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# Gender Aspects of Urban Water Supply and Sanitation Services

a compilation of abstracts on Woman, Water, Sanitation

**COLLAGE**

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**Gender Aspects of Urban Water Supply  
and Sanitation Services**

A 'collage' of abstracts taken from the  
Annual Abstract Journal 'Woman, Water, Sanitation'

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## FOREWORD

Water is an increasingly scarce resource requiring careful economic and environmental management . This situation is exacerbated by rapid population growth and urbanization in developing countries. These factors also make environmental sanitation a particularly important issue. Appropriate sector policies and practices are needed in order to achieve environmentally sustainable development . These involve the adoption of a comprehensive policy framework, the treatment of water as an economic as well as a social good, decentralized management and delivery structures, greater reliance on pricing, and fuller participation of stakeholders. There are various groups of stakeholders, and their different preferences and roles need to be taken into account. Women and men, for example, may have different tasks and ideas related to sector activities, and so it is important to consider gender differentials along with other relevant social factors.

We are pleased to issue *Gender Aspects of Urban Water Supply and Sanitation Services, a compilation of abstracts* taken from issues of the abstract journal *Woman, Water, Sanitation*, published by IRC.

As always, we would like to thank the Government of Norway for their financial support for the abstract journal over the years.

Wendy Wakeman  
PROWESS  
UNDP-World Bank Water and Sanitation Program



**PROJECT PREPARATION**



Crawford, Sheena (1990). *Republic of Yemen, Rada water supply and sanitation project : baseline survey, period October-November 1989 : final report*. Arnhem, Netherlands, Euroconsult.

In conjunction with the Rada Water Supply and Sanitation Project (RWSSP), a baseline survey on environmental health was carried out in 339 households randomly chosen from 12 urban districts in Rada. The survey was biased in favour of female participants since the house was chosen as the unit of reference, and male/female roles in Yemen are well-defined. Results were to be used to develop appropriate health education messages.

Interview teams consisted of local people, men to interview men and women for women, trained in a two-day workshop. Sensitive questions on income were deleted or left until the end of the interview. The questionnaire, training methods, and other pertinent information are included in the appendix.

At the time of the survey electricity supply was erratic, so 65% of those interviewed (no distinction was made between men or women) stated that its improvement was their major concern. This was followed by sewers (11%) and water supply (10%). As their second choice most people chose water supply (46%) and sewers (20%). Although respondents were unwilling to state specific amounts, experiences from other towns indicate that people are willing and able to pay for services.

Although the original formulation of the RWSSP did not contain "Women and Development" as a distinct objective, there has been a commitment to promote women's participation from the outset. The RWSSP and other development projects have opened up opportunities for professional development of women by employing them as project personnel. The Rada's Non-Formal Training Centre for Women, which supplied four women for the interview team, started an environmental health training course in February 1990.

Ninety-seven out of 223 women respondents stated that water-carrying and doing the laundry were their most tiring jobs since water has to be carried to upper storeys of the houses, and most houses (285 out of 339) have no electricity to run their washing machines. Half the women with a generator for their washing machines still claimed that water-related tasks were the hardest work: water shortages and the lack of sewerage meant that even washing machines have to be filled and emptied by hand. More women (52%) than men (36%) stated they were ill at the time of the survey. The percentage of women (33%) and men (74%) claiming to be able to read and write reflected more the desire for literacy than the actual situation. While 75% were aware of the container programme for garbage disposal, taking rubbish was delegated to children in 54% of the cases. The containers are too high for most children and some women to reach. Men and boys play a negligible role in garbage disposal: males are responsible for this task, which is considered dirty and lowly, in only 8% of the cases.

Questions on personal hygiene focused on hand-washing practices and washing of children. Most people do not favour running water or soap in hand-washing because of the social practice of washing hands together in a bowl, and water scarcity. Daily washing of children was not common (18%) for fear of causing colds. Respondents were aware of the health risks of mosquitoes, flies and fleas, but not always of the places where they bred.





Grady, Heather, et al (1991). *Assessing women's needs in Gaza using participatory rapid appraisal techniques*. RRA Notes: no. 10, London, UK, International Institute for Environment and Development, p. 12-19.



In 1990 a group of national and expatriate researchers organized a two-week rapid appraisal in one rural and one peri-urban Palestinian community. Methods used were semi-structured interviews and direct observation with individual women, groups and key informants. Involvement of Bedouin women was hampered by the absence of a Bedouin team member. A mobility map and daily routine diagram were designed to collect supplementary data on women's freedom of movement and patterns of work. Findings cover education, health, work in and outside the house, decision-making and community participation. Urban health awareness is higher, but women face more environmental problems, including overcrowding, and poor solid waste disposal and sewerage. Piped water supply has facilitated their daily lives. Rural women work both domestically and in agriculture and contribute considerably to family income, but their mobility is strictly controlled. In the urban area, domestic decisions are made jointly, but with strong influence of the husband. Rurally, mothers-in-law are the key persons in domestic decisions. Women's participation in public meetings and neighbourhood activities is rare and requires both organization and confidence building. On the basis of the study, different projects will be developed with rural and urban women.

Doucet, Andrea (1987). *Women and water: case studies from Latin America and the Caribbean*. In: Zandstra, Ilse (ed). *Seminar on the participation of women in water supply and sanitation programs*. (IDRC Manuscript Report; no. 150), Ottawa, Canada, International Development Research Centre.

Despite all evidence, the needs for women's involvement are not recognized and the methods not yet sufficiently adopted by project donors and agencies. Projects are conceived as being technical in nature, hygiene education is underrepresented and coordination with other sectors is lacking. Participatory socio-economic feasibility studies with women can reveal women's interest and capacity to pay. Women in a low-income urban settlement in Cuzco had already helped to build five watertaps. They wanted sewerage, nutrition centres and more taps, but not latrines. Latrines did not exist in their rural area of origin and a course on latrines had been "condescending,

preachy and critical of the women's traditions". In the Grand Cayman Islands 16% of the target group for urban sewerage could not afford the planned flat fee. Eighty percent of this group were female heads of households. In a peri-urban settlement near Cochabamba, water and latrines were first priorities and the women were willing to contribute. They spent up to 50% of the family income on buying water from trucks. Latrines were known to these urban women and the Ministry of Health had conducted an effective and acceptable hygiene course in the community. Effective hygiene education is participatory. It involves female opinion leaders as promoters and helps women install the facilities required to implement the hygiene messages, e.g. laundry basins and bathing cubicles. Participation and education activities of related projects should be combined, to make optimal use of women's limited time and opportunities. A mother and child health project in Honduras reached women in 1000 villages twice a month, but the water supply and watershed conservation projects in the same area did not use these meetings as a means to communicate with them.

Kinley, David (1992). 'Kumasi's people pay for better sanitation services'. In: *Source*, vol. 4, no. 1, p. 4-9

Roughly three quarters of the population of Kumasi, Ghana's second largest city, does not have adequate sanitary facilities. Forty per cent rely on overused and unhealthy public latrines that have to be paid for by the users. After 40 years of traditional sanitation master planning, based largely on a high-cost technology, the city still had no comprehensive sewerage system, leaving most of the city unserved.

The institutional problems began to be tackled in 1989 with the Kumasi Sanitation Project, which focused initially on home and public latrines. The first step was to elicit the needs and preferences of people in the various communities in Kumasi. A "willingness-to-pay" survey was conducted. The author does not mention which community members were interviewed, nor does he say whether women and men were interviewed in separate session. Families on average were willing to pay about the same amount for sanitation facilities in their homes as they paid for rent, electricity or water. A home latrine programme was carried out to test whether people in three varying neighbourhoods would be willing to invest their own money in new or improved facilities. A two-year loan to finance the investment came from a revolving fund managed by a community sanitation committee. Other involvement of the community in the testing phase is not mentioned. Latrine construction was carried out by a local private contractor. Public latrines were suffering from years of

maintenance neglect. Five private contractors took charge of twelve latrine sites serving more than 20,000 people daily. The tanks are now emptied twice a week and insecticides are applied regularly to control disease.

The success of the pilot projects has led to the development of a larger strategic sanitation plan for the city. It aims to provide the entire population of the city with improved sanitation services by the end of the decade. The new approach will employ a range of low-cost, market-oriented solutions to address various economic and demographic conditions. But its adoption will take strong political leadership as many metropolitan assemblymen want to see water-borne sewerage systems installed in their communities.

Macharia, L. (1992). *Sanitation options for Kibera low-income area in Nairobi*. Tampere, Finland, Tampere University of Technology

The aim of this study was to propose practical alternatives to improve sanitation in Kibera. Kibera is a squatter settlement occupying around 2.5 km<sup>2</sup> about 7 km from downtown Nairobi. The population is about 450,000, living at a population density of 180,000 per km<sup>2</sup>. The houses are made of temporary materials. The area is poorly served with basic infrastructure. The residents are mainly of very low socio-economic status. The study included a field survey to identify the needs of the residents and to find out their ability and willingness to pay for basic urban services. The opportunities for community participation and management were looked into. Although the report

refers to women and their living conditions, it is not clear whether they were involved in the survey.

The author concludes that the residents have a willingness and an ability to pay for basic services provided at a level they can afford. It is also suggested that the scope for community participation in Kibera is wide.

A number of issues are discussed which represent prerequisites for the successful implementation of basic infrastructure projects in Kibera. Among these are the provision of access and solving of land tenure issues.

Technical options proposed include shallow sewers for excreta disposal while lined major drains and unlined minor drains are recommended for stormwater drainage. The author recommends that the main water reticulation system should be provided by the Nairobi City Commission (NCC), while community or individuals could be mobilized to construct minor water lines. Sullage disposal could be either with excreta or stormwater disposal. It was recommended that solid waste management could be either partially or fully community-based. Small plot toilets and bathrooms were preferred to communal ablution blocks serving many plots.



Whatever options were chosen for the basic sanitation of the area it was emphasized that community participation should be an integral part of the project while in the long term the objective should be total cost recovery. It was noted that adopting a community participation approach in an upgrading programme may require quite some changes to the existing infrastructure and organizational structures. At the level of the community, organizational and technical skills have to be developed. At the level of the relevant authorities e.g. of NCC, personnel will have to be trained in participatory activities, and at the national level, organizations may need restructuring to incorporate a community-based strategy. Throughout the document no explicit reference is made to the potential role of women in these processes.

Damen, Annette (1993).  
*Intra-household activities and attitudes regarding water, health and sanitation in Hai el Tadamon : a study for the Hai el Tadamon water project, Gedaref, Sudan.*  
 Wageningen, The Netherlands, Dept of Household Studies, Agricultural University, Wageningen

The Dutch University Gedaref Assistance Programme wants to supply the peri-urban neighbourhood Hai El Tadamon with safe and cheap water through a distribution network with 18 standposts. After completion of the project the National Urban Water Corporation will be owner of the water system and therefore responsible for its operation and maintenance. Still, it is intended that a Hai El Tamadon Water Committee is involved in project preparation, management, operation and maintenance. Along with a chairman, a treasurer and a secretary the committee will consist of one female and one male member of each of the six blocks of the neighbourhood. Supervision of the standpost and fee collection will be taken care of by one woman and one man per standpost, who will be employed by the project.

It was felt that before starting technical implementation attention should be paid to the health and sanitation component of the project. In order to gain insight into the intra-household activities and attitudes regarding water, health and sanitation before designing a hygiene education programme, a study was done. Research questions concentrated on attitudes and practices related to water handling, food handling, personal hygiene, waste disposal, knowledge related to health and diseases, and (useful) women's networks and organizations. Data were collected from women through informal interviews using open-ended questions, participatory observation and informal conversations with individuals and small groups.

Apart from general hygiene behaviour data relevant for setting up a hygiene education programme, the study revealed interesting information related to water prices and willingness to pay and women's organizations.

With the project the service level will go down. The workload of women will increase because they will have to carry the water from the standpost, whereas at the moment water vendors bring it to their doorstep. Moreover, the vendors can be called for when needed. The standposts however, will only deliver water once every two days at possibly inconvenient hours. In spite of this increased workload women opt for standpost water since water bought from water vendors is three to four times more expensive than water from the standpost.

According to the women water vendors need to be involved in the project in order to keep up a delivery system for old, sick and pregnant women and for those women who are not allowed to leave their homes for a visit to the standpost. Water vendors then need to be allowed to tap water from the standpost. Project staff is hesitant to allow this, since it will be difficult to prevent water vendors from selling the cheap standpost water outside the neighbourhood.





## PROJECT IMPLEMENTATION - WATER SUPPLY



Sudjarwo, Christine (1988). *Final report on the introduction of PVC handpumps in Indonesia and the involvement of women in handpump technology*. Yogyakarta, Indonesia, Yayasan Dian Desa.

To initiate the project, two staff members of the NGO Dian Desa were trained and a feasibility study was carried out. Over half of the households in three rural and three urban hamlets belonged to low-income classes and used either unlined wells or rivers. The users had a clear idea of the pro's and con's of handpumps. Maintenance, cost, poor water quality from rusty risers and drying up were seen as main problems, and convenience, small space, easy handling, protection from dirt and safety to children as main benefits.

Informed about the characteristics of the pvc pump, its costs, credit conditions, maintenance training, guarantee period and the availability of a service and spare parts supply system afterwards, 108 families decided to install a pump. The number of pilot pumps was therefore raised from 40 to 120. Consultation during planning showed rural users preferred dug wells, as they can be deepened, are cheaper and allow contributions in labour. Peri-urban families, who have less space and time and more cash, preferred drilled wells. Private pumps were preferred over public or group pumps, to avoid conflicts on sharing, amount of water use and payment. Users contributed towards the construction costs of Rs 50,000 and bear all costs of maintenance and repair. Both men and women were trained for maintenance in small village sessions, and given a locally adapted manual

and tool kit. Loan repayment is either in 20 monthly instalments (95%) or after the harvest (5%) and is on schedule for almost 90% of the households. After 6 - 18 months, all pumps were working, with 2% broken at the time of survey and 16% having problems of well recharge.

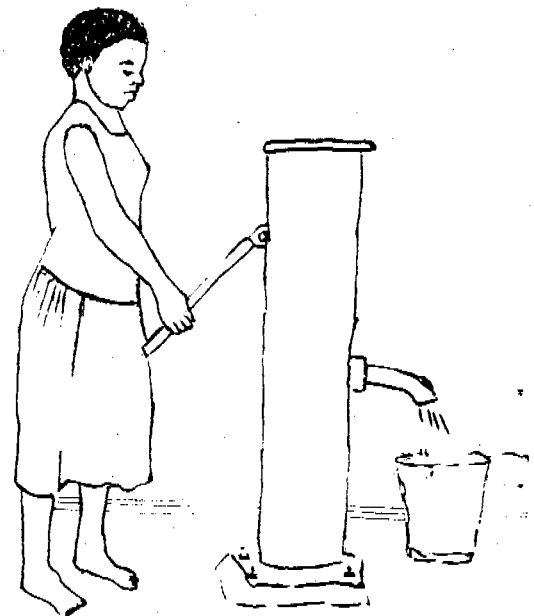
The main problem is broken pvc rods, which requires better control of licensed manufacturers.

Preventive maintenance consists of greasing (77%), and fencing and roofing (27%), and is done mostly by women (54%), while the men do simple repairs (24%). All feel training is useful and over half have passed on their skills to other pump owners, neighbours and family members. In all hamlets, one person is in charge of spare parts supply. The NGO is in charge of distribution, loan repayment and follow-up through scheduled monthly visits.

Most problems occurred during the first six months, with 14% of the users handling the problem themselves and 30% calling in and paying the mechanics of the NGO. Ten families (8%) have had major repairs, at an average cost of almost Rs 2000. Main reasons for non-participation in the project are cost (19%), satisfaction with own well (25%), renting the house (16%) and preference for traditional wells (6%). Sixty percent of the pumps are shared by two or more families and over 90% of the users have been contacted by others wishing to install

a private pvc pump, one third of them from another village. Only 10% had problems with repayment, mostly from untimely collection.

The main reported benefits are socio-economic rather than health: reduction of time and energy in water collection for women (average distance has been reduced to a maximum of 500 meters and an average of 5 to 32 meters); use of water and time for income-generating activities (48%); improvement of family welfare (37%); better neighbourhood relationships (27%); and constructing other hygiene and environmental provisions, such as toilets, washing facilities, bathrooms and drainage channels.



Thacker, Prabha (1993). 'Women and water: equity and gender'. In: Pickford, John; Steele, Rowena and Shaw, Rod. *Water, environment and management: proceedings of the 18th WEDC Conference, Kathmandu, Nepal, 30 August - 3 September 1992* Loughborough, UK, Water, Engineering and Development Centre, Loughborough University of Technology. p. 279-282

The paper explores women's roles in Nepal concerning water supply and sanitation. It is explained that women in this country, whether urban or rural, have traditionally been viewed as basic managers of water systems. Women and girls in all regions of Nepal are deeply entrenched in water-related activities that revolve around daily household activities, and during festivities and religious events. When the taps run dry or when water is scarce, it is women who bear the brunt of the difficulties. And even when the quantity is not so much a problem, after the water enters the supply system drinking water can be contaminated through leakages and infiltration. The author noted poor handling practices and bad storage facilities as causing contamination of water to dangerous levels before it is used for drinking.

Environmental management is seen as becoming a critical factor in Nepal's water supply. Water resources are affected by both physical and human interactions. Deforestation, soil erosion, over-population, pollution and urbanization in Nepal are placing greater stress on the environment, and subsequently upon women. Receding

water sources, deterioration of natural water supply systems, water pollution at source and in distribution systems, and lack of repair and maintenance all represent factors which force women and girls to spend more time looking for and carrying safe water.

A link is made between sanitation and water supply. It is seen as a problem that sanitation in Nepal is not viewed as being anyone's responsibility. This is amply illustrated by the deplorable situation in the Kathmandu Valley. The area is known to have the worst sanitation conditions in Asia. The major cities of the Kathmandu Valley have very poor sewage systems. Sewage pipes are found in close proximity to drinking water pipes, and the intermittent supply (2-4 hours daily) increases the risk of contamination by sewage. Leaks and seepage are common. Crowding of people into the cities, random construction and building works, unplanned housing and public works, lack of community development and community benefits, all contribute to perpetuating the chaotic, unsafe and unhealthy conditions of living in the urban areas of the Kathmandu Valley.

The paper ends with a list of constraints which limit women's participation in water supply and sanitation projects, followed by a list of basic strategies for women's involvement under the following headings: a clear cut policy; institutionalization of the concept of women's role in water supply programmes; strengthen women's involvement in user's committees; training programmes; incentive schemes; and environmental education.



UNICEF (1994). 'A cost study of rural and peri-urban water supply and sanitation in Benin'. In: *Global meeting of UNICEF WES professionals: Bangalore, India, 25-30 March 1994*. New Delhi, India, UNICEF Regional Office for South Central Asia

First an overview is given of the current state of affairs in the WES sector in Benin. In 1993 approximately 45% of the rural and 65% of the urban population had access to improved water supply; for sanitation these figures are much lower, respectively 7% and 48%. No sullage and hardly any refusal disposal system is available. Currently international organizations, foreign and national consultancy agencies, small private firms and NGOs are working to improve this situation.

The study subsequently appraises different technological choices and organizational arrangements to give recommendations to reduce costs and to increase cost efficiency and cost sharing. Construction of traditional small diameter wells and simplified piped systems will reduce costs for operation and maintenance. On-site sanitation precludes expensive sewage systems. The improved Mozambique latrine ('sanplats'), watertight cess pits or raised composting latrines for areas where the water table is high seem viable models. Simple soak-aways reduce the problem of sullage disposal. Refuse can be disposed of by using it as compost or collected and burnt, buried or composted.



Proposals concerning cost reduction for institutional arrangements include training local craftsmen, and contracting national private firms and consultancy agencies instead of foreign companies. Local development groups and health services can be encouraged to take up sanitation activities. They can start dialogues in the communities for a better understanding of the importance of sanitation and more user involvement in choices concerning technological design and institutional arrangements. Interesting is the inclusion of cost appraisals of 'animation' and health education activities. On average these take up less than 5% of project budgets. The study recommends to allocate more resources to develop an adequate structure that promotes grass roots development.

Discussions on cost recovery and cost sharing now take place at national political level, but they should involve lower levels and users as well. The idea of cost sharing implies a more equitable allocation of scarce resources. Therefore the issue of paying different rates by poor and rich community members and parts of the country should be an important issue. Proposed studies to assess willingness to pay need to be reviewed to take into account local conditions to give realistic assumptions. More information is needed on people's real behaviour and actual monetary resources. The present study indicates that many people are not able to pay for services. They are poor, and are asked to contribute towards the costs of health and education services as well. Willingness to pay is linked to the accessibility of water and not to water quality.

The cost appraisals and recommendations do not comprise any gender distinctions/analysis.

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Kwaule, Fabiano (1993). *Gender and peri-urban water supplies in Malawi: paper presented at the Workshop: Gender and the Development, Management and Utilization of Water: Lessons Learned and Strategies for the Future, Stockholm, December 1-3rd 1993*

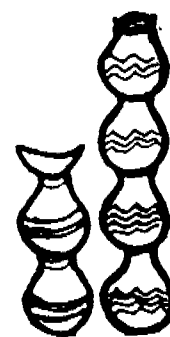
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In Malawi it is estimated that up to 60% of the urban population live in the fringes of the urban centres, where even the most basic facilities are not provided. In 1981 the Urban Communal Water Point Project was launched to provide potable water at an affordable cost to low income groups. As a result, project areas for further improvement were identified. As a second phase to the Public Standpost Water Supplies Project the Piped Supplies for Small Communities Project was implemented as a pilot demonstration project. The main aim of this project was to stimulate the development of appropriate and sustainable methods to plan, implement and manage piped water supply systems (including waste water disposal) with full community involvement.

No gender analysis was carried out and the project personnel assumed that the committees responsible for managing the communal water points would automatically be dominated by women. However, the composition of the committees turned out to be between 80-90% men. The male-dominated committees were not performing satisfactorily mainly because the majority of the men were out of the villages most of the time. Not consulting women during the planning phase also resulted in poor location, inconvenient design and subsequent wrong use of facilities.

To increase the involvement of women in the management of the water points new strategies were developed. The following practical measures were undertaken (1) guidance of the committees during elections; (2) development of positive attitudes of men to the involvement of women; (3) separate consultation of women during meetings; (4) use of male and female extension workers; (5) involvement of women in design and location of the communal water points. Their results were encouraging. More women occupied key positions in the committees. Special training programmes were organized for women which aimed at increasing their leadership/management capacities. The female-dominated committees were not only more active, membership of the water points improved, as well as financial management and maintenance of the water point surroundings. Hygiene education and sanitation promotion also had more impact. On the other hand, collaboration between the female committee members was not always easy, leading to resignations from the committee and migration of users. It was also observed that female-dominated tap committees perceive keeping tap surroundings clean as their main duty.

Simply including women on water management organization is not sufficient. The degree and quality of participation of women and men during the whole process of a project are essential for a sustainable impact.





ENDA America Latina and Habitat International Coalition (1994). *Mujer y calidad del agua: estudio de caso Bogotá - Santa Marta, Colombia*. Mexico City, Mexico. Coalición Internacional Habitat.

This case study gives the results of the Appropriate Technology for Women (PROTAM) project in two cities in Colombia. A national study in twenty cities on how women deal with the urban crisis gave lack of reliability, distance and poor quality of water as major problems.

The PROTAM project trained women through participatory workshops and games on the relationship between water quality and health and helped them to install, operate, maintain and manage water filters using slow sand filtration in crèches to eliminate the need for boiling the drinking water. Educational materials include a game on appropriate technology to raise the awareness of children and husbands. Laboratory tests are reported to show that the filters produce E-coli-free drinking water, but no hard data are included. Wrong siting caused initial damage and breakage and led to a workshop whereby the causes of problems were identified and the women trained on better location and operation and maintenance. Since 1993, the mothers keep a logbook on the functioning of the system. The women reported more time and space (no more water boiling and storage); less anxiety from fear of children getting water-borne diseases (cholera!); enhancement of analytical, technical and managerial skills; more self-confidence; validation of existing knowledge and more dialogue on water and health between men and women. Credibility and acceptance requires involvement of also others: medical staff, health promoters and fathers.

Whitaker, Helen (undated, c. 1993). *Participación, mujer y proyectos de abastecimiento de agua: marco para una metodología*. Tegucigalpa, Honduras, Unidad Ejecutora de Barrios Marginales, SANAA. (Participation, woman and water supply projects. Framework for a methodology)

The Executive Unit for Marginal Communities (UEBM) implements water supply projects in low-income urban settlements under an agreement between the national water agency SANAA and UNICEF.

Aim is to reduce water-related diseases by a more cost-effective drinking water supply using non-conventional technologies. These include: bulk supply to community storage reservoirs, small piped systems from boreholes and tanker supply to community reservoirs. This document describes the position of women in the *barrios* and their roles in the projects. In general, 33% of households have a woman as single head; in the *barrios* this is 37%. Women collect the water and are affected by its poor quality, difficult access and high cost (30% of income to vendors). Water use is 20% of that of a middle-income family. Water from the new projects is cheaper; burdens decrease and hygiene improves. Existing gender relations limit women's project participation - yet women take an active part. They initiate projects, through husbands, as women's leaders and through women's organizations. They learn about the project in a general assembly, which more women attend than men, or through the socio-economic feasibility study. They often informally promote the project. UEBM decides on the technology. The women provide labour or catering, depending on accepted gender divisions. The

general assembly elects the water committee, organizes the self-help, employs local staff and manages the system. Paid functions are divided according to gender: men are operators, women secretaries and (paid) tap attendants/ kiosk holders. Women make the best kioskholders: they are motivated and stay in the community. Of the 21 water committees, 91 members are men, 40 women. Four committees are all-male. Women are elected as secretary (57%), member (36%), treasurer (33%), or auditor (11%). Female treasurers proved more careful than males with regard to using the funds for the benefits of the family and the children. Women take up a leadership role in water more easily than for other aspects because it is a great need and they remain in their neighbourhood during the day, whereas the men usually work outside it. Reasons for their support are both practical and strategic (self-esteem, recognition, new skills). Elected women are generally supported by their husband (when present) and the community at large. They have a double job, but manage to organize their time. Limitations to women's participation are: the sectoral character of the project; few female promoters (3); no special attention to women in the participation process; existing gender relations and concentration of staff on working with the committees and not the community at large. Participation of the community in decisions on the type of project and knowledge of the links between water, environmental sanitation and health need to increase. On the basis of this framework, the project has asked the consultant to develop a guide for women's involvement

Mikkelsen, Britha; Yulianti, Yanti and Barre, Anton (1993). 'Community involvement in water supply in West Java'. In: *Environment and urbanization*, vol. 5, no. 1, p. 52-67

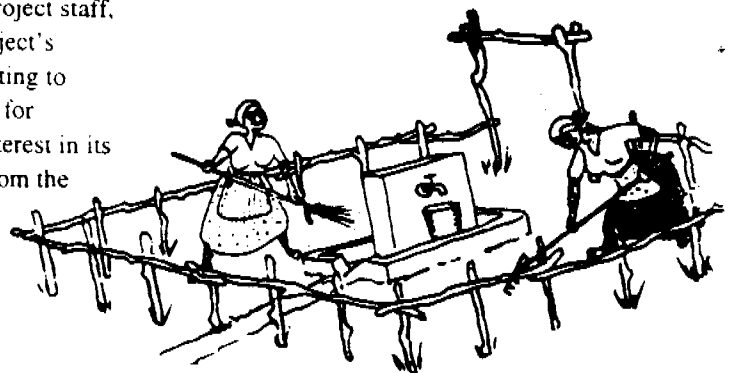
This paper describes a Danida-assisted water supply programme, the "44 Ibu Kota Kecamatan (IKK) Water Supply Project", underway in West Java, which involves households in determining the level of provision and location and in ensuring the management and maintenance of house connections and public taps for lesser and better-off sections of communities in minor towns. The complexity of the political administration of West Java, and of the demographic, socio-economic and cultural make-up of the 44 towns involved in the IKK project call for great flexibility in community involvement approaches, and for motivated and qualified field staff.

The original concept of the IKK water supply system, based on the water use practices of the mainly Islamic population, involved continuous water flow into water storage basins with flow restrictors to allow 50 l/house connection/day as well as 250 l/public tap/day for users without connections. Because this concept adopted a top-down approach involving the provincial water supply project, the Provincial Monitoring and Development Unit and district water agencies situated in district capitals, problems arose because the IKK systems are implemented in sub-district capitals where less experienced staff are responsible for customer relations, operations, and maintenance. The shortcomings of the first IKK schemes based on the original design criteria include poor public tap sites due to lack of community involvement, technical problems with house connections, inflexible standards for setting targets for connection points and finally, since actual demand was insufficiently reflected in planning, reduced cost-effectiveness.

This has led to a new participatory approach for IKK projects emphasizing community involvement in technical, financial, institutional and environmental sustainability. This change to an integrated community involvement programme means that the customer is an active partner not just a beneficiary of the scheme, eg. user groups decide sites of public taps. The emphasis is on developing skills at the local level including the local community leader, village work groups and women's grassroots organizations and involving them in planning, organization, monitoring and feedback, though not at present in project identification, construction of facilities, operation or management. The role of district water agencies has been expanded (in keeping with Indonesia's decentralization policy) to include the integration of the project's technical and community activities, marketing and public relations. Further adjustments to the original project concept include water meters/flow restrictors, 24-hour supply, progressive water rates after fixed monthly fees, staggered construction schedule, estimates of future connections as part of the system's design, land requirements for public taps reduced from 16 m<sup>2</sup> to 4 m<sup>2</sup>, new socio-economic and community activities structured chronologically for each scheme, review and modification of projects from community involvement programmes and community involvement in the collection of necessary information. These last two changes result from the community self-survey conducted by local community members (chiefly women) with guidance from the implementing agency's project staff, and are essential for a project's planning and design (reacting to actual demand) as well as for mobilizing community interest in its water supply. The data from the

survey helps the district water agency determine consumer preference for the number of connection points, the location of public taps, the tariffs, installation fees, service level options, and the scheme's financial viability.

Since the project is about selling water to communities in small towns, this active community involvement and use of the self-survey are successful because they establish interest and lead to a higher number of subscribers. The formation of tap user groups is vital to sustainable supply since their consent is required for land provision, agreement on payment system, location of taps, and water utilization rules. The active role of the district water agency and IKK staff in the customer campaign and in institution building is paramount as are post-construction community involvement activities and training both for tap coordinators and user groups, and for water agencies responsible for house connections and technical installations. The main results of the new approach are that the government of Indonesia has accepted the bottom-up approach, there is an increase in house connections, customers' needs are fulfilled to a greater extent and social balance is improved. Remaining problems include budget and bureaucratic constraints, water source problems, difficulties reaching the poor, and projects limited to water supply omitting environmental sanitation.



## PROJECT IMPLEMENTATION - SANITATION



Soepardjo Roestam, K. (1987). *Women, environment and development: a brief account of women's participation in a human waste disposal program in two urban areas in Indonesia*. Jakarta, Indonesia, Pembinaan, Kesejahteraan Keluarga (PKK).

This report describes two community self-improvement projects in urban sanitation in Central Java, Indonesia. In Semarang, Rp. 2,500,000 (US \$1,500) was collected, and 15 toilets for women and 13 for men were built on a donated piece of land. All 650 families contributed out of solidarity, irrespective of intended use. The 125 user households pay Rp. 300 (US \$0.20) a month for maintenance. From an adjacent neighbourhood 80 users pay Rp. 500. The funds finance a cleaner (Rp. 10,000) and a fee collector (Rp. 15,000). By collective decision the balance is used for repairs, garbage disposal and street paving. A small committee, in which women play an important role, checks payments, manages funds and supervises maintenance.

In Surakarta, the Government and the World Bank started a US \$40,000 revolving fund for household latrines. In 4 months, 70 families have taken monthly loans, at an interest of 1.36% (= 16% per year) and built septic tanks with toilets. Local contractors are supervised by a technical agency. A local committee with community leaders and representatives of the Family Welfare Movement (P.K.K.), an official women's organization, co-ordinates the project. After training, PKK members motivate women to join the scheme, supervise non-technical aspects, e.g. prevention of overpricing of building materials, and motivate and monitor maintenance and loan repayment through the "Ten Family Groups". Expansion to other areas is planned.

Meyer, Werner P. (1993). Community involvement in municipal solid waste collection in two West-African cities. In: *IRCWD News*, no. 27, p. 11-15

The performance of community-based primary solid waste collection is described in four low-income urban neighbourhoods, one in Ouagadougou, Burkina Faso and three in Abidjan, Ivory Coast.

The scheme in Ouagadougou is managed by a local sanitation committee with support from two Burkanese NGOs. Member households pay a monthly tariff for bi-weekly collection by local collectors with donkey carts. The system has been operating for six months. Coverage is 20% and increasing. Cost coverage is low, but increasing.

In Abidjan, three schemes operate(d). The first is run by two entrepreneurs, a cooperative and a local businessman, with concessions from the local authorities. Their collectors use one-axle handcarts financed by the EEC. Waste is collected daily and brought to central points. Member coverage is 30%. The scheme has run for two years and is being copied by entrepreneurs in other quarters.

In the second scheme a local sanitation committee placed bins at every 60 meters and hired and equipped unemployed, chief-appointed youths to empty them. Coverage was 100%. Fees were voluntary. When these dwindled, the youths added bathroom and toilet cleaning. When large trucks from a private company which collects refuse collection in the main city began to make stops and collect waste free of charge, the boys gave up. After a while, people's willingness to bring refuse to the trucks dwindled, due to the longer carrying distance. Indiscriminate dumping is now back.

In the third scheme a neighbourhood sanitation committee employed teams of two with barrel push carts. They passed daily, announced by whistling. Every week the teams collected fees, of which they could keep 80%. Coverage was 70%. The scheme worked for one year, but stopped when the private company's trucks began to call.

The study shows that 20-70% of the households in the low-income urban areas want to pay for refuse collection. Collection by private entrepreneurs had the best cost coverage; a community-based service had the best (universal) coverage, although not all paid. All schemes suffered from lack of secondary collection. Competition from a central service killed local initiatives and then proved to be ineffective. Asked about the gender aspects of the scheme, the author added by letter that the schemes were a joint initiative of men and women. Both are members of the committees. In Adjoufou also young women are employed as collectors, they are called 'amazones'. Moreover, the staff of the two local and one expatriate NGOs include females. The community mayor who started the youth collection schemes is also female. The scheme is run by private enterprise and all secondary collection and collection management is done by men. A gender problem is that fees are monthly and too high to be paid by the women alone. Husbands do not always want to contribute. The women would bring this issue up in the next committee meeting. Direct benefits from better refuse collection go to women and children, but all family members including men benefit from the broader impacts of an improved environment and less work.



Dalmeijer, Ria (1988). *The role of women and other human and cultural factors in Small Towns Sanitation West Java Project*. Bandung, Indonesia. Small Towns Sanitation West Java Project

This report documents the findings and results of a short mission to the Small Towns Sanitation West Java Project. The main objective of the mission was to advise the consultants team on relevant human and cultural aspects, with special regards to role patterns and to participation of women within the scope of the project objectives.

Women's sanitation roles within households, communities and at higher levels, (e.g. provincial) are defined, and six fields for action are given: 1) preservation of water and waste; 2) domestic management of water and waste; 3) health guarding; 4) education; 5) motivation and income generation; and money spending. During the six phases of sanitation projects: planning; design; implementation; operation and maintenance; health education; and monitoring and evaluation, women have to be involved according to their different roles at different levels. This has, however, not been worked out in detail in the project.

The report gives an overview of literature in the water supply and sanitation sector with more emphasis on water supply. Little is said about solid waste and drainage, and about the role of men in sanitation projects.



Watson, Gabrielle (1993). *Condominial sewer system in Brazil - an evaluation report of research funded by the Water and Sanitation Division of the World Bank*, assisted by PROSANEAR project team of the Caixa Econômica Federal, Brasília - Brazil

Arrais, Silvia Cavalcanti (1993) *Environmental Hygiene, Health Education and Sanitation - Gender and Sanitation Programmes in Urban Areas*. Prefeitura da Cidade do Recife/EMLURB - Brazil. Paper presented at the Workshop : Gender and the Development, Management and Utilization of Water Resources : *Lessons Learned and Strategies for the Future*. Stockholm, December 1-3rd, 1993

The lack of sanitation is one of the major health and environmental problems facing third world cities today. Despite massive investments in urban sanitation during the 1980's, large segments of urban residents remain unserved. This service deficit has fallen disproportionately on the poor. While the central business district and wealthy neighbourhoods enjoy full sewer coverage, residents in working class, low-income, and illegal settlements, representing between 30 and 60% of urban residents, go without service. Yet as cities develop, water consumption increases. In Brazil, for instance, over 90% of urban households have house connections, and average water consumption is approximately 160 litres per person per day. Because individual solutions to waste water removal in these areas were not successful, an effort was made to find a solution through the condominial system, a system where residents living in a group of households share



common services. This study is based on four months of field research in four capital cities, (Natal, Recife, Brasília and Cuiabá), two secondary cities (Petrolina and Joinville) and one small rural township of 14,000 residents (Itapissuma in Pernambuco state). The sample represents roughly two thirds of all condominial connections in Brazil: 52,550 of the over 75,000 connections country-wide. The Research Report is broken into three main parts: project implementation, operation and maintenance, and dissemination and scaling up. Within project implementation, the challenge of serving low-income urban communities is discussed, with an assessment of the condominial system's ability to address this challenge. Some factors that contributed to the more successful cases are described and analyzed. The section on operation and maintenance discusses reasons why it is particularly difficult for communities to manage the system collectively, and what approaches communities and agencies have taken. The paper concludes with some observations on the sustainability and potential dissemination of the condominial system. Gender is not specifically dealt with in this report.

The paper presented at the SIDA Workshop focuses on the condominial system implemented in Recife, where environment degradation is aggravated by uncontrolled river and channel floods. To increase sewer coverage of the poor areas, the condominial system appears to be a practical solution which requires community participation to be successful. A joint effort is made by the two main actors (the governmental institution and the community) for the construction and maintenance: in the public areas (the streets) by the governmental

institution and in the private areas (the house blocks) by the community. Participation of women is combined in two linked projects: the selective collection of solid waste and the maintenance of the condominial sewer. The first project entails reduction of operational costs of the municipal urban cleaning by reducing the volume to be transported; reduction of the environmental problems like water contamination and pollution; effective increase of recycling of plastic and other materials; stimulation of popular organization and raising awareness for improved sanitation and environment. The main partner of this process is the woman, for whom handicraft with recycling material opens new opportunities for marketing and income generation.

The second project, the condominial sewer system, profits from this awareness and again women are the most active participants, especially in the domestic maintenance of the system. Their role (to clear condominial branches obstruction and select domestic garbage) is differentiated from the men's role (to trade heavy loads of recyclable material). The paper points out final considerations on gender and differentiated roles for women and men involved in the condominial sewer system of Recife.



Bakhteari, Quratul Ain and Wegelin-Schuringa, Madeleen (1992). *From sanitation to development: the case of the Baldia soakpit pilot project*. (Technical paper series / IRC ; no. 31). The Hague, The Netherlands. IRC International Water and Sanitation Centre

A community-based sanitation project was carried out in Baldia, a low-income urban area in Karachi, Pakistan, between 1979 and 1986. Baldia has an estimated population of 150,000 people living in individual neighbourhoods, each with their own cultural characteristics. The initial goal of the project was on-site sanitation for all people living in the area. Through the involvement and motivation of young women in this strict Muslim society and the community's self-directed approach, the project progressed beyond building latrines to other community development activities. The project started adapting latrine design to local conditions and developing strategies to involve the community, both socially and financially. Demonstration latrines were built by a local mason in the yards of the poorest people in the neighbourhood. The project established four categories of assistance to households, varying from a full subsidy for the poorest households to technical assistance only for those able to pay for the rest of the costs. The sanitation committee was responsible for selecting the households for each category.

Women appeared to be often more motivated than men to build latrines. The women were encouraged to express their own ideas and possible adaptations to the soakpit design were discussed extensively. They became fully informed about the project and were able to supervise the construction of the soakpits when the men went out to their work.

Acceptance in the first neighbourhood was so high that it was decided it would serve as a demonstration area for the whole of Baldia with the sanitation committee acting as promoters and motivators. Women became the main motivators in the new neighbourhoods, and managed and supervised construction of soakpits. The fact that this kind of activity was possible and accepted by the men gave women enormous self-esteem and stimulated them to become involved in other activities such as home schools to provide education for girls, and primary health care. During the project the soakpit design was greatly improved. The costs of constructing latrines was reduced from US\$200 per unit to US\$80. By the end of the project, a total of 1146 latrines had been constructed with subsidies, and 3721 with technical assistance only. Open drains constructed in most roads are an obstacle to the sustainability of the soakpits. They have become a major source of pollution and many households now want a small-bore sewer system. Municipal authorities are going to construct such a system, but will make use of the existing soakpits wherever possible. The approach and sanitation technology, as well as home schools used in the Baldia Sanitation Project, are being replicated both in and beyond Pakistan.





Furedy, Christine (1991). 'Women and solid wastes in poor communities'. In: Smith, Michael D. *Infrastructure for low-income communities : proceedings of the 16th WEDC conference : Regional Centre for Urban and Environmental Studies (RCUES), Osmania University, Hyderabad, India, 27-31 August, 1990.* Loughborough, UK, Water, Engineering and Development Centre, Loughborough University of Technology. p. 51-54

Muller, Maria S. (1991). 'Habitat, a women's affair : slum improvement in Kirillapone, Sri Lanka'. In: *Source*, vol. 19, no. 4, p. 15-18

Save the Children (SAVE), a non-governmental organization, was asked by the Government of Sri Lanka to assist with the upgrading of Kirillapone, one of the over 300 squatter and slum settlements in the capital Colombo.

In the early 1980's the Kirillapone settlement consisted of 340 households. There were several socio-economic sections within the population. Because of the differences, no easy solidarity among the Kirillapone residents was possible, including among women. To stimulate community participation in Kirillapone SAVE conducted a socio-economic baseline survey which revealed the general tendencies in income, education, type of work, project opinions and variations among social groups. The formation of a Settlement Committee to represent the interests of the various sections in the population was supported. The staff proposed to have the chairman elected by the whole community, while each of the neighbourhoods and the ethnic groups were to elect at least one Committee member. The only woman serving on the Committee was unable to defend the women's interests. Moreover, the women of the settlement did not act as a group to express their opinions, nor did they recognize or support the woman

Committee member as their representative.

The SAVE staff began to recognize that women would only be involved in the project if the activities responded to the real needs of the different groups of women. Consequently they planned a large number of activities dealing with economic and social development, health care, creches for children, nutrition, and housing. SAVE started a project for the improvement of the housing conditions. It was suggested that women participate in the building activities as they required employment near their homes. No women reacted to a public announcement of the possibility for both men and women to register for training. However, when a special registration for women was organized, 58 women applied.

Many more women were employed as unskilled labourers and learned the skills on-the-job. The women received the same wages as the men and they soon formed the majority of the labour force and some became team leaders. The women also accepted new responsibilities for the building project. The project improved housing conditions and provided poorer women with an opportunity to earn money. The social position of women in the community improved. The project also contributed to the feeling of solidarity within the settlement and the rivalry among the five neighbourhoods was reduced, although there was healthy competition.

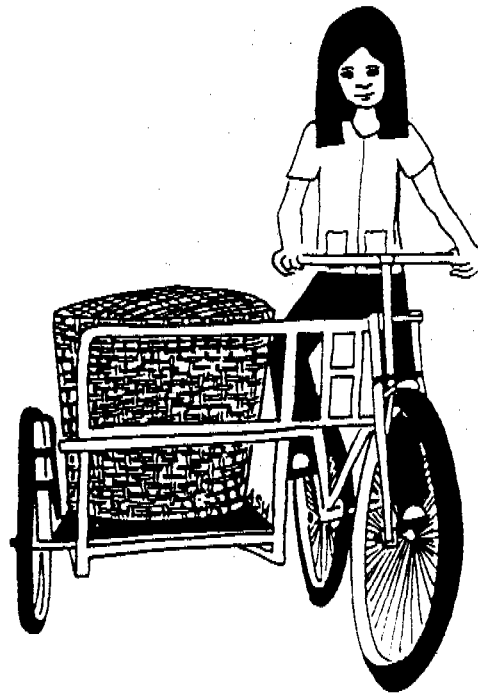
The establishment of a formal committee proved not to be the most effective step towards encouraging wide participation in Kirillapone. For community participation to succeed, however, the opportunities must be organized and different approaches must be tried. What these opportunities are depends on the situation, the cultural aspects and the stage of the project.

Many poor families exploit wastes as substitute resources, a fact that few waste management plans take into account. Such items as vegetable wastes and animal dung are used for fuel; strong plastics, scrap metal, broken bricks and rags can be used for repairing shelters. Women are often the decision makers as to what is regarded as waste, and in many countries the job of municipal cleaning is primarily a woman's job. In some Indian cities, a widow has the right to the first cleaning job available to support her family. Women often go out of their neighbourhoods to pick through the larger urban dumps, hunting for usable materials. It is suggested that municipal waste planners incorporate a broader view of waste management by taking into account waste recovery and recycling, include social research into the perceptions of women regarding waste; understanding of health hazards from uncollected wastes; and the conditions of women waste pickers concerning income, social roles and control of waste by men.

Mitra, Amit (1992). 'I hate scavenging, but what else can I do'. In: *Down to Earth*, vol. 1, no. 13, p. 50-51

This interview tells the story of Rameshwari. She is a woman scavenger in private service with 50 families in Ajmer town, Gujarat. Every day she cleans the toilets, sweeps the drains and empties the bucket latrines. For this she gets Rs. 500 a month. She uses the salary to feed the family and send the four children to school. Although other family members earn bigger salaries, they do not contribute to the daily household expenses and household work. Rameshwari perseveres to give her children a better life. Most times she tries to negotiate better labour conditions or pay she fails, because she stands alone and has no ways to exert pressure on her employers. The government promotes the conversion of bucket latrines and many families now install water-flushed toilets. Because the water supply is insufficient, the drains often get blocked and she is called in to clean

the blockage by hand without extra pay for the longer working hours and distasteful work. When more flush toilets are installed and the drains start to work properly, she fears she will be without a job, as the programme for latrine conversion does not include job alternatives for private scavengers such as she.





## FINANCING AND MANAGEMENT



CINARA (1990). *Evaluación de sistemas de abastecimiento de agua con plantas de tratamiento administrado por comunidades.* (Evaluation of community-managed water supply systems with treatment plants). Cali, Colombia, Centro Inter-Regional de Abastecimiento y Remoción de Agua.

Latin America has a long tradition of small, community-managed piped water supplies. Many of these distribute surface water and now need treatment plants to cope with the growing turbidity and bacteriological contamination of their water. Four such communities, two rural with low-incomes and two peri-urban, one with low and one with higher incomes, had slow sand filters and pre-treatment systems installed. They also received simple equipment and training to monitor the quality of the treated water. After 2-3 years, a Colombian team of technical and social specialists evaluated the communities' management of the systems.

The evaluation showed that all communities were able to manage a water supply with simple water treatment. E-coli were reduced by over 99% to less than 2 ppm/100 ml. and fully eliminated by the now more limited chlorination. Colour and clarity of the water were also much improved. The greatest problem was the continuity of the service. In only one community did all sections have 24-hour service. The poor distribution net limits services in the others to between 2 and 15 hours per day.

Between 90% and 100% of the households were connected to the systems. The communities carried out and financed all daily operation, maintenance and management tasks and also managed the internal water quality control successfully. All regular operation and maintenance costs were paid from the water tariffs and three of the four communities made a profit. Except in the one wealthier peri-urban village, large repairs and expansion could not be paid from the tariffs, partly because incomes were too low, partly because the water committees did not know how to budget and plan for these costs. Another problem yet to be solved was the high water consumption, often for economic purposes. The amounts used per capita had in some cases surpassed the design capacity of the treatment plants and reflected the users' habituation to an unlimited gravity water supply.

Women played a prominent role in management and tariff collection. Three of the four water committees had female members, who were president (1), secretary (2), treasurer (1) or member (1). In addition, there were two women on a social sub-committee, two female tariff collectors and a female accountant. Functions on the committees were voluntary and held by dynamic women who also held other functions in the community (teacher, political leader, organizer of community labour, etc.). The work had given them much technical insight, enabling e.g. the female president to make an inventory of the works and supervise the contractor. Wives of operators frequently shared operating tasks, but not the position or training, and did not attend management meetings with their husbands. The authors recommend to extend future trainings to include the wives of operators.

Alur, Sathi with Nigam, Ashok (1994). *Water and sanitation sector financing by External Support Agencies: 11. World Bank commitments 1990 to 1998 (as of June 1994) : a summary.* New York, NY, USA, UNICEF

The goals for water supply and sanitation are to provide universal coverage by the year 2000, and the mid-decade goal is to reduce the coverage gap by 25% for water supply and 10% for sanitation. To form a picture of investment in the sector, an initiative has been taken to examine loans by international financial institutions (IFIs). This report summarizes a study examining World Bank/IDA lending and commitments in the water and sanitation sector to urban and rural projects for the period 1990-93 and proposed lending for 1994-98 as at June 1994.

The study is based on Bank documents (1990-93), Monthly Summaries for projected lending (1994-98), and on Staff Appraisal Reports (SARs) for 17 urban and 7 rural projects for the period 1990-98 which were made available. The findings of the study are presented in two parts: overall lending and rural sector lending. An analysis of overall lending shows that during the period 1990-93, overall Bank lending to the water and sewage sector was an average of 4.75% of the total lending compared to 5.85% for health and nutrition and 8.58% for education. Of the total lending to the water sector of \$1 billion per year on average during this period, 82% (\$800 million) is for urban and 18% for rural projects (\$200 million); that is an average of only 0.8% per annum of the Bank's annual loan portfolio which went to rural water and sanitation projects. (It is estimated that another \$18 million per year may have been invested through

agriculture, human resources, transport, natural resource management and environmental loans).

Of the total rural sector loans for the period 1990-93 of about \$786 million, 46% were to South Asia; 35% to East Asia and Pacific; 10% to West and Central Africa; 4% to East and Southern Africa; 3% to Central and South America; and 2% to the Middle East and North Africa Region. Indeed, three countries, India, Pakistan and China received over \$100 million each in loans and account for 57% of total lending for rural water supply and sanitation. For Sub-Saharan Africa as a whole the Bank's annual investment for the period 1990-93 averaged \$28 million per year.

A review of the seven SARs on loans to the rural areas for the period 1990-98 indicated that the total investment in these projects was \$522 million (\$359 million from Bank loans and the remaining from government, other bilaterals and households) with an anticipated population coverage of 16.5 million. On average 76% of these investments were for water supply.

The Bank's approach to technology as indicated by the SARs stresses the need for a menu of technology options to allow for community management and participatory planning for sustainable water supply. The general approach is to support community choice of technology based on community willingness to pay. Results based on this Bank

policy shows that 75% of the water supply component is for piped water supply schemes while 25% is for non-piped schemes and other works. In order to promote community participation and a demand-driven approach, a minimum contribution from the community is built into the financing pattern. An average 24% of rural sector project investment is for institutional reform such as capacity building of the private sector to expand its role at community levels; institutional development to improve project planning, design, implementation and management; health education; and technical advice and training. The projects are also targeted at poverty issues such as social equity, the high incidence of absolute poverty, hygiene and sanitation education, and the improvement of the quality of life and productivity of women.

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Nigam, Ashok and Ghosh, Gourisankar (1995). 'A model of costs and resources for rural and peri-urban water supply and sanitation in the 1990's'. In: *Natural Resources Forum*, vol. 19, no. 3, p. 193-202

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This article deals with a model of cost and financing strategies for rural and peri-urban water supply and sanitation. It suggests that significant progress towards the World Summit for Children goal of universal access to water supply and sanitation can be made if a combination of strategies is adopted. On the cost side, significant cost reductions should be possible

through efficiency in resource use and reduction of system management costs. On the financing side it suggests: restructuring the financing of the sector with improved efficiency and greater cost recovery in urban services; full cost recovery of operation and maintenance costs; cost-sharing through community contributions in kind such as own labour and partial cost recovery in rural and peri-urban water supply for basic levels of service depending on willingness and ability to pay and full cost recovery for higher levels of service; a high degree of cost recovery in rural and peri-urban sanitation; development of institutional structures for both collection and management of revenues; development of alternate financing mechanisms such as rural credit schemes and revolving funds, adapted in specific country contexts, including the required institutional mechanisms; and additional allocations from governments and external support agencies. Additional government or external financing alone, while critical, will not of itself lead to effectiveness in the use of resources. Equally cost recovery alone cannot lead to universal access and sustainable solutions. A composite set of actions is needed within which building capacities of institutions and people is necessary for sustainability.

As an example of an alternate financing mechanism the Grameen Bank in Bangladesh is mentioned, which has been successful in extending loans to about 2 million poor and landless persons, mainly women. The bank is a successful example of extending credit for rural water supply and sanitation. The bank's significant innovation is to organize people into groups of five, and ask each person to guarantee the repayment of a loan to any of the other four members. The security provided to the bank is in the form of a collective collateral, relying on peer pressure and close supervision by the bank. The leader of each group has a

weekly review meeting with a staff member of the bank.

In 1992 the bank provided \$5.7 million in loans for tubewells and sanitary latrines which more than tripled to \$18 million in 1993. 9% of which was for sanitary latrines. The interest rate charged on loans for tubewells is 20% while for sanitary slabs and rings it is 8% repayable over two years. Repayments are made in weekly instalments of 1% of total disbursement. The loan amount for tubewells is about \$125 individually (\$250 jointly); and \$18 for sanitary latrines bought from the Grameen Bank manufacturing units (\$12 if procured elsewhere due to the difference in quality).

No gender-specific information is given in the document.



Grant, James P. (1994). 'Keynote speech Ministerial Conference on Drinking Water and Environmental Sanitation'. In : *Ministerial Conference on Drinking Water and Environmental Sanitation : implementing UNCED Agenda 21, March 22nd/March 23rd 1994, Noordwijk : conference report*. The Hague, The Netherlands, Ministry of Housing, Spatial Planning and the Environment. Vol. 1, p. 26-31

In this speech the late Director of UNICEF suggests a number of measures to help close the gap in the number of people who have access to water and sanitation facilities in developing countries.

In order to even have a chance at achieving the year 2000 goal of universal access to safe drinking water and adequate sanitation, Mr. Grant stated that efforts must be accelerated to reach the mid-decade goals that have been set. He argued that by 1995 countries should increase water supply and sanitation so as to narrow the gap between the 1990 levels and universal access by the year 2000 of water by one-fourth and sanitation by one-tenth. To achieve the mid-decade goals, it was estimated that water will have to be provided to an additional 193 million people and sanitation services to an additional 190 million.

Next, it was suggested that a fundamental restructuring was needed in the way governments and donors apportion resources. Less should be spent on providing water and sanitation to middle and

upper-income urban populations, and more should be done to increase the water supply and sanitation coverage in the rural and urban low-income population, the watchword being "Provide some for all rather than more for some".

Mr. Grant then pointed out that the water and sanitation effort must not be a lonely sectoral undertaking isolated from overall social and economic policy. It has to be seen as an integral and vital part of a multi-sectoral push to reach concrete goals for the benefit of the nation. The sector needs to move from its current hardware orientation to a people-focused approach that emphasizes outcome as reflected in improved health and socio-economic benefits, and in sustained maintenance, with the participation of the community.

The fourth point mentioned is that determined efforts be made to improve cost effectiveness. It is argued that it should be possible for most rural villages and peri-urban communities to bring the cost of supplying water and sanitation down to below \$30 per capita (and even lower where grassroots volunteers are heavily involved in installation and maintenance of systems).

The point is also made that governments need not - indeed cannot - bear the sole financial responsibility for extending water and sanitation services. They do, however, play a crucial role in funding and in motivating others to contribute. A plea was also made for the pooling of resources, whereby multiple interventions are employed. An example mentioned is Mexico where community sanitarians are involved in low-cost technologies for water and sanitation with ORT promotion and hygiene education programmes.

The last two points were that monitoring systems must be strengthened to provide accurate and timely information to guide policy and programmes and that sanitation should become a national priority. It is noted, that because they involve changing people's behaviour, low-cost sanitation programmes are far more difficult to implement than water programmes.

Mottin-Syla (1991). *Les femmes et l'argent : document de synthèse* [Women and money : a summary document]. Dakar, Senegal, ENDA-SYNFEV

This document is a synthesis of the main results of the study on women and money carried out by ENDA in 1987. The objective of this study was to identify how women relate to the concept of money in the Wolof urban culture of Dakar. The methodology adopted for the study consisted of a questionnaire in the Wolof language to interview some groups of women, and a discussion with them afterwards. The results were then compared with results from other more encompassing research on the same topics: traditional methods for resource mobilization by women, systems of relations and solidarity involving financial issues, traditional ceremonies.

The main results reveal that, in principle, women in urban areas of Dakar do not have a regular income (salary, for example), especially more mature women, mothers and house-wives. Yet, even without money, women are actually responsible for their families and social environment (their neighbourhood). On the other hand, men are the ones supposed to meet all the family's needs (even "providing for the salt to be used in meals" as women say happened in the 'good old

times'). However, men are now perceived as not being able to fulfil their obligations. Nevertheless, their (social) power is unquestionable - men are the head of the family. In this situation, women must seek the means to provide what their family needs in a discrete way so as not to disturb the existing social balance. They do not struggle for their rights; if they do not have their own income, women must 'sort things out by themselves'.

To 'sort things out by themselves' is something basically connected to their relationship with money. This is an accepted notion in society. It is also used by women as a *strategy for management*. If there is no financial security for women, they must set up systems which will meet this demand for a solution, even if in an unplanned way. They must put things in order, arrange themselves, solve crises. When analyzing the answers which were given and the discussions held in the Wolof language, the various words used by women regarding the notion of 'sort things out by themselves' always transmitted an idea of an active, responsible, aggressive, positive attitude. This notion is also connected to being a woman. It is expressed in the Wolof language as, for example, '*laxasaayu*' which means to wrap herself in her skirt (*laxas*: to wrap, *aay*: me, *u*: self) as to be ready to take action.

Another important aspect is that women are under pressure to 'sort things out by themselves'. They must sort things out by themselves as they do not have sufficient financial resources to meet their basic needs and those of their family. Women's main needs relate to their social position among their equals. They also relate to the family ceremonies, for which they are the guardians, actors and beneficiaries. It is essential for women to set up strategies to reach their goals, which are mainly social goals.

Women revealed that strategies set up by them derive from the more general 'sort things out by themselves': to invest in future needs (especially those of women as jewellery and clothes); to place money in tontine; to enter into informal commerce activities; to turn to their husbands for money, first for the monthly provision and then for emergencies; to undertake special activities as sewing, cooking, selling, ....; to hope that God, their husbands, the people will help them; to repay their debts; to take steps...; to initiate stratagems; to progress in their activities; to borrow money to repay older debts.

At the end, it seems that the ultimate goal of women when making such an effort to 'sort things out by themselves' is to save their husband's reputation (on which their own reputation also depends) and to maintain their family's 'social honour'.

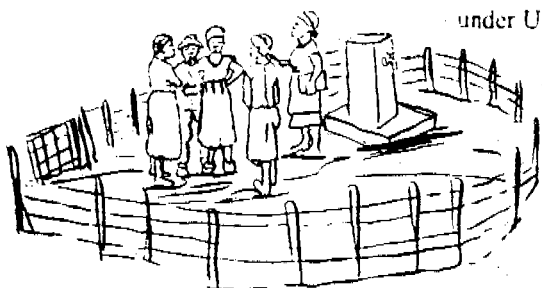
Cooperative Housing Foundation (1993). 'Supporting shelter and community improvements for low-income families in Central America'. In: *Environment and Urbanization*, vol. 5, no. 1, p. 38-51

The Cooperative Housing Foundation (CHF) is a private, non-profit organization which has provided shelter and related technical, financial and policy assistance in more than 80 Third World countries for the past



three decades. It is supported by grants and contracts from international development agencies as well as contributions from individuals, foundations, corporations and community organizations.

This paper describes CHF's shelter finance and community development programme which enabled indigenous non-profit private sector organizations to develop the capacity to deliver credit and provide a range of shelter solutions for low-income families. One of these programmes is the US Agency for International Development (USAID)-supported Cooperative Neighbourhood Improvement and Job Programme for Belize, Costa Rica, El Salvador, Guatemala, Honduras and Panama. The programme's objectives were: (a) to increase low-income families' access to credit for shelter and community improvements, and (b) to strengthen non-profit private institutions' capability to finance and manage improvements to the physical living conditions of the poor. CHF's Loan Programme was designed to be implemented in collaboration with cooperative housing federations, credit union federations and other non-profit NGOs. It provides institutional support grants and technical assistance to strengthen these institutions and their affiliates by increasing their capacity to mobilize and manage financial resources and improve cost recovery techniques.



There are four basic types of loans: (1) home improvement loans, (2) mortgage and construction loans, (3) community services loans, (4) small business loans. Loans to community associations were also used to improve safe water supplies and sanitation services but the paper does not discuss this subject.

In Honduras, CHF used the comic book approach to promote a home improvement loan programme among low-income working families whose primary reading material consisted of comic books. Loans to small businesses that produce building materials and provide construction-related services were made in collaboration with the Honduran Development Institute (IDH). CHF also collaborated with the Honduran Federation of Women's Associations (FAFH) which was founded in 1951. FAFH's mission was to advance women and integrate them in the country's economic development. A survey to determine the socio-economic status of programme beneficiaries revealed that one-third of the households in the *Colonia 30 de Noviembre* community in the Tegucigalpa settlement of Honduras were headed by women. Most households which typically consisted of five persons had at least two income-earning members to make ends meet. Primary occupations included market vendors, traders, domestic labourers (maids, janitors, laundresses). Main source of income for 12% of the husbands and 44% of the wives was work based in the home. The average monthly family income was US\$ 146 or US\$ 24 per person. CHF and FAFH offered loans to the women to improve or expand an existing home or build a small house. Typical loans were under US\$ 1000.

With CHF's assistance, organizations in Central America developed policies and procedures that took into account women's unique economic circumstances while offering them equal access to funds for housing improvements. In Costa Rica, CHF collaborated with *Coope Santa Cecilia*, a sewing cooperative in Santa Cruz. The cooperative which started out with 15 women produced and marketed clothing. Within the first five months after home improvement loans were offered to its members, the cooperative experienced tremendous growth and disbursed loans to 63 members. It is estimated that the loan programme in Central America generated more than 18,500 work years.

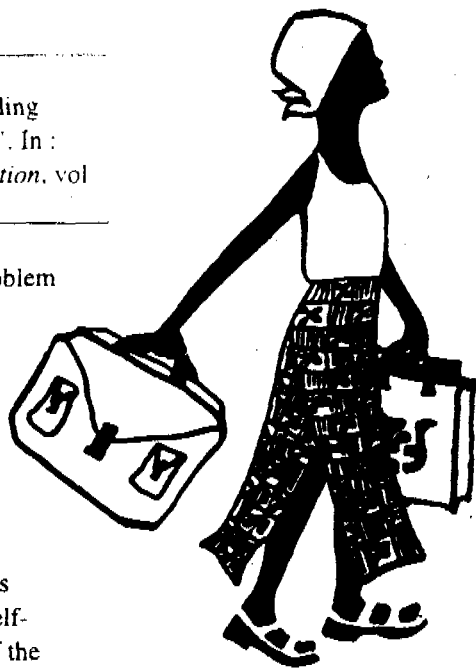
Key lessons learned from the programme are: (1) income production of often overlooked low-income families is linked to housing; home improvement loans improved economic standing as well as quality of life; (2) the need to develop loan programmes for the working poor must be flexible enough to be affordable (loan application criteria, amounts, repayment schedules); (3) support self-help and self-managed construction programmes: families who were personally involved in developing solutions to their shelter problems always had a high level of satisfaction with the final results; (4) implementing a pilot loan programme provided participating institutions with an opportunity to learn how to be effective; (5) technical assistance and training through a learning-by-doing process was more effective than traditional seminars and workshops; (6) ongoing loan programmes must be monitored at all stages of implementation to avoid major problems; (7) institutions with healthy portfolios analyzed loan applications thoroughly and had strict collection policies; (8) field work carried out and supervised by *maestros de obra* resulted in lower charges; (9) a flexible home improvement programme enabled low-income families to pursue an incremental approach to improving their shelter.

Mitlin, Diana (1993). 'Funding community level initiatives'. In : *Environment and Urbanization*, vol 5, no. 1, p. 148-154

This article addresses the problem of finding publications that focus specifically on the funding (all aspects of the financial support for an improvement project) of community-level initiatives in the urban context. Community-level initiatives are defined as those which arise from the self-defined needs of members of the community and include housing improvement and construction, water supply and sanitation, health and education services and walkways and roads. Despite an increasing interest in the topic of funding, readers must sift through literature which only addresses the topic indirectly or inadequately.

As a good introduction to finance in the Third World the author cites "Financial Systems and Development" in the World Bank's World Development Report 1989. The chapter gives a useful overview of the topic focusing on financial systems appropriate to national decision making as well as on informal financial institutions servicing low-income households and communities.

The author then divides existing literature into three main bodies, each of which is helpful in understanding specific aspects of funding, but cautions that this division does not work in all cases nor does it focus on the comparative advantages of different types of funding support. The first section includes studies of community development with a focus on housing, infrastructure and basic service development. Literature on community initiatives includes *Building Community* edited by Bertha



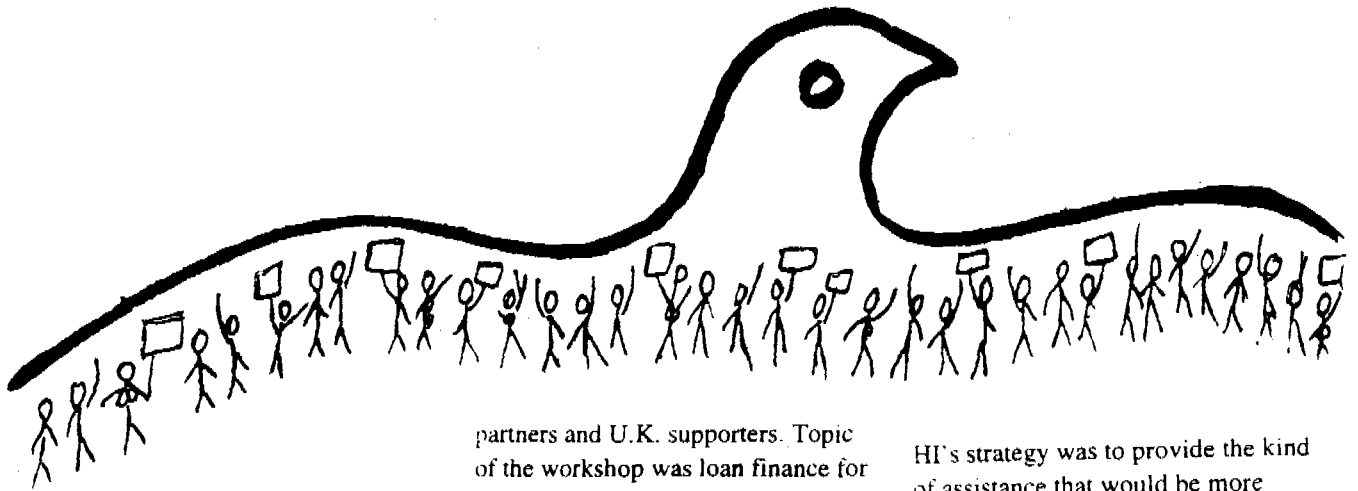
Turner (1989) which provides case studies of 20 community development projects: two newsletters, SINA and SELAVIP; and a Spanish journal, *Pobreza Urbana y Desarrollo*. Individual community initiatives with a financial focus have been documented by Grameen Bank (Bangladesh) which has a programme of loans for income generation and housing and in *The Management of Revolving Funds for House Improvement Loans* (Lewin) which gives a detailed description of setting up a revolving fund for housing improvements in the Dominican Republic. Further information is available in unpublished project evaluation reports and consultants' reports on finance-related issues. Overviews of community financing of low-income housing cooperatives are given in *Cooperative Housing: Experiences of Mutual Self-Help*, UNCHS (1989); *Promotion of Non-Conventional Approaches to Housing Finance for Low-income Groups*, UNCHS (1984a); the report of the 1990 seminar, "Access to Basic Infrastructure by the Urban Poor", which considers financial issues such as cost recovery, subsidies and credit; *Funding Community Level Initiatives*, a report prepared for the Urban Management Programme; and *The*

*Housing Finance Manual*, UNCHS (1991), written to explain housing finance and demand-based strategies.

The second section of literature focuses on two categories: analyses of different financing mechanisms (primarily credit) to support micro-enterprises, and income generation schemes and prescriptive texts. Included in this section is *Where Credit is Due:*

*Income-generating Programmes for the Poor in Developing Countries*, Remenyi (1991), describing the role of over 20 credit-based income generation schemes in poverty alleviation. An analysis in IFAD (1988), *Developing Financial Institutions for the Poor and Reducing Access to Women*, Holt and Ribe (1991), and a guide published by the Voluntary Fund for the United Nations Decade for Women both focus on women's financial issues. Further information is available in *Self-Help Promotion: a Challenge to the NGO Community*, Verhagen (1987), and in reports on Sri Lanka's "Janasaviya" or Poverty Alleviation Programme.

The third section covers publications on state or government financing schemes for housing, basic services and infrastructure. *Finance for Shelter and Services*, UNHCS (1990), and *Housing and Financial Institutions in Developing Countries: An Overview*, Renaud (1984), discuss national financing institutions and policies. A UN report, *Non-Conventional Financing of Housing for Low-income Households*, and *Community Based Finance Institutions*, UNCHS (1984b), both discuss community-based housing finance issues. HUDCO (1992) is a study of small-scale credit and savings initiatives for housing in India. Further information on government programmes to support the shelter initiatives of low-income households and communities is available from governments involved such as Mexico, the Philippines, Brazil, and Sri Lanka.



While some of the publications in Section 2 and 3 deal with broader issues, they still contain information relevant to the funding of community initiatives. Complete bibliographical information for each publication is given at the end of the article.

McLeod, Ruth and Mitlin, Diana (1993). 'The search for sustainable funding systems for community initiatives'. In: *Environment and Urbanization*, vol. 5, no. 1, p. 26-39

The absence of formal loan systems often force low-income households to pay high interest rates for informal sector loans. This limits the investments that households can make in improving their homes and, in the long term, increases household expenditure because of repeated repairs which are not up to adequate standards. A number of donors are now interested in exploring alternative ways of providing loan finance for low-income communities.

This paper is the result of a workshop organized by Homeless International (HI) and a number of its southern

partners and U.K. supporters. Topic of the workshop was loan finance for community-level initiatives on land acquisition, housing construction or improvement, and infrastructure and service provision with an emphasis on loan finance. Discussions revolved around the most appropriate terms and conditions for loan finance and the broader financial and institutional issues involved in its provision. Much of the meeting concentrated on ways in which southern- and northern-based participants could work effectively together to exchange experiences and ideas and to provide mutual support. Various aspects of loan finance for housing, infrastructure and basic services were explored. Major key topics which emerged from the discussions were: 1) terms and conditions under which loan finance was provided, especially rate of interest on loans and use of subsidies; 2) the broader financial context in which poorer groups make housing investments, specifically attitudes of the state and private financial institutions; 3) relations between NGOs providing finance and various institutions, community groups, government and private banks; and 4) the role of loan finance in achieving social change. The need to identify clearly how new housing contributes to additional income was emphasized.

HI's strategy was to provide the kind of assistance that would be more developmental and sustainable. Key areas identified were: (a) institutional development, (b) policy change, (c) self-help and investment by project participants, (d) recognition of women's role, (e) prioritizing support that would lead to secure land tenure, (f) emphasizing documentation of work as it progressed.

HI projects include funding for documentation centres, exchange projects, training programmes, revolving loan funds for land purchase and self-help housing construction, start-up funding for building material production plants and self-help initiatives which concentrated on upgrading of water and sanitation facilities. One of these projects was the community water supply project in Cochabamba, Bolivia. It was carried out by the *Centro de Estudios de la Realidad Economica y Social* (CERES). CERES has been working with *barrio* (neighbourhood level) organizations to improve community services. The main objective of this organization is to improve the living conditions of the Bolivian people. One of the communities CERES has been working with is called *24 de Enero* ("24th January") after the date of their eviction from another site. The major problem faced by this *barrio* and other low-income communities is lack of water. Only 52% of Cochabamba's population are connected to sewers while 72% have potable water. A grant from the International Year of Shelter for the



Homeless Trust (HI's predecessor) was used to extend the community water supply and establish a revolving fund. Direct and indirect beneficiaries participated actively in the planning process. Each of the direct beneficiaries took on specific responsibilities for a component of the project. While CERES and the residents of the *barrio* provided the implementation, coordination and management of the installation of the water mains, the municipality provided technical support and transportation. Households were divided into two groups: group one (80%) had to repay their loans in one year, group two (20%) who were very poor, were given more time. Residents of *24 de Enero* made monthly instalments to the cooperative which they had formed. The community only had to pay for the cost of materials. No interest was charged. Thirty percent of the original finance was recovered through the revolving loan fund which was used for community projects such as: pavements, patios, laundry facilities, improvements to the Mother's Club Centre, and additional extension of the water network.

One issue that was repeatedly raised during the workshop was subsidy. Revolving loan funds without interest charges are rapidly eroded, particularly where there is a high rate of inflation. A paradox was noted: **providing a subsidy threatens the sustainability of the project and makes beneficiaries dependent on the donor organization. However, not providing a subsidy implies that it is not poverty that is the problem but the weakness within the institutional delivery system.**

Other projects mentioned in the paper are the Akwana Housing Cooperative in Kenya and the Youth Charitable Organization Housing Project in Andhra Pradesh, India where the titles (*patta*) to the land are held by women. Although the recognition of women's central role is featured in HI projects, the paper does not elaborate on this topic. However, reference is made to the fact that most of the savings schemes, which are critical in working towards loan financing and developing community capacity, rely on women's participation at the community level.



UNICEF, WHO, UNCHS and ODA (1995). *South Africa: community water supply and environmental sanitation for South Africa's unserved: supporting the transition: report of the UNICEF-coordinated UN Inter-Agency Water and Environmental Sanitation Mission to South Africa. 30 October - 10 November 1994. New York, NY, USA. UNICEF*

This document is a report of the UNICEF-coordinated UN inter-agency water and environmental sanitation mission to South Africa from 30 October to 10 November 1994.

Part One discusses the mission objectives, activities and outputs. Part Two discusses the political, economic and institutional background and the water and sanitation situation. Part Three describes observations, challenges and insights gained from the mission. Part Four gives guidelines for supporting the sector, discussing potential programme areas and potential agency involvement. In Part Five, the concluding section, the key challenges and the mission's insights as developed in the report are summarized and presented in tables. In the annex objectives, outputs and activities of possible programmes to support the sector are presented in tables.

A key observation of the mission derived from field visits and discussions with the Umgeni Water Board was that cross-subsidization from urban to peri-urban and rural areas was justified not only on grounds of equity, impact on health and health costs, and number of lives saved, but on the basis of efficiency and effectiveness in formal urban services provision as well. The mission observed that the interdependencies among the urban, peri-urban and rural and the significant positive externalities that prevail suggest that the financing for

service extension should be on the basis of the "Basin Management" approach. The approach suggests that because of these externalities, the management of water resources and allocation of capital costs of service extension should be to all households in the basin - even those who were fortunate to have been served many years earlier. Such a long-term perspective in which environmental considerations are built-in provide the economic rationale for capital investments in peri-urban and rural areas by water boards in many parts of the country. The report suggests that cost allocation and cost recovery in a basin management approach is thus not necessarily cross subsidy from urban to rural areas, due to the long-term benefits to the providers of the 'subsidy' in terms of environmental impacts and effects on long-run costs.

The mission also found that the Mvula Trust in South Africa, which has been set up to reach the rural communities through a demand-driven approach, has many characteristics in common with the social investment funds (SIF) in Latin America. Characteristically SIFs are developed to supplement government activities by channelling funds through existing community-based organizations (including NGOs, cooperatives and local government) for small-scale social and productive programmes specifically targeting the poor. Funds are designed to provide a fast, flexible, decentralized, demand-driven mechanism for programme funding, driven by a bottom-up process of project identification and sponsorship and a top-down process for funding and technical assistance.

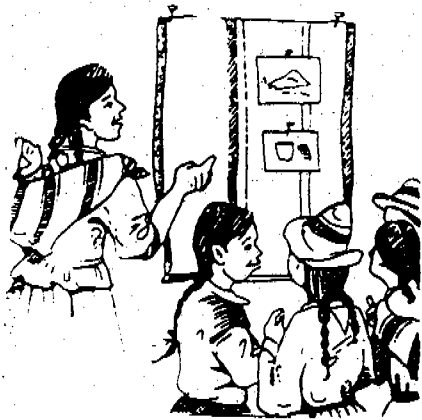
An SIF is generally established as a legal, autonomous or semi-autonomous institution, with a fixed lifespan. The highly decentralized staff typically undertake promotion, project selection, coordination, contracting, training and supervision. In addition, extension agents play a pivotal role in community mobilization and organization.

The mission concluded that the principles under which the Mvula Trust works are firmly endorsed, as the Trust seeks to build community capacity to manage, but that implementation is not easy, and start-up has been slow and disbursements limited so far. To promote income generation in urban areas, the mission suggests that informal fresh food vending and urban-fringe market gardening could be promoted using surplus water or even treated wastewater. In East London townships informal fresh food vending was apparent. In rural areas, the potential for using improved water services as an entry point for income generation is substantial. Positive effects can be better nutrition, better environmental management and better children's education.

The authors argue that these types of activities tend to benefit women who are more likely to stay in their communities than commute to work. The local government has a role both in establishing and supporting community-based small credit mechanisms and in providing training both in basic managerial techniques and in productive skills.

The objectives of the mission were: a) to examine the status of water supply and sanitation service provision to low-income people in South Africa; b) to share with government the experience of the UN and others in the provision of water and sanitation to the poor in other countries; and c) to discuss with government possible roles for UN and other external support agencies in providing support to the extension of sustainable water and sanitation services to the rural and urban poor and to identify and agree on follow-up actions.





Espejo, Norah (1989). *Water committees in Latin America: tasks and training*. The Hague, The Netherlands, IRC International Water and Sanitation Centre.

Latin America has the longest tradition of community-managed water supplies. This report reviews the various types of water committees found in the region, their tasks and the degree to which they are being prepared for these tasks. After reviewing a large number of project reports, evaluations and training materials, the author concludes that water committees are more successful when they have not been imposed by external organizations, but been created by community members themselves for the specific purpose of establishing and running a water system. Neither type of committee is

at present sufficiently trained for their managerial tasks, especially with regard to links between water supply projects and broader community development; negotiation and planning with implementing agencies; understanding and managing operation and maintenance; financing and financial management, including accountability of the committee for their management to the tariff payers; and health aspects. Training methods are conventional rather than participatory. They have a narrow individual focus and do not constitute 'learning events' for whole communities or groups. Although women are often the initiators of water projects, especially in urbanization areas, their participation is often hardly recognized. They are providers of food and drinks during construction, and sometimes physical labour. They might also help their husbands, members of water committees, in official duties. Women are sometimes inhibited to participate in training because they cannot travel. Audio-visual materials depict only men in water supply and environmental activities. The report includes a selection of the better training materials, some of them prepared by local communities.

Yusuf, Aisha (1992). 'A success story of housewives'. In: *Tuesday Review*. January 21-27, p. 14-15

One of the cases at the Global Assembly on Women and the Environment in Miami, USA in November 1991 was that of the Karachi Administration Women Welfare Society (KAWWAS), presented by its founder and president Safina Siddiqi. It is about a women's

group whose members are ordinary middle-class housewives who demanded, fought for and succeeded in getting basic services such as roads, regular garbage collection and disposal, replacement of broken sewerage and water lines, and antimalarial fumigation. The society was formed in mid-1988 by a small group of desperate housewives who were daily confronted with the virtual slum like condition in their neighbourhood.

The Municipal Cooperation, its zonal committee and Water & Sewerage Board refused to take over maintenance of basic services, because the works were either incomplete or sub-standard. The local management of the cooperative housing society had failed over the past 35 years to develop these services. The residents of the Karachi Administration Employees Cooperative Housing Society had paid all development charges to the housing society and various taxes to concerned authorities.

Three years of continuous pressure by the KAWWAS altered the situation. Major development work has been completed already by local government and municipal authorities and municipal services are provided fairly regularly. The KAWWAS is now gradually assuming the role of a local environmental watchdog. Currently, they are working on the maintenance of a refuse collection system with the assistance of ZMC's Health Department.

None of the women were familiar with office procedures, the organisational structure and working of local government, its numerous agencies and departments, nor with formal management skills. Sheer determination and hard work helped them overcome the bureaucratic obstacles. They learned from experience and confidently presented their case, supported now and again by resources within the system, and finding recognition in the invitation to present their story at the Global Assembly.



Schmink, Marianne (1984).  
*Community management of waste  
recycling : the SIRDO.* (Seeds ; no.  
8). New York, NY, USA, Seeds

Two case studies are presented of the involvement of women in management of low-cost urban waste disposal and water supply. The women operate, maintain and manage a small neighbourhood plant which recycles sewage, grey water and organic refuse. The plant is operated on a rotational basis and supervised by an elected and trained women's committee. This committee has employed a widow and her son for daily plant maintenance. The end products, compost and purified water, are used for growing vegetables and the surplus compost is marketed. Spin-offs include the construction of a children's playground and buying food wholesale. The women have given feedback for design improvements and were involved as trainers in a second neighbourhood which installed the plant. Here the women had already improved the poorly functioning water supply, by collecting funds for maintenance and arrears in water fees and by establishing an advisory committee to improve the performance of the male water board.

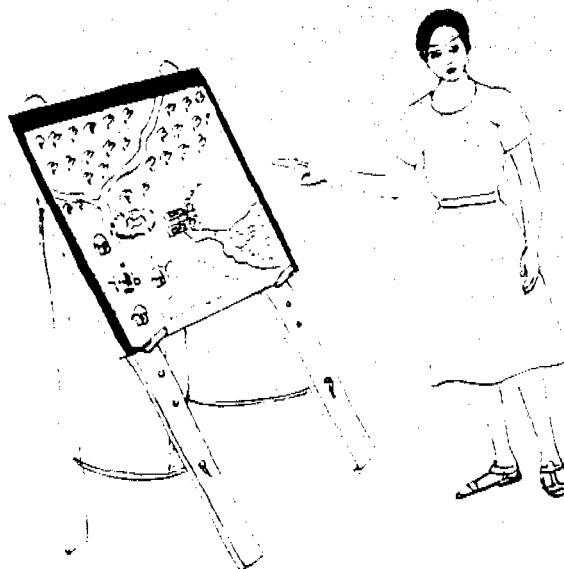


**EDUCATION AND TRAINING**



Haskoning (1988). *Skill training for female construction workers as masons*. Nijmegen, The Netherlands, Haskoning. Videofilm.

This short videofilm (20 minutes) in Hindi with English undertitles shows how 30 unskilled female construction workers were trained effectively as masons. They now build latrines in two smaller Indian towns, Kampur and Mizrapur. The video shows how women were selected and prepared, and gives pictures of their three-week training in the classroom and on the work site. The course was followed by a three-month apprenticeship, with the women building latrines in groups of three. The women themselves tell about their experiences and benefits, and the master mason praises the quality of their work. Not shown in the video is how despite their training, the women could not find skilled jobs as individuals. After a year, they therefore formed a co-operative to increase their bargaining power with the municipalities. They now all have building contracts.



Each module is organized in the same way: reasons for and constraints to women's participation, implications for project success when women are in- or excluded, and practical recommendations on how to involve women.

Each module also has three basic questions on which participants can do instant research in low-income settlements nearby, and three discussion questions on their own projects. Because the guide covers all aspects of low-income urban settlement, only the major aspects of women's involvement in water supply and sanitation (physical planning and design, maintenance) are covered.

Expanding to cover other aspects of water supply and sanitation in low-income urban areas, such as self-managed systems or facilities, community administration of services, preservation of water quality and hygiene education would therefore be useful.

UNCHS (1986). *The role of women in the execution of low-income housing projects: training module*. Nairobi, Kenya, United Nations Centre for Human Settlements (Habitat).

Involving women in all aspects of slum upgrading and site and service projects is the subject of this practical training guide for project staff. The guide consists of guidelines for the trainer, plus ten modules on all aspects in which women should be involved: formulation of selection criteria, selecting beneficiaries, planning the settlement, planning the infrastructure, planning the dwelling, financing, construction, self-help building and contracting, project maintenance and cost-recovery.

Sörensen, Maria E.C. (1992). *Hygiene education with a participatory approach for women in Madras, India*. Utrecht, The Netherlands, Faculty of General Social Science, University of Utrecht

An Indian NGO, Women's Voluntary Services, organizes programmes for adult education, employment and health education for poor rural (25,000) and urban (35,000) women. A few years ago, WVS adopted a more participatory approach. The author studied the health education work by visits to 10 rural and 10 urban centres and meetings with staff, women members and drop-outs. Health education is carried out by female field workers from the community. WVS asks male leaders to assist in finding interested literate and trusted women of 15-35 years. Those chosen often already showed interest during adult education classes. Each worker has a group of 30 women. Field workers with dedication, experience and leadership become supervisors over 10 colleagues. Salaries are Rs. 200 for supervisors and Rs 150 for field workers, both lower than what a domestic servant earns in Madras. In total, some 2250 women are group members. Drop out is 25%. Field workers are trained in contents by WVS's health education specialist and in communication by the Department of Adult Education, including on how to prepare their own materials. Training methods are still quite formal. Participatory training methods are not yet used. To form a group, field workers contact male leaders and conduct a survey to gauge interest, literacy and age patterns. Contents of the programme are planned centrally, after a (non-participatory) survey on health problems, resulting in a focus on environmental hygiene. Education methods are home visits, to get to know the family and get support from husbands/mothers in law, and group meetings at the worker's home.

Group meetings are preferred (sharing problems/ideas, mutual motivation, group action). The field worker does not instruct, but encourages sharing of problems and solutions. Drop out is not from lack of interest, but from too much work and most want to return later. Good timing of meetings is essential. Men are targeted indirectly by asking the women to pass on knowledge to husbands. When joint meetings are organized, half of the husbands also come. Male participation is needed as tasks and authority on environment related issues are divided and men often co-determine domestic decisions. Participants and staff are satisfied with the education, but both want to move into physical upgrading.

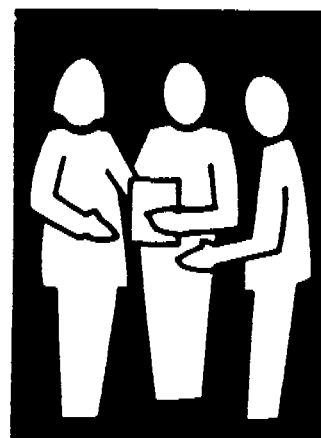
The study gives some recommendations to further strengthen the participatory character of the work.

El Katsha, Samia, et al. (1990). *The Anne White Health Education Summer Clubs established at six primary schools in Menoufia Governate*. Cairo, Egypt, Social Research Centre

Women, Water and Sanitation Project (1989). *A guide for trainers for improving hygienic practices and sanitation*. Cairo, Egypt, Research Center, American University in Cairo

To introduce schoolchildren and teachers to environmental health education, the action research project "Women, Water, Sanitation" organized summer clubs at six primary schools. Aims were to improve the children's knowledge and practices, inform the teachers on modern hygiene education methods and train staff from the Department of Education on a different approach to school health education. The

reported programme was the third in a series. It was financed by a private grant. A baseline by the researchers showed that children's and teachers' existing knowledge was theoretical and not applied. Teaching methods lacked creativity and educational material was absent. The programme introduced making one's own materials (drawings, dolls, drama). The teachers got training and a guide. Themes were personal and environmental hygiene, pollution, sanitation and disease transmission. Training courses were introduced at the Department, on how to organize an environmental health education programme, including setting objectives, making job descriptions, preparing programmes and materials and bringing in resource persons. Results were measured through interviews with children and parents. A group session was held with teachers and Department staff. Children had more practical knowledge and were said to introduce improved hygiene practices at home. Teachers and Departmental staff reported the programme to be a success. Participants suggested to continue the education during the regular school programme and to expand it to other schools. The documents include no quantitative data on knowledge and behaviour change and participation and results of boys and girls are not compared.



UEBM (undated, c. 1993).

*Promoviendo la participacion de la comunidad en los proyectos de abastecimiento de agua : una guia para trabajar con la mujer.*

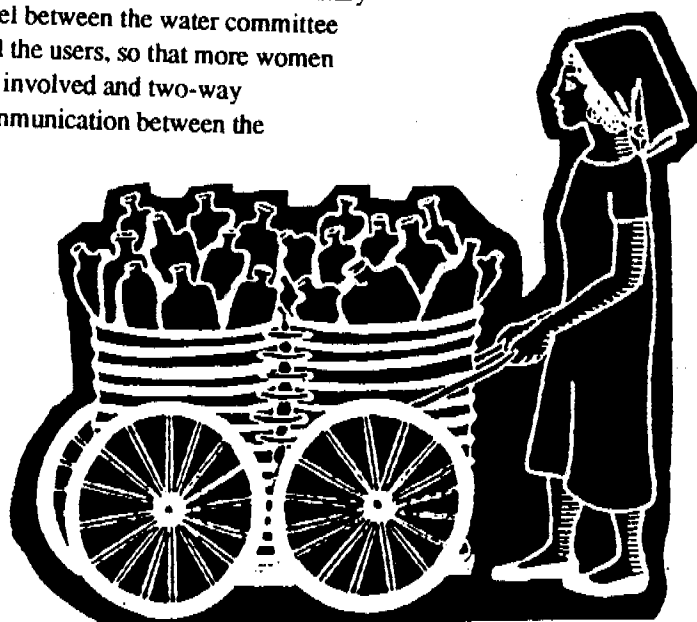
Tegucigalpa, Honduras, Unidad Ejecutora de Barrios Marginales, SANAA and UNICEF.

(Promoting the participation of the community in water supply projects. A guide for working with women)

This guide is the result of an earlier analysis of how women in low income urban communities participate in UEBM's water projects (see abstract 44). It distinguishes first between community mobilization and voluntary labour for a pre-determined project and real community participation. In the latter, solutions are flexible and the community makes the ultimate decisions after an interchange of information and manages the resulting service. Originally, no special attention was paid to women, but they were found to make a difference to the projects. Their participation is important for the project's effectiveness and because it helps meet women's development needs and reduces inequalities in gender relations. A greater participation of women in a more participatory process ensures that the system installed is the nearest match to what the users expect and what is technically, economically and managerially feasible. Designs of distribution nets and user facilities are better adapted to user needs. Enough women are on the committee managing the participation process and the subsequent service. More women take part in decision-making, organization and representation. Access to training and functions is more equally divided and women's self-esteem, capacities and organization increase. The document then outlines a broad strategy for achieving these goals. This is

followed by operationalization: more time for participation up front, especially for information, election of water committees and decisions on technology; sensitization of the community on the importance of women's involvement; motivation of women, e.g. through local groups, to take part and elect women functionaries; changing of the collection and analysis of community data into a participatory process with men and women; holding project assemblies at neighbourhood level, which are easier for women to attend and speak out in; discussion of tasks and functions of water committees and roles of women before actually electing the committees; identification of what women need to leave home and take up functions, e.g. possibilities to bring children along or leave safely home, training and alleviation of domestic work; explaining consequences of various technologies and service levels, so that technical and economic feasibility are in harmony with what women will accept; more attention to proper information channels and media to women; election of women neighbourhood representatives (1 per 10-15 households) as an intermediary level between the water committee and the users, so that more women are involved and two-way communication between the

committee and the users becomes easier; more involvement of existing women's groups and mothers clubs; design of audiovisuals and written material with needs and participation of women in mind; involvement of women in discussions and decisions on technology and local designs; asking NGOs and local groups to organize discussions with men and women on gender issues; staff training on gender issues and more cooperation between technical and social staff and between the project and other organizations. The document ends with suggestions for project and programme evaluations, a list of evaluation questions, including women's participation and a list of indicators to monitor women's involvement. Participatory techniques for use in the field are under development.





Munoz, A.F. and Salazar, N. (1990). *Participation Comunitaria Educacion Sanitaria e Higiene Personal*. Lima, Peru. CEPIS (Community Participation, Hygiene Education and Personal Hygiene)

This book presents conclusions and material of the workshop on community participation, sanitary education and personal hygiene held in Lima, Peru, 19-23 March in 1990. Cases from Bolivia, Colombia, Ecuador, Paraguay, Peru and Venezuela, both in rural and urban water and sanitation projects are presented. The book offers interesting data and information concerning the situation of water and sanitation in the Latin American region.

Colombia has the highest rates (95%) of water supply coverage in Latin America. In general 86% of urban population and 53% of rural areas are served by water supply systems. Rates of coverage for sanitation are 76% in urban areas and 31% in rural areas. These figures have to be counterbalanced with data providing information on the way these facilities are functioning. As main problems of the limited development of community participation and sanitary education during the Decade, the lack of social marketing, a low dissemination of information, the economic crisis in the region, shortage of foreign aid as well as lack of institutional capacity were mentioned.

Community participation is defined in the relationship state-community.

It implies the participation of all persons responsible for the development of public services: politicians, technicians, communication and information people, private entrepreneurs, university and users. The book describes all problems in the community participation and sanitary education as far as each of the responsible agency actors is concerned. Strategies and plans of action are drafted both at regional and country level. The book does not mention women's involvement as a process, but it pictures participation as a global strategy.



WHO, CEPIS, Ministerio de Salud and UNICEF (1991). *Training Package for "Movilizadoras" (women community motivators) on Water and Health in Urban Areas*. Lima, Peru, CEPIS

This material deals with seven themes related to water and health. It can be used by sanitation technicians to train movilizadoras for work with women in communities. The training package includes: 1) a technical guide, which provides the learning contents and techniques for the person who is going to facilitate training; 2) a set of posters, portraying the problems and solutions related to each theme; 3) a guide for women's participants - a simple booklet containing the main messages and handed over to the participant at the end of the training; 4) a motivator's guide, containing techniques to be used by the motivators in their work with fellow women.

The themes developed are short and simple. For each theme, the problem, objectives, basic information, techniques, actions to be taken and a summary is presented in two pages. Throughout the seven themes, messages such as low-cost solutions, importance of water quality, use of clean water and community organization are strongly portrayed.





Montesdeoca, Ariel (1993)  
*Seminario Mujer, Agua y Saneamiento* (Seminar Woman, Water and Sanitation) held in Managua, June 1993. INAA/INIFORM/SNV/UNICEF/CARE/IBIS/AOS SNV, Nicaragua

Discussions held during the seminar on "Woman, Water and Sanitation" aimed at systematizing the work which is being carried out by water supply and sanitation projects involving women. The exchange of information on local experiences presented by participants opened space for reflection and sensitization at individual (participant) level, with spin-off at project and institutional levels, on the need to stimulate women's participation in water and sanitation projects. A different approach for women's participation was outlined by participants, demanding not only an egalitarian participation for women, but also their access to decision-making processes. Specific objectives of the seminar were to evaluate women's

participation and project impact on women; the search for enhanced exchange of information on gender in water and sanitation projects; the involvement of different governmental and non-governmental organizations with gender in water and sanitation projects; the proposal of strategies to involve technical staff, promoters, and authorities in gender issues on water and sanitation programmes according to immediate needs and strategies of women; and the continuation of inter institutional support to the gender component on water and sanitation programmes. Several gender policies at institutional level were presented as well as four case studies: rural aqueducts, the CARE-MATAGALPA project, the SNV-New Guinea project and the IBIS-El Sauce project. These case studies focused on the socio-economic context in which projects are carried out, roles played by women, factors facilitating and/or limiting women's participation, how communities behave when women participate in water committees, benefits achieved by women in projects, and what projects expect from women's participation. Projects should lead to the amelioration of community conditions and to a higher level of development. The latter is measured by the degree of participation, at individual and collective levels, in economic, social and political processes. Women have a positive or negative participation in development projects depending on the acceptance of their participation by the community, this being a point of departure for the debate on special issues relating to the participation of women in water and sanitation projects. The following questions were raised and analyzed: How is the gender approach understood? Does the election procedure within the

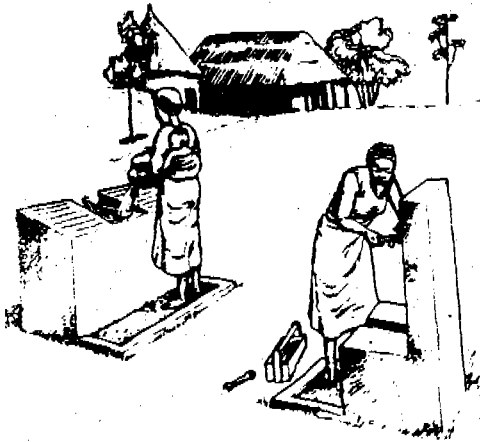
drinking water committees facilitate the election of women? Is it easy to integrate women in projects? Is this integration having any impact on the value given by the community to women and access to decision making, or are women used as physical labour force alone? How is women's participation linked to sustainability? What factors have determined that women do not identify their participation as a factor of personal development and benefit to the project? Which methodology should be elaborated as to sensitize community without causing confrontation between men and women?

Productive and reproductive activities undertaken by men and women regarding water are examined as a means of clarifying the different roles played by both sexes and their differentiated access to and control of water. For example, women have more free time when public or domestic water pumps were installed but lose the social contacts with other women when going to the river or water source.



## HEALTH AND HYGIENE





Hoque, Bilqis Amin and Briend, A. (1991). A comparison of local handwashing agents in Bangladesh. In: *Journal of Tropical Medicine and Hygiene*, vol. 94, no. 1, p. 61-64.

A frequent drawback of health education programmes is their neglect of beneficial customs and promotion of improved practices that

are only affordable to higher income groups, such as handwashing with soap. This study indicated that mud and ash are an equally efficient cleaning agent as soap. Twenty women from a low-income urban neighbourhood in Dhaka, Bangladesh washed their hands on five consecutive days with soap, mud, ash, water only or not at all. The researchers used a modified fingertip technique to collect samples and tested these for faecal coliforms through membrane filtration. On the day without washing, 70% had significant contamination with faecal bacteria. Washing hands with an agent (soap, mud or ash) led to a significant reduction. Washing with water only made no such difference. A questionnaire on general household hygiene revealed that only 15% of the women in the study used mud for handwashing. Most women only used water and many were not aware of the benefits of handwashing. One of the recommendations was therefore that health education programmes should concentrate on increasing women's awareness of the importance of handwashing and promote the habit of using traditional agents.

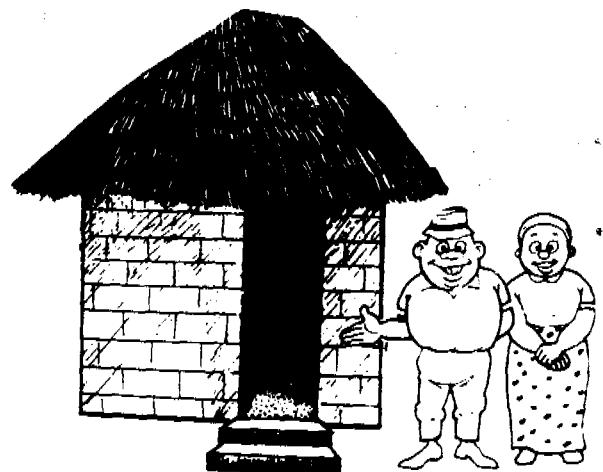


Zimicki, Susan (1993). 'Understanding the diarrhoea problem in the Philippines: research as a basis for message design. In: Renata E. Seidel, (ed.). *Notes from the field in communication for child survival*. Washington DC, USA, Academy for Educational Development. p. 7-15

The population of the Philippines is spread over 7,000 islands, a great challenge for health education and services. Testing public communication of oral rehydration therapy was done in three pilot areas. Two were heavily populated with good access to health services. Here

the programme promoted home-made fluid and a factory produced formula, Oresol, which people could get free at clinics or buy in shops. In an isolated Muslim area with a weak health delivery system a traditional weaning food called 'am' was promoted. A survey was done among mothers to learn what their views and practices on child diarrhoea were - and not those of the official health service.

The survey was to give the information needed to plan a health communication campaign which would be relevant and convincing for its target group. It showed that the mothers distinguished various level of seriousness in child diarrhoea and treated it with more fluid (59%), special food (26%), but also stopped breast-feeding (30%) or gave purgatives (7%). Oresol was known to 79% and 19% mentioned its use without being asked. Main barriers were low availability, not recommended by the medical sector or relatives and friends and lack of information on its preparation. The survey also showed that in private health centres staff recommended antibiotics or anti-diarrhoeals rather than ORT, and that women's exposure to radio and television was high. The study taught several lessons: 1. The group with the greatest risks had more children, less money and education; 2. Mass media are the best way of reaching these mothers with information; 3. Continuation of breast-feeding during diarrhoea is to be promoted; 4. Public and private health staff need training on ORT; and 5. Oresol has to be better distributed.



Yoder, P.S.; Oke, E. A. and Yanka, B. (1993). 'Ethnomedical research for developmental purposes : examples from Nigeria and Zaire'. In: Renata E. Seidel, (ed.), *Notes from the field in communication for child survival*. Washington DC, USA, Academy for Educational Development. p. 17-23

Ethnomedical research investigates how different ethnic groups identify and classify illnesses, see causes and remedies, and evaluate treatment. Knowledge of these indigenous disease systems makes public health projects more effective. In Nigeria a male researcher interviewed female groups on their views on child diseases and knowledge of oral rehydration. First he obtained support from male leaders and interviewed men to prevent jealousy. 'Nupe' speakers distinguished three types of diarrhoea, corresponding to general diarrhoea, dehydration and dysentery. 'Hausa' speakers distinguished the first and last types, but not dehydration.

In Zaire, the male researcher interviewed female Swahili-speaking groups in the capital and Shaba. Six types of diarrhoea, each with its own name and synonymous to general diarrhoea were mentioned by the women: diarrhoea with nappy rash, diarrhoea with dehydration, diarrhoea in a breast-fed child, diarrhoea with measles and dysentery. They were treated with various liquids. When dehydration occurs, the mother rubs a local ointment on the fontanelle or palate. Findings taught that health communication programmes need to recognize different types of diarrhoeas and give the correct treatment for each type.

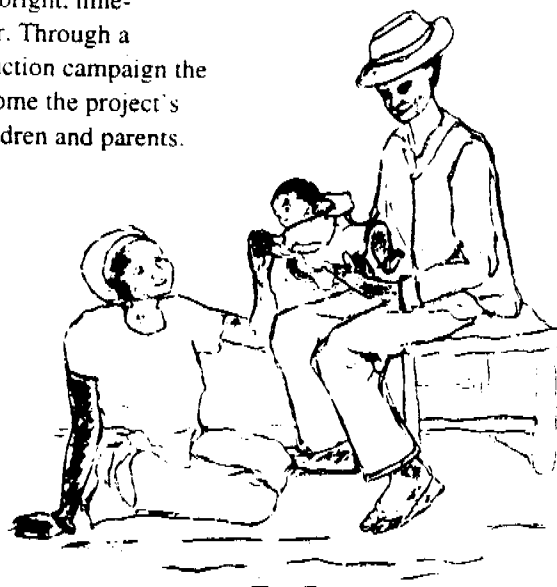
The work showed further that short studies yield important data, identify

Seidel, Renata E. (1993). *Notes from the field in communication for child survival*. Washington, DC, USA, Academy for Educational Development

Three field notes (no.10, 13 and 18) from the HEALTHCOM project deal with communication and marketing for child survival in Ecuador.

In 1985 Ecuador's first nation-wide child survival programme (PREMI) was created to lower morbidity and mortality among children under five by promoting immunization, diarrhoeal disease control, growth monitoring and breast-feeding. A PREMI logo and slogan were designed with the help of a local advertising agency and the focus group of women.

Normally an effective communication strategy avoids any mid-programme change in major messages. Results of the first national health campaign, however, showed that most children over three years old had completed their vaccination doses. The PREMI logo, showing children of early school age, therefore had to be changed. The robust boy and girl gained a healthy, bright, nine-month-old brother. Through a successful introduction campaign the little boy had become the project's spokesman to children and parents.



One of the chief goals of the programme (field note no.18) was to undertake public health education efforts on a massive scale. Ecuador has a relatively high literacy rate and an even higher level of radio ownership. A radio course on infant health was to bring about changes in health-related behaviours practiced at home. A second goal was to produce graduates who would in turn become sources of reliable information within their respective communities. Several media were integrated and a nation-wide lottery for educational scholarship should provide incentives to all participants, being rural mothers and nurse teachers. Radio programmes provided the backbone of the course. They required mothers to follow broadcasts simultaneously with a printed booklet and to engage in group discussions. Each learning module, 36 in total, consisted of five distinct parts; a brief introduction, a soap opera, a list of summary recommendations, exercises and the last section suggested related community activities. This last element appeared unlikely to be conducted outside the home without further support. The success of the course depended heavily on the involvement of 900 auxiliary nurses in the 20 participating provinces. Upon graduating, mothers received a door sticker, a supply of ORS packets and a printed diploma.



Curtis, V.; Cousens, S.; Mertens, T.; Traore, E.; Kanki, B. and Diallo, I. (1993). 'Structured observations of hygiene behaviours in Burkina Faso: validity, variability and utility'. In: *Bulletin of the World Health Organization*, vol. 71, no. 1, p. 23-32

For the study of the health impact of water supply and sanitation programmes in developing countries methods for the measurement of changes in hygiene behaviour need to be developed. Structured observation of behaviour is increasingly used in investigations of associations between behaviour and health. A number of questions remain, however, about the validity of the method of measurement and the variability of the behaviour itself.

A study of childhood diarrhoea in Bobo-Dioulasso, Burkina Faso, has been carried out including the administration of a questionnaire on, and direct observation of, hygiene practices and environmental conditions related to hygiene. A total of 2775 home interviews were

conducted with the mothers of hospitalized children and with a neighbourhood control group. In addition, 548 of the households were visited for the purpose of direct observation. Fifty per cent were revisited for a repeat observation, and ten households were observed on six separate occasions.

Agreement between the questionnaire responses and observations on child defecation and stool disposal practices was relatively poor. A higher degree of concordance was found between repeated observations of child defecation and stool disposal behaviours than between the questionnaire response and the initial observation. This with the suggestion of over-reporting of "good" practices on the questionnaire are consistent with the hypothesis that the questionnaire responses were less valid than the data obtained by direct observation.

Behaviours and conditions related to hygiene in Bobo-Dioulasso vary, both within and between individuals, and the within-individual variability may be substantial. Measurement may be useful to determine the incidence/prevalence of different behaviours/conditions in the community. For monitoring changes in hygiene behaviour a series of cross-sectional studies could be used.

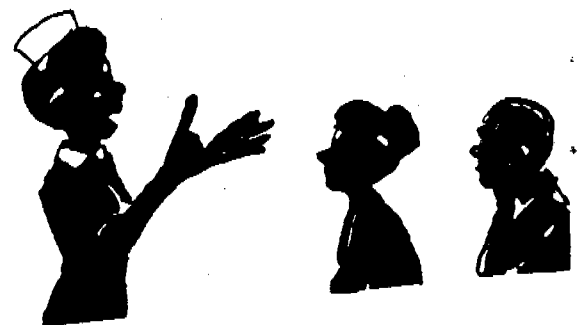
The findings of the study confirm that data collected through direct observation of hygiene related behaviours have greater validity than those obtained through questionnaire interviews, which may tend to overestimate the frequency of good practices. But structured observations are expensive.

Boot, M.T. and Cairncross, S. (1993). *Actions speak : the study of hygiene behaviour in water and sanitation projects*. The Hague, The Netherlands. IRC International Water and Sanitation Centre

Hygiene behaviour is defined as a wide range of actions associated with the prevention of water and sanitation-related diseases. To improve the effectiveness of water supply, sanitation and hygiene education programmes, we have to know how people behave and why.

The available literature is reviewed to specify links between human behaviour and the transmission of water and sanitation-related diseases. The authors conclude that - in general - reduction of these diseases can only be achieved by a combination of better hygiene behaviours. Safe disposal of human excreta and the use of more water for personal, domestic and food hygiene are among the most important measures to take for cutting off transmission.

The authors discuss how to design, plan and organize a hygiene behaviour study. Different observation and interview techniques are reviewed extensively to be able to decide which combination can best be selected for a particular study. When studying behaviours, cultural



concepts of purity and cleanliness, perceptions about transmission risks and socio-economic and demographic circumstances have to be taken into account.

Boot and Cairncross warn to be gender conscious. Men and women often have different roles and responsibilities as well as different knowledge, views and experience with regard to hygiene behaviour. Because of these differences between men and women, it is often more appropriate that women are interviewed by women, and if necessary, separately from men so they can express themselves more freely. Also among men and among women in the household there may be a difference in responsibilities, tasks and authority according to age and family status (e.g. mother-in-law, daughter-in-law, first/younger wife, girls, children). There may also be differences in socio-economic and cultural background of men and women from different households to be taken into account.

Schuurmans, Akke (1994). *Women and purdah : the position of women involved in a low-cost sanitation project in Quetta, Pakistan*. (Urban research working papers ; no.36). Amsterdam, The Netherlands. Institute of Cultural Anthropology/Sociology of Development, Free University

This book discusses three ethnic communities in the project areas: 1) Pashtoon, 2) Baloch and 3) Hazara. In-depth interviews with Muslim women from the different ethnic groups reveal their contrasting positions within each community, depending on the way with which they observe *purdah* i.e. the system segregating women from men based on three cultural values: a. proper behaviour, b. shame and c. honour. Indicators for women's *purdah*

observance appear to be: 1) length of family's stay in the city, 2) housing circumstances, and 3) family's level of education. Interrelationships between socio-economic indicators and observance of *purdah* are identified. Socio-economic indicators such as income, education, housing conditions, length of stay in Quetta, family system and size, and children's mortality rates were obtained from a 1992 baseline survey among beneficiaries of low-cost sanitation (LCS) to analyze general socio-economic conditions. According to the survey, the Hazaras, who are the least restricted, had the best socio-economic conditions and the Pashtoons, who are much stricter, the worst. However, this could be attributed to the short period of time the Pashtoons have lived in the cities. Female staff workers involved in hygiene education are recruited from the community. Some have had university educations but others are uneducated. Several case studies describing their various backgrounds clearly show a woman's vulnerability, and her dependency on male members of the family for her position in life, especially when she marries or loses her husband before or after a certain age. LCS experience with regard to the involvement of female staff members who observe *purdah* in the programme show: 1) positive results from highly-educated women with strong personalities, 2) illiteracy of female community staff members was compensated by their amazing ability to communicate verbal messages, 3) young female staff members had to be escorted by a male relative or older woman if they had to use public transportation, 4) problems finding educated women who were allowed to work in the field, and 5) female staff often lack ability to assert themselves.

Advantages of working with female beneficiaries are: 1) women take the time to talk and listen, 2) they tend to be curious and therefore more receptive to new ideas, 3) they have the ability to budget, 4) support for female staff working in the community, and 5) privacy among women due to segregation from men. Constraints are: 1) verbal explanations to illiterates tend to be more labour intensive, 2) because young women are secluded, the necessity for door-to-door visits to ensure they are included is very time-consuming, 3) project strategies and monitoring tools have to be adapted to different ethnic groups, and 4) lost time and increased overhead because women have to consult with men before decisions are made.







# ENVIRONMENT



CSE (1984). 'The state of India's environment, 1984-1985. New Delhi, India, Centre for Science and Environment'. In : *UNDP news*, May/June 1986

This earlier publication covers the degradation of environment conditions in India - home to 1/6th of the world's people. The country could probably feed 3-4 times its current population, with its soil and water resources properly managed. Instead, the success of the Green Revolution of the 1960s is being compromised by tree felling, soil erosion and increasing water shortages. The report is the second in a series published by CSE and dedicated to 'the dam-displaced people of India'. Annually, 1.3 million hectare of forests are felled to satiate demands in especially urban areas, which consume up to 20 million tonnes of wood a year. Wood is the country's main energy source and is becoming so scarce that in many cities prices doubled in 6 years. Some urban poor now spend up to 1/5th of their incomes on wood to cook with. In some rural areas wood is so short that farmers cannot afford new ploughs and bullock carts and fishermen find it difficult to obtain wood for their boats. Soil erosion has been such that 1/3 of India is now almost barren. With no topsoil or vegetation to trap rainwater and replenish water tables, much of India will face massive water shortage within a decade. It is India's women - the collectors of wood and water - who bear the brunt of the burden imposed by environmental degradation. Women have now started to take action. Hundreds of women's groups have sprung up throughout the country bent on actions to save themselves and their communities by saving their environment. Their first priorities are to replant forests and protect water catchments.

IPAC (1991). *Global Assembly of Women and the Environment : success stories. World Women's Congress for a Healthy Planet, Miami, Florida, USA, 8-12 November*. Miami, FL, USA. Women's International Policy Action Committee on Environment and Development.

This document is a collection of 218 case studies on how women have dealt with problems of water supply, waste disposal and environmental degradation. The case studies are all one page long and in a common format, give the name of the country, region and subject, the name and address of the woman responsible, the number of staff and community participants involved, a brief summary of the problem, the action undertaken and the impact, and a concise description of the history, way of work and results of the project.

Case descriptions are about projects from Africa (51), Asia and the Pacific (61), Latin America and the Caribbean (48) and Europe and North America (58). They deal with water supply and water treatment (56), waste disposal (51), afforestation and natural resource protection (34) and environmentally friendly systems. Projects are both rural and urban. The majority deals with single communities or towns and consist either of actions to protect existing water and energy resources or actions to improve local water supply, environmental sanitation and ecological conditions.

The following abstracts concern documents which have been reported in earlier reference publications of IRC and PROWESS. They are reprinted here because their contents are of particular relevance to the theme of this number of 'Woman, Water, Sanitation'.



De Colombani, P.; Borrini, G.; Meira de Melo, M. C. and Irshaid, M. (1992). 'Exploring the potential for primary environmental care: rapid appraisal in squatter communities in Salvador da Bahia (Brazil)'. In: *RRA Notes: special issue on applications for health*, number 16. London, UK. International Institute for Environment and Development

This paper presents the methods of collecting information in a field study carried out in Brazil by a group of postgraduate students of the International Course for Primary Health Care Managers at District Level in Developing Countries. The results, conclusions and recommendations of the study are presented in an ICHM dissertation. The study investigated possible actors, conditions, means and resources to promote Primary Environmental Care (PEC). PEC integrates three community components: empowering communities, protecting the environment, meeting needs. A Rapid Appraisal was carried out in three squatter communities within the Pau da Lima district. Squatter communities were chosen because in urban areas they are the ones most seriously affected by environmental problems and related health and

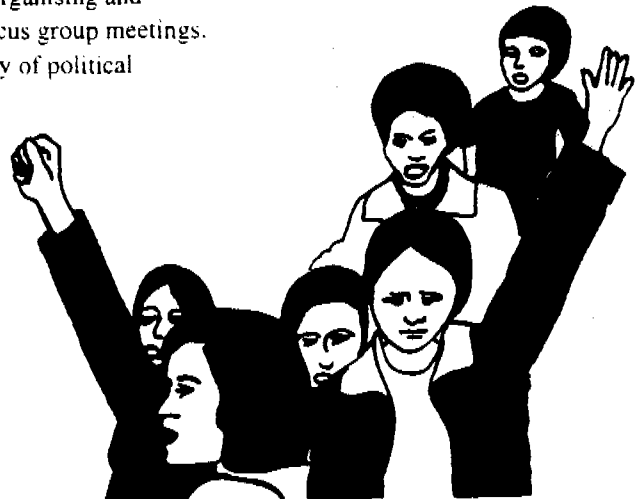
social problems. The focus of the Rapid Appraisal was on felt problems, interests and priorities in PEC, forms and conditions of community organization, and instances and conditions of community-based action. A checklist on the physical and social environment was prepared and used while collecting data with various Rapid Appraisal methods.

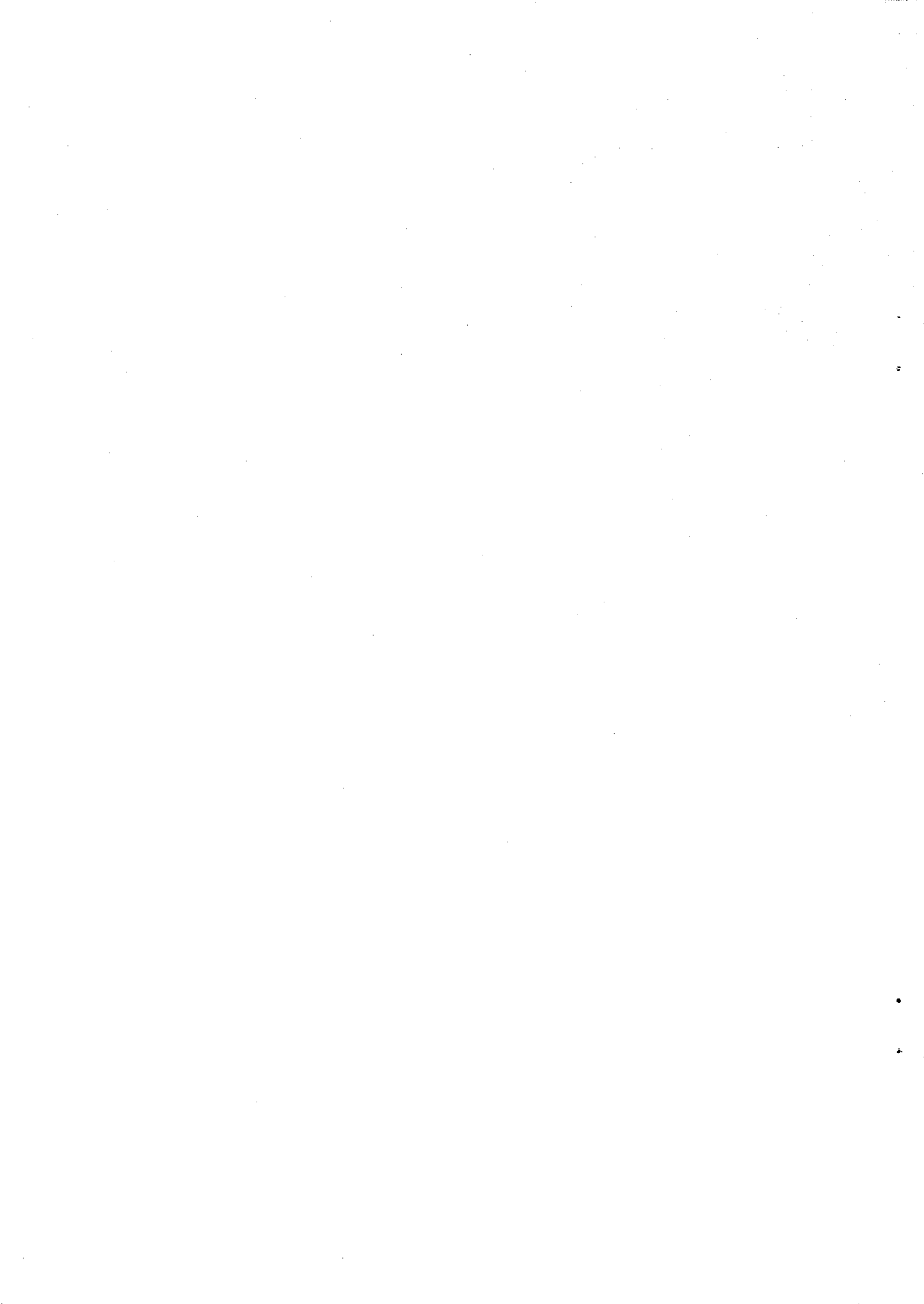
These methods are: review of secondary data; informal discussions with informants; direct observations; laboratory analysis of samples of the main sources of water used by the residents, taken during the observation walks. Life histories were collected to get insight in which people get to become and remain squatters. As the main method to identify felt problems in PEC and assess interests and motivation for community action, one focus group meeting was held with women, one with men and one with youth of both sexes under 20 years of age. Women appeared to have less information on community organization than men, but stronger determination to be involved in the future and often made many good suggestions for possible actions. Several difficulties were encountered in organising and managing the focus group meetings, e.g. the proximity of political

elections may have influenced people. Only with regard to the issues of community organization and action did semi-structured interviews with key informants provide richer information than the focus groups. Ten institutions interested and competent on environmental activities in the district were selected and interviewed following a checklist of questions. Finally, all members of the three communities were invited to a common feedback meeting on the study's preliminary results.

Information obtained with the above mentioned methods was summarized with the use of historical profiles, transects, maps and conceptually clustered matrixes.

The authors argue that Rapid Appraisal should be linked with a more action-oriented phase, e.g. micro-planning to work out the PEC strategy.





**MONITORING AND EVALUATION**



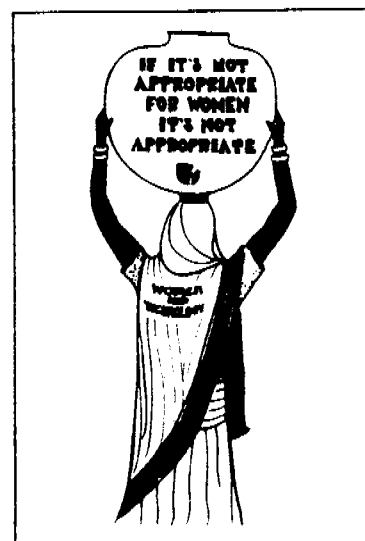
Hannan-Anderson, Carolyn (1990). *The challenge of measuring gender issues in water and sanitation. Paper presented at the workshop on "Goals and indicators for monitoring and evaluation for water supply and sanitation"*, Geneva, Switzerland.

The author states that monitoring and evaluation are possible tools to achieve a better integration of women into water supply and sanitation programmes. By integration of women is understood the involvement of women alongside men in mainstream development programmes/projects, as actors and on the basis of their existing roles. There are various reasons for women's integration: equity, shared benefits, project efficiency and empowerment. In the sector, efficiency seems to be the major motivation for the involvement of women, but this involves the risk of increasing the workload of women, and may create unequitable situations, for example when women work as volunteers and men are paid for the same work.

Methodological aspects in developing a strategy for integration are: 1) integration into the mainstream instead of separate programmes for women; 2) a gender approach, focusing on both women and men, instead of exclusively on women; 3) identification of those responsible within the organization for integration of women; 4) taking up integration in planning; 5) all staff having necessary awareness and skills, instead of appointing a specialist.

Gender refers to socially determined roles of women and men. They can be classified in reproductive, productive and community-linked roles. Women are involved in all three types. Knowing this, two areas of gender needs can be identified: practical and strategic gender needs. Water supply programmes often limit themselves to meeting practical gender needs of women, by providing women with practical benefits through better accessible water and enabling them to better carry out their practical gender roles. Evaluation of such projects would focus on practical benefits of water supply. Strategic gender needs can be found where women need changes in existing gender roles. Such needs are seldom clearly defined project goals, because of resistance within

governments and donors. They can, however, be implicit project goals, as a kind of "hidden agenda". If a project goal is to involve women fully in all aspects of the programme, strategic gender needs can be met through involvement in planning and decision-making, giving access to information and training, etc. Evaluation would then focus on these aspects. If the involvement of women has not been a project goal, evaluation can be used as an entry point for gender. The terms of reference for the evaluation and the composition of the team should then be gender-sensitive and gender aspects should be included in the main body of the evaluation report and not as an annex or separate report. To incorporate gender in planning we need baseline information, information on strategy in implementation based on the baseline information, and indicators for monitoring and evaluation. Indicators should be made gender-specific and go beyond an assessment of conventional benefits for women. In an annex to the document gender aspects have been added to indicators of efficient use, sustainability and replicability. They include access and control over resources provided; control over decision-making and leadership; changes in status in the community; changes in work situation; possibilities to sustain achievements;



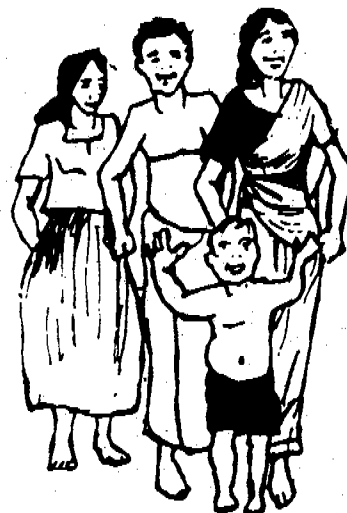
and possibilities to carry over awareness and skills developed through the water supply project to other areas in household and community.

Since in the water sector more and more emphasis is put on community initiatives, the potential for participation of women and men is increasing. In order to prevent men getting a dominant, managerial role and women a dependent role in an area where they formerly used to be independent and responsible, a gender perspective is very important. Support agencies will then have to identify and accept new roles.

GTZ (1989). *Indicators for success. community participation and hygiene education in water supply and sanitation: how to measure progress and results.* (CPHE Series; no. 4). Eschborn, Germany, Gesellschaft für Technische Zusammenarbeit (Technical Cooperation Agency).

Since community participation and hygiene education have become accepted parts of water and sanitation projects, there is a growing need to monitor their implementation and measure their effects. Impacts from participatory projects on health and socio-economic development take time and are difficult to measure, as many other factors may intervene. The document therefore advocates the use of more intermediate variables, such as adequate functioning of facilities, increased water or latrine use, and observed reduction of disease transmission risks from changed hygiene conditions and practices. To monitor the extent of community participation, five general variables are discussed. They are: the type and degree of user consultation in the local planning process of the water or sanitation project or the hygiene education programme; an adequate community organization for participation/hygiene education; adequate training of community

functionaries; and active involvement of women in planning, implementation and maintenance/management of water supplies, sanitation and hygiene education. For each participation variable, several observable or otherwise measurable indicators are proposed. Actual formulation of indicators and methods of measurement are situation-specific and are best decided in close cooperation with the local organizations and the people involved in monitoring. Indicators suggested to monitor women's involvement are: women are informed about the project, take part in local planning and decisions and find their suggestions used; they are members of local management organizations for water/sanitation/hygiene education, attend their meetings and take part in their decision-making; and they can take equal part in training and fulfill paid or otherwise recognized functions in maintenance, management and hygiene education. A second range of variables deals with measurable project results. These focus on items such as increased water availability and latrine coverage; adequate water quality or quality of sanitation; sustained functioning and upkeep of facilities; the extent and way people use the facilities; and the degree to which men, women and children have reduced risky hygiene conditions and practices in their communities, neighbourhoods and at home. Suggestions are further given on how to monitor project inputs in community participation and hygiene education activities and monitor also the contributions in time, cash and labour from the communities. The concluding chapter is devoted to setting up a community-based monitoring system. Several examples of monitoring forms from field projects are included.



Heyink Leestemaker, Joanne (1989). *Effects of changing water supply infrastructure on unpaid and paid labour of South Indian women: the case of Hosur 1971-1991.* The Hague, Netherlands. Institute of Social Studies.

This report gives the results of a study in an upcoming industrial centre in Tamil Nadu, India. It is one of the few quantitative studies on the economic benefits derived from improved urban water supply. The major objective was to quantify the link between the demand for and supply of water for domestic purposes and women's labour. The subject has been placed within the context of population and development dynamics and the overall water infrastructure of the region. A major conclusion is that improvements in water supply will affect various categories of women in different ways. Upper middle-class women, who have access to the formal labour market, and the poorest women, who have to earn money in the informal sector in order to survive, are most likely to use saved time and energy directly for extra income earning, while other women are less likely to do so. Opportunity costs of individual women's labour do not always justify the extra expenses made to pay the water rates. The availability of formal or informal employment opportunities for women is a pre-condition for increasing incomes. Without such opportunities income benefits are unlikely to be achieved from improved water supply in urban areas.

Chant, Sylvia (1984). Household labour and self-help housing in Querétaro, Mexico. In: *Boletín de Estudios Latinoamericanos y del Caribe*, vol. 37, p. 45-68.

Over one third of the population of Querétaro lives in peri-urban squatter settlements. Their population is essential for the town's industrial growth. Although the 29th largest city in 1980, Querétaro had the 5th highest industrial growth. Environmental conditions are bad, but lack of legal status and difficult topography has prevented the expansion of water supply and sanitation services. Water is delivered and sold by private or municipal trucks or through a few standposts located in front of the most important people in the lowest parts of the *barrio* (neighbourhood). Drainage, sanitation and solid waste collection are lacking. For reproductive and cultural reasons, a strict gender-based labour division exists with women in charge of domestic work and men doing wage labour and going out into the streets. Because of the unhygienic circumstances this means a 40% longer working day for women, as goods and services normally provided by the public sector now have to be provided by women as individuals. Improved quality of housing gives better results in less time and increases women's satisfaction. Concrete floors are a major felt need as they are easier to keep clean and prevent hook- and tapeworm. Lack of space also heightens unhygienic conditions. Water is another priority, as the trucks reach only the lower part of the community. Women from the upper sections keep oil drums for water storage along the road and then carry the water up. Those in the lower sections use hoses, but with the risk of sucking in dirty water. For tankwater (which sometimes comes from rivers), the women pay 100 pesos per cubic meter, 25 times the price paid by owners of private

connections in the wealthier parts of the city. On average, a household spends 7% of its income on water. To save money and cope with shortages many women wash clothes elsewhere. On average this takes 9-11 hours per week. About half the families have an -unhygienic- latrine, the remainder uses waste land, where also the solid waste is dumped, a major source for the spread of parasites, hepatitis A and polio.

Opportunities for handwashing are absent. In extended families, men occasionally help with water collection and solid waste disposal, while female relatives help with housework. Women heads of households are helped by daughters (45%) or sons (36%). Women in male-headed nuclear families work longest and get the least help. Nuclear families also have the highest number of dependants per income earner.

Between 32 and 44% of the women earn some income, one-third from home industries. Earning money contributes to marital stability and is an important source of power and prestige. Most of the female earnings are spent on household items.

ENDA América Latina (1990). *Nosotras en la ciudad - el aporte invisible de las mujeres al desarrollo urbano de Colombia*. Bogotá, Colombia. Grupo de investigación: *Nosotras en la Ciudad*. [We, the women in the city - the invisible contribution of women to urban development in Colombia]

The main objective of the resource booklet "We the women in the city" is to disseminate the outcomes of the research "Women living in low-income areas and the urban crisis" among those same women

who participated in the research. It also aims at valuing the work done by women to overcome the problems resulting from the lack of public and social services and proper housing in their neighbourhood. Another objective is to stimulate the exchange of experiences and to support the work done by women. The findings of the research are presented in a simple language by those women who were interviewed. Of a total of 2000 questionnaires sent out, 1876 were answered by women in 15 cities of Colombia. Findings refer to everyday problems in the communities, initially mentioned as being the lack of: water, proper housing, health services, proper light/energy and their worries about the safety and health of their children. Women also expressed how they organize themselves to overcome all their problems, how their organization works, what their contribution is, how they distribute their time among the various tasks which they have to perform and what their achievements are. Later, the women concluded not only that there was a lack of public services as they had initially mentioned, but also that they had no right to be the owner of their own houses, no opportunities to express their own opinion, no possibility to participate in the decisions taken concerning urban problems or to plan their house space, no egalitarian distribution of domestic roles among men, women and children, no leisure time and no training for women.





Espejo, Norah; Farrach, Violeta and Visscher, Jan Teun (1993). *Documentacion participativa del programa UEBM/SANAA de barrios marginales en Tegucigalpa, Honduras : informe final*. [The participatory documentation of the UEBM/SANAA peri-urban 'barrios' programme : final report]. The Hague, The Netherlands, IKC International Water and Sanitation Centre

In five years, 52,000 people in 28 low-income urban settlements, or 10% of the total *barrio* population, have received an improved water system. This report describes the participatory evaluation of the ongoing programme. The programme constructs community reservoirs which are filled from the municipal net, from boreholes or by tanker. The water is pumped into an overhead tank, then flows by gravity to standpipes or house connections. The community finances 20-50% of the capital costs through a revolving fund; the remainder is covered by UNICEF and the national agency SANAA. The programme sets the O&M tariff but the local water committees determine the payment arrangement and get the users' approval.

Implementation is by a technical and social team. The evaluation was done in a sample of six communities together with the implementors, male and female members of the water committees and women users. On average, 85% of the households were registered users. The registration range was 58% - 100% and was lowest in the largest neighbourhood, with 17,000 inhabitants. The systems function on alternate days and hours are irregular. Systems with their own source are affected by the unreliability of the source and/or the irregular electricity supply for pumping.

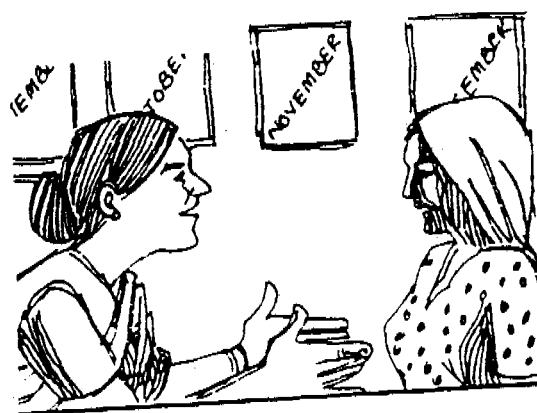


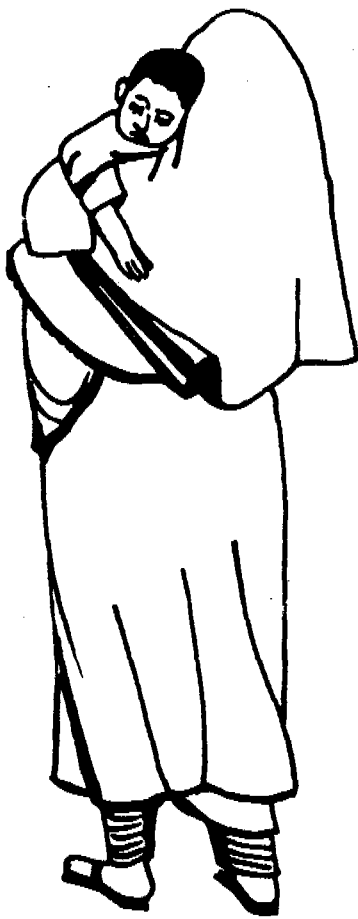
Before the improved system came, most people bought water from private trucks at US\$10/month, which they then had to carry uphill to their homes. For 80% of the households this amount constituted 12% of their monthly income.

Targeted amounts of water are 100 l/c/d for private connections and 120 l/hh/d for standposts. The tanker-filled systems supply 4 barrels/hh/wk, which is too little. Standposts are located by the neighbourhoods and open at fixed hours. Although the systems function, maintenance leaves much to be desired. They are self-reliant in terms of financing, but the contribution to the capital costs does not keep pace with inflation. To get a system, interested communities submit a request. The programme then visits them to assess technical and socio-economic viability and proposes a design and tariff. The community accepts the proposal (or not), chooses locations for standposts and forms a management committee. The committee holds information meetings, registers users, plans and organizes the community's contributions to construction, and manages the water system and its O&M and financing of recurrent costs. Local help teams assist in the community survey and with the committee's work. Subcommittees are organized on the basis of standposts, streets or blocks.

Twenty percent of the committee members are women. In other communities this is higher (average 30% for 21 *barrios*).

Women committee members are usually secretary or treasurer. The female membership is higher in the helper groups: 64%. The evaluation showed the following benefits of the programme: more water; a more reliable supply; savings in money and collection time; enough water for a much lower and affordable price; all have access at same price; surplus funds can be used for other projects; better, though not always adequate, water quality; better hygiene; less stomach and skin disease; less tired; a higher self-esteem because of better personal hygiene; more safety for women and children. At the end of the evaluation the team had meetings with the communities and the programme on where to make improvements. These include the strengthening of the programme's community participation and gender strategies.





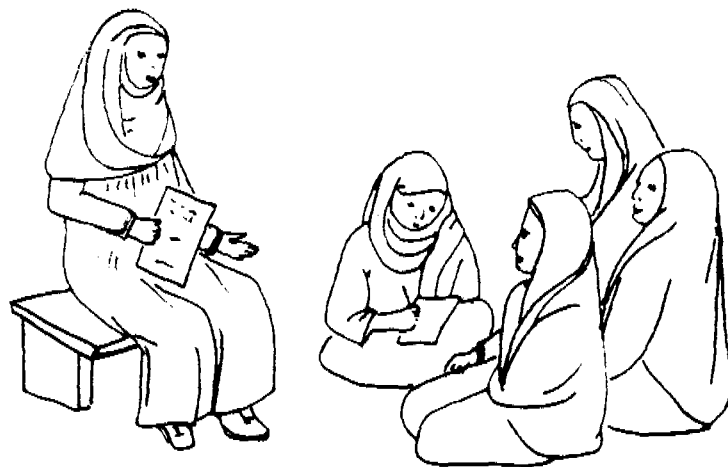
flushing and cleaning. Existing latrines were not used by men for urination for fear of filling up the pit too quickly, and by children for fear of falling into the hole or problems with fouling the seat. More than 90% of the latrines were cleaned by women. In the rural areas, households formed work teams to dig the pits. Because only 3% could afford the cost of the latrines, a 75% subsidy was given. Evaluation showed that women wanted washing facilities near the latrines for reasons of culture, convenience, and health. Households preferred their latrines to be located at some distance from the house, but if too far away, they are not used at night and in the rainy season. Compost-making procedures in double vault composting latrines installed in urban pilot areas have not been followed in spite of an intensive education campaign, thus mechanical emptying at the cost of the households is planned.

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Mbere, Nomtuse (1983).  
*Socio-economic aspects of low-cost sanitation : the Botswana experience*. Paper presented at the International Seminar on Human Waste Management for Low-income Settlements, 17-22 January 1983, Bangkok, Thailand

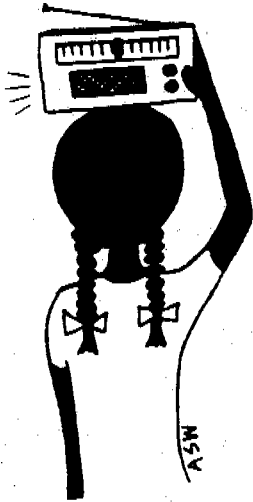
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In a pilot project in four low-income urban and six rural communities in Botswana, various types of latrines have been introduced for field-testing. Motivation training and health education were given by men and women health staff. The community was involved through general assemblies, meetings with leaders, and home visits. A sociological survey revealed a high felt need for private flush or improved pit latrines, a good health awareness, and several socio-cultural design criteria for latrine use by men, women and children. These included a short distance to a water point, raised seat, lack of visibility of use from ventilation openings under doors and from carrying water for



## POLICIES AND STRATEGIES





if poor women are to be mobilized for participation in sector activities, professionals need to gain a good understanding of their situation. Meeting and work times need to fit in with their family and market-oriented tasks. Poor households often rely on women's earnings and thus on their education, health and capacity to work. Female-headed households form a special group. Their incomes may be too low to qualify for housing/ infrastructure projects, they have even less time than other women and they are likely to have less access to loans. A good understanding of cultures and class and caste structures is also needed. The modesty imposed upon women can, for example, have implications on the siting of public facilities and on their employment within the sector. Female staff might be necessary to get access to some women. However, project examples show that women can be organized in spite of cultural constraints.

Various strategies and recommendations for involving women are distilled, like: determining the relevance of gender issues in ongoing and new projects; creating mechanisms for the participation of women and communities; and including gender considerations in design, siting and maintenance of facilities.



Kudat, Ayse and Weidemann, C. Jean (1991). *Gender in urban water and sanitation sector in South Asia*.

Based on literature review and field observations, roles of women in urban water and sanitation in India, Pakistan and Bangladesh are described and mechanisms identified to better target sector services to women. The authors give an overview of women's social, economic and residential conditions. Their potential for participation in sector improvements is mixed. On the one hand, some factors constrain their involvement, such as lack of political power, continuous threat of eviction, and poverty and indebtedness. Other factors stimulate their involvement, such as the relative stability of the migrant population, an often higher level of education of migrants compared to non-migrants, and a high level of participation of women in the labour force.

Gopalan, Prema (1991). *Women, shelter and environment: search for sustainable alternatives by the urban poor*. Paper presented at the International Forum on Human Settlements, Environment and Development, Mexico.

The paper states that due to the high growth rate of cities and the poverty of most of the inhabitants, governments face an enormous demand for municipal infrastructure and services. The poor have to develop survival strategies. Since women play the most active role in this, they are most affected by the urban crisis and by the urban poor's "administrative invisibility". However, they are also the first to invest in the future by mobilizing financial resources. They also have roles as income earners, information transmitters and negotiators with authorities. NGOs promoting sustainable strategies for urban development should therefore create support systems which recognize these roles and include women as partners in problem-solving and decision-making. To prevent a possible rejection of participating women by the community, it is important that the whole community recognizes the role women can play for change. NGOs should also try to promote the visibility of the urban poor by generating data and increasing interaction between urban institutions and low-income groups. Consolidation of shelter and settlement planning are conditional for sustainable survival strategies. Participation in these processes by those concerned, in particular women, is a necessity.

Siddhi, R.K. and Joshi, V.R. (1991). 'Strategies for a sanitation master plan'. In: Pickford, John. *Infrastructure, environment, water and people: proceedings of the 17th WEDC Conference, United Nations Centre for Human Settlements (Habitat), Nairobi, Kenya, 19-23 August 1991*. Loughborough, UK. Water, Engineering and Development Centre. Loughborough University of Technology. p. 97-101

Rural and urban sanitation schemes in Nepal were evaluated in the context of the formulation of a master plan for sanitation. Rural programmes administered by FINNIDA, UNICEF and the UK Government, and urban programmes administered by UNICEF, NGOs and governmental organizations all have advantages and disadvantages as outlined in the report. The overall goal of providing sanitation services and hygiene report. The overall goal of providing education for all inhabitants is targeted for the year 2000. Governmental institutions are to play a facilitating rather than a decision-making role. Women are to be more actively included, and a reorganization of the administrative structure is planned. The program will begin with hygiene and sanitation education, followed by the formation of community sanitation committees. The emphasis is on construction of low-cost technologies using locally available materials. Monitoring and evaluation will be provided by district and regional units. District training teams will carry out the educational aspects.

FINNIDA (1994). *Looking at gender, water supply and sanitation*. Helsinki, Finland. Finnish International Development Agency, Ministry for Foreign Affairs

Interspersed with project and field information, this booklet describes the policy and activities of the Finnish national agency for development cooperation to give men and women more equal parts in Finnish-funded activities and projects. The booklet documents how this policy was applied in a rural water project in Tanzania and an urban water project in Hanoi, Vietnam.

In Tanzania, the project began as a purely technical construction project. Consequently no social studies were made and research showed that women were almost excluded from planning, implementation and training. In phase VI, the final phase, strategies to involve women systematically were put into place, a course on women, water and sanitation was offered, the role of women in village participation designed and put into a manual and project statistics disaggregated by sex. In the urban case, the importance of community participation by gender was discovered four years after the programme started. Awareness and participation were formulated as explicit objectives to be achieved. An implementation programme was started up. The booklet draws lessons from both cases and gives practical suggestions on what to avoid and how to proceed. In the next chapter the lessons are related to the overall project cycle. Concrete suggestions are made on how to include gender aspects into each step of the cycle.

General recommendations are: not to mention women's activities as a separate item, but address how men and women take part in all project activities; include women's participation in achievement indicators; disaggregated statistics by sex; accept that gender goes beyond having 'a' woman on the team; collect information on the target population by gender and socio-economic levels to reveal e.g. high percentages of women-headed households; and consider the gender issue not only at the field but also at the institutional and policy level. A list of references is included.

