as training for the operators; and (ix) expansion of demand-based rural water supplies in the two Oblasts.</li> <li>• The rural sanitation component promotes demand-responsive and participatory approaches (based on the pilot project) for the construction and rehabilitation of improved latrines and installation of handwashing facilities in selected households, public places, primary health centers, canteens, schools, and collective farms.</li> </ul>



*Sanitation, Health and Hygiene in World Bank Rural Water Supply and Sanitation Projects*

<b>Uzbekistan: Rural Water Supply, Sanitation and Health Project, FY97</b>	
<b>Thematic Area</b>	
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>The project is subsidy-based. The Bank, other donor agencies, and the Government will provide the funds for project activities. Beneficiaries contribute in kind or in cash to the capital cost of the project. Communities are expected cover the full operations and maintenance costs of the water and sanitation schemes. These would be designed and costed with the participation of the selected communities according to the level of service they choose.</li> </ul>
<b>Training Investments (e.g., Capacity Building)</b>	<ul style="list-style-type: none"> <li>Other investments provided by the UWSSH project include technical assistance for institutional strengthening, a tariff study, a refinancing and feasibility study, and project management training and training of latrine artisans. The project management training investments are meant to improve the organization, management, operation and maintenance, and financial viability of the regional agencies responsible for water supply, sanitation, and health.</li> </ul>
<b>Participation</b>	<ul style="list-style-type: none"> <li>The UWSSH project promotes participation in project activities. Participation activities were initiated during project preparation. First, the project facilitated extensive stakeholder consultation and carried out household surveys and community focus group meetings to identify stakeholder needs, priorities and constraints. Second, the two pilot projects initiated participatory activities in project implementation. The pilot projects include the water supply engineering project and the community-based demonstration rural sanitation, hygiene and health project. The outcomes and experiences from the pilot and participatory monitoring activities have greatly influenced project design and implementation.</li> </ul>
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"> <li>Since this project is the first in the water and sanitation sector in Uzbekistan, a lot of monitoring and evaluation (M&amp;E) is required for an effective design and implementation of project activities. The UWSSH has already initiated an impressive track record of M&amp;E activities. For example, five social assessments were carried out during project preparation. Among the monitoring activities that provided baseline data for the full-scale project are: (a) a social needs assessment of rural communities in Karakalpakstan and Khorezin Oblast; (b) an urban area social assessment in urban centers of Nukus and Urgench Oblast; (c) a water vendor and willingness to pay study; (d) a salinity taste tolerance assessment and household survey of private water supply users; and (e) a hand pump user survey and water quality assessment. A periodic collection of similar baseline data would guide the effective implementation of full-scale project activities, as well as make evaluation at project completion easier.</li> <li>Further, the project implementation unit (PIU) is responsible for tracking the activities under the pilot and full-scale projects using a geographic information system (GIS)-based management information system (MIS) and a set of key performance indicators for monitoring implementation progress (SAR, par. 46-47, 51).</li> <li>The Bank will supervise the project four times in the first year, and quarterly project reports on the actual and planned physical performance of the project and progress to-date will be prepared and submitted to the Bank (see SAR, 48-50)</li> </ul>

**ANNEX 5: ECA REGIONAL SOCIAL FUNDS PROJECTS WITH MICRO-PROJECTS INCLUDING  
RWSS, HYGIENE AND SANITATION SUB-COMPONENTS**

<b>Albania: Pilot Poverty Alleviation, FY93</b> <b>Albania: Rural Development, FY95</b> <b>Albania: Community Works Projects, FY99</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>• Though the policy and institutional reforms supported by the Albania community works project is less poverty focused, all three projects (Pilot Poverty Alleviation, Rural Development and Community Works) supported by the Albanian Development Fund (ADF) are directed at rebuilding the rural economy -- on a free market basis -- from bottom up. More specifically, the ADF policy seeks to support:               <ul style="list-style-type: none"> <li>• Actively alleviating rural poverty;</li> <li>• Restoring food security;</li> <li>• Promoting the small private sector;</li> <li>• Strengthening local governments; and</li> <li>• Rooting rural development policies in local tradition and culture.</li> </ul> </li> </ul>
<b>Hygiene Education, IEC, and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>• There seems to be a rule of thumb in all types of projects -- social fund, rural development, integrated, or stand alone -- that information, education, and communication (IEC) campaigns are necessary to create public awareness of the project's existence and to generate public interest in the services that would be provided by the project. The ADF projects are not an exception to this rule of thumb. IEC is one of the essential elements to promote the ADF projects, especially since all three are demand-driven.</li> <li>• Hygiene education, on the other hand, is not a major priority in the projects or subprojects financed by the ADF. The ADF policy supports poverty alleviation that can be achieved through improvement in basic infrastructure services (e.g., clean water, transport, health centers, etc.) and facilitates growth of alternative employment and consumption possibilities. In addition, providing a reliable water supply frees up the time spent (usually by women) collecting water from remote natural wells for other productive uses and will also greatly reduce the need for medical care due to risks of water-borne diseases, that have been observed from time to time in the country.</li> </ul>
<b>Service Options</b>	<ul style="list-style-type: none"> <li>• All three ADF projects are demand-driven, hence communes demand services and select, design, and implement subprojects based on established eligibility and approval criteria. ADF staff evaluate subprojects and propose level of service. Technology options for the water supply subprojects include gravity-systems, standpipes, and piped systems. A gravity system connected to a stand-post is adopted by most because of its minimum installation cost (US\$22,000) and operational cost and its potential for sustainability.. Each stand-post serves on the average 500 people.</li> <li>• The ADF provides a range of rehabilitation and construction cross-sectoral services in rural and urban areas through priority small investments identified by the communities (villages) or local governments (municipalities), including: rural roads, schools, health centers, water supplies, markets, and small scale irrigation schemes. The basic employment opportunities through infrastructure works account for 25-30% of subproject costs.</li> <li>• The ADF has financed about 60 rural water supply subprojects (under the pilot and rural development projects).</li> </ul>

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<b>Albania: Pilot Poverty Alleviation, FY93</b> <b>Albania: Rural Development, FY95</b> <b>Albania: Community Works Projects, FY99</b>	
<b>Thematic Area</b>	
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>• Total project cost is estimated at US\$12 million. The financing plan for the total project is as follows:</li> <li>• The Bank - 50% (~US\$6 million)</li> <li>• Other Donors - 40% (~US\$4.8 million)</li> <li>• The Government - 10% (~US\$1.2 million)</li> <li>• Communes are expected to contribute a part (5-10%) of subproject costs (in kind or in cash) depending on circumstances.</li> </ul>
<b>Training Investments (e.g. Capacity Building)</b>	<ul style="list-style-type: none"> <li>• The project provides limited seed funding for training and study tours to help equip Albania's local government with the skills necessary for local development.</li> <li>• Other investments include: local government, contractors and community capacity building, operational costs, and training for and technical assistance to the ADF staff.</li> </ul>
<b>Participation</b>	<ul style="list-style-type: none"> <li>• The ADF projects promote participation in subproject design and implementation. For example, once a village selects a subproject and contracts are signed after subprojects are approved, the commune and village work together in preparing project cost estimates and work plans, with technical support from the ADF staff (see par. 3.10, SAR).</li> <li>• In addition, the task manager says that, where relevant, users associations and/or maintenance funds are created to ensure adequate maintenance of the rehabilitated infrastructure for the first years after its completion.</li> </ul>
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"> <li>• Monitoring and evaluation undertaken in the ADF projects consists of qualitative and quantitative assessments. The quantitative monitoring assesses the physical and financial performance of project activities (i.e., procurement, financial disbursements, number of subprojects approved and financed, etc).</li> <li>• The qualitative monitoring consists of beneficiary assessment and socioeconomic studies. Beneficiary assessment (BA) studies are conducted and the findings are evaluated and incorporated into project implementation. An ADF project team member also asserts that the BA studies also help to identify obstacles to development and to root project activities in local culture. The socioeconomic studies are to monitor and assess how much poverty has been alleviated due to ADF activities.</li> </ul>

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<b>Armenia: Social Investment Fund, FY96</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>The project seeks to support the transition to a market economy by stimulating demand in the small-scale private sector; strengthening the capacity of small private enterprises and local organizations to undertake infrastructure rehabilitation and maintenance; and generating employment.</li> </ul>
<b>Hygiene Education, IEC, and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>The ASIF is demand-driven, and a public awareness campaign has been implemented to promote the project. The SIF project has a promotion team that goes to the communities to disseminate information on the SIF program. The project also conducts an advertisement campaign in newspapers and on local radio stations.</li> <li>Hygiene/health education has not been a major priority of the rural community; hence, the ASIF project does not focus much attention on it. However, since two stand-alone health and education programs are currently being implemented in country, it is assumed that they will cover hygiene/health education issues.</li> </ul>
<b>Service Options</b>	<ul style="list-style-type: none"> <li>The poverty assessment conducted during project preparation reveals (this is also confirmed by the task manager) that portable water supplies, schools, and youth centers are the highest priority needs of the rural communities in Armenia. Water is needed for survival and schools for the future well being of the children, and the youth centers are meant to prevent/mitigate migration. Consequently the main service options provided to the rural beneficiaries are rehabilitation or construction of small-scale rural infrastructure.</li> <li>Community members are required make a 15% (5% for the poorest of the poor) contribution to the capital cost of the micro-project selected. Community members are also required to set up a user committee and to be responsible for the operation and maintenance of the facilities.</li> <li>There is, however, a limitation on the services provided by the ASIF in terms of technology options and training of community members to effectively and sustainably operate and maintain their facilities. This limitation has been noted by the project team; follow-up supervision missions will address it accordingly. Finally, the level of service for the micro-projects is dependent on affordability and sustainability criteria set up by ASIF.</li> </ul>
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>The total project cost is estimated at US\$20 million</li> <li>Of the total project cost, IDA provides a grant of US\$12 million (60%), the government US\$1 million (5%) and the community contribution is US\$2.5 million (12%), other donors will contribute ~US\$2.5 million (12%), private sector US\$2.0 million (10%).</li> <li>The average cost of a micro-project is estimated at US\$32,000, and the maximum allowed size of a micro-project will be US\$150,000.</li> </ul>
<b>Training Investments (e.g., Capacity Building)</b>	<ul style="list-style-type: none"> <li>The investments (institutional support) provided by the ASIF are limited only to training of contractors and the ASIF management staff on procurement issues (i.e., of equipment, project materials and vehicles). Other ASIF's investments include technical assistance on financial management, salaries, operating costs, and monitoring and evaluation.</li> <li>In addition, institutional support (international and local technical assistance) provides training to maintain the management information system (MIS) that was designed during the pilot phase.</li> <li>According to the task manager, follow-up programs for sustainability training and studies, involving more micro-project committees at the community level and the local government (in support of the government's decentralization efforts), are in the pipeline of ASIF project activities.</li> </ul>

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<b>Armenia: Social Investment Fund, FY96</b>	
<b>Thematic Area</b>	•
<b>Participation</b>	<ul style="list-style-type: none"> <li>• The project is demand-driven, and community members make decisions on the choice of micro-project and design based on their willingness to pay and the selection criteria set up by ASIF. However, the participation process seems to stop there. The task manager asserts that, the participatory process must be improved to empower community members, influence community participation during implementation, and effectively and sustainably manage (and also operate and maintain) the improved facilities.</li> </ul>
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"> <li>• The monitoring and evaluation system for the ASIF seems to be quite functional and systematic. The activities within the monitoring and evaluation system include systematic qualitative and technical assessments. Results of these assessments are fed into the project MIS and have been a source of guidance for the design of the project implementation manual. Among these assessments are:               <ul style="list-style-type: none"> <li>• Yearly procurement, audit, and technical reviews.</li> <li>• Needs and beneficiary assessments to assess the satisfaction of beneficiaries with the overall service delivery and results and the opinion of beneficiaries on the services and technical assistance being provided by the official stakeholders.</li> <li>• Poverty monitoring conducted during project preparation and entailing a major household survey on health and basic social status, etc.; a second poverty monitoring is in the pipeline.</li> <li>• Two to three in-depth supervision missions per year by Bank staff to conduct their own audit, procurement, and disbursement reviews.</li> </ul> </li> </ul>

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<b>Georgia: Social Investment Funds, FY98</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>• The PAD (prepared in November 1997 by the infrastructure department) states that the key policy of the GSIF project is in support of the borrower's municipal social development and poverty reduction program. The program is directed at improving mobilization of local resources and transparency in their use, rehabilitating and improving maintenance of public assets, and introducing and expanding cost recovery for basic services.</li> <li>• However, according to the the project task manager, this policy is currently under review because it does not reflect what is actually happening right now in the country in the areas of poverty alleviation and social development.</li> </ul>
<b>Hygiene Education, IEC, and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>• A review of the PAD reveals that hygiene education was not included in the menu of sub-projects to be financed by the GSIF project. The task manager indicated that sanitation was not a demand. Since the GSIF promotes the demand-driven approach to financing sub-projects, beneficiaries are responsible for making their choices based on the priority needs in their communities.</li> <li>• Public awareness campaigns on the availability of the funds and on the types of sub-projects supported by the GSIF are conducted nationally and locally. Such campaigns are also meant to increase awareness among community members, potential implementing agencies, and the private sector.</li> </ul>
<b>Service Options</b>	<ul style="list-style-type: none"> <li>• The GSIF project promotes demand-driven approaches to financing sub-projects. However, as revealed by the task manager, the level of service of micro-projects is balanced between the standards that the Government expects and what the community wants and can afford. Choice of technology options and standard of construction are negotiated and mostly dependent on affordability for beneficiaries.</li> </ul>
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>• IDA would finance 15% of the project cost and the Government 5%.</li> <li>• A minimum of 2-3% of the micro-project costs (in kind or in cash) is required of the users directly and 16% minimum contribution from the community. However, the task manager indicates that community members are refusing to pay the contribution because they still do not understand why this money is being collected from them. A willingness-to-pay study is being conducted to identify what the real problem is and why beneficiaries do not want to contribute.</li> </ul>
<b>Training Investments (e.g., Capacity Building)</b>	<ul style="list-style-type: none"> <li>• The GSIF provides a significant amount of training investments that are directed at effective and sustainable delivery of services provided by the GSIF project. The training investments include:</li> <li>• Capacity building of policymakers to monitor and analyze trends in the level and structure of poverty in Georgia.</li> <li>• Institutional strengthening of GSIF for mobilization, channeling project resources through small investments, coordinating, planning, monitoring, and managing project activities.</li> <li>• Capacity building of communities to prepare and implement small projects.</li> <li>• Capacity building of private, small-scale contractors to benefit directly/indirectly from contracts financed by the GSIF.</li> </ul>
<b>Participation</b>	<ul style="list-style-type: none"> <li>• The GSIF promotes participation in its activities including community participation, key stakeholder consultations. In terms of community participation, microproject committee members select microprojects, involve in design, procurement and implementation decision, and O&amp;M and reporting back to the GSIF project staff.</li> </ul>

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<b>Georgia: Social Investment Funds, FY98</b>	
<b>Thematic Area</b>	<ul style="list-style-type: none"><li>•</li></ul>
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"><li>• Project monitoring and evaluation (M&amp;E) would be the responsibility of the GSIF.</li><li>• The M&amp;E system for the GSIF would comprise micro-project monitoring by GSIF staff and communities, the management information system (MIS), and a beneficiary assessment (BA). The MIS would generate information on the physical and financial progress of works.</li><li>• The BA would be used to evaluate the impact of micro-projects on communities and other social and institutional issues affecting micro-project implementation and sustainability.</li><li>• Other sources of information for the M&amp;E system include State Department Statistics, Poverty Assessment, Bank Supervision, Disbursement Records, and Audits.</li></ul>

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<b>Moldova: Social Investment Funds, FY99</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>• The key policy of the Moldova SIF (MSIF) project supports the sector-related CAS goal of public sector policy reforms with a renewed focus on poverty alleviation. The poverty alleviation focuses in part on improved coverage and targeting of social services to the poor.</li> <li>• The MSIF also support capacity building of local institutions to improve the quality, access, and management of basic public services.</li> <li>• The Moldova SIF supports the decentralization process and helps reorient local government into a more supportive and accountable role, working in partnership with community-based organizations.</li> <li>• The Moldova SIF also contributes to the growth of the private sector by enhancing competition in the local construction and technical assistance markets.</li> </ul>
<b>Hygiene Education, IEC, and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>• Through the public awareness and promotion program in communities, MSIF provides information and promotion on choices, technical assistance throughout the micro-project cycle, formal appraisal of the micro-projects, supervision oversight, and monitoring and evaluation.</li> <li>• The MSIF also promotes hygiene education activities. For example, during implementation many of the infrastructure micro-projects will be integrated with programs to improve basic social services, such as early childhood development, primary health care programs, and public health and hygiene education.</li> </ul>
<b>Service Options</b>	<ul style="list-style-type: none"> <li>• The services provided by the MSIF are demand-driven. The type of infrastructure services provided under the micro-projects include: rehabilitation of local health posts, school facilities, and community centers, including hygiene facilities, sanitation, cold and/or hot water supply, etc. Other services include rehabilitation and construction of community-level potable water networks: supply lines, distribution networks, source development, etc. Sanitation services include rehabilitation and expansion of community level sewage networks and pumping stations, disposal and treatment of solid and liquid waste in the communities, etc.</li> <li>• A community-based organization referred to as the local implementing agency (IA) is directly responsible for preparing the micro-project proposals and for the up-front collection of a financial and in-kind contribution of 15% of total project costs from beneficiaries. The IA is also responsible for micro-project implementation.</li> <li>• The MSIF serves also as an autonomous and demand-driven financial intermediary that provides technical assistance and transfers small grants (average US\$65,000) to the IAs.</li> </ul>
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>• Total project cost US\$19.8 million. The Bank is funding 75.8%~\$15 million, other donors 7.07%~\$1.4 million, the Government 6%~\$1.2 million, and local communities 11%~\$2.2 million of total project costs.</li> <li>• Thus, since the project is demand-driven, community members are required to contribute up to 15% of the total project costs, procure all works and services, and supervise the implementation and future sustainability of the facility and services.</li> <li>• The overall project cost summary is as follows: infrastructure micro-projects 84%, project management unit (PMU) 8%, children social development 2%, capacity building 6% of the total project cost.</li> </ul>
<b>Training Investments (e.g., Capacity Building)</b>	<ul style="list-style-type: none"> <li>• The pilot project provided a significantly large investment (~US\$1.7 million in grants and trust funds) in the MSIF team and associates, private contractors, local governments and local community implementing agencies towards upstream technical assistance, local and foreign training, workshops and study visits, and specialized training of local governments public sector finance and management of project activities.</li> <li>• The full-scale project will also provide a significant amount (US\$1.53 million) of investments support and technical assistance to the PMU.</li> </ul>



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<b>Moldova: Social Investment Funds, FY99</b>	
<b>Thematic Area</b>	
<b>Participation</b>	<ul style="list-style-type: none"><li>• The MSIF also promotes community participation in micro-project activities. For example, the beneficiary community is expected to organize itself through the IA, identify and reach consensus on small-scale investment priorities that maximize public benefit, and take responsibility for procurement and implementation.</li><li>• The participation of women in the community management committee is also one of the major criteria for project appraisal.</li><li>• In cooperation with local government, the IA is also responsible for planning and funding the operation and maintenance of the facility and/or program in order to ensure sustainability.</li></ul>
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"><li>• The MSIF PMU is responsible for monitoring and evaluation of all project and program activities.</li><li>• MSIF's management information system (MIS) is the major tool to store the detailed monitoring of performance data and impact indicators for the project as a whole and for each individual micro-project (see Annex 8 and 9 of the PAD for MIS structure and micro-project cycle monitoring system).</li></ul>

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<b>Poland: Rural Development Program, FY00</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>• The key policy of the Poland Rural Development Program is in support of decentralization and comprehensive rural development. This policy is in support of the Government's efforts toward European Union (EU) accession by helping to narrow the gap between rural and urban areas in economic development. The policy links with the EU accession initiatives for rural development, environment, employment, and agriculture, to enable the Government to use available resources (credits, grants, and human capital) with maximum efficiency.</li> <li>• However, the top priority in the PRD's policy is the support to rural infrastructure provision as the basic condition for stimulating economic activity that will improve living conditions in rural areas.</li> </ul>
<b>Hygiene Education, IEC, and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>• Though the PRD program design includes education in its menu of sub-projects, it does not include hygiene education or environmental sanitation promotion. The program includes public awareness and program promotional activities at all levels and through all appropriate communication media (i.e., TV, radio, newspapers, etc.).</li> <li>• Hygiene education is not included in the menu of options.</li> </ul>
<b>Service Options</b>	<ul style="list-style-type: none"> <li>• The overall PRD program is designed to allow for the phased introduction of project benefits into progressively larger sections of the target areas experiencing high levels of rural unemployment, so that, by the end of the program, populations in all selected <i>voivodships</i> (regions) will have received investments for infrastructure, training and education, and private enterprise development to increase employment and promote sustainable economic growth.</li> <li>• The PRD is a demand-driven program; hence, investments will be directed only at priority projects that are identified by local government (rural and mixed <i>gminas</i> and <i>powiats</i>), with committed financing sources. The priority rural infrastructure services to be provided include water supply systems (piped, distribution, networks, etc.) and sewerage (wastewater collection network, either on site or off site, and treatment).</li> <li>• A project management structure and a maintenance plan for each infrastructure work, including sustained annual budgeting and appropriate user fees, will be an obligatory part of the design of each sub-project.</li> </ul>
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>• Since the program is demand-driven, only projects proposed by local authorities with identified and committed financing sources, will be eligible for partial co-financing of up to 1/3 of total project costs. Project financing by the Bank (30-40% ~ 1/3 of total project costs) would be in the form of credits, rather than grants (or subsidies), and would be at commercial terms; the remainder would be available on concessionary terms or as grants. More than 50% of the PRD funds would be co-financed by the EU. In addition, sub-project beneficiaries are required to contribute 5-10% of total sub-project costs.</li> </ul>
<b>Training Investments (e.g., Capacity Building)</b>	<ul style="list-style-type: none"> <li>• Investments provided by the PRD include:</li> <li>• Human capital development (i.e., training/education) and private sector development.</li> <li>• Technical assistance to communities for writing proposals and training in financial management, contracting and procurement policies, organizing service contracting, implementation, repairs and supervision, reporting procedures to the <i>voivodships</i> or VPIU (the PRD program implementation unit at the regional level).</li> <li>• Capacity building of the program management unit (PMU) at the national level and the VPIU in program management, implementation, monitoring, and evaluation.</li> <li>• Field and other studies and other necessary technical assistance to VPIU.</li> </ul>

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<b>Poland: Rural Development Program, FY00</b>	
<b>Thematic Area</b>	•
<b>Participation</b>	<ul style="list-style-type: none"> <li>• The PRD promotes participation. For example, it involves all stakeholders (the <i>voivodships</i>, rural community representatives, local government, etc.) in project planning and management decisions.</li> </ul>
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"> <li>• The PRD's PMU is responsible for the overall monitoring of program activities. The PMU has set up a central statistical office (CSO) with a management information system (MIS) and has developed sets of output monitoring indicators to supervise the implementation activities of the rural development program. The VPIU monitors program activities at the regional level. The monitoring activities of the VPIU include: monitoring the quality of sub-project proposals presented by the communes, financial and physical activities of the PRD in the field, and socioeconomic studies (beneficiaries assessment and willingness to pay). VPIU is required to report findings to be fed into the program's MIS.</li> <li>• Further Bank supervision missions serve as a complement and check to the PMU's monitoring and evaluation system.</li> </ul>

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<b>Romania: Social Development Fund, FY98</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>• The key policies supported by the Romanian Social Development Fund (RSDF) include poverty alleviation and decentralization (page 4, PAD). However, they tend to be more supportive of poverty alleviation at the community level than decentralization.</li> <li>• The policy also promotes demand-driven and participatory approaches to RDSF project interventions. Thus, by promoting these approaches the RDSF program intends to increase people's ability to trust each other and cooperate in mobilizing resources and solving problems.</li> </ul>
<b>Hygiene Education, IEC, and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>• The RDSF project design also includes promotional activities. These project promotional activities are meant to be a publicity tool to disseminate and create public awareness of the existence and offerings of the RDSF project, rather than as an educational tool. The promotional activities will include national level campaigns (using TV, radio, and newspapers and organizing seminars with NGOs, parliamentarians, and journalists) and county-level promotion (using local media, posters, and leaflets and organizing workshops).</li> </ul>
<b>Service Options</b>	<ul style="list-style-type: none"> <li>• Since the RDSF project is demand-driven, beneficiaries would be expected to select level of service for sub-projects. The numbers of beneficiaries per project will depend on the nature of the project.</li> <li>• The beneficiaries' choice of service options will be based on affordability and sustainability.</li> <li>• Further, beneficiaries (i.e., poor rural communities and disadvantaged groups), with the assistance of the RDSF staff, would be expected to prepare sub-project proposals and designs. The sub-project interventions promoted by the RDSF will include small-scale rural infrastructure (latrines, sewerage systems, community centers, local water supply/piping, artesian wells, etc.) and income-generating activities (focused on the rural areas). Community-based social services (day care centers/educational centers; family planning/counseling/ health promotion; home care for the elderly; shelters for the homeless; juridical assistance services) are to be promoted among NGOs and disadvantaged groups located both in rural and urban areas.</li> <li>• When sub-project proposals are approved, the technical staff of RDSF will also offer direct technical assistance to the community groups by providing impartial information about unit costs, appropriate technologies and whatever services would assist and enable the very poor to make informed choices and to take sustainability into consideration.</li> <li>• In addition, NGOs will be required to inform their beneficiaries and to offer them service options in order to enable them to participate in the project design and to make informed choices.</li> </ul>
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>• In support of the demand-driven principles of the RDSF, sub-projects will be financed only based on request. RDSF will also require evidence of community interest and willingness to pay through cash or in-kind contributions to the project proposal budget. A minimum contribution of 10% of the sub-project cost (net of taxes) is expected from beneficiaries (in-kind or cash).</li> </ul>
<b>Training Investments (e.g., Capacity Building)</b>	<ul style="list-style-type: none"> <li>• The RDSF also offers investments through training courses and technical assistance aimed at community level capacity building for: <ul style="list-style-type: none"> <li>• Participatory identification and prioritization of needs.</li> <li>• Design, implementation, and monitoring of sub-projects.</li> <li>• Use of cost-effective standards and appropriate technologies for small infrastructure.</li> <li>• Institutional capacity strengthening of RDSF through training and technical assistance.</li> <li>• Provision of support to the overall management of the RDSF project.</li> </ul> </li> </ul>

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<b>Romania: Social Development Fund, FY98</b>	
<b>Thematic Area</b>	
<b>Participation</b>	<ul style="list-style-type: none"> <li>• The RSDF promotes participation in almost all project activities. For example, during project identification and preparation, the primary beneficiaries (community groups, local authorities, and NGOs) were consulted.</li> <li>• Further, poverty appraisal and prioritization of needs and design and implementation of the project will be highly participatory. RSDF will also require community groups to be organized and registered; project management committees (elected by the community to represent the community's interests) should be in place prior to application.</li> <li>• In addition, RSDF will also require that other organizational forms, such as maintenance committees, should be initiated prior to implementation. Thus, community members will participate in identification and implementation of demand-driven sub-projects.</li> <li>• Finally, NGOs, acting as implementing agencies will have to submit to RSDF evidence of beneficiaries' involvement in problem identification and project design. NGOs are also expected to consult with beneficiaries and communities and collaborate with them in implementation.</li> </ul>
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"> <li>• Project monitoring and evaluation would be the responsibility of the RSDF. Through the monitoring system, regular surveys would be conducted (both quantitative -- on the physical and financial activities of the project, and qualitative -- baseline beneficiary assessment surveys). The survey findings would provide information on achievement of benchmarks and feedback on criteria and procedures used for selecting and implementing sub-projects, enabling revisions of the operational manual. In addition, RSDF staffs are expected to supervise projects at critical stages of project implementation. RSDF will also submit to the Bank semi-annual progress reports on the project in accordance with an agreed format. Four types of indicators will be used to monitor the RSDF program performance: input, process, output, and impact indicators. A detail of these indicators is provided in page 3, of the PAD.</li> </ul>

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<b>Tajikistan: Social Investment Fund, FY97</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>• The key policy supported by the Tajikistan Social Investment fund (TSIF) is to collaborate and scale-up NGO poverty alleviation programs (i.e., develop capacity at the national and local to implement participatory approaches to poverty alleviation and demonstrate poverty alleviation activities that could be replicated or expanded through the TSIF).</li> <li>• Community-based organizations involved in NGO programs will also be encouraged to put forward proposals to the TSIF.</li> </ul>
<b>Hygiene Education, IEC, and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>• The educational efforts promoted by the TSIF project are meant to increase awareness among community members, potential requesting and implementing agencies, and the private sector of the availability of funds and the types of micro-projects supported by the TSIF. The information, education, and communication (IEC) promotional activities will begin at the end of the first year in targeted regions so as to generate proposals to be financed during the second year.</li> <li>• The educational efforts do not seem to include hygiene education or environmental sanitation promotional campaigns.</li> </ul>
<b>Service Options</b>	<ul style="list-style-type: none"> <li>• The micro-projects promoted by the TSIF are demand-driven.</li> <li>• Ten to fifteen micro-projects (social infrastructure, such as wastewater canal cleaning, small water and sanitation stations, public baths and latrines, schools and health points, etc.) are to be implemented during the first year of the project (par. 3.10, SAR)</li> <li>• The TSIF will have limited funds and will aim to assist the poor. Not everyone will be helped. By December 31, 1997, the TSIF was to have developed a targeting strategy satisfactory to IDA to guide distribution of project resources (par. 4.18, SAR).</li> </ul>
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>• The estimated total project cost including duties and taxes is US\$12.7 million. IDA provides 94% (US\$12 million) and the Government 6% (US\$0.7 million) of the estimated total project cost (pages 28-30).</li> <li>• The TSIF project is also subsidy-based. But community members would be required to contribute an equivalent of 10% of total cost of each micro-project either in the form of time or labor, rather than in cash. This contribution would supplement the limited ability of the beneficiaries to pay directly for operation and maintenance costs of rehabilitated infrastructure.</li> </ul>
<b>Training Investments (e.g., Capacity Building)</b>	<ul style="list-style-type: none"> <li>• Sustainability is a concern at both the institutional (TSIF) and micro-project level. Although the TSIF project is being conceived as a short-term program of three years, if it is successful the TSIF could be continued. Hence, the project would build the institutional capacities of the TSIF, as well as local agents (such as local government units and NGOs), so that they could carry out poverty alleviation programs in the future. For example, technical assistance in the form of an international technical advisor, focusing on construction, preparation of standards, and norms, will be provided (par. 4.16, SAR).</li> <li>• In addition, training will be provided to the TSIF staff on a range of topics, such as participatory community development, contracting and bidding procedures, project supervision and evaluation, English, and computer training.</li> <li>• Trained TSIF staff will also provide technical assistance and training to local governments, small contractors, NGO staff and other active community members to help them plan, manage, and implement micro-projects and to participate in competitive bidding (par. 3.9, SAR)</li> </ul>

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<b>Tajikistan: Social Investment Fund. FY97</b>	
<b>Thematic Area</b>	
<b>Participation</b>	<ul style="list-style-type: none"> <li>• The TSIF project promotes participation of stakeholders at all levels in its poverty alleviation program activities. For example, participants involved with micro-projects will be (a) the community or group that is supposed to benefit directly from the micro-project in terms of increased job opportunities and income and improved access to services, (b) the requesting agency (i.e., the community group, NGO, or local government) that presents a microproject proposal to TSIF for financing, and (c) the implementing agency that will sign the framework agreement with the TSIF.</li> <li>• Another activity promoting participation by the TSIF project is the criteria requirement (presentation of a plan for operating and maintaining the micro-project) for micro-project proposal approval.</li> <li>• Finally, the emphasis on community participation in micro-project design and implementation will improve the prospect for sustainability.</li> </ul>
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"> <li>• Monitoring and evaluation have already been a prominent feature of the existing NGO programs, and both the findings and systems used will be built upon in the scale-up programs (pages 25-26, 48-49, SAR).</li> <li>• The NGOs are to report progress of micro-project and achieved targets to the TSIF on a quarterly basis (page 25, SAR).</li> </ul>

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<b>Uzbekistan: Social Transformation Fund, FY00</b>	
<b>Thematic Area</b>	
<b>Key Policy</b>	<ul style="list-style-type: none"> <li>• Though the Uzbekistan Social Transformation Fund Project (USTF) does not have a fixed policy framework, its policies are focused mainly on poverty reduction and stimulation of employment-generating opportunities in rural communities. Also, the conditionality surrounding the key policy is consistent with the CAS strategy reform from the ground up.</li> <li>• The project, however, addresses several CAS objectives: (a) improving the environment for increased output and employment in productive private sectors; (b) development of small and medium enterprises (SME); (c) increased focus on basic social services, in order to improve living standards, particularly in rural areas; (d) alleviation of poverty, through both the components and the proposed selection criteria for pilot oblasts; (e) and more generally, supporting less government control over private sector activities, through the use of an implementation mechanism that is administratively autonomous and encourages non-bureaucratic internal processes.</li> <li>• Other likely policy reforms that may be required by the USTF include: (a) creation of a legal framework for the operation of credit unions; (b) clarification of the legal regime for community participation and contributions to social and other basic infrastructure; and (c) institutional reforms – administrative and procedural autonomy in USTF's daily operations.</li> </ul>
<b>Hygiene Education, IEC, and Environmental Sanitation</b>	<ul style="list-style-type: none"> <li>• The PCD does not mention the possibility of a hygiene education or environmental campaign in the USTF project activities.</li> </ul>
<b>Service Options</b>	<ul style="list-style-type: none"> <li>• Though the PCD does not provide a lot of insight into the service options proposed by the USTF project, infrastructure (water and sanitation, health, education) services under the project are likely to be a balance between rehabilitation and construction of existing infrastructure. Thus, the USTF is likely to finance community infrastructure works identified by communities in collaboration with the USTF staff and local authorities.</li> <li>• The service option to be promoted by the USTF will reflect the lessons learned from the IDB review of social funds which emphasizes that the fund should be designed to ensure that infrastructural interventions are demand-driven and proactive in eliciting community demand, particularly in the poorest areas where communities may have less capacity to articulate their needs.</li> </ul>
<b>Financial Options</b>	<ul style="list-style-type: none"> <li>• The PCD does not offer much information on the financial options provided under the USTF. However, it states that the financial issues of the USTF sub-projects in some sectors (e.g., water and sanitation, health, etc.) will be defined through collaboration with colleagues already active in the sector.</li> <li>• Furthermore, the proposed project design will draw on the lessons learned from the IDB review of social funds emphasizing the need to select infrastructure interventions with a clear understanding of the recurrent cost implications and the sources of recurrent cost financing.</li> </ul>



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<b>Uzbekistan: Social Transformation Fund, FY00</b>	
<b>Thematic Area</b>	
<b>Training Investments (e.g., Capacity Building)</b>	<ul style="list-style-type: none"> <li>• The PCD states that the USTF provides a significant amount of training investments in its design. The training investments include:</li> <li>• Building the capacity of local communities and their organizations (e.g., mahalla committees, village credit associations, etc.) to articulate their needs and preferences.</li> <li>• Training of small contractors, to familiarize them with USTF bidding procedures and assessment criteria and to clarify their responsibilities during the implementation of subprojects.</li> <li>• Strengthening of small and medium enterprise capacity to access the formal credit system, through a range of businesses support services.</li> <li>• Building of capacity in selected financial institutions to operate SME credit windows according to commercial criteria and actual disbursement of small credit lines.</li> <li>• Technical assistance to the central and local USTF staff and staff in relevant line ministries. Building their capacity for basic financial and economic analyses of sub-projects that balance sustainability requirements with the need for timely implementation.</li> </ul>
<b>Participation</b>	<ul style="list-style-type: none"> <li>• The USTF supports participation based on lessons learned from an IDB review of social funds. The lessons learned on participation experiences reflected in the USTF's proposed project design point to a need for mechanisms to ensure community participation beyond identification of sub-projects.</li> </ul>
<b>Monitoring and Evaluation</b>	<ul style="list-style-type: none"> <li>• The ability to target low-income groups in the development process is vital to the impact of the USTF sub-projects. The PCD further states that the monitoring and evaluation (M&amp;E) system for the USTF will include the following activities:</li> <li>• Social assessments meant to be used to help develop strategies for minimizing social risks.</li> <li>• Developing a good management information system (MIS) for each component and designing sub-project procedures for all components. M&amp;E indicators should be part of the sub-project approval process, rather than as free standing post facto assessments.</li> <li>• The USTF will also be linked to other initiatives (financed by GTZ and possibly UNDP) supporting a reformed in budget survey for Uzbekistan, which should significantly increase the ability of the government, and USTF to identify low-income groups and areas where different services are underdeveloped.</li> </ul>

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**ANNEX 6: LIST OF PERFORMANCE MONITORING INDICATORS FOR RWSS**

**A. The World Bank**

<b>Benin: Rural Water Supply and Sanitation Project, FY94</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Effectiveness and sustainability of the decentralized planning process	<ul style="list-style-type: none"> <li>• Ability of SRHs and NGOs to use participatory methods, effective use of self-evaluation procedures</li> <li>• Effectiveness in mobilizing communities</li> <li>• Number of rural systems constructed</li> <li>• Number of schools and health centers enrolled in sanitation program</li> <li>• Number of household latrines constructed</li> <li>• Share of operating expenditures financed by budget</li> </ul>
Development of private sector capacity	<ul style="list-style-type: none"> <li>• Number of qualified NGOs</li> <li>• Number and performance of local drilling contractors</li> <li>• Number and performance of trained masons and well-diggers</li> <li>• Unit costs of facilities (water supply and latrines)</li> <li>• Number and performance of pump mechanics</li> <li>• Availability of spare parts and after sale service</li> </ul>
Ownership and community management of facilities	<ul style="list-style-type: none"> <li>• Number of active WSCs</li> <li>• Women's involvement in key positions</li> <li>• Availability rate of water systems</li> <li>• Cost recovery and revenue collection</li> </ul>
Use and Impact of facilities	<ul style="list-style-type: none"> <li>• Consumption of water dry/rainy season</li> <li>• Number of users dry/rainy season</li> <li>• Number of users of on-site sanitation facilities</li> <li>• Water quality, upkeep of water point surrounds and sullage control</li> <li>• Water hygiene and excreta disposal practices</li> </ul>
<p><i>"Benin: Rural Water Supply and Sanitation Project - Staff Appraisal Report No. 12860-BEN." Washington, DC: The World Bank, 1994.</i></p> <p><i>"Benin: Rural Water Supply and Sanitation Project - Project Status Report, Project ID No. 121." Washington, DC: The World Bank, 1994.</i></p>	

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<b>Bolivia: Rural Water and Sanitation Project, FY96</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Access/coverage	<ul style="list-style-type: none"> <li>• Number of beneficiaries from water projects</li> <li>• Number of beneficiaries from sanitation projects</li> <li>• Number of contracts signed for community training (DINASBA/PROSABAR)</li> <li>• Number of communities benefiting from training and hygiene education</li> <li>• Number of community operators certified</li> <li>• Number of water projects approved by SIF</li> <li>• Average per capita cost of water project: # (to be adjusted during MTR)</li> <li>• Average per capita cost of sewage facility: # (to be adjusted during MTR)</li> <li>• Per capita cost of community development</li> </ul>
<p><i>"Bolivia: Rural Water and Sanitation Project - Project Status Report, Project ID No. 6206." Washington, DC: The World Bank, 1996.</i></p>	

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<b>China: Rural Water and Sanitation Project, FY92</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Policy Coverage Development	<ul style="list-style-type: none"> <li>• Adoption of country long-term water supply investment strategy</li> <li>• Ability of target beneficiaries to make initial investments</li> <li>• Water charges sufficient to cover water systems operations and maintenance, and depreciation or credit repayment</li> <li>• Smooth operation of project offices, technical assistance, and supervision activities</li> <li>• Total number of people benefiting from new water supply</li> <li>• Total number of people benefiting from sanitation programs</li> <li>• Total number of people benefiting from health/hygiene education programs</li> <li>• Number of new and revised manuals and standards developed and adopted</li> <li>• Evidence of dissemination of these standards</li> </ul>
<p><i>"China: Rural Water Supply and Sanitation - Staff Appraisal Report No. 10028-CHA." Washington, DC: The World Bank, 1995.</i></p> <p><i>"China: Rural Water Supply and Sanitation - Project Status Report, Project ID No. 3587." Washington, DC: The World Bank, 1995.</i></p>	

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<b>China: National Rural Water and Sanitation Project, FY97</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Sanitation and Health Education	<ul style="list-style-type: none"> <li>• An average five-percentage point improvement compared to the baseline period in key water-related health behaviors</li> <li>• Number of sanitary latrines constructed in villages in the project counties in addition to those constructed under the project</li> </ul>
Water Supply coverage	<ul style="list-style-type: none"> <li>• Number of villages newly served by project-supplied water meeting national rural water quality standards, with the goal of serving 4.6 million over five years. Annual targets are distributed as follows:                             <ul style="list-style-type: none"> <li>- 1998 - 0.4 million</li> <li>- 1999 - 1.5 million</li> <li>- 2000 - 3.0 million</li> <li>- 2001 - 4.0 million</li> <li>- 2002 - 4.6 million</li> </ul> </li> <li>• Water charges sufficient to cover water systems operations and maintenance, and depreciation or credit repayment</li> <li>• Sustainability of supply: 95% of water systems meeting the tariff covenant by the second full fiscal year of operation</li> </ul>
Project Management	<ul style="list-style-type: none"> <li>• Ability of target beneficiaries to make initial investments</li> <li>• Smooth operation of project offices, technical assistance, and supervision activities</li> </ul>
<p><i>"China: National Rural Water Supply Project - Staff Appraisal Report No. 16380-CHA." Washington, DC: The World Bank, 1997.</i></p> <p><i>"China: National Rural Water Supply Project - Project Status Report, Project ID No. CN-PE-3637." Washington, DC: The World Bank, 1997.</i></p>	

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<b>Ghana: Community Water and Sanitation Project, FY94</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Public sector facilitation	<ul style="list-style-type: none"> <li>• District water and sanitation (DWS) programs established in all regions</li> <li>• District Assembly members knowledgeable about their water and sanitation program</li> <li>• Permanent institutional framework for the DWS teams and budget security</li> <li>• DWS team members competent in their area of specialty</li> <li>• An autonomous national community water and sanitation organization established with multi-disciplinary teams in all regions</li> <li>• Community Water &amp; Sanitation (CWS) Organization governed by stakeholder board and able to attract external financing for services provided</li> <li>• Policies and guidelines as well as a sector investment program supported by all stakeholders.</li> <li>• Monitoring and evaluation framework developed to improve the National CWS Program</li> </ul>
<p><i>"Ghana: Community Water And Sanitation Project - Project Status Report , Project ID No. 924." Washington, DC: The World Bank, 1993.</i></p>	

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<b>Ghana: Community Water and Sanitation Project, FY94</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Improved living conditions in rural communities and small towns	<ul style="list-style-type: none"> <li>• 450,000 people will have improved, sustainable water facilities in 500 rural communities and 30 small towns, where as 20,000 people will have improved household sanitation facilities</li> </ul>
Communities effectively plan, manage and use their water and sanitation facilities	<ul style="list-style-type: none"> <li>• Communities pay 5% of the capital cost before construction and all O&amp;M costs</li> <li>• Communities decide the type of system they want and how to manage it</li> <li>• Women are actively involved in all stages of planning and managing their facilities</li> <li>• Communities establish WATSANs and WS development boards</li> <li>• Communities manage their water supply facilities - i.e. operate, maintain, collect revenues, keep records and accounts, evaluate and resolve problems, and enter into service contracts Improved water facilities are operational and used by everyone throughout the year</li> <li>• Water outlets are kept clean with no ponded water</li> <li>• Latrines are used, kept clean and adequately separated from water sources</li> <li>• All individuals in the community uses better hygiene and water use practices</li> </ul>
Private sector provides goods and services	<ul style="list-style-type: none"> <li>• 1 qualified Partner Organizations per district</li> <li>• 1 qualified small towns consulting firm per region</li> <li>• 4 firms provide bore-hole siting and construction supervision services</li> <li>• 6 qualified hand dug well contractors per region</li> <li>• 1 drilling rig per region</li> <li>• 10 qualified latrine artisans per district</li> <li>• 800 handpumps supplied, installed and warranted by local distributor with spare parts outlets available in all districts</li> <li>• 2-3 hand pump mechanics per district trained and equipped</li> <li>• 2 private piped system operators per region</li> </ul>

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<b>India: Karnataka Rural Water Supply and Environmental Sanitation Project, FY93</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Promotion of more equitable distribution of safe water	<ul style="list-style-type: none"> <li>• Completion of piped water schemes for 950 villages</li> <li>• % of household receiving at least 40 lpcd water supply to be more than 90%</li> <li>• % of households walking less than 150 m to fetch water, to be more than 90%</li> <li>• % of households spending less than 1 hour/day in water collection, to be more than 90%</li> </ul>
Increased public and private investment in Environmental Sanitation	<ul style="list-style-type: none"> <li>• Completion of sullage drainage schemes for 800 villages</li> <li>• Completion of 70,000 household latrines</li> <li>• % of households contributing to construction of public drainage system, to be more than 70%</li> <li>• % of households constructing household latrines under the project, to be more than 10%</li> <li>• GOK investment in environmental sanitation schemes, to be more by at least 20% over the previous year</li> </ul>
Improved sustainability of water supply and drainage schemes	<ul style="list-style-type: none"> <li>• Number of project villages who have received skills and management training, to be more than 90%</li> <li>• More than 90% village water and sanitation committees (VWSCs) to be functional after 2 years of scheme completion</li> <li>• More than 90% of project villages collect 100% O&amp;M cost from user charges/own resources</li> <li>• More than 50% of VWSCs have at least one-third women members</li> <li>• In more than 90% of the project villages the water supply down-time to be less than 15 days in a year</li> <li>• In more than 90% of the project villages, the physical assets to be in good condition</li> </ul>
Created greater community awareness of the causes of water and sanitation related health problems	<ul style="list-style-type: none"> <li>• Hygiene education management consultant recruited for the project</li> <li>• % of project villages having clean and healthy environment evidenced through sample surveys, to be more than 60%</li> </ul>
<p><i>"India: Karnataka Rural Water Supply and Environmental Sanitation Project - Staff Appraisal Report No. P5975."</i>  <i>Washington, DC: The World Bank, 1993.</i></p> <p><i>"India: Karnataka Rural Water Supply and Environmental Sanitation Project - Project Status Report, Project ID No.10418."</i>  <i>Washington, DC: The World Bank, 1993.</i></p>	



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<b>India: Maharashtra Rural Water Supply and Environmental Sanitation Project, FY91</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Water Supply Component - Handpumps coverage	<ul style="list-style-type: none"> <li>• Villages covered (Nos.), Population benefited (Nos.)</li> </ul>
Water Supply Component- Piped Water Supply coverage	<ul style="list-style-type: none"> <li>• Total number of schemes (Nos.), Number of schemes prepared by consultants (Nos.)</li> <li>• Regional Schemes completed and commissioned (Nos.), Regional Schemes taken-over by Zilla Parishads (Nos.)</li> <li>• Regional schemes maintained by management contract (Nos.)</li> <li>• Village level operation for regional schemes taken over by GP (Nos.)</li> <li>• Individual village schemes completed and commissioned (Nos.)</li> <li>• Individual village schemes taken-over by GP (Nos.)</li> <li>• Total number of stand-posts provided (Nos.)</li> <li>• Total number of private connections provided (Nos.)</li> <li>• Government investment in water supply (Rs million)</li> </ul>
Sanitation Component coverage	<ul style="list-style-type: none"> <li>• Latrines constructed (Nos.)</li> <li>• Population benefited by the provision of latrines (Nos.)</li> <li>• Number of drainage schemes prepared by consultants (Nos.)</li> <li>• Villages participated in construction of sullage drains (Nos.)</li> <li>• Population benefited by construction of sullage drains (Nos.)</li> <li>• Government investment in latrine construction (Rs million)</li> <li>• Private investment in latrine construction (Rs million)</li> <li>• Government investment in sullage drain construction (Rs million)</li> <li>• Private investment in sullage drain construction (Rs million)\no. of villages with VWSC (Nos.)</li> </ul>
<p><i>"India: Maharashtra Rural Water Supply and Environmental Sanitation Project - Staff Appraisal Report No. ?" Washington, DC: The World Bank, 1991.</i></p> <p><i>"India: Maharashtra Rural Water Supply and Environmental Sanitation Project Project Status Report, Project ID No. 10369." Washington, DC: The World Bank, 1991.</i></p>	

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<b>India: Uttar Pradesh Rural Water Supply and Environmental Sanitation Project, FY96</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Community organization, mobilization	<ul style="list-style-type: none"> <li>• Number of female VWSC members to be more than one third</li> <li>• Number of SC/ST VWSC members to be more than 20%</li> <li>• Number of VWSC accounts with full balance to be at least 80%</li> <li>• Functioning Tap-stand committees to be more than 80%</li> <li>• Proportion of VWSC functioning to be at least 80%</li> <li>• VWSC members per scheme trained to be at least 90%</li> <li>• At least 90% village maintenance workers trained</li> <li>• Whether time saving assessment undertaken by communities</li> <li>• Cross visits to successful schemes undertaken</li> </ul>
Hygiene and environmental sanitation awareness training	<ul style="list-style-type: none"> <li>• Whether healthy homes survey undertaken by community</li> <li>• Health impact through incidence of diseases</li> <li>• Construction of 1000 water supply schemes</li> <li>• Construction of household latrines</li> <li>• Construction of catchment protection</li> <li>• Construction of drainage systems</li> <li>• SO assistance, Rejection rate of SO proposed staff</li> <li>• Adoption of Demand driven approach</li> <li>• Compliance with Planning and Implementation phase contractual agreements</li> <li>• % of households contributing to construction of public drainage system, to be more than 70%</li> <li>• % of households constructing household latrines under the project, to be more than 10%</li> <li>• GOK investment in environmental sanitation schemes, to be more by at least 20% over the previous year</li> <li>• PMU management; Compliance with eligibility criteria; and Cost of service delivery</li> <li>• The planning phase cost is currently below appraisal estimates; and Time required to deliver services</li> </ul>
To promote long-term sustainability of the rural water supply and sanitation sector	<ul style="list-style-type: none"> <li>• Transfer of policy making for the rural water supply sector to the rural development department</li> </ul>
<p><i>"India: Uttar Pradesh Rural Water Supply and Environmental Sanitation Project - Staff Appraisal Report No. 15516-IN." Washington, DC: The World Bank, 1996.</i></p> <p><i>"India: Uttar Pradesh Rural Water Supply and Environmental Sanitation Project - Project Status Report, Project ID No. 10484." Washington, DC: The World Bank, 1996.</i></p>	

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<b>Indonesia: Water Supply and Sanitation for Low Income Communities Project, FY93</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Targeting of poor	<ul style="list-style-type: none"> <li>• Number and characteristics of communities and population covered</li> </ul>
Community participation	<ul style="list-style-type: none"> <li>• Completed, functioning, WSS systems</li> <li>• Preparation of Village Action Plans, Cost Recovery, Maintenance</li> <li>• Cost per system by type</li> <li>• Knowledge and practice of HSE.</li> <li>• Disease rates</li> </ul>
Water Supply	<ul style="list-style-type: none"> <li>• Projected and actual unit cost/capita for subproject</li> <li>• Population benefiting from improved coverage</li> <li>• Water availability/capita before and after project</li> <li>• Reported breakdown rates of completed systems</li> <li>• Average time lapse between breakdown and repairs</li> </ul>
Sanitation	<ul style="list-style-type: none"> <li>• Projected and actual unit cost/capita in subproject area</li> <li>• Description of option chosen: Private toilets, Communal Washing, Bathing and Toilet Facility (MCKs)</li> <li>• Population benefiting from improved coverage</li> <li>• Loan repayment performance (if any); Breakdown rates (for MCKs)</li> </ul>
Assessment of long-term health benefits	<ul style="list-style-type: none"> <li>• Reported decline in incidence/000 population of: skin infections, trachoma, gastroenteritis, hepatitis, filarisis, and hookworm</li> </ul>
Long-term economic benefits for an average household	<ul style="list-style-type: none"> <li>• Reductions in average time taken to fetch water</li> <li>• Reductions in price paid for water</li> </ul>
Hygiene Education	<ul style="list-style-type: none"> <li>• Expenditures and persons covered</li> </ul>
Long-term environmental benefits	<ul style="list-style-type: none"> <li>• Changes in BOD, COD levels, and coliform content of water bodies in subproject area</li> </ul>
Village Action Plan (VAP) Preparation Process	<ul style="list-style-type: none"> <li>• Date Village Water &amp; Sanitation Committee (VWSC) was constituted</li> <li>• Number of meetings of VWSC before Village Action Plans (VAPs) was finalized</li> <li>• % of targeted beneficiaries who participated in selecting project design</li> <li>• Number of meetings between beneficiaries and staff (with department affiliations) in reporting period</li> <li>• Completion dates for VAPs; Date of approval / rejection of VAPs</li> </ul>

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<b>Indonesia: Water Supply and Sanitation for Low Income Communities Project, FY93</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Training activities	<ul style="list-style-type: none"> <li>• Persons trained at community and official levels for: construction of W&amp;S system, financial reporting O&amp;M of W&amp;S system, and expenditures incurred</li> <li>• Actual community contributions agreed in Village Action Plans (VAP): % as cash, % as materials, % as labor</li> <li>• Efficiency of enforcing VAP commitments: date when community contributions were available</li> <li>• Extent of shortfall if any from VAPs commitment; Steps taken against defaulting community members</li> </ul>
Procedural delays	<ul style="list-style-type: none"> <li>• Time delays in acquisition of land; Funding for project activities by Consultants</li> <li>• Procurement schedule delays; Pre-qualification; Advertisement, bid evaluation, and awards</li> </ul>
<p><i>"Indonesia: Water Supply and Sanitation for Low Income Communities Project - Staff Appraisal Report No. 11777-IND." Washington, DC: The World Bank, 1993.</i></p> <p><i>"Indonesia: Water Supply and Sanitation for Low Income Communities Project - Project Status Report, Project ID No. 3990." Washington, DC: The World Bank, 1993.</i></p>	

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<b>Kazakhstan: Water, Sanitation and Health, FY96</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Health Coverage	<ul style="list-style-type: none"> <li>• A functioning water supply pumping station, reservoirs and partial rehabilitation of pipeline and secondary distribution networks</li> <li>• Counterpart funding of US\$388,000 from the Government and Bank provision of loan funds of US\$7.0 million</li> <li>• Improved piped water supply for about 30,000 people living in the project areas water supply;</li> <li>• Improved health and economic conditions for 30,000 people in the pilot project area</li> <li>• Facilitating implementation of full-scale project, thereby benefiting people living in the Aral Sea disaster area of Kazakhstan</li> </ul>
<p><i>"Kazakhstan: Pilot Water Supply Project - Staff Appraisal Document Report No. 15868-KZ." Washington, DC: The World Bank, 1996.</i></p>	

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<b>Morocco: Rural Water Supply and Sanitation, FY97</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Health Coverage	<ul style="list-style-type: none"> <li>• Reduce by 50% the diarrhea disease rates in young children (less than 5 years old) within one year of project completion.</li> <li>• About 600,000 additional people will have access to safe water and adequate sanitation by year 2001</li> <li>• Provide complementary assistance to Morocco Basic Education Project (Loan 4024-MOR) to achieve enrollment target of 46%, and retention rate of 65% by FY2001 in 10 rural provinces (a follow-up project will cover the remaining three provinces)</li> </ul>
<p><i>"Morocco: Rural Water Supply and Sanitation Project - Project Information Document No. PIC3736." Washington, DC: The World Bank, 1997.</i></p> <p><i>"Morocco: Rural Water Supply and Sanitation Project - Project Status Report, Project ID No. 40566." Washington, DC: The World Bank, 1997.</i></p>	

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<b>Nepal: Rural Water and Sanitation Project, FY96</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Delivering sustainable health and hygiene benefits to the rural population through improvements in water supply and sanitation	<ul style="list-style-type: none"> <li>• Number of female water users committee (WUC) members</li> <li>• WUC account with full balances</li> <li>• Functioning tap-stand committees</li> <li>• Proportions of WUC functioning (i.e., meeting)</li> <li>• Village maintenance worker trained</li> <li>• Whether healthy homes survey undertaken by community</li> <li>• Health impact through incidence of diseases.</li> <li>• Schemes in operation 1 and 3 years after construction.</li> <li>• Tap-stands in working conditions (1&amp; 3 years after construction)</li> <li>• Quantity and quality of source yield after 1 and 3 years</li> <li>• Whether time saving assessment undertaken by communities</li> </ul>
Improving rural real incomes by assisting women identify ways to earn income from time saved in carrying water	<ul style="list-style-type: none"> <li>• Cross visits to successful schemes undertaken</li> <li>• Number of women participating in skill enhancement training under the project</li> <li>• Number of women gaining access through the project, to the formal credit system</li> </ul>
Improving governmental and non-governmental capabilities to undertake and sustain these efforts	<ul style="list-style-type: none"> <li>• Adoption of demand driven approach</li> <li>• Cost of service delivery, time required to deliver service</li> <li>• Rejection rate of Support Organization proposed staff</li> <li>• Identification of best practices</li> <li>• Compliance with Development and Implementation Phase contractual agreements</li> <li>• Compliance with eligibility criteria, and compliance with time saving eligibility criteria</li> </ul>
<p><i>"Nepal: Rural Water Supply and Sanitation Project - Staff Appraisal Report No. 15232." Washington, DC: The World Bank, 1996.</i></p> <p><i>"Nepal: Rural Water Supply and Sanitation Project - Project Status Report, Project ID No. 10516." Washington, DC: The World Bank, 1996.</i></p>	

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<b>Paraguay: Fourth Rural Water Supply and Sanitation Project, FY98</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Wastewater disposal systems	<ul style="list-style-type: none"> <li>• 3/4 sewerage systems implemented per year for three years (2000-2002)</li> <li>• An average of 4000 latrines built a year over five years</li> </ul>
Water supply systems	<ul style="list-style-type: none"> <li>• Water systems and on-site sanitation implemented in 66 communities per year for five years</li> <li>• 3/4 existing water systems expanded per years for three years (1999-2001)</li> <li>• 7 new water systems operational per year for five years in indigenous communities (1999-2003)</li> </ul>
Technical Assistance and Project Administration & Engineering	<ul style="list-style-type: none"> <li>• SENASA redefines its role as regulator of the Juntas and the private operators through a new legal framework</li> <li>• Associations of Juntas functioning in 5 departments by midterm and all the rest of the departments by the end of the project</li> <li>• Two private operators delivering water service in two communities by midterm and three other systems by end of the project.</li> </ul>
<p><i>"Paraguay: Fourth Rural Water Supply and Sanitation Project - Project Status Report No. 3998." Washington, DC: The World Bank, 1998.</i></p>	



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<b>Sri Lanka: Community Water Supply and Sanitation Project, FY92</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Access to a portable water service can be measured	<ul style="list-style-type: none"> <li>• The distance traveled to collect water in meters (m)</li> <li>The time spent daily in this activity (in minutes)</li> </ul>
Local Group Performance	<p><b>Design and construction:</b></p> <ul style="list-style-type: none"> <li>• Design participation (% of Households)</li> <li>• Women's participation (% of Households)</li> <li>• Construction participation (% of Households)</li> <li>• Construction monitoring (% of Households)</li> </ul> <p><b>Operation and maintenance:</b></p> <ul style="list-style-type: none"> <li>• O&amp;M participation (% of Households)</li> <li>• O&amp;M monitoring (% of Households)</li> <li>• O&amp;M dispute resolution (% of Households)</li> <li>• Female water committee members (% of water committee members)</li> <li>• Good water committee attendance (% of water committees that have more than half of members attend meetings)</li> </ul>
Partner Organization and Government Performance	<p><b>Design and construction:</b></p> <ul style="list-style-type: none"> <li>• Early water committee (% of communities)</li> <li>• Technology choice (% of communities)</li> <li>• Service choice (% of communities)</li> <li>• Cost choice (% of communities)</li> <li>• Location choice (% of communities)</li> <li>• Design Performance (index, see IER par. 2.39)</li> <li>• Quality construction (% of communities with good quality)</li> </ul> <p style="padding-left: 40px;"><b>Operation and maintenance:</b></p> <ul style="list-style-type: none"> <li>• Administrative training (% of water groups)</li> <li>• Hygiene training (% of Households)</li> <li>• Access to tools (% of service operators)</li> <li>• Access to spare parts (% of service operators).</li> </ul>
<p><i>"Sri Lanka: Community Water Supply and Sanitation Project - Impact Evaluation Report No. 18113." Washington, DC: The World Bank, 1998.</i></p>	

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<b>Turkmenistan: Water Supply, Sanitation and Health Project, FY97</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Coverage Health	<ul style="list-style-type: none"> <li>• % of population served by water supply systems</li> <li>• the number of water supply systems and sanitation facilities-- in schools/market/households--made operational/replaced/repared per month</li> <li>• % of water quality samples meeting bacteriological water quality standards</li> <li>• % decrease in incidence of water borne diseases particularly diarrhea diseases, subdivided by age and sex</li> <li>• number of staff trained for water quality, sanitation and hygiene surveillance and monitoring</li> <li>• number of health staff trained to conduct health education and number of epidemiological studies conducted</li> <li>• number of workshops organized and number of handwashing basins installed</li> <li>• % of population receiving health education and the % of population reporting positive attitudes and practices before and after health promotion campaign</li> </ul>
<p><i>"Turkmenistan: Water Supply and Sanitation Project - Staff Appraisal Report No. 16142-TM." Washington, DC: The World Bank, 1997.</i></p>	

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<b>Venezuela: Monagas Water Project, FY96</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Institutional Development Coverage	<ul style="list-style-type: none"> <li>• Signing of management contract with a private operator</li> <li>• Efficiency in collections of 80% by year 2000</li> <li>• 33% contribution of Aguas de Monagas (AdM) to investments on an annual basis from internal cash generation by year 1999</li> <li>• 100% metered coverage of large consumers by end of 1998</li> <li>• 42,000 people upgraded to basic service levels in rural communities by year 2000</li> <li>• Reduction of number of days of rationing per year to five by year 2000</li> <li>• Reduction of unaccounted-for water from current 70% to 40% by the year 2000, which would reflect improved management practices and serve as a proxy for quality through less leakage and improved metering of production and consumption</li> <li>• Four national standards established for WS&amp;S issued by end of 1998</li> <li>• By the year 2000, six regional, state or municipal water systems transferred from national water authorities to local authorities</li> <li>• Establishment of confederation of water users in the State of Monagas by end of 1999</li> </ul>
<p><i>"Venezuela: Monagas Water Project - Project Status Report ID No. 8224." Washington, DC: The World Bank, 1996.</i></p>	

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**B. Other Development Agencies**

<b>CARE: Bangladesh Evaluated SAFE Pilot Project</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Sanitation and hygiene	<ul style="list-style-type: none"> <li>• Reported latrine use (mothers, men, and children over five usually use the latrine)</li> <li>• Observed environmental cleanliness                             <ul style="list-style-type: none"> <li>• No feces in the yard</li> <li>• No feces inside the latrine</li> </ul> </li> </ul>
Water and Health, KAD	<ul style="list-style-type: none"> <li>• Knowledge of causes of diarrhea (six or more causes known)</li> <li>• Knowledge on diarrhea prevention</li> <li>• Observed handwashing technique</li> <li>• Diarrhea prevalent in at least one child in the household in the past two weeks</li> </ul>
<p><i>Bateman et al. "Prevention of Diarrhea Through Improving Hygiene Behaviors: The Sanitation and Family Education (SAFE) Pilot Project Experience." Bangladesh: CARE, ICDDR, 1995.</i></p> <p><i>Macy, J. and P. Lochery. "Lessons Learned in Water, Sanitation and Environmental Health." CARE, 1997.</i></p>	

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<b>DANIDA: Volta Region Community Water and Sanitation Program</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Sanitation and hygiene	<ul style="list-style-type: none"> <li>• Absence of feces and urine of latrine floors and compound</li> <li>• Absence of cleansing materials on latrine floors</li> <li>• Absence of odor and flies in the latrine</li> <li>• Evidence of handwashing after using latrine</li> </ul>
Water and hygiene	<ul style="list-style-type: none"> <li>• Water fetching points are free from dirt</li> <li>• Water transported in clean collecting vessels</li> <li>• Water storage containers free from dirt, placed in clean environment and covered</li> <li>• Use of cup with long handle for collecting water</li> </ul>
Health, KAD	<ul style="list-style-type: none"> <li>• Percentage of population that can demonstrate new knowledge as regards hazards associated with water, sanitation and health of each target community</li> <li>• An existing agenda on hygiene education with data on activities such as the number of hygiene education meetings held and number of women attending the meetings and follow-up activities</li> <li>• Target schools will have in existence: a hygiene education plan, data on number of meetings held by the school health committee, x number of trained school health coordinators, a hygienically kept latrine with hand washing facilities, and clean school environment.</li> <li>• Existence of hygiene education program involving the whole community emphasizing the following:               <ul style="list-style-type: none"> <li>- Proper disposal of refuse</li> <li>- Proper disposal of wastewater</li> <li>- Penning of animals</li> <li>- x number of meetings held on hygiene activities</li> <li>- Environmental cleanliness and human excreta disposal.</li> </ul> </li> <li>• At least 4 out of 10 households have some mechanisms of handwashing</li> </ul>
<p><i>"Evaluation of Hygiene Education Component of the Volta Region Community Water and Sanitation Program." Ho, Ghana: Community Water and Sanitation Division, VRCWSP.</i></p>	

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<b>ENVIRONMENTAL HEALTH PROJECT (EHP)</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Priority Behavioral Indicators for Diarrhea Disease Prevention	<p><b>Cleansing of Hands-</b> Indicator Definition and Unit of Measurement:</p> <ul style="list-style-type: none"> <li>• Proportion of households....</li> <li>• Where the mother (or caretaker) reports washing her hands at least once within the previous 24 hours on each critical occasion</li> <li>• Where the mother (or caretaker) demonstrates all elements of adequate handwashing technique</li> </ul> <p><b>Sanitary Disposal of Feces-</b>Indicator Definitions and Unit of Measurements:</p> <ul style="list-style-type: none"> <li>• Proportion of households....</li> <li>• Where all family members three years or older usually use a sanitary facility for defecation (report)</li> <li>• Where the feces of children under three are disposed of in a sanitary fashion (report)</li> <li>• Where the house area and yard are free of human fecal contamination (observation)</li> <li>• Proportion of sanitary facilities.....</li> <li>• That appear to be in use (observation)</li> <li>• That are free of soiling with human feces (observation)</li> </ul> <p><b>Drinking Water Free of Fecal Contamination-</b> Indicator Definition and Unit of Measurement:</p> <ul style="list-style-type: none"> <li>• Proportion of households....</li> <li>• That use water from an acceptable source for cooking and drinking</li> <li>• That either have in-house piped water or have a system of water collection, transport, storage, and access that maintains water free of contamination</li> </ul> <p><b>Food Free of Fecal Contamination-</b> Indicator Definition and Unit of Measurement:</p> <ul style="list-style-type: none"> <li>• % of infants 6 months and under</li> <li>• That are exclusively breastfed</li> <li>• Proportion of households.....</li> <li>• Where the mother reports washing her hands before preparing or serving food or feeding children</li> <li>• Where food is eaten within 3 hours of cooking</li> <li>• Where cups and spoons rather than bottles are used to feed infants and small children (report, observation)</li> </ul>
Other W&S Related Indicators- Access	<ul style="list-style-type: none"> <li>• Continuous access to safe water at household level</li> <li>• Access to devices for water collection, transport, storage</li> <li>• Access to sanitary excreta disposal; Access to soap or ash for handwashing</li> <li>• Access to sufficient water quantity (20 liters per capita per day)</li> </ul>

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<b>ENVIRONMENTAL HEALTH PROJECT (EHP)</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
Other W&S Related Indicators-Quality	<ul style="list-style-type: none"> <li>• Water supply: collection time, continuous availability, level of portability</li> <li>• Sanitary excreta disposal: odors/aesthetics, durability of solution, ease of maintaining cleanliness, cultural appropriateness of design</li> <li>• Behavior change: locally appropriate design, use of participatory processes</li> </ul>
Other W&S Related Indicators-Demand	<ul style="list-style-type: none"> <li>• An understanding that diarrhea is preventable</li> <li>• Knowledge of the causes of diarrhea and the means to prevent it</li> <li>• Willingness to pay for adequate water supply, sanitation, soap or ash and to participate (money or in-kind contribution)</li> <li>• Functioning community environmental health committee</li> <li>• Community norms supportive of appropriate behavior</li> </ul>
Other W&S Related Indicators-Sustainability	<ul style="list-style-type: none"> <li>• Effective policies and institutions that support access and quality</li> <li>• % of costs recovered from users</li> <li>• Evidence that operation and maintenance are taking place</li> <li>• Availability of capacity financing; Adequately trained personnel</li> <li>• Functioning community environmental health committees</li> </ul>
Other W&S Related Indicators-Hygiene Education ( this indicators were found in an EHP project in Thailand)	<ul style="list-style-type: none"> <li>• % of the village population with access to a latrine for everyday use</li> <li>• % of households with latrines kept clean on a regular basis</li> <li>• % of school latrines kept clean and without smell everyday</li> <li>• % of school and household latrines with water and a dipper inside for flushing</li> <li>• % of households and schools with soap or detergent available for washing hands</li> <li>• % of households and school latrines with new picture stickers inside</li> <li>• % of children aged 4-6 who are trained to use a latrine at all times.</li> <li>• % of households and village schools with access to clean drinking water</li> <li>• % of rainwater jars that have covers</li> <li>• % of rainwater jars that are always covered</li> </ul>
<p><i>Bendahmane, D.B. "Indicators for Programs to Prevent Diarrhea Disease, Malaria, and Acute Respiratory Infections - Activity Report No. 46." EHP, 1997.</i></p>	

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<b>WEDC-GARNET</b>	
<b>Indicator / Indicator Definition</b>	<b>Unit of Measurements</b>
	<ul style="list-style-type: none"><li>• behavior-change indicators, health impact indicators, long-term success indicators</li><li>• the % of population that needs to be covered ('critical mass') that would be considered "full coverage" for purposes of disease control</li><li>• development of criteria and a monitoring and evaluation framework for measuring success at national and community levels</li><li>• development of methods for assisting communities in identifying and using indicators</li></ul>
Global Applied Research Network. <a href="http://www.lboro.ac.uk/departments/cv/wedc/garnet/sanecd.html">http://www.lboro.ac.uk/departments/cv/wedc/garnet/sanecd.html</a>	



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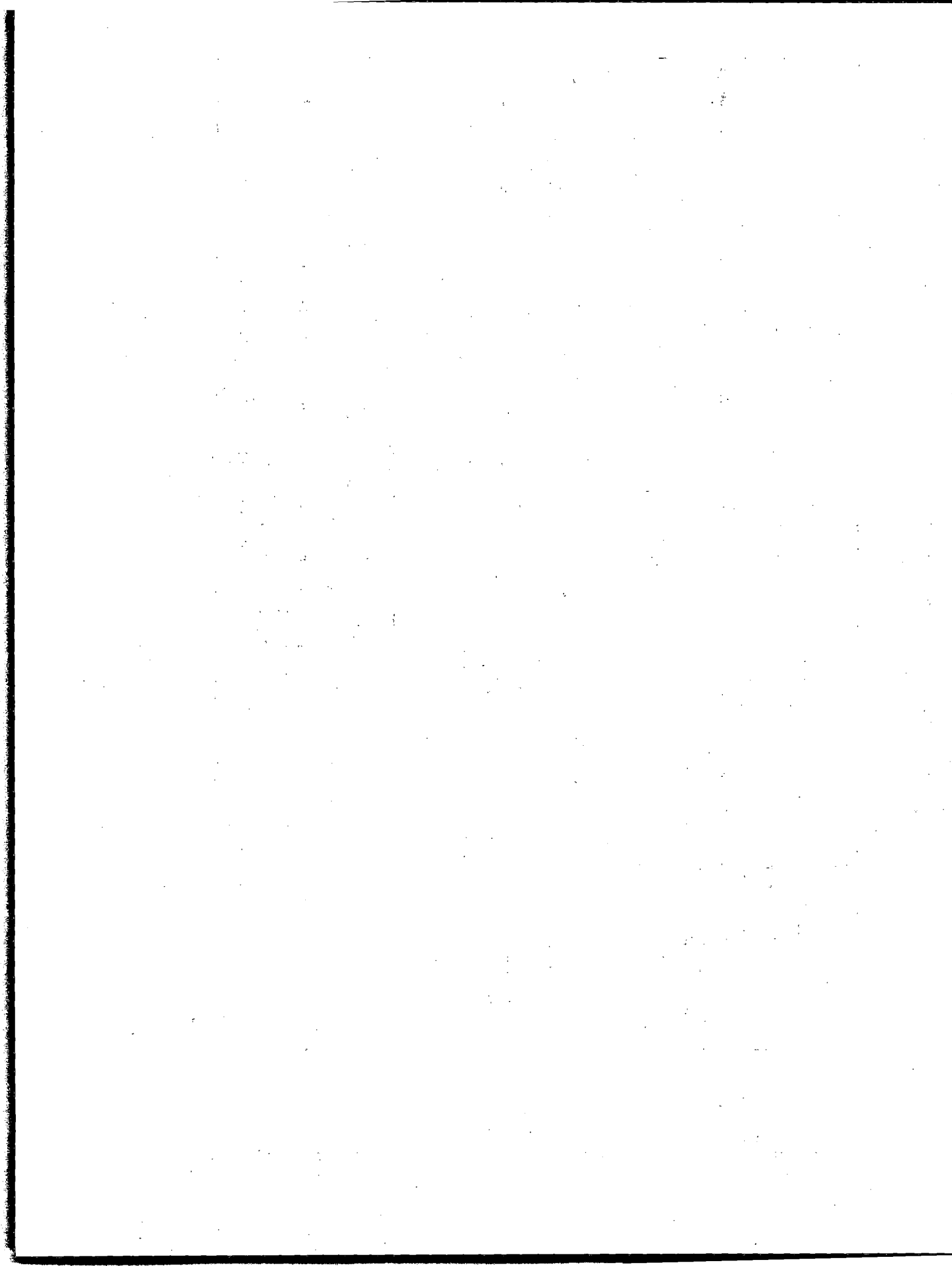
IRC	
Indicator / Definition	Unit of Measurements
Package addressing critical domains of sanitation behavior (according to local assessment)	<p><b>% observed reduction in high-risk practices of human excreta disposal:</b></p> <ul style="list-style-type: none"> <li>• no or inadequate handwashing at critical occasions.</li> <li>• collection, storage and drawing of drinking water.</li> <li>• waste water disposal at source and home solid waste disposal</li> </ul>
Upgrading strategy with flexible technology	<ul style="list-style-type: none"> <li>• % increase in users of different sex and class who know about and install a facility they can pay for, use and maintain</li> </ul>
Small or no subsidy	<ul style="list-style-type: none"> <li>• % of subsidy given to % of population consistently using facilities</li> </ul>
Hygiene promotion for all, infrastructure for high-risk populations	<ul style="list-style-type: none"> <li>• % of men, women, children reached by hygiene promotion, leading to observed and sustained reductions in unsafe conditions and practices</li> <li>• % of high-risk environments where programs are carried out</li> </ul>
Gender and class specific community participation in planning and implementing interventions	<ul style="list-style-type: none"> <li>• men and women, in each socioeconomic level and cultural group consulted on needs and demands, and given informed choice on and access to affordable and adequate<sup>7</sup> solutions</li> </ul>
Environmentally friendly approach	<ul style="list-style-type: none"> <li>• % of facilities with no new risks to environment and environmental health through: soiled facilities, water pollution, soil pollution, mosquito, fly and rodent breeding, and excessive water use</li> </ul>
Sufficient and socio-economically specific change	<ul style="list-style-type: none"> <li>• Critical mass<sup>8</sup>, adoption of hygienic practices by women, men, girls, boys of different socioeconomic and cultural groups</li> </ul>
	<ul style="list-style-type: none"> <li>• Water is transported and stored in "safe" manner-containers used are "clean"</li> <li>• Water is used in "sufficient" quantity- if 20 liters per person per day are not being used, why not and how can it be encouraged?</li> <li>• "Good" sanitation - in this case very different indicators were developed depending on the behavioral patterns in specific towns</li> <li>• Women are 'effectively' involved in decision-making processes. Specific Indicators used include: a number of women have "agreed" to site selection, an issue raised by women has been 'acted " on by the committee; women members of committee have 'required skills" and "actively influence' decisions taken</li> </ul>
<p><i>_____ "Self-Monitoring in Uganda" in Water Newsletter #257. August 1998.</i>  <i>Samantha, B.B. and C. A. Van Wijk. "Criteria for Successful Sanitation Programs in Low Income Countries" in Health Policy and Planning, Vol. 13, No. 1. 1998.</i></p>	

<sup>7</sup> Adequate in technical, socio-cultural and environmental terms (to be defined locally).

<sup>8</sup> Esrey (1994) gives 75% adoption of safe sanitation practices as critical mass for health impact, at least in densely settled areas.

**ANNEX 7: KEY DESIGN PRINCIPLES FOR COMMUNITY WATER AND SANITATION SERVICES**

1. Promote a demand responsive approach where communities make informed choices regarding their participation, service level, and service delivery mechanisms.
2. Promote institutional reform based on clear roles for key stakeholders where communities own their facilities, the private sector provides goods and services, and government facilitates the process.
3. Ensure appropriate legal framework for ownership and management.
4. Implement CWS projects within context of broader community and local government development.
5. Establish financial policies that underpin demand responsive approach where communities pay part of the capital cost in proportion to the cost of the facilities, and all operations and maintenance costs.
6. Support formation of representative Water User Associations for planning, implementation, and management of community water supply facilities.
7. Create competitive environment for allowing communities to access range of providers of goods and services for all aspects of the project cycle.
8. Integrate water, sanitation and hygiene education in CWS projects.
9. Promote user investment in sanitation through public awareness and hygiene education, and strengthen private sector's ability to construct facilities.
10. Ensure representative and informed participation of all stakeholders.
11. Include clearly defined capacity building components that enable all stakeholders to play their roles and build partnerships.
12. Set rules to target poor, unserved communities and vulnerable groups in these communities.
13. Support community-based environmental management to improve living conditions and protect water resources.



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Key Design Principles for Community Water and Sanitation Services		
Thematic Area	Problem Definition and Key Responses	Community Water and Sanitation (CWS) Strategy for Rural Areas and Small Towns
Policy Environment	<p>Limited political commitment, weak legal framework and poor governance lead to unstable policy environment for sector. This results in: under-investment, undefined ownership, poor participation, weak regulation, and conflicting priorities</p> <p>Response</p> <ul style="list-style-type: none"> <li>• Bank works only where policy reform is in place, or where there is a demonstrated commitment to it</li> <li>• Government should clearly articulate and disseminate policies, regulations and programs</li> <li>• Role of stakeholders should be clearly defined</li> <li>• Broad consultation in policy review should be promoted</li> </ul>	<p><b>Promote a demand responsive approach (DRA) where communities make informed choices regarding their participation, service level, and service delivery mechanisms. Communities decide:</b></p> <ul style="list-style-type: none"> <li>• Whether to participate in project</li> <li>• Preferred level of service based on willingness to pay</li> <li>• How services are planned, implemented, operated and maintained</li> <li>• How funds are managed and accounted for</li> </ul> <p><b>Promote institutional reform based on clear roles for key stakeholders where communities own their facilities, the private sector provides goods and services, and government facilitates the process.</b></p> <ul style="list-style-type: none"> <li>• Community owns, manages, and helps finance services;</li> <li>• Government at all levels facilitates the process by encouraging stakeholder participation, setting policies and standards, and financing facilities.</li> <li>• Private sector and NGOs provide goods, services and financing</li> <li>• External support agencies: financing, technical assistance, policy coordination</li> <li>• Civil society provides policy and implementation support</li> </ul> <p><b>Ensure appropriate legal framework for ownership and management.</b></p> <ul style="list-style-type: none"> <li>• Ownership (water resources + assets);</li> <li>• Recognition and autonomy of community-elected Water Users Associations (WUAs) to operate, set tariffs, manage funds, especially vis-a-vis local government</li> </ul> <p><b>Implement CWS projects within context of broader community and local government development.</b></p> <ul style="list-style-type: none"> <li>• Support decentralization reforms</li> <li>• Recognize and promote cross-sectoral linkages (education, health, rural development, energy, etc)</li> </ul>

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Key Design Principles for Community Water and Sanitation Services		
Thematic Area	Problem Definition and Key Responses	Community Water and Sanitation (CWS) Strategy for Rural Areas and Small Towns
Financing Options	<p>Demand for services is increasing but service expansion has been constrained by insufficient resource allocation from the public sector, inefficient investments in costly schemes, and a lack of capacity to mobilize resources from users, local government, private sector and others.</p> <p>Response</p> <ul style="list-style-type: none"> <li>• Financial policy should link prices charged to costs of services. Users should pay more for higher levels of service</li> <li>• Tariff policy is important and should be designed to meet financial viability of each system</li> <li>• Subsidies should only be transitional and targeted to communities on a one-time basis</li> <li>• Balance capital investments with long term O&amp;M</li> </ul>	<p><b>Establish financial policies that underpin demand responsive approach where communities pay part of the capital cost in proportion to the cost of the facilities, and all operations and maintenance costs.</b></p> <p>Promote increased capital cost recovery from users</p> <ul style="list-style-type: none"> <li>• An upfront cash contribution based on their willingness-to-pay is required from users to demonstrate demand and develop community capacity to administer funds and tariffs</li> <li>• Ensure 100% recovery of operation and maintenance costs</li> <li>• Improve community level financial management and resource mobilization, especially for major repairs/replacements and service expansion</li> <li>• Set up robust financing mechanisms (public and private sector) and explore financial intermediation options (such as household credit for on-site sanitation) to increase internal resource mobilization</li> <li>• Small towns may need specific assistance for tariff-setting and financial management plan for service expansion and upgrading,</li> <li>• Provide detailed information on costs to allow for informed choice, and seek to reduce investment costs through lower cost options and more efficient delivery mechanisms</li> </ul>

Key Design Principles for Community Water and Sanitation Services		
Thematic Area	Problem Definition and Key Responses	Community Water and Sanitation (CWS) Strategy for Rural Areas and Small Towns
Service Delivery Options	<p>Government monopoly on service provision has resulted in lack of accountability and community ownership, poor management and sustainability, low quality services and weak development of private sector and alternative delivery options.</p> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Promote community ownership and management and support a range of delivery and management options based on service levels, population size, etc</li> <li>• Promote policies and institutional reform that remove barriers to private sector participation and other support and management arrangements</li> <li>• Develop mechanisms for allowing users to make informed choice (social intermediation)</li> <li>• Promote flexible standards that open up choice, support appropriate technologies and equipment standardization (where required for spare part network)</li> <li>• Consider management and O&amp;M issues as an integral element of the community planning and decision process</li> </ul>	<p><b>Support formation of representative Water User Associations (WUA) for planning, implementation, and management of community water supply facilities</b></p> <p>Promote community contracting and transparency in all procurement</p> <ul style="list-style-type: none"> <li>• Recognize range of management options based on community size, technical and financial complexity, and consider the special needs of multi-community regional systems and neighborhood options in small towns. The larger and more complex the system, the greater the need for professional operators.</li> <li>• Ensure long-term support and technical assistance to community management (private and public sector support, association of WUAs, etc), appropriate technology, availability of spare parts in the local market, etc.</li> </ul> <p><b>Create competitive environment for allowing communities to access range of providers of goods and services for all aspects of the project cycle</b></p> <ul style="list-style-type: none"> <li>• Community organization and formation of representative WUA, resource mobilization</li> <li>• Service planning: estimating costs, engineering designs, financing plans</li> <li>• WUA training in financial management, contract administration, operations and maintenance</li> <li>• Community awareness-raising, hygiene education, sanitation promotion</li> <li>• Contracting, procurement and construction supervision</li> <li>• Long-term support to management, operation, maintenance</li> <li>• Small towns are institutionally, technically and financially more complex than rural areas and require additional support and training</li> </ul>

Sanitation, Health and Hygiene in World Bank Rural Water Supply and Sanitation Projects

Key Design Principles for Community Water and Sanitation Services

Thematic Area	Problem Definition and Key Responses	Community Water and Sanitation (CWS) Strategy for Rural Areas and Small Towns
Hygiene and Sanitation	<p>Full economic and health impact of improved CWS are often not achieved due to lack of attention to hygiene education and sanitation. Approaches to sanitation have focused mainly on technology aspects, rather than on behavior changes and creating a market (supply and demand) for sanitation facilities</p> <p>Response</p> <ul style="list-style-type: none"> <li>• Ensure that HES components are included in national policy dialogue and resources provided in CWS programs</li> </ul>	<p><b>Integrate water, sanitation and hygiene education in CWS projects</b></p> <ul style="list-style-type: none"> <li>• Hygiene education and sanitation need clear objectives, performance indicators and monitoring and evaluation processes</li> <li>• Hygiene education should build on existing beliefs and community priorities, and seek to achieve effective and sustained use of improved water and sanitation services and hygiene practices</li> <li>• Schools and family units are both important in HES programs</li> </ul> <p><b>Promote user investment in sanitation through public awareness and HES education and strengthen private sector's ability to construct facilities</b></p> <ul style="list-style-type: none"> <li>• Subsidy programs for sanitation are not sustainable, however targeted subsidies may be appropriate to demonstrate approaches and stimulate demand</li> <li>• Include a wide range of technology options for waste water and excreta disposal and treatment</li> <li>• Interventions should be coordinated with and supplement National Health Programs</li> </ul>
Participation and Gender	<p>Lack of community involvement, and especially of women, has been the main reason for poor service sustainability. Traditional project design did not consider the required project rules and incentives to achieve full participation.</p> <p>Response</p> <ul style="list-style-type: none"> <li>• DRA requires ample information flow, and processes for the community to make all investment decisions</li> <li>• CWS programs should recognize women as primary users of water, hygiene educators and managers and involve women in sector development, treating men and women as equal partners</li> </ul>	<p><b>Ensure representative and informed participation of all stakeholders</b></p> <ul style="list-style-type: none"> <li>• Place the community at the forefront of decision-making and management through appropriate project rules, incentives and social intermediation</li> <li>• Ensure participation of women and minority groups</li> <li>• Promote exchanges (meetings, newsletters, e-mail, associations of WUAs)</li> <li>• Facilitate stakeholder participation in policy formulation and program design/evaluation</li> <li>• Monitoring and evaluation should include participation of all stakeholder groups</li> </ul>

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Key Design Principles for Community Water and Sanitation Services		
Thematic Area	Problem Definition and Key Responses	Community Water and Sanitation (CWS) Strategy for Rural Areas and Small Towns
Capacity Building	<p>Insufficient attention is paid to the appropriately targeted capacity building required to implement DRA, and there are also few incentives for local private sector and NGOs to participate in programs</p> <p>Response</p> <ul style="list-style-type: none"> <li>• Capacity bldg is central to Bank support in sector</li> <li>• Capacity building requires a commitment to long-term support</li> <li>• Projects must have realistic objectives consistent with local capacity and build in local knowledge</li> <li>• DRA recognizes the need to support community outreach, social intermediation and training</li> </ul>	<p><b>Include clearly defined capacity building components that enable all stakeholders to play their roles and build partnerships</b></p> <ul style="list-style-type: none"> <li>• Target training to communities, private sector and NGOs, local/regional/national government.</li> <li>• Innovative tools and methodologies are required as well as a learning-by-doing approach.</li> <li>• Community outreach, intermediation and training are required before, during and after facility construction.</li> <li>• Selection of trainers and community development workers should be done in a cost effective and competitive manner, with the community involved in the contracting process, as appropriate.</li> <li>• Capacity is most required in social intermediation skills and informing communities about choices.</li> <li>• Training should be time-bound, output and impact oriented, with performance monitoring and targets to measure capacity and achieve goals.</li> <li>• Develop opportunities for local stakeholders (private sector, local govt, NGOs) to participate and build their capacity</li> </ul>
Poverty and Access	<p>Majority of clients are the poor, poorest are outside cash economy and politically weak, it is easier to provide services to rich, population is increasing, and there are decreased services and resources as well as lack of political commitment towards the poor</p> <p>Response</p> <ul style="list-style-type: none"> <li>• Design CWS programs to reach the poorer segments of the population</li> <li>• Expand range of technology and management options that are affordable to the poor</li> </ul>	<p><b>Set rules to target poor, unserved communities and vulnerable groups in these communities.</b></p> <ul style="list-style-type: none"> <li>• Develop baseline information, identify vulnerable groups and monitor access of the poorer communities to project services</li> <li>• Expand range of technology options, building on existing resources in community</li> <li>• Ensure adequate flow of information to all eligible communities and ensure adequate social intermediation and participation by all groups, including women, poor and minorities</li> <li>• Recognize and build on informal safety nets within communities</li> <li>• Involve women and minority groups in community decisions and management</li> </ul>



*Sanitation, Health and Hygiene in World Bank Rural Water Supply and Sanitation Projects*

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Environmental Management	<p>Improper excreta and solid waste disposal are increasingly a source of pollution and related disease. Growing demand for water coupled with high variability of supply contributes to increased competition for scarce water resources and degradation of resource.</p> <p>Response</p> <ul style="list-style-type: none"> <li>• Consider environmental aspects of CWS: water resources and waste management</li> <li>• Promote holistic view of IWRM in designing CWS policies and programs</li> </ul>	<p><b>Support community-based environmental management to improve living conditions and protect water resources.</b></p> <ul style="list-style-type: none"> <li>• Consider source protection, conservation, and education of water users as stewards of water resources, watershed management and appropriate water resource allocation among competing sectors, etc</li> <li>• Promote waste management as an integral part of IWRM</li> <li>• Support public awareness and community education programs on environmental protection and IWRM</li> <li>• Rely on groundwater rather than surface water which must be treated to protect water quality</li> </ul>