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Water Supply & Sanitation Working Notes

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RURAL WATER SUPPLY, SANITATION, AND HYGIENE: A REVIEW OF 25 YEARS OF WORLD BANK LENDING (1978–2003)

SUMMARY REPORT

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Water Supply & Sanitation Working Notes are published by the Water Supply and Sanitation Sector Board of the Infrastructure Network of the World Bank Group. Working Notes are available online at www.worldbank.org/watsan. Working Notes are lightly edited documents intended to elicit discussion on topical issues in the water supply and sanitation sector. They disseminate results of conceptual work by World Bank staff to peer professionals in the sector at an early stage, that is, "works in progress." Comments should be e-mailed to the authors.

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1 INTRODUCTION

This summary review is drawn from a larger report, "Rural Water Supply, Sanitation, and Hygiene at the World Bank: A Review of 25 Years of Lending (1978–2003)," available from whelpdesk@worldbank or online at www.worldbank.org/watsan.

The World Bank has more than 25 years of experience with lending for Rural Water Supply, Sanitation, and Hygiene (RWSSH) projects. Since the first sector loan in 1978 through 2003, the World Bank lent approximately US$5.5 billion for RWSSH investments, using both single-sector (or "dedicated" water and sanitation) and multisector lending instruments.

Whereas the World Bank has undertaken assessments of its RWSSH portfolio in the past, such reviews have been limited in their coverage regionally, temporally, or substantively. This review, which represents the only known effort to investigate the full universe of Bank-supported projects in the sector, was spurred in part by the Millennium Development Goal (MDG) initiative. Recognizing that improving access to water and sanitation services in rural areas can play a major role in the poverty reduction agenda embodied by the MDGs, the World Bank's Energy and Water Department launched this review to provide the Sector Board with (a) an overview of historical trends, as well as the current scope and direction, of the RWSSH portfolio; (b) key insights regarding the alignment of the World Bank's RWSSH activities with its commitment to attaining the MDGs; and (c) a proposed agenda to address gaps in knowledge and to help maximize the impact of the World Bank's RWSSH lending.

The review was carried out using data from 397 Bank-supported projects that had identifiable RWSSH components.[1] Summary information about each of these almost 400 projects was collected from existing reports and was used for analysis of broad trends in the World Bank's RWSHH portfolio. Next, a stratified sample of 60 projects was drawn that mirrored the full data set in terms of regional distribution, size of projects (in US$ terms), and period of execution. To supplement the available secondary data for this subsample, in-person or telephone interviews with World Bank task managers were carried out whenever possible. This additional data-collection effort allowed for the more in-depth analyses included in the review.[2]

2 FINDINGS

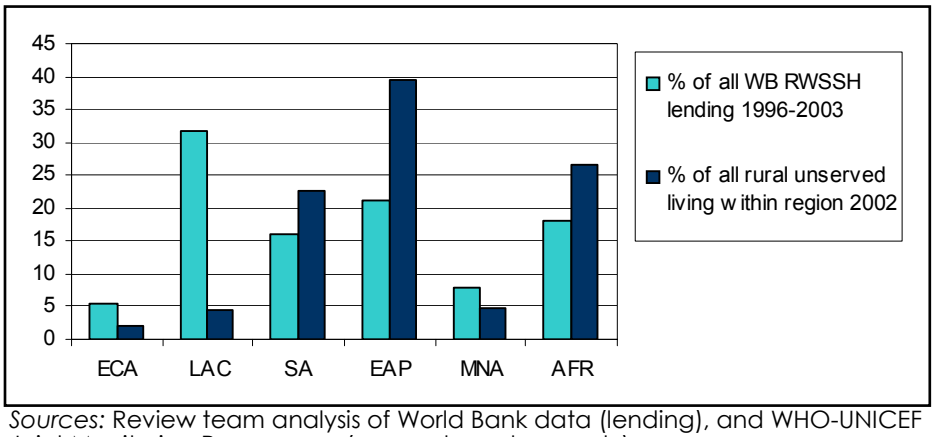
2.1 Lending and the Millennium Development Goals (MDGs)

This review provides an opportunity to assess the extent to which Bank lending for RWSSH is aligned with those actions identified by the international community as being critical for attainment of the Millennium Development Goals. Recent RWSSH investments (1996-2003) do not appear to be well aligned with MDG priorities. The Millennium Development Project, for example, has noted that the key regions requiring support and resources in order to meet the 2015 water supply and sanitation targets are Sub-Saharan Africa (where progress to date has been slowest) and East Asia (where the numbers

[1] For a full discussion of the review methodology, as well as sampling and data analysis caveats, refer to section 2 of the full report.

[2] Efforts were made to identify all Bank lending in support of projects with a RWSSH components; however, given limitations of project information available (particularly with respect to multisector initiatives), it is almost certain that the World Bank's RWSSH portfolio during the period 1978–2003 includes a greater number of projects than the 397 identified for this review.

Figure 1: Regional distribution of World Bank RWSSH lending and rural populations lacking access to improved water supply[3]

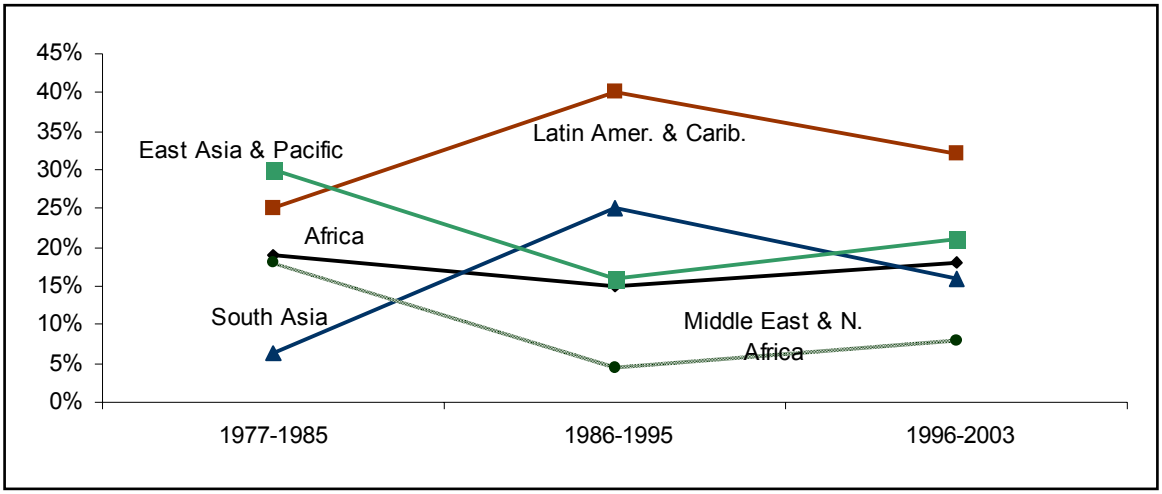


Sources: Review team analysis of World Bank data (lending), and WHO-UNICEF Joint Monitoring Programme (access to water supply).

of unserved are highest).[4] These are not the regions to which the majority of Bank RWSSH lending has been channeled in recent years (figure 1).

Bank staff and sector experts interviewed for the review cited a number of institutional and technical factors that have likely contributed to this finding. Some emphasized the low absorptive capacity in the rural water supply and sanitation sector in most African and some South and East Asian countries; others noted that the often stringent reform programs imposed by the World Bank and other donors as prerequisites for aid have likely limited lending flows to those regions. In addition, lending to the East Asia and Pacific region dropped off during this period, most likely because of the regional macroeconomic crisis that began in 1997 (figure 2).

Figure 2: Allocation of World Bank RWSSH lending, by period and region (%)[5]



[3] Note that investment data represent total RWSSH lending, whereas coverage data are for rural water supply alone. Investments in sanitation and hygiene constitute a negligible % of the total. A similar analysis for sanitation investments alone (from all ODA) showed a similar skewing of investment priorities

[4] United Nations Millennium Project Task Force on Water and Sanitation. 2005. *Health, Dignity, and Development: What Will It Take? Achieving the Millennium Development Goals*. Stockholm: Stockholm International Water Institute and the United Nations.

[5] Allocation of World Bank RWSSH lending to Europe and Central Asia was less than 5 percent in each of the three time periods.

By contrast, respondents felt that the generally strong economic base and institutional framework found in many Latin American countries have facilitated lending from both a demand and a supply perspective. Bank lending for RWSSH in Latin America has also been comparatively more costly on a per capita basis—the result of both higher unit costs and effective demand for higher levels of service—which also contributes to higher aggregate lending levels in that region.

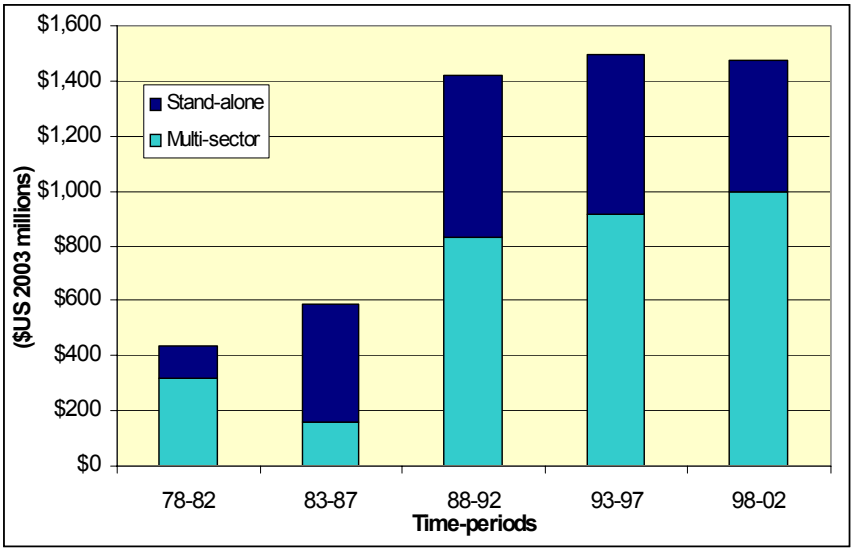
Finally, several respondents noted that the relative allocation of Bank resources through loan (IBRD) versus IDA (credit) channels has also shaped the regional distribution of funding for RWSSH. Whereas a substantial proportion of rural populations that lack access to water supply and sanitation services live in large middle income countries that receive IBRD loans, the majority of rural unserved live in poorer IDA (International Development Association) countries.

2.2 Stand-alone and multisector operations

Bank lending for RWSSH is delivered through both stand-alone projects implemented under the Water Supply and Sanitation Sector Board and through multisector operations, mainly within agriculture, social funds, and rural development. Following a period of predominantly stand-alone RWSSH projects in the early 1980s, multisector approaches have claimed a steadily increasing share of Bank lending owing mainly to the introduction of Social Development Funds. Indeed, multisector operations currently account for two-thirds of RWSSH lending (figure 3).

Whether multisector or stand-alone approaches to RWSSH lending have systematically better outcomes is a question that has been subject to periodic debate. One 2003 evaluation completed by the World Bank's Operations and Evaluation Department (OED), for example, concluded that stand-alone rural and urban water and sanitation projects receive higher performance ratings because they "include objectives such as cost recovery, policy reform, private sector participation, and regulatory reform more frequently than non-dedicated projects do."[6] The findings of this current review, which are drawn from a larger sample of projects as compared with the OED study, do not corroborate these conclusions. For example, median values for the percentage of capital cost sharing for water infrastructure are consistent at 15 percent across all three project types, although the mean value is higher at just over 20 percent for stand-alone projects (table 1). Cost sharing for operations and maintenance of installed infrastructure is also consistent across project types and is close to 100 percent.

Figure 3: World Bank lending in RWSSH, by project type and period



[6] World Bank (2003). *Efficient, Sustainable Services for All? An OED Review of the World Bank's Assistance to Water Supply and Sanitation*. Washington, DC: Operations and Evaluation Department.

Table 1: Capital cost sharing for water infrastructure, by project type[7]

% capital cost sharing by users/ community	Stand-alone projects (n=14)	Social funds (n=14)	Rural development projects (n=10)	All nondedicated (n=24)
Median	15	15	15	15
Mean	20	15	15	15
Standard development	16	5	9	7

Given the continuing debate within the donor community about the effectiveness and efficiency of various strategies for implementing RWSSH projects—as well as the continuing trend within Bank lending away from stand-alone and toward multisector approaches—this topic would seem to be an important element of future research into the conditions under which different RWSSH investment strategies are successful.

2.3 Sustainability

Target 10 of the Millennium Development Goals explicitly identifies the expansion of *sustainable* access to water supply and sanitation services, implicitly recognizing the persistent challenge of maintaining installed infrastructure that has plagued the water supply and sanitation sector, particularly in rural communities.[8] Assessing the World Bank's experience with sustainability of rural water and sanitation projects over its 25 years of lending, however, is difficult for the following reasons:

- RWSSH components of multisector projects are rarely evaluated individually, despite the fact that these operations represent more than two-thirds of total Bank lending in the sector.
- Only a small percentage of stand-alone RWSSH projects have been evaluated by the OED.
- OED's approach to assessing sustainability has changed during the period under review (box 1), making analysis of trends questionable.
- Available data are heavily skewed toward inputs (project design) as opposed to outcomes and impacts.
- Attention to sustainability evaluations among Bank staff has increased over the period under review.

Box 1: OED sustainability ratings

The Operations Evaluation Department (OED) currently uses the following indicators to generate project sustainability ratings:

- **Technical resilience**
- **Financial resilience** (including cost recovery)
- **Economic resilience**
- **Social support** (including safeguard policies)
- **Environmental resilience**
- **Government ownership** (including by central governments and agencies, and availability of O&M, or operations and maintenance, funds)
- **Other stakeholder ownership** (including local participation, beneficiary incentives, civil society and NGOs (nongovernmental organizations), and the private sector)
- **Institutional support** (including legal and regulatory frameworks and organizational and management effectiveness)
- **Resilience to exogenous influences** (including terms of trade, economic shocks, and regional political and security situations)

For more information, see http://oed.worldbank.org

These caveats aside, the review found evidence that RWSSH project sustainability ratings have generally been improving over time. Although available data do not allow for direct analysis of the association between particular project elements and sustainability scores, the review did examine the extent to which those elements that are widely considered to contribute to sustainability have been included in Bank-supported RWSSH projects over time.

[7] Here, and where relevant in following tables, "*n*" represents the subset of the sample for which data are available on the topic under analysis.

[8] See, for example, J. Sara and T. Katz (1998), "Making Rural Water Supply Sustainable: Report on the Impact of Project Rules," World Bank Water & Sanitation Program.

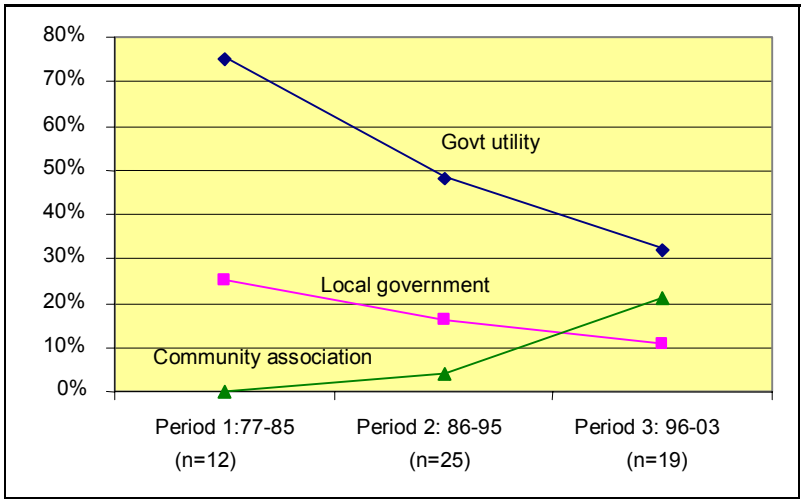
Table 2: User and community cost sharing in Bank-supported RWSSH projects

	Period 1 1977–85	*Period 2 1986–95*	*Period 3 1996–2003*	*Over all periods*
	Median % of capital costs contributed by users/communities			
	15 (*n*=6)	15 (*n*=16)	15 (*n*=16)	15 (*n*=38)
	% of projects including capital cost contributions of indicated type			
Cash	100	100	94	98
Labor	80	83	92	86
Materials	60	78	85	78
Land	40	61	69	61
	Median % of operation and maintenance cost borne by users/communities			
	100 (*n*=10)	100 (*n*=23)	100 (*n*=18)	100 (*n*=51)

Cost sharing: Despite the relatively recent attention to "demand-oriented" project design in the water supply and sanitation sector, the review found that cost sharing by users and communities for both capital and operation and maintenance costs (O&M) of installed infrastructure has actually been a consistent feature of Bank-supported RWSSH projects since the first operations in Ecuador and Paraguay in 1978 (table 2). Over time, the form of such cost sharing has changed somewhat, with noncash (e.g., labor and land) contributions becoming more common.

Institutional responsibilities: Allocation of institutional responsibilities in Bank-supported RWSSH projects has also shifted over time. The review documented increasing reliance on community associations and private sector actors and a reduced role for central government, particularly for long-term O&M of installed infrastructure. In addition, ownership of assets has increasingly moved into the hands of community associations, largely at the expense of ownership by central government (figure 4).

Figure 4: Ownership of completed water supply assets (% of projects)



In sum, the frequency both of favorable evaluations for sustainability and of the inclusion of project design elements that are widely considered to be prerequisites for sustainability have increased in Bank-supported RWSSH projects. For the reasons cited above, however, no causal relationship between these observations should be inferred. Indeed, the paucity of rigorous analysis of sustainability represents both a challenge and an opportunity for the World Bank. In the absence of a solid understanding of how project design factors have influenced sustainability over time, on what basis can the World Bank justify shifts in its approach to RWSSH lending (such as the current trend toward multisector, as opposed to stand-alone, projects)? From a broader perspective, the persistent challenges related to sustainability of donor operations in RWSSH projects suggest that this is an important puzzle that deserves attention within the World Bank's research agenda.

2.4 Scalability

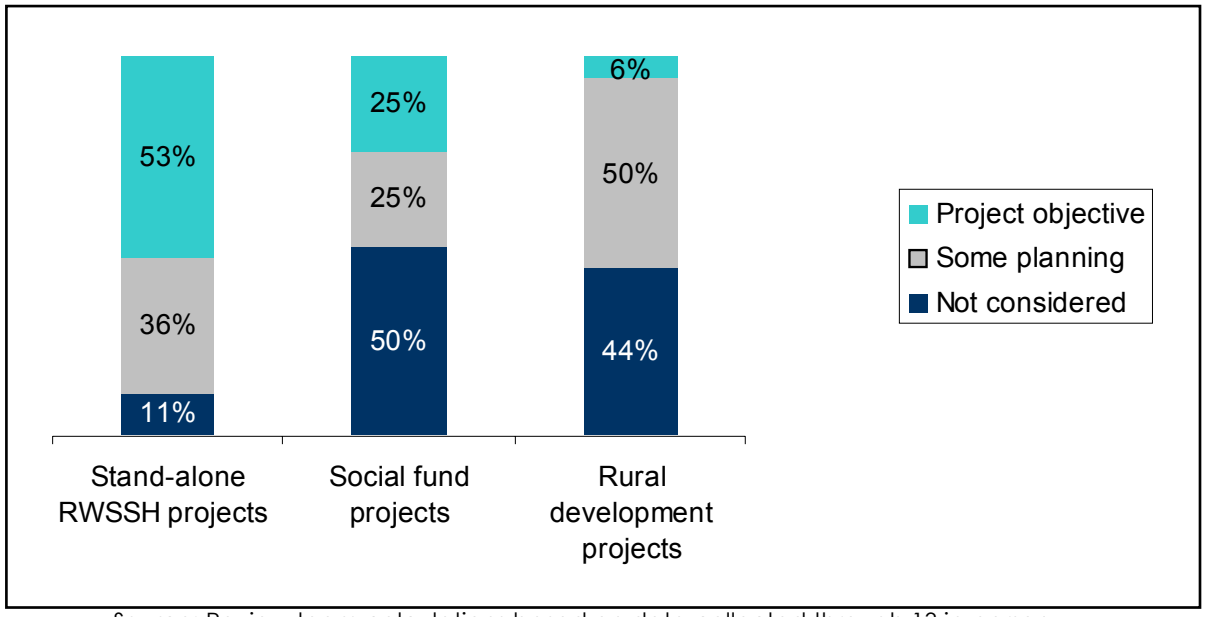
Along with sustainability, scalability is a topic that is currently receiving considerable attention in the context of efforts to rapidly expand RWSSH coverage to meet the Millennium Development Goals. A

2002 World Bank discussion paper on rural water supply services defines the term *scaling up* as comprising two basic factors:[9]

1. *inclusion* of the vast majority of the target population among those receiving sustainable, improved services within a reasonable time, and
2. *institutionalization* of the necessary capacity and resources within public, private, and civic entities to deliver sustainable rural water services indefinitely.

Given the World Bank's shift toward allocating an increasing percentage of its RWSSH lending to multisector projects, it is interesting to note that stand-alone projects appear to have explicitly emphasized scalability in project design during the review period (figure 5). Data collected during staff interviews suggest that scaling up to meet the needs of a client country's target population was a "principal project objective" in just over half of the sampled stand-alone projects, much higher than the 6 percent and 25 percent of rural development and social fund projects, respectively.

Figure 5: Consideration of "scalability" in project design, 1978–2003 (percentage of sampled projects reporting)



Source: Review team calculations based on data collected through 13 in-person interviews and 15 questionnaires with Bank staff.

Just as the World Bank's experience and position in the sector provide a unique opportunity to advance understanding of the determinants of sustainability of RWSSH investments, so too does it have a comparative advantage in promoting work that illuminates the conditions under which project lending leads to broader impacts and increased access to services among rural communities. Such work might also ultimately enable the development of scalability criteria that could be included within project evaluation processes at the World Bank.

2.5 Sanitation and Hygiene

Whereas this review was nominally intended to survey Bank experience with water supply, sanitation, and hygiene in rural areas over the past 25 years, in reality that portfolio has been dominated by water (figure 6). The percentage of Bank-supported RWSSH projects that include sanitation has doubled during the period 1978–2003 but is currently only about 60 percent. Moreover, the fraction of projects that include a hygiene component has remained essentially unchanged. Across all regions,

[9] J. Davis and P. Iyer (2002), *Taking Sustainable Rural Water Supply Services to Scale: A Discussion Paper*. Washington, DC: Bank-Netherlands Water Partnership and the Water & Sanitation Program.

sanitation components within Bank-supported RWSSH projects receive just 3 percent of the total project funds on average; hygiene activities claim less than 1 percent of lending (figure 7).[10]

Figure 6: Percentage of World Bank RWSSH projects with sanitation and hygiene components, 1978–2003

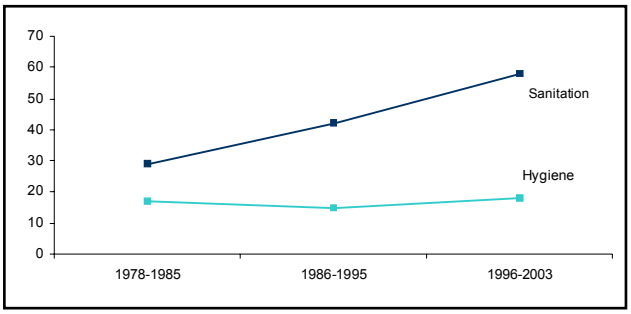
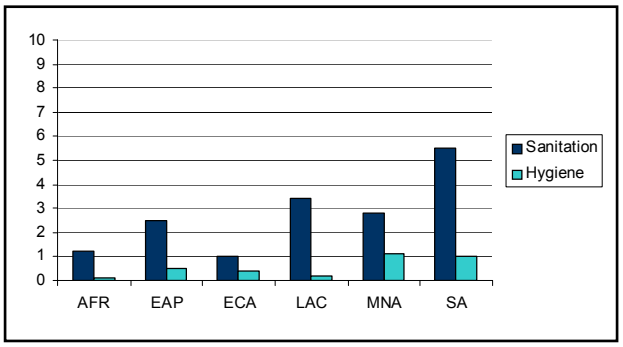
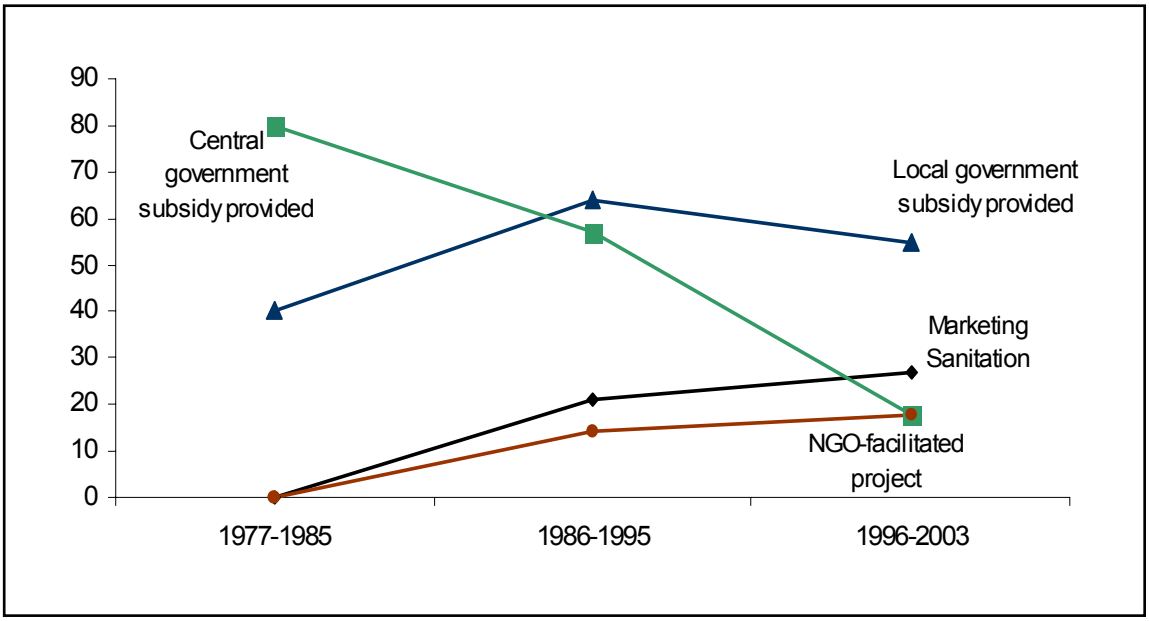


Figure 7: Percentage of all RWSSH lending allocated to sanitation and hygiene by region, 1978–2003



On a more positive note, the review did find that the World Bank has been demonstrably willing to work with governments to experiment with innovative approaches to sanitation. These include supplanting central government subsidies with locally administered subsidies, social marketing programs, engagement with NGOs, and promoting household-level investments (Figure 8).

Figure 8: Trends in sanitation approaches in World Bank-supported RWSSH operations, 1997-2003 (in % of sampled projects)



[10] Of course, the impact of a given amount of spending on water supply, sanitation, or hygiene is likely to be quite different; there is no a priori expectation as to what the ideal allocation of RWSSH funding among these components might be. At the same time, in a qualitative sense the World Bank's funding for sanitation and hygiene appears very limited, given that (a) a substantially larger number of people lack access to sanitation services as compared to water supply, and (b) consensus is mounting that hygiene programs enhance the impacts of sanitation infrastructure.

3 CONCLUSIONS

Lending an average of US$220 million each year during the 25-year period of 1978–2003, the World Bank has been a key actor in rural water supply, sanitation, and hygiene. The wealth of experience gained during this period provides a basis for continuing leadership in the sector, as well as an opportunity to explore critical questions about maximizing both sustainability and impact at scale within RWSSH operations.

The World Bank has the potential to accelerate improvements to the quality and impact of its RWSSH portfolio, particularly if it endeavors to do the following:

- Investigate and address **factors that may be limiting RWSSH lending** and achievement of the MDGs **in Africa, East Asia, and Southeast Asia**.
- Encourage **more rigorous and longer-term sustainability assessments** of RWSSH projects that are linked to practice and whose findings are used to shape new programs. Implement related organizational policy changes that promote greater attention to sustainability, such as revising project cycle budgeting so as to allocate more resources toward post-implementation project assessment.
- **Move scalability up the agenda**, including developing a clear definition and monitoring process. Despite a recognized need to address scalability in the sector, no organization has operationalized the concept (e.g., through the development of indicators).
- Work with partners to optimize their leadership competencies in key areas of the sector, particularly with respect to sanitation and hygiene.

The World Bank also has the opportunity to maintain its position as a "thought leader" in RWSSH, and to make major contributions to the understanding of both sustainability and scalability of interventions in the sector. To do this, the World Bank must be prepared to do the following:

- Undertake a program of rigorous empirical (field-based) studies to **examine the long-term sustainability and scale impact of operations** and the conditions under which different lending strategies—including stand-alone and multisector approaches—are most likely to be successful.
- **Modify existing monitoring and evaluation systems** to ensure that they generate key information on design inputs, implementation experience, and sustainability and scalability outcomes. Such efforts might entail working with partners to develop cost-effective and practical indicators and guidelines for their use; testing and calibrating such indicators through rigorous fieldwork across a sample of Bank-supported projects, and, eventually, revamping monitoring systems across the World Bank (including those tracking multisector lending) to ensure that data are reported in a consistent, regular, and timely manner.
- Continue **strengthening Bank capacity in the area of rural sanitation and hygiene** through sustained support of the recently established Sanitation, Hygiene, and Wastewater Advisory Service. The utility of establishing learning networks with related sectors such as education and health might also be explored.

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