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SIDA

SIDA PILOT PROJECT: *THE*
EXAMPLE OF SWACH

July 1998



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The strategy for SIDA development assistance to India is to focus on innovative pilot projects that test new systems, structures and techniques to solve development problems in India. The rationale for this strategy, as explained in various SIDA documents, is that SIDA development assistance is extremely small when compared to that offered by other foreign funding agencies, especially multilateral agencies, and to the sectoral investments made by the Government of India and/or the state governments.

The SWACH project is being used to analyse whether this strategy has been clearly reflected in the project design, implementation, monitoring and evaluation. Specifically, as mentioned in the TOR for this study, the following questions have to be answered:

How is the pilot project concept reflected in the project objectives?

What does it mean for project design and activities?

How does it affect the criteria for monitoring progress and measuring results?

How can systems be developed to learn and change project design to ensure replicability?

How can project activities facilitate replicability?

The second part of this report analyses the SWACH project according to the above criteria, focussing specifically on aspects of project design, implementation and monitoring and replicability that are relevant if SWACH were to be treated as a pilot project. The third part summarises lessons that could be used to design and evaluate pilot projects, drawing upon the experience of SWACH and other development projects in the social sectors.

This report was prepared after going through the relevant documents provided by SIDA and by the Director SWACH. This information was complimented by a field visit to Rajasthan (which provided an opportunity to meet Director, SWACH and NGOs enabling an understanding of their perspective) and a thorough analysis of Rajasthan budget documents to understand development trends of the state.

We are grateful to SIDA for all the help and patience, as also to the NGOs of southern Rajasthan and the Director, SWACH for the valuable time and insights provided by them.

Although the SWACH project has been described in the TOR for this study as "one of the first Swedish funded projects with a clear pilot project focus", there is little evidence in any of the supporting documentation to suggest that the project was regarded as a pilot project by the implementers or the project funders and sponsors (SIDA, UNICEF, Government of Rajasthan and Government of India). The comprehensive evaluation conducted in 1994 mentions in just one place that the project is "an experimental intervention aimed at exploring how a "grass-roots" focused development project can be implemented through cooperative arrangements between donors, government, non-government organisations and rural beneficiaries". However, the experimental nature of the project is not reflected either in the aims and objectives, in the activities that were promoted, in the financial arrangements that were made or in the monitoring and evaluation. Each of these is examined by turn in the following sections, after a brief description of the policy environment in which the project was launched.

2.1

POLICY ENVIRONMENT AND SECTORAL ISSUES

The policy environment was generally favourable for the effective use of a pilot project at the time of project preparation and launch (i.e. the years leading up to 1986, when the project formally commenced). The International Drinking Water Supply and Sanitation Decade had been proclaimed by the United Nations in 1981. As part of the Sixth Plan (1980-1985), rural water supply schemes under the Minimum Needs Programme were commenced within the state Plans. Although 2.31 lakh villages were identified as "problem villages", progress was slow until the end of the Sixth Plan. Among the problems listed in the analysis of the progress of the schemes, the multiplicity and weakness of the organisational and administrative structures were stated to be the principal ones (Govt. of India, Seventh Plan). Not only did different states have different agencies and organisational mechanisms, but even within states, the number of agencies and their responsibilities varied from scheme to scheme. (The departments included those of Public Health Engineering, panchayati raj, Rural Engineering, Public Works, etc.) Another problem listed in the Seventh Plan was the maintenance of handpumps in rural areas. Recognising that existing schemes would lead to considerable delays in achieving the targets, the Government of India established the National Drinking Water Mission (NDWM) in 1986 and launched the Accelerated Rural Water Supply Programme as a Centrally Sponsored Scheme in which GOI provided 75% of the funds, the state government financing the remainder 25%. The Central Rural Sanitation Programme was also launched subsequently.

These schemes led to an accelerated coverage of the rural population for drinking water supply, although coverage under rural sanitation programmes was still minuscule (Table 1). Nonetheless, the old problems remained more or less unaddressed while new problems surfaced. The active involvement of the Central government from the mid-eighties led to a multiplicity of departments at the central level also, which was only partly mitigated by the existence of the NDWM. At the beginning of the 7th Plan, the Ministry of Urban Development was the nodal agency at the Central level for drinking water supply and sanitation (which were essentially state subjects under the Constitution). With the launch of rural water supply schemes, the Department of Rural Development became the nodal agency at the Central level, while urban water supply and sanitation remained with the MUD. The exclusive concentration on drinking water supply in a mission mode led to the neglect of the concept of total environmental sanitation, specifically the safe disposal of waste water. Thus, one problem was ostensibly being solved while another was being created (the pollution of water sources) which could jeopardise the success of the water supply schemes.

Table 1
Population covered (Rural water supply and sanitation)
Millions (% of rural population)

	31/3/81	31/3/85	31/3/92
Water supply	162.07 (31.0)	299.78 (53.9)	486.11 (78.4)
Sanitation	2.80 (0.5)	5.7 (0.95)	16.96 (2.73)

Source: GOI. Eighth Plan

Further, the supply of safe drinking water not being an end in itself, but being instrumental in bringing about improvements in health and in releasing women's time for more productive work, needed to be linked to other programmes which had these aims. As Table 2 shows the growth in per capita spending on water supply was more rapid than on direct spending on the health sector and second only to the growth in spending on nutrition. By the end of the 7th Plan, the per capita spending on water supply was close to the per capita spending on curative healthcare facilities. Nonetheless, the expected linkages amongst the major components—medical care, public health, family welfare, nutrition and water supply - were not formulated explicitly in the plans and were not reflected in the implementation of the schemes. The linkages with the schemes for improving the livelihood of women and their welfare are even more weak or entirely absent.

Linkages

Table 2
Government Expenditure on Health and Related Sectors
(Centre and States: Rs. Per capita at 1988-89 prices)

	1974-78	1978-82	1982-86	1986-89
Medical	19.01	22.84	25.57	27.86
Public Health	5.08	7.05	8.93	9.52
Family Welfare	4.19	3.94	7.45	8.29
Water Supply	9.48	15.29	21.90	24.03
Nutrition	1.41	2.05	5.31	8.78

Source: World Bank, India: Policy and Finance Strategies for Strengthening Primary Health Care Services. May 1995 (page 31).

The Eighth Plan document listed some of these problems and adopted an approach that would be based on protection of the environment (integrated management of water resources, including disposal of wastes), organisational reforms, community management, sound financial practices and convergence of all related services, particularly those dealing with healthcare and women's welfare.

This brief review of the sectoral developments suggest that SIDA was in a strong position to use its pilot project to offer credible and field-worthy solutions to the problems that were emerging in the area of water supply. In addition, SIDA was the only bilateral donor to the national programme. Specific issues that arise from even this cursory review are listed below:

Technical

- integrated management of water resources
- linking drinking water and environmental sanitation

Economic

- cost-effectiveness and financial sustainability and replicability
- fiscal resources required
- generation of financial resources for maintenance
- economic incentives for environmental protection
- projection of increase in demand (both quantity and quality aspects) due to rise in per capita income

Institutional

- government machinery for delivering services
- achieving inter-departmental coordination both at the planning stage and in implementation
- quality of service
- legal issues relating to water use

Social

- the influence of better social service provision on health and economic productivity
- the differentiated demand for water and sanitation services within rural communities due to increasing socio-economic differentiation
- the emerging demand for new services (such as education, better health care, etc.) as basic needs are met
- the changing roles of women as they are released from some household tasks and take up market-oriented occupations

It is possible to argue that some of these issues could be highlighted only with the benefit of hindsight. However, as is clear from the above review, many issues had emerged by the time that the SWACH project was launched and many more had become apparent by the time the project was mid-stream (at the end of the Seventh Plan and after nearly a decade of experience in implementing water supply schemes). Many more would have been clear at the outset if an attempt was made to analyse the dynamics of social change and the ramifications of even relatively isolated interventions.

2.2

AIMS AND OBJECTIVES OF SWACH

Assuming SWACH was envisaged as a pilot project, how far did its aims and objectives try to grapple with the issues that had the greatest implications for national programme and find credible, sustainable solutions for them?

The goals of the project as stated in the first Plan of Action range from some very broad, general aims ("to improve the quality of life and socio-economic conditions in tribal areas with particular reference to women and children"; "to promote community involvement and self-reliance in the planning, implementation and maintenance of drinking water supply") to certain very specific aims ("to lower the incidence of water-related diseases"). Specific objectives set for the project in order to realise these goals were: ensuring the safety of water sources, providing new tubewells and handpumps, strengthening and improving the operation and maintenance system, establishing a process of continuous health education and improving domestic and

environmental sanitation to reduce the incidence of Guineaworm infestation).

While the overall goals of the project reflect many of the issues relating to the development of the water supply and sanitation sector, finding strategies that address these issues is not an explicitly stated goal. The specific objectives of the project, on the other hand, delimit very precisely the nature of activities to be financed and carried out under the project. The manner in which the objectives are stated clearly preclude the testing of systems and procedures for ensuring the integrated supply of water and sanitation services. What is missing is a statement of the strategies or activities that are being piloted and the manner in which their effectiveness will be determined.

It is possible that the pilot nature of the project was not adequately reflected in the written documentation, perhaps because it was taken for granted by both the donors and the GOI and GOR as well as the implementing agencies. There is no evidence to suggest that planned activities reflected this outlook. On the contrary, the shifting focus of the project to the more operational objective of eradicating guineaworm, which is evident from the documentation and is recognised by the 1994 evaluation, provides the best proof that the pilot nature of the project had been relegated to the background. The project had been transformed into an implementation project for water supply and sanitation in a few districts and subsequently into a project for eradication of the guineaworm from these areas. The "pilot nature" of the project came to be seen as nothing more than the fact that project activities were confined to a few districts; i.e. that it was small in its relative scope and coverage.

The lack of clarity in the nature of the issues that were piloted is reflected in the funding and organisational arrangements. The 1994 evaluation states that "In the Plan of Action 1987/88-1991/92, the project is booked under the major head 'Medical and Public Health', under the minor head of 'Public Health' and only in its sub-heading as 'Guineaworm Disease Control'". (Evaluation, 1994; para 6.24). On the other hand, the project was itself located within the Tribal Area Development Department, under the Tribal Commissioner. The funding arrangements suggest that the project was being treated essentially as a health project, with broader focus than disease control and which covered important health-related issues such as water supply and sanitation. (This raises the question of what was the financing mechanism; also at the national level, which was the nodal ministry for SIDA: the Dept. of rural development or the Health Ministry?) The issue here is whether the project aimed primarily to test health-related interventions in water supply and sanitation or whether it was to deal with the general development of tribal people through specific interventions on supply some basic needs.

Before one can answer the question as to whether SWACH was a success as a pilot project, it would be necessary to ascertain what measures were being piloted. The above-state goals and specific objectives lend themselves to a number of interpretations in this connection. For instance,

Was SWACH developing mechanisms for improving the health status of the people in the project area through an integration of direct disease control measures and health-related activities in water supply and sanitation and health education?

Was SWACH testing the proposition that provision of services related to improvement of health would improve the quality of life of the tribal people, bring about wider socio-economic changes including the alteration of gender relations?

Was SWACH trying to find safe and cost-effective means for treating and eradicating guineaworm?

Was SWACH trying to find mechanisms for effective inter-departmental coordination in the supply of water and/or for eradicating guineaworm?

It is not clear from the project documentation which of these issues were being piloted under SWACH..

2.3

SWACH PROJECT DESIGN: STRATEGY, ORGANISATIONAL STRUCTURE AND ACTIVITIES

The essence of the SWACH strategy was that the project team would serve as the catalyst for mobilising both government resources and community participation to ensure safe water supply, health education and medical services for guineaworm treatment/eradication. The project would also add to the total resources for this purpose by providing additional funds and specialised technical know-how. Since the scope of the project crossed the boundaries of the line departments (Medical and Public Health, Public Health Engineering, Education) as well as of the local bodies, which had previously taken up specific activities in apparent isolation from each other, the project was designed to ensure inter-departmental coordination. The project organisation was itself given considerable autonomy and flexibility to take decisions and in developing implementation plans and undertaking innovations, without having to refer to the line departments. The project provided additional finances to the tune of little less than 60% of total project costs (60% of all non-salary costs; all salary costs were to be met by the Government of Rajasthan). SIDA's contribution was routed through UNICEF which also played the role of lead technical agency providing on-site support.

SWACH activities consisted largely of construction activities (conversion of stepwell, digging new borewells and fitting handpumps, drainage platforms, cattle troughs etc.), maintenance of the facilities, training related to these activities, health education, medical outreach services and community mobilisation. In terms of expenditure, construction absorbed over three-quarters of total project costs.

For a project designed as a pilot project, the key issue is whether the strategy and derived set of activities are feasible (acceptable on technical, financial, social and administrative grounds as leading to project goals) and could be replicated. This decision would rest on whether there is a benchmark for comparison.

Comparisons of results based on "before and after the project" or "with and without the project" would not be adequate for a pilot project that aims at testing new systems, structures and techniques. This is because *any* project, however ill-designed, which provides a substantial infusion of funds and physical investments into a backward or poorly developed region, is likely to have *some* beneficial impact. The fact that the project has provided net benefits in excess of the incremental costs in itself will not show whether the systems and processes used are the best under the circumstances. Thus, for instance, in the case of SWACH, provision of borewells, handpumps and conversion of stepwells will undoubtedly provide additional benefits when compared to the non-project scenario. For SIDA's purposes, however, the benchmark for making comparisons should be alternative methods for providing the same services and realising similar outcomes. Alternative methods could include alternative technologies, structures for management and implementation, processes and financing mechanisms. These alternatives could be deliberately designed within the pilot project itself - though institutional and financial reasons would naturally limit the number of alternatives that could be experimented with in practice. Another method would be to use non-SWACH strategies for providing water supply and sanitation as the benchmark for comparison, provided that the evaluation of alternatives was carefully built into the pilot project design.

It does not appear that the SWACH project design was undertaken in this manner. None of the written documentation provides any basis for judging the efficacy of the SWACH strategy that was eventually adopted versus any others. Rather, the plan of action appears to have been prepared on the basis of rigid and untested assumptions: for example, that only handpump technology is the only feasible technology, because of its relatively low investment costs and because its operation and maintenance is more simple and can be undertaken relatively more easily at the village level; one idea of how community participation should be done, etc.

Clearly, SWACH could have consciously planned for a different set of strategies within the project areas (which were sufficiently large in terms of area and population, but similar in socio-economic conditions) to enable appropriate comparisons. Apart from this, and perhaps more importantly, SWACH had other alternatives and "controls" against which to compare its strategies. Two key components of the project were being carried out on a national scale through other strategies: water supply through the NWDM and guineaworm eradication through NGEF. Implemented throughout the country in a variety of socio-economic and institutional settings, these programmes provided readymade benchmarks for comparisons.

It is indeed surprising that even in the area of guineaworm eradication, which has been the most successful component of SWACH, there has been no attempt to compare the strategies followed by the NGEF, although the methods adopted by the two organisations are distinctly different. Although SWACH claims that its method has made a breakthrough in the project districts, the fact remains that the incidence of guineaworm has reduced in other states as well and at similar rates as in Rajasthan even after 1986 (Table 3). Since, the three SWACH districts contributed the most to guineaworm cases in Rajasthan, there does not seem to be enough evidence to support the claim that the SWACH strategy has been exceptionally good in reducing the transmission chain, although it may have been better on other grounds (such as reducing the period of morbidity and entailing suffering and loss of production)

Table 3
Guineaworm Cases (Rajasthan and India)

	Rajasthan		India	
	Number	% decline	Number	% decline
1984	15,210		39,972	
1985	11,644	-23.5%	30,950	- 22.3%
1986	10,500	- 9.9%	23,070	- 25.5%
1987	7,896	-24.8%	17,031	- 26.2%
1988	5,619	-29.9%	12,023	- 29.5%
1989	4,872	-13.3%	7,881	- 35.5%
1990	3,376	-31.8%	4,798	- 39.1%
1991	1,712	-49.3%	2,185	- 54.5%
1992	792	-53.8%	1,081	- 51.6%

Source: Foundation for Research in Health Systems, Health Monitor 1997.

As it turned out, the breakthrough in control of the guineaworm disease (after 1990) was not achieved primarily due to the integrated

water supply, sanitation and health education, but due to the adoption of surgical extraction of the pre-emergent worm that broke the transmission chain. In other words, the principal method that led to success in guineaworm eradication was a medical intervention - perhaps not anticipated in the initial project design. In part due to this success, the project became increasingly divorced from the pilot project concept and became de-facto an implementation project for the eradication of guineaworm in the project districts. The other components of the project - improving the quality of water, control of other waterborne diseases, maintenance of handpumps, sanitation, community participation, health education (apart from guineaworm) - which were more difficult to implement and sustain satisfactory results gradually received less attention. By 1993, when extension of the project was sought, it was primarily on the grounds of completely eradicating guineaworm and to prevent a resurgence of the disease that might have occurred if the project activities reverted to the line departments. The 1993 POA therefore puts guineaworm eradication as the first objective and states that "certain activities which are of critical importance to guineaworm eradication may be funded by UNICEF and carried out by SWACH...Similarly, activities identified as essential broadly cover Training, IEC, R&D.. may be funded by UNICEF and carried out by SWACH in close coordination with /participation of the concerned line departments... Promotional activities are not central to our basic mandate i.e. guineaworm eradication. Hence these activities may be funded by GOR and carried out by respective line departments". The latter activities included such items as improvement of drainage, construction of washing platforms, household latrines and repair of broken handpumps.

Thus, by 1993 after 7 years of operation, SWACH had undergone a metamorphosis from an integrated water supply and sanitation project to one which had the "basic mandate" to eradicate guineaworm. This remarkable change could only have occurred because the pilot project concept was not firmly rooted in the original objectives nor built into the project design, which would have made mandatory the comparisons of key project strategies and activities with alternatives.

The project management structure for SWACH was an innovation which seems to have yielded considerable benefits in enabling speedy implementation, flexibility and a limited amount of community participation. The aim seems to have been to maintain a lien with the government departments (in order to coordinate between them and influence them) while retaining autonomy in decision-making. Again, if this organisational form had been designed with the aim of piloting new structures and processes, the benchmarks for comparisons should have been formulated. In doing so, it would have been necessary to state whether this new organisational form was intended as a replicable structure for other projects or for facilitating the normal activities of the

original line departments. The SWACH project structure has diffused to other projects, particularly those funded by external agencies, which have a clear focus and require implementation within a stipulated time frame. It is not surprising, for instance, that the SWACH structure has been adopted for the Rajasthan Integrated Guinea worm Eradication Programme or for education projects, such as Lok Jumbish. However, SWACH's organisational structure, processes and culture have had negligible impact on the line departments, as seen in the project documentation.

Capacity building within the existing administrative set-up was one of the strategies of the project but this was evidently not built into the project design. It is otherwise inexplicable that throughout much of its life, the project had little connection with the Medical and Family Welfare Department, despite the fact that most of the project objectives were health-related and the project finally ended up focussing on guinea worm eradication. There is also no evidence to suggest that the activities that finally reverted to the PHED and other departments were influenced by the SWACH culture in any way. Even the novel technique of guinea worm extraction did not find acceptability with the National Institute of Communicable Diseases that was responsible for technical expertise in implementing the National Guinea worm Eradication Programme.

Although experimenting with different organisational forms may have been difficult at the outset, the project, in its pilot phase, could have allowed for changes to be made with accumulating experience. Apart from this, comparisons with other new organisational structures, both within the governmental framework and in partnership with NGOs, should have been made. The decade of the eighties provided ample opportunity to do so with the establishment of a number of Technology Missions to implement centrally sponsored schemes in the social sector. A number of organisational forms were attempted in the education sector. In the National Literacy Mission, the emphasis was on making full use of NGOs and allowing local initiative. While considerably successful for the campaign period, the lien with the Adult Education Department was tenuous, with the result that the campaign left little impact on the department and activities could not be sustained once the initial infusion of funds subsided. An alternative model was tried in the Bihar Education Project, funded by UNICEF, where a registered society (with representation from various departments and NGOs) was created to manage the project, which was empowered to receive funds and take decisions. The society concept became more widespread in the implementation of the District Primary Education Programme, where a conscious effort was made to retain project autonomy while working with the parent department and using the existing technical institutions.

The SWACH experience seems to fall into NLM mould, with considerable successes being achieved during the programme period, but with no long-term effects on the working of the government machinery. The main issue, however, is that there was no real piloting of the new organisational structure created in the project.

The issue of time frame is also crucial in a pilot project design. Although originally intended as a five year project, SWACH finally lasted for almost a decade. This not only makes it difficult to evaluate the replicability of the project processes but also added substantially to the costs. (The original provision was for Rs. 12 crores in Banswara and Dungarpur, an additional Rs. 18 crores when the project was extended to Udaipur and final project cost estimates are about Rs. 48 crores after the 1993-95 extension). The time required to bring about the desired outcome is an essential component in deciding whether the project methods are acceptable and trade-offs between different project objectives may become necessary. Besides, not all project outcomes need necessarily have the same time frame. The supply of safe drinking water facilities clearly needs to have a shorter time frame than objectives such as raising the all-round quality of life of the tribal people. The danger, of course, is that those objectives that can be attained in a shorter time period would tend to overshadow those which take a longer time, but this should be explicitly taken into account in the design.

2.4

FINANCIAL SUSTAINABILITY AND REPLICABILITY OF SWACH

Analysing financial sustainability should be an inherent part of a pilot project. It does not appear to have been consciously built into the SWACH project design. This is reflected in the lack of necessary cost data in the project accounts. Much of the data on costs and related physical outputs come from different sources whose accounting periods do not coincide (SWACH Evaluation, 1994).

In order to judge whether the project was financially sustainable, it would be necessary to assess whether the annual recurrent expenses (at the end of the project) which are required to maintain facilities and undertake on-going facilities could be financed by the state government. The specification of these recurring activities/expenses is crucial for this purpose. For instance, the construction of new handpumps or conversion of stepwells is a one-time activity, but its regular maintenance is a recurrent one. The production of training materials for training the handpump mechanics is a one-time activity, but if periodic refresher training is envisaged, the latter should be included as a recurrent cost. The project documentation does not categorise activities and their related costs in this manner.

A rough idea about the financial sustainability of SWACH can be obtained by comparing the annual costs excluding construction with the total expenditure on water supply and sanitation by the Govt. of Rajasthan. The 1994 evaluation estimates that the annual per capita cost is about Rs. 14 (Rs. 13.46 in Banswara/Dungarpur and Rs. 14.15 in Udaipur) of which about Rs. 10 was on construction costs (Rs. 9.74 and Rs. 11.09 in the two regions respectively). Thus, the other costs amount to about Rs. 4 per capita; however, this estimate overstates the costs of sustaining activities, since it includes other capital equipment, training and all personnel costs. (The costs are averaged for the period 1986-1992). This compares with an annual per capita expenditure of Rs. 46 in 1990-91 on all water supply and sanitation schemes in Rajasthan. Clearly, if the costs of sustaining SWACH activities were indeed Rs. 4 per capita, the project would be unsustainable, since the additional costs amount to almost 10% of state allocations on water supply and sanitation. If, on the other hand, the costs of maintaining project facilities and activities were only Rs. 1 per capita, it is more likely that the project would be sustainable since it would have added only a small burden to existing expenditures. However, the state per capita expenditures are not the appropriate base for comparing the additional maintenance expenditures arising from the project as the former include capital expenditures which were about 50% of total expenditures on water supply and sanitation. If the additional maintenance expenditure of the project is compared with the recurrent expenses on water and sanitation, the project may still prove to be an unsustainable activity.

Moreover, such calculations would provide only an overall indicator of financial sustainability. Ensuring that the enhanced allocations actually do go into maintaining project activities would require paying attention to patterns of funds allocation across sectors and intra-sector allocations to particular categories of activities. This is related to the question of organisational sustainability and the final organisational responsibilities that would be made for locating the project activities (for instance, in which department's budget would the project activities appear under what head? What would be the mechanisms for transferring funds to other departments which may also have some responsibilities?)

An issue of special importance in the Indian context is the distinction between Plan and Non-Plan activities and the different sources of funding for these activities. A new project (pilot or otherwise) such as SWACH would appear in the State government plan and would be funded by the state government's own Plan finances or through Plan transfers from the Central government (including funds raised from external agencies). At the end of the Five-Year Plan or the completion of the project, the project activities are normally transferred to the Non-Plan category and are financed from the state government's own revenues (which included tax revenues transferred by the Central

government). The experience of projects, especially in the social sectors, is that personnel costs tend to be protected in this process, but allocations relating to operation and maintenance tend to be minimal. A pilot project such as SWACH should take these factors into account while determining eventual sustainability.

Financial implications of scaling up the pilot project can be analysed if relevant unit costs are available and the scale to which the project is to be expanded is known. Examples of relevant unit costs would be the cost of serving a habitation/village of defined population, the training costs per batch trained, the maintenance cost (including spares, wages, travel, etc) per handpump etc. It would also be necessary to assess whether these unit costs would hold for the new geographical areas to which the project would be extended or whether they would need to be modified in view of different terrain, population density, water availability, distances between villages etc.

Another issue is to decide which project interventions have proven to be cost-effective and should be replicated on a large scale. Since hardware costs dominated SWACH (construction costs alone absorbed nearly 80% of total costs, it is particularly important to evaluate the cost-effectiveness of these investments. The water quality assessment conducted in 1990/91 indicated that two-thirds of handpumps provided contaminated water. If safe drinking water is the desired output, the unit cost of providing potable water is three times higher than an estimate based on quantitative achievements, since only one in three handpumps constructed provided safe water.

The data discussed above are not available in the project documentation and it is not clear whether analyses such as these were envisaged at the time of designing the project. Again, one very rough indicator of the implications of scaling up SWACH to the entire state of Rajasthan can be provided by comparing the annual per capita costs on the project with the annual per capita expenditure on water supply and sanitation by the state (which includes capital and recurrent expenditure). Annual per capita expenditure on the project (Rs. 14) was a little less than a third of per capita expenditure on water supply and sanitation (Rs. 46), but it constituted about half the per capita expenditure on rural water supply and sanitation (approximately 60% of total expenditure on water supply is in rural areas). (These comparisons are not exact since the per capita expenditure calculated in the 1994 evaluation amortises some of the capital expenditure - however, since construction costs have not been amortised and they comprise the greater part of capital expenditures, it does not substantially affect the comparison). Assuming that scaling up to the state level would require the same level of provision per capita, extending SWACH to the whole of Rajasthan would require an enhancement of financial allocations for rural water

supply by about 50%. This is a considerable enhancement and would raise the issue of whether the project was replicable on a large scale.

Finally, there is the question of what sources of finance are available for providing the additional funds for either project sustainability or replication.

The finances of most state governments in India have deteriorated since 1987. In Rajasthan, there was a small surplus on revenue account up to 1991/92, but thereafter the revenue deficit has widened (Table 4). The gross fiscal deficit, which comprises the revenue deficit and capital expenditures and net lending i.e. the state government expenditure that has to be financed by borrowing, has increased considerably. Moreover, the revenue deficit comprises an increasing share of the fiscal deficit (27% in 1995/96), implying that borrowing was used to cover current expenditures rather than financing capital expenditures.

Table 4
Rajasthan : Revenue and Fiscal Deficits
(Rs. Crores)

	91/92	92/93	93/94	94/95	95/96	96/97
	Acc.	Acc.	Acc.	Acc.	Acc.	Rev. Est.
Revenue Surplus/ Deficit (+/-)	48.03	-109.49	-300.68	-424.75	-701.87	-487.32
% growth over previous year			+175%	+45%	+65%	
As % of Net State Domestic Product	0.24%	-0.47	-1.24%	n.a.	n.a.	n.a.
Fiscal Deficit	-792.4	-1048.6	n.a.	n.a.	-2574.3	-2162.1
Rev. Deficit as % of Fiscal deficit		10.4	n.a.	n.a.	27.3	22.5

Source; GoR, Budget Study, various issues and Reserve Bank of India Monthly Bulletin (special supplement on State Government Finances) various issues.

Table 5 shows that expenditure on water supply and sanitation has been more or less stable as a percentage of total budgetary expenditures at about 6%. Plan capital expenditures on water supply and sanitation

has absorbed a higher share of plan capital expenditures (between 10-19%) and the share has fluctuated because of the annual variations in investment spending. The share in non-plan spending is much lower (at about 4%) indicating that much of the expenditure on the sector is on new facilities.

Table 5
Rajasthan: Expenditures on Water Supply and Sanitation
(percentages)

	91/92 Acc.	95/96 Acc.	96/97 Rev. Est.
Expenditure on WS&San as % of ¹ :			
Total Budgetary Expenditure (Cap+Rev)	5.6	6.2	6.8
Total Non-Plan Revenue Expenditure	4.9	4.6	4.2
Total Plan Capital Expenditure	10.7	15.2	13.1

Note: 1. The numerator for each row is revenue and capital expenditure, non-plan revenue expenditure and plan capital expenditure on Water Supply and Sanitation.

Source: GOR, Budget Study, various years; Reserve Bank of India Monthly Bulletin (special supplement on State Finances) various issues.

In comparison to other states, Rajasthan spends a relatively high percentage of its state domestic product on water supply and sanitation and its per capita provision is also high (Table 6). In fact, among the fourteen major states, Rajasthan had the highest value on these indicators in 1990/91. However, this comparatively higher level of budgetary provisions still do not get reflected in improved supplies for the population because of the higher unit costs of provision in this geographically larger and more arid state. What is notable is the decline in the level of budgetary provision both in per capita terms and as % of NSDP between 1986/87 and 1990/91.

Table 6
Expenditures on Water Supply and Sanitation (current prices)
Per capita and as % of NSDP

	1986/87	1990/91
Per capita expenditure		
Rajasthan	60.09	45.98
All state govts.	19.78	31.16
As % of NSDP		
Rajasthan	2.86	1.10
All state govts.	0.75	0.66

Source: K.N. Reddy and V. Selvaraju, Health Care Expenditure by Government in India 1974-75 to 1990-91. New Delhi: Seven Hills Publications, 1994.

Equally important is the fact that a considerable share of the expenditure on the sector is actually financed by the Central government. In 1996/97, the share of the Central government in Plan capital expenditure in the sector was 39%, but in rural water supply schemes it was 52%. (Table 7). This includes about Rs. 2 crores received for water supply schemes under the National Guineaeworm Eradication Programme. In short, not only has the budgetary allocation for the sector declined as a share of state income and in per capita terms, but the state government has financed a smaller share of these expenditures from its own sources.

Table 7
Rajasthan: Share of Central Government in Water Supply and Sanitation

	95/96 Acc.	96/97 R.E.	97/98 B.E.
Share of Central Govt. in Plan Capital Expenditure of:			
Total WS&San	30.5	38.9	32.5
Rural Water Supply	48.5	52.5	43.5

In summary, the sectoral allocations for water supply and sanitation after showing an increase after the mid-eighties have apparently

declined in Rajasthan. Although these allocations are higher compared to other states, they reflect the difficulty in providing services in the state rather than a greater extent of coverage. Further, the expenditure, especially for the rural areas, has relied to a large extent on the availability of Central finances. The state government's willingness and ability to spend large amounts on this sector are not in evidence, especially given the precarious condition of state finances.

2.5

MONITORING AND EVALUATION

The nature of monitoring and evaluation in a pilot project as envisaged by SIDA would clearly be different from that undertaken in an implementation project. The difference lies in what is to be evaluated and how the evaluation is to be done. The benchmarks for marking comparisons are of course essential in doing this kind of monitoring and evaluation. Apart from the outcomes, the processes and structures also need to be evaluated, from the point of view of their financial and organisational sustainability and replicability in different social, fiscal and policy environments. The methodology for evaluating changes in process and structures is much less developed than that for measuring outcome changes and would require considerable skill and refinement in applying to the particular questions posed by the project.

Many studies and evaluations were commissioned within SWACH but SWACH does not seem to have been structured as self-learning and adapting organisation. For instance, several studies had shown that the contamination of handpump water was at an alarming level (even higher than shown by studies done in other states). Although this would seriously jeopardise the fulfilment of some key project objectives and also affect the cost-effectiveness of the project, there is no evidence that SWACH reoriented its strategy or activities to rectify it. On the other hand, although guineaworm eradication had become one of the main objectives of the project, there was no attempt to assess the effectiveness and economic implications of the SWACH approach with a view to disseminating it. In short, despite the considerable allocations for research and evaluation, SWACH did not differ from most government departments in commissioning studies but failing to use them or not commissioning the most relevant type of studies.

Assuming that the aim of the pilot project is to scale up for eventual state-wide coverage, monitoring and evaluation would have to address the following issues:

- Fiscal sustainability - whether the maintenance of the physical facilities and other programmes required for sustaining outcomes are available with the state government and whether it is willing to continue to spend on these programmes

- Fiscal replicability - the cost-effectiveness of the strategies adopted by the project and the additional funds required by the state government in order to extend the project to other districts or target groups. Fiscal indicators, such as the current spending on project-related activities, projections of funds availability from different sources in the future and the ability of the state government to generate these resources are required to monitor this.
- Organisational sustainability and replicability - the issues here are infinitely more complex to assess. The following questions would be pertinent: is the organisational structure that has proved successful for small-scale experimental projects suitable for large-scale implementation projects? Does the ethos of different departments permit the adoption of new structures, processes and culture? Can the project structure work in states which have a different administrative culture?

If transference to line departments is envisaged, the issues are even more problematic. There is always the possibility that the project management structure cannot be replicated. All externally-funded projects are always relatively better endowed not only in terms of funds and facilities, but even personnel. The quality, motivation, commitment and professional expertise of the project personnel are invariably better; they tend to be younger, more ambitious and dynamic; and these qualities are shared by both the professional as well as the support/administrative staff. Apart from financial rewards, the methods of selection of project staff and the desire of the state government or concerned department to ensure the success of the project usually ensures this. Further, being under the scrutiny of outside agencies and having a chance to interact with other professionals usually sustains motivation and commitment during the project period. The ability to replicate this within the normal state administrative machinery would necessarily be limited. This would affect the assessment of the replicability of the overall project.

This part of the report summarises lessons from the SWACH Project to offer a short list of imperatives that need to be considered in a pilot project. Details have already been provided in section 2.

- Analysis of policy environment and sectoral issues; while the policy analysis will provide inputs in eliminating *ab initio* any impediments at broader levels, it may also help in choosing relevant sector (for intervention) on the basis of better policy-legal framework that it may provide for experimentation. Within a sector technical, economic, institutional and social issues need further analysis to firm up the technology package, evaluate financial sustainability, determine institutional structures and devise social interventions for launching a pilot project with capacity to replicate and upscale.
- The pilot projects should have an explicit statement about strategies, systems and procedures that are being piloted and the indicators to judge their effectiveness.
- Efficacy of a pilot project is determined by its better performance in relation to other strategies/projects that may have been tried before or may be under implementation. It is therefore necessary to specify benchmark for comparison.
- SIDA interventions are of specific duration. For sustainability of intervention, it is necessary to ascertain capacity of state government (or any other project implementers) to provide for recurrent costs after the SIDA intervention is over. Replicability is determined on twin principles of (i) cost effectiveness as demonstrated by pilot project results and (ii) capacity of state/central governments to invest, as revealed by their budgetary trends and plan documents. Replicability may also be hampered by work culture. Hence project structure ought to be such as can be adopted by line departments or the state governments should be willing to bring about substantial change in the functioning of its departments.
- In pilot projects, it is not only project outcomes that need to be monitored, but also the processes and structures, their financial and organisational viability, sustainability and replicability in different social, fiscal and policy environments. The methodological development in measuring change in processes and structures is at a nascent stage and hence it is important that adaptive mechanisms are developed for self learning within the project organisation.

It is clear that the major investment in the social sectors in India is made by the governments; both the central government and state governments. They are also the major implementers through the line departments. The investment trends (as shown by budgetary allocations) reveal the social priorities adopted by the governments. If the purpose of SIDA investment is to induce an alteration in these priorities and the governments agree to do so, this must find a reflection in the budgetary allocations. If the commitment of a government to a particular social sector is not matched by the increased allocation, the new activities are unlikely to be sustainable. Given the current position of state finances, it is difficult that the governments would accept such a conditionality. Nevertheless a movement towards such a conditionality on the basis of a demonstrated success is desirable. Similarly, since the line departments are the major implementers of programmes (despite the presence of NGOs), the purpose of the institutional arrangements should be to reform the departments themselves. While it is possible to work out arrangements which bypass the line departments, such arrangements are unlikely to lead to any significant upscaling of the pilot projects.

In addition to the above, the following recommendations are made which will help in achieving the objectives of pilot projects :

4.1 *SELECTING THE SECTOR(S)*

Within SIDA's broad mandate of investing in the social sectors that have the most immediate impact on improving the quality of life of those most affected by poverty, a rigorous analysis needs to be undertaken to determine where SIDA's funds should be allocated. Specific issues to be analysed for each sector include:

- key indicators of availability or utilisation of services, especially with reference to particular population groups such as women, tribal people, etc, to determine areas of greatest need.
- the policy statements of Central and state governments
- the budgetary provisions of Central and state governments
- the funds provided by other external agencies
- the existing institutional arrangements, including any innovations or changes brought about by other foreign-assisted projects
- synergy between different sectors (eg. Education and health; health and water/sanitation, etc.)

For SIDA pilot projects, the overarching goal is to test new strategies and processes for achieving desired outcomes in the sector. This goal needs to be explicitly stated and should permeate the design of all the components of the project. The choice of specific strategies and the creation of new institutional structures and processes should be undertaken on the basis of relevant technical, economic and social analysis that clearly spell out why a particular strategy is being adopted. Since the aim is to judge the efficacy of these strategies, an analysis of existing strategies that would provide the framework for comparisons should also be undertaken. Alternatively, the project design can explicitly articulate different strategies within its own framework and comparisons can be made of these alternative strategies.

4.3

CRITERIA FOR EVALUATION

The project design should take into account the evaluation of the key project strategies from the point of view of technical efficacy and feasibility, cost-effectiveness, the effectiveness of new managerial structures and processes and the broader impact on social relations. The types of evaluation to be undertaken and their broad design should preferably be undertaken at the time of launching the project. In a pilot project it is necessary to ensure that evaluations are done both rigorously and in a timely fashion. Another important issue is to ensure that the results are discussed and utilised. In addition to these formal mechanisms for evaluations, the project structure (including the MIS) should have a mechanism for being receptive to unexpected results and unanticipated problems, as well as of learning from experience gained from other projects and programmes.

4.4

ANALYSIS OF SCALING UP THE PILOT PROJECT

This analysis would start with a statement of the level to which the project might be scaled up (several districts, entire state, several states or entire country) and would comprise two parts. The first is to estimate the financial resources that would be required for upscaling and the ability of the state(s) to raise the additional resources. The second part would deal with the organisational resources required including the changes in structures and processes that may need to be brought about in line departments, additional training requirements etc. This analysis should make a realistic assessment of whether the project can be scaled up in reality.

DISSEMINATION OF RESULTS

Part of the success of a pilot project and its ability to be replicated depends crucially on the extent to which its objectives, strategies and results are disseminated and assimilated by policy makers and others. The mechanisms for doing this - for different groups of people - should be taken into account in the project and resources made available for this.

Faint handwritten notes and diagrams, likely bleed-through or a rough sketch of a process flow. The text is mostly illegible due to fading and bleed-through, but some discernible words and phrases include:

- ... and expectations*
- ... to be*
- ... are the*
- ... and*
- ... on*
- ... model*
- ... and identified*
- the change*