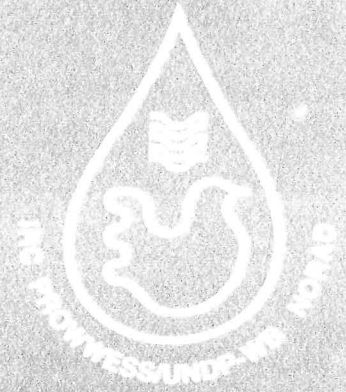


Special Issue: Low-Income Urban Water
Supply and Environmental Sanitation



Woman, Water, Sanitation



Woman, Water, Sanitation

About PROWESS

PROWESS stands for the "Promotion of the Role of Women in Water and Environmental Sanitation Services". It focuses on gender issues and relations in water supply and environmental sanitation projects, because these factors greatly affect the success of projects and the even distribution of benefits.

PROWESS was created in 1983 in response to a widely perceived imbalance between policy commitment to the involvement of women and the lack of concrete field experience. PROWESS has moved from UNDP/New York to Washington, where it is a part of the UNDP-World Bank Water and Sanitation Program. The Program is active in 40 countries around the world. PROWESS, in conjunction with the Program and the International Training Network, continues to focus on the challenge of institutionalizing participatory and gender sensitive approaches in the provision of water supply and sanitation services for the poor.

Requests for information about PROWESS should be addressed to:
PROWESS, UNDP-World Bank Water and Sanitation Program,
World Bank, 1818 H Street, N.W., Washington, D.C. 20433, USA
Tel. +1 (202) 473 3994, Fax +1 (202) 477 0164

About IRC

The IRC International Water and Sanitation Centre is an independent, non-profit organization dealing with information support and knowledge generation and exchange on water and sanitation improvement. With its partners in developing countries and with United Nations agencies, donor organizations and non-governmental organizations, IRC assists in the development, exchange and application of relevant and recent knowledge. The focus of this cooperation is on the rural and urban fringe areas.

Support is provided by means of publications, training and education programmes, evaluation and advice services, and development and demonstration projects. IRC's information and training programmes include community participation and management; gender and gender relations; hygiene education; human resources development; appropriate technology, including low-cost water treatment, water resource protection and rainwater harvesting; operation and maintenance of completed systems, and community-based financial management.

Requests for information about IRC should be addressed to:

IRC, P.O. Box 93190
2509 AD The Hague, The Netherlands
Tel: +31 (0)70-3068930, Fax: +31 (0)70 3589964, E-Mail: general@irc.nl

Colophon

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Compilation:
Maria-Lúcia Borba
Ineke van Hooff
Christine van Wijk-Sijbesma

State of the Art:
Maria-Lúcia Borba

With contributions from:
Bettie Westerhof
Nigel Browne
Christine Zeber
Diana Kay

Editing:
Nicolette Wildeboer

DTP/lay-out:
Lauren Houttuin

Printing:
Pallas Offset

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For further information:

IRC International Water and Sanitation
Centre
P.O. Box 93190
2509 AD The Hague
The Netherlands

Tel: +31 (0)70 3068930
Fax: +31 (0)70 3589964
E-mail: general@irc.nl

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We women (Kolladi from Kerala)

Oh ye women, did you hear a news, so good it warms our hearts?
Gather all ye women, if you haven't, call all your friends, oh women
and hear this wonderful piece of news.

Health for each and health for all with the coming century
Let us work for it and reach that aim. Ah, let us sing and dance, yes,
let us all sing and dance.

Miles and miles we tread to fetch some water for our home
What a pain is this burden for us women. These husbands are to be looked after
All alone we bring up the children.

All the household chores we do also. We ourselves do all the cleaning
and tidying around. It is midnight before we go for sleep.
Only to get up before dawn breaks, early, very early,
to run for the backyard. Oh what a pity, we have no latrines.

Where are our men, those men, where are they?
Aren't here, anyone, to listen to our voice?
Yes we know the rulers, too, were not different
from these men of ours, in their cruel domination.

Panchayanthi Raj has come at last. For women, they say, it cares
with focus and reservation. But tell ye women about it.
Who is here so involved as to work for it?

Chant our burdens, sing our pain. We can't go on thus, we can't go on
This state of ours must change, yes. We can't go on.

When Grama Sabhas are convened in future, In one voice we say things of our concern
Remember: programmes of change must never be just on paper.
Let us rise and struggle, oh women. No more can we stand this downtrodden state
of ours, no more.

Chant our burdens, sing our pain. We can't go on thus, we can't go on
This state of ours must change, yes. We can't go on.

Source: SEU, Kerala

Foreword

Water scarcity, inadequacy of sanitary conditions and environmental degradation in urban areas have an especially arduous impact on the urban poor. The access to good quality water and sanitation often is restricted to the better-off neighbourhoods, although the poor in many cases pay higher prices for unsafe water bought from water vendors. These hardships often are aggravated by the failures of urban water management and by political and institutional factors. Rapid population growth in the perimeter of developing country cities contributes to this chaotic situation.

We are pleased to issue *Woman, Water, Sanitation : Annual Abstract Journal* No. 6, which discusses the major documents that have been written recently covering gender roles in the sector, with a particular emphasis on urban issues. In addition to the difficulties mentioned above, urban growth CAN also involve positive aspects such as higher wages and better access to education, health services, food and job opportunities. In the last decades interventions for water and sanitation in urban low-income areas have been characterized by massive, costly conventional technologies which often have not reached the majority of the population. Sector agencies are now searching for new solutions. These entail the participation of residents - women and men - in planning and sometimes managing their basic water and sanitation services.

As always, we would like to thank the Government of Norway for the continuing financial support to the bibliography, as well as Mary Elmendorf for her contribution as reviewer. We would appreciate any feedback you have for us, along with new documents which could be included in the next issue.

Wendy Wakeman
UNDP-World Bank Water and
Sanitation Program

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Cover photographs:

Ing. Cesar Rissoli, CAESB, Brasília

Illustrations:

American Public Health Association and the World Federation of Public Associations

Enfoque Feminista, São Paulo, Brazil

Boesveld, Mary, IRC, The Hague, The Netherlands

Geldermalsen, M. van, HABITAT II

Governo de São Paulo, Brazil

Health Education & Sanitation Promotion, Malawi

Institute of Public Health and Preventive Medicine, Tamil Nadu, India

Technical Teachers' Training Institute, Bhopal, India

Training Centre for Water and Sanitation, University of Zimbabwe, Harare, Zimbabwe

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Introduction

The Annual Abstract Journal *Woman, Water, Sanitation* is a joint publication produced by the IRC International Water and Sanitation Centre and PROWESS/UNDP-World Bank Water and Sanitation Program, with financial support from the Government of Norway.

Each issue contains a state-of-the-art article and approximately 70 abstracts of recent documents or articles on aspects related to gender, water and sanitation.

The abstracts in this new issue of the journal focus mainly on the gender-related considerations of the abstracted documents.

The majority of the abstracted documents are considered '**grey literature**' i.e. documents and articles which are unpublished or not easily accessible, but which contain relevant information.

Five issues have been published so far:

- 1: Woman, Water, Sanitation (1991)
- 2: Woman, Water, Sanitation, special issue on Economic Benefits (1992)
- 3: Woman, Water, Sanitation, special issue on Water Resources (1993)
- 4: Woman, Water, Sanitation, special issue on Sanitation (1994)
- 5: Woman, Water, Sanitation, special issue on Financing (1995)

How to Get the Most Out of Your Abstract Journal

1. For a quick overview of recent developments in the sector regarding gender issues scan the abstracts.
2. For information on a particular country or on a specific subject have a look at the country and subject index.
3. For abstracts of works by a specific author please consult the author index.
4. If you are interested in recent developments and an analysis of the abstracts read the state-of-the-art article.
5. For information on resources, for instance organizations involved in gender and water supply and sanitation, have a look at the Resources section.

We hope you will find the journal useful. Please contact us if you have any comments or if you have information which can be used in one of our next issues, which will focus on *education and training*.

STATE-OF-THE-ART

Gender and Water Supply and Environmental Sanitation for Urban Upgrading

1. A gender approach in urban areas?

With the participation of men and women, more cost-effective solutions to urban water and sanitation in low-income neighbourhoods have been implemented

The case of *dona Domingas*

Domingas Evangelista, a low-level civil servant, lives with her sons in plot number 05, block 136, Planaltina, an old and stable low-income neighbourhood in Brasilia. Until 1995, her family and their neighbours had to use latrines for sanitation. There were many problems: overflowing, flies, contamination of groundwater, open drainage of wastewater and diseases related to water contamination, especially among young children. Through pressure exerted by her and her neighbours, the Municipal Water Company - CAESB - included Planaltina in the 'condominial sewerage system' programme, a low-cost, non-conventional technology. For its implementation all residents of a block would have to agree to participate and be responsible for operation and maintenance (O&M). A special effort is demanded from the women in preserving the proper functioning of the system. Dona Domingas convinced her neighbours to attend the meetings of CAESB. Particularly the women were interested, after all, they suffer most from the lack of hygiene. However, in the first meeting another resident raised many objections to the new system: Why doesn't the company install and operate a system and does not bother the neighbours? What if some neighbours will not collaborate? What if the common pipe passing in front of her house explodes, leaving her with all the dirt from someone else? It took several meetings before all the women and men understood that this was a more efficient and cheaper system which they could afford, that all would be served, and that together they would be the proprietors and managers. Finally all agreed. When the neighbourhood had designed its own system together with CAESB's technical and social staff, the money (US\$52 per household) was collected by the block's elected representative, a woman. She gave it to the man who bought the materials: pipes, cement and connections. CAESB installed the main pipeline and the residents constructed the connections to all the houses in only one weekend. Domingas and her sons are now remodelling their whole house. Freed from the dirt, they were motivated to do a complete upgrading of their home and street environment.

Governments and agencies recognize that universality and sustainability of urban water supply and environmental sanitation interventions require new participatory approaches

Why is participation so necessary?

Water scarcity, inadequacy of sanitary conditions and environmental degradation in urban areas are affecting especially the urban poor. The access to good quality water and sanitation is restricted to the better-off neighbourhoods, although the poor quite often pay a higher price for unsafe water bought from water vendors. These hardships are aggravated by the failures of urban water management (*AJW 6: 22*) and by political and institutional factors (*AJW 6: 24*). Rapid population increase in the perimeter of the cities in developing countries contributes to this chaotic situation (*AJW 6: 16*). The existing infrastructure is incapable to serve all and has deteriorated due to lack of investment. Users compete for water (*AJW 6: 8*), and human and solid waste threaten water sources and a safe environment. The impact of urban growth on freshwater supplies (*AJW 6: 23*) is on the residents of low-income urban areas, especially on women and children.

However, the urban sanitary crisis (*AJW 6: 23, 31, 52*) and the catastrophic vision of urbanization give only one side of the picture. The urban growth also stands for new dynamics with higher wages and better access to education, health services, food and job opportunities. In Latin America, young women, who represent a large proportion of those who migrate to low-income neighbourhoods (*AJW 6: 47*), profit from the contact with a more open society, more training and job opportunities, different sources of information, exposure to different cultures and ideas. Gender equality, human development and national economies can be increased through urbanization (*AJW 6: 7*). In the last decades interventions for water and sanitation in urban low-income areas

have been characterized by massive, conventional technologies which require large international loans. They have indebted developing countries and have not reached the majority of the population. Governments and multilateral and bilateral agencies are now searching for new solutions. These, like in Planaltina, require the participation of residents - women and men - in planning, programming, implementing and managing their basic sanitation services (AJW 6: 3, 9, 12, 46).

Specific characteristics of low-income urban areas such as the stability of communities, the heterogeneity of residents, legal aspects of land/house tenure, and interlinking of sectors for interventions, require specific approaches for the involvement of men and women

Differences with rural areas

Participation is a process through which all interested parties influence and share control over development initiatives and the decisions and resources which affect them (AJW 6: 4). The basic literature on participation in rural water supply and sanitation (AJW 2: 57, 58, 59, 64; AJW 3: 71; AJW 5: 42, 43, 44; van Wijk, 1995) has already stated that better participation helps to achieve project goals: the good functioning and management of installed facilities, the sustainability and durability of the interventions and the improvement of the situation of women and men. Although the concept and the use of the word 'gender' became popular in the 1990s, earlier studies already included urban versus rural aspects related to crowding, need for privacy and cultural differences (Elmendorf et al 1980; Elmendorf and Buckles 1980). Should the participation of women and men in urban areas be approached differently from that of rural areas?

Between low-income rural and urban areas, clear economic, social and environmental differences exist (AJW 6: 34). Solutions suited to rural areas are often not suitable for peri-urban settlements, which have a high population density, a heterogeneous population and lack of legal land tenure (AJW 6: 6). Low-income residents generally settle in areas of difficult access, which cannot be easily reached by conventional services. Where conventional systems are possible the sites are often outside the legal boundaries of the municipality and its services. Also, the number of entities present in urban settlements and their ways of approaching residents and their means of assistance can vary. Furthermore, poor neighbourhoods are under the influence of many levels of intervention: CBOs, NGOs, local government or municipalities, province or state level and even national or federal level institutions. Their origins may differ, giving them a completely different nature and therefore requiring a completely different way of intervention. Men and women in urban situations thus have to deal with more varied and complex situations than when living under rural conditions.

On the other hand, progress towards literacy and a better occupational status have better equipped men, and to a lesser extent women, for participation. Nevertheless many women in cities of the developing world have remained marginalized (AJW 6: 15, 16, 17, 18; El Sayed, 1996). Many of them suffer from tradition-bound segregation (AJW 6: 63), discrimination in education and jobs, sexual exploitation and other sorts of physical abuse, heavy jobs and exposure to hazardous activities and to urban violence (AJW 6: 17, 21, 23). Women are also left out of decision-making processes (AJW 6: 5, 17). It is common for women to leave their children alone to seek job opportunities far away from their homes, for example as waste collectors (AJW 3: 71; AJW 6: 32). Many authors have analyzed the position of women in low-income urban areas, making a positive contribution to the understanding of their needs (AJW 2: 2, 54; AJW 3: 44; AJW 6: 5, 14, 15, 17, 18, 20, 29, 31, 41, 47, 48; El Sayed, 1996; Mazingira Institute, 1994).

2. *Trends in policies and strategies*

The introduction of gender considerations in public institutions and agency activities related to urban water and environmental sanitation sector should be made operational and effective at field level

Obviously the presence of clear gender policies for the sector is only a first step. It is comforting to see that the recognition of the different roles of men and women in peri-urban settlements is increasingly stressed in policy papers. They stress the importance of women being involved in the economy and in the provision and finance of shelter - as managers, professionals, entrepreneurs, process workers and traders; in basic urban services such as health care, child care, education, water supply and sanitation and management of municipal governmental and non-governmental agencies (AJW 6: 7). Recognizing the economic and social role played by women, a number of multilateral and bilateral agencies have introduced a strategy to integrate gender into their programmes (AJW 6: 3, 11) which apply both to rural and urban areas (AJW 4: 58, 62; AJW 5: 16, 27, 72, 74; SNV, 1993; DGIS, 1992).

There is a call for public policies (AJW 6: 5) to modify laws and regulations as a means of achieving a greater gender equality at community level. Authorities are urged to integrate a gender focus into their programmes and men's and women's groups are encouraged to participate in the implementation of policies which promote gender equality (AJW 6: 3, 15, 20, 21, 62; UNCHS, 1996) and reduce exposure to environmental risks from uncollected urban waste (AJW 6: 21). The West Africa 1994 Conference in Accra (AJW 6: 1) concluded that a shift is needed from community participation and health education to community management of local water supply and sanitation services. This shift in strategies calls for a role of users not as recipients of services but as those responsible for their maintenance to ensure sustainability. A requirement is that women are involved.

To what extent are gender policies being implemented in the field, or do they arise from field experiences? The following section gives a summary of developments in gender in urban areas.

3. *The difference made in the field: the focus of this issue of Woman, Water, Sanitation*

This 6th issue of the abstract journal contains abstracts focusing mainly on *urban* water supply and environmental sanitation - WSES - in low-income areas. In addition, a 'collage' of abstracts relating to urban WSES featured in the other issues of the journal (IRC 1996) has been recently prepared by IRC. It was a contribution from the Water Supply and Sanitation Collaborative Council's Working Group on Gender to the Habitat II Conference in Istanbul, Turkey. Both documents now serve as the basis for a closer look -with a gender eye- at the state-of-the-art of urban WSES projects in low-income urban areas (3.1). Items are highlighted according to gender in choice of technology (3.2), education and training (3.3), process and service management (3.4) and intersectoral linkages (3.5). Section 4 gives some recommendations for a more gender-specific approach and for evaluating existing approaches in urban WSES.

New interventions for water and environmental sanitation in low-income urban areas might have a negative impact on the situation of women when project implementors do not take the different knowledge, needs and experiences of men and women into account

Projects with and without gender strategy

Attention to or neglect of gender issues can determine whether urban projects worsen or improve the position of women. Many urban women, despite their domestic chores, have to earn an income for their family through work with no qualifications, and with long hours, risks to health and low wages, such as sweeping streets, scavenging and waste picking. (*AJW 1: 15; AJW 3: 24, 68; AJW 4: 9, 14, 20*). Although providing income, these activities threaten women's health, and reduce life expectancy, self-esteem, respect from relatives, public authorities and society in general. The story of Rameshwari, a woman scavenger of Gujarat, India, who hates her job (*AJW 3: 24*) is quite striking. It reflects not only this sad perspective but also an even more cruel one: she fears that the sanitation intervention which will guarantee a cleaner environment in the city will leave her without her daily work because an alternative is not foreseen in the project. Many times project staff are unaware that such situations exist. An effort should be made by agencies to exploit the work of women in a positive way. An example is the gender strategy for solid waste management in Recife, Brazil (*AJW 4: 14*). Women have organized in groups to collect, select and recycle solid waste, with financial and health benefits, while maintaining the domestic sewerage system in good order. Men carry out the more heavy tasks like the transport of heavy loads of recyclable material. A similar positive example comes from Bangalore, India, where female waste collectors have organized in unions (*AJW 6: 41*).

Projects providing cheaper and safer water through public standposts may represent a bigger burden for women when water previously sold at their door by vendors now has to be carried (*AJW 4: 7*). To avoid these and other negative impacts, project planning should take into account the views of women and men and identify the strategic interests of both. Findings of a study conducted by Moser, Gatehouse and Garcia in four cities (of Ecuador, Philippines, Hungary and Zambia) revealed that although more women were pushed out to work, no important shifts occurred in the structure of household tasks: women worked almost as many hours as men in labour market and still did a considerable amount of the reproductive work. In Hungary, however, the authors found a much higher participation of men in childcare (Moser 1995). If their role inside the household as fathers increases with the increasing participation of women in income earning activities, the credibility and acceptance of the new services also require the involvement of men (*AJW 5: 29*). Moreover, decisions on domestic investments are usually taken by or with men (*AJW 3: 71*).

Projects that take gender aspects into account have drawn certain benefits from this strategy. In the sanitation project in Orangi, Pakistan, men were assigned tasks related to construction. Women formed training teams, organized meetings at their homes and formed neighbourhood groups; a women's work centre programme organized stitchers and other garment workers into family units dealing directly with exporters and wholesalers (*AJW 6: 39*). The programme also covered managerial skills and cooperative action for women. The result was a clear division of benefits for the women (who gained knowledge on basic health, family planning and hygiene practices and skills to improve household income), the men (who acquired skill on proper construction techniques) and the project (which attained its goal of physical, social, health and economic changes in Orangi).

Gender and technology selection

If in the past the choice of technology has been related more to economic and political issues, at present the tendency is to link the choice of technology to the participation of residents, the recovery of the investment costs and management by the community (*AJW 6: 9*). Especially in urban areas where water shortage, lack of funding and lack of access to services can so prominent, a range of options for alternative systems should be examined together with the residents. The report of the Working Group on

Recent projects recognize the different capacities which exist in urban areas and allow men and women to make an informed choice in technologies

Urbanization (now called 'Network on Services for the Urban Poor') of the Water Supply and Sanitation Collaborative Council states that special attention should be paid to the instruments which facilitate the participation of residents in the formulation of projects to ensure that women are involved in the choice of options (*AJW 6: 3*). Benefits from involving women in the choice of technology are evident: it ensures that new facilities are used with a gain for users and good maintenance of facilities, and results in reduction of time and energy in water collection, use of water and time for income-generating activities, improvement of family welfare and health, better neighbourhood relationships and further upgrading of sanitary conditions (*AJW 6: 4, 10, 40, 53; Mara, 1996*). Technical assistance and institutional support and cooperation from the service provider should be reliable to encourage participation and trust (*AJW 6: 39*).

A latrine project in Ouagadougou, Burkina Faso, did not use a standard approach. Technical solutions were based on users' preference and willingness to pay, housing characteristics, water availability, geological conditions, and O&M needs and costs. Women were better informed than men, and more concerned about the sanitation situation at their homes. The project team interacted with them during visits to the houses for the specific types of facilities. This contributed to the success of the project (*AJW 6: 55*).

Users (especially mothers) and engineers together should examine the most favoured design options (*AJW 6: 56, 58*). Because users and their needs in urban areas are not homogeneous, there should be a sufficiently wide knowledge of design alternatives and their costs. In an analysis of 15 experiences in drinking water and sanitation, cooperation created communication channels between users, NGOs, local government and experts. This led to a positive discussion on, among others, the range of technologies. Suggestions were mostly for integral low-cost systems, linking water to sanitation and solid waste management. Links between technology, social aspects, adaptation to urban structures and land use were present in all 15 cases (*AJW 6: 38*).

Even when hygiene education is provided, as long as there is no participation of residents - especially women - in the planning and design of facilities, projects may not attain their objectives of improved health. An example is the project in Mirpur slum in Dhaka, Bangladesh, where a water supply, sanitary latrines and hygiene education intervention was undertaken involving 2600 squatter families. The infrastructure was designed by the authorities, and field workers and residents had no say in the design or construction. Although the women of the households were receiving hygiene education, 90 percent still used the water from ponds and nearby rivers for bathing and washing; almost 50 percent of the pumps showed problems, while 74 percent of the families did not use the pit-latrines properly and dumped their contents into drains, a canal or buried them (*AJW 6: 54*).

Discussions of a new technology may give insights on further improvement of hygiene practices. A survey in Lucknow, India, found that inadequate handwashing was the most important cause of illnesses among children. This was connected with the disposal of faeces at household level. Among other recommendations, the programme recommended that residents were to be given a low-cost technological option for excreta disposal, and women were asked to volunteer to try out safe practices. This already motivated mothers towards improved behaviour (*AJW 6: 53*).

The above illustrates the growing interest for low-cost appropriate technology and community choice at community, national government and international level. Nevertheless, Black points out that less than 5 percent of donor aid is spent on low-cost solutions and 80 percent of investments in water and sanitation still go to high-cost technology (*AJW 6: 23*).

The choice of technology by services providers and residents (men and women) helps in attaining sustainability and durability of interventions.

Training men and women for new roles helps them benefit from urban water supply and environmental sanitation projects. Gender-sensitive and skilled staff in government departments and agencies contribute to the success of projects

Education and training

Training given to urban women is frequently related to hygiene and health (*AJW 2: 22*). There are authors (*AJW 4: 10*) who comment that such training may involve more, rather than less, work for women. Education only for women also bypasses male hygiene behaviour, which culturally women cannot easily influence. It leaves male health responsibilities, such as helping finance major investments for better domestic hygiene, unaddressed. There are several urban projects which take a gender approach to training and also train women for new roles in water supply and sanitation (*AJW 1: 22, 36; AJW 2: 4, 44; AJW 6: 37, 50, 61*). An example of training for new roles comes from EMOS, a public utilities unit which provides water and sanitation services to 4.5 million people in the metropolitan area of Santiago, Chile. Women receive instruction on water conservation, bill paying, basic household plumbing and proper use of the sewerage system. When the course is finished, women receive diplomas (GEN NET, 1996).

Because men and women have different views, experiences, knowledge and means regarding hygiene behaviour and health (*AJW 4: 36*), both should be included in training programmes. In urban areas men are, for example, faced with situations in which they are left alone to care for children, in the absence of their working wives. Hygiene education training programmes originally meant only for women and focusing only on women's interests, might now consider a more gender-sensitive approach. In Quetta, Pakistan, hygiene education addressed new roles and responsibilities for women and men. They are trained separately and project staff ensures that the views of both are exchanged. Training uses participatory techniques which are very useful because they do not rely on one way teaching but use active learning based on the participants' own knowledge and life experiences. An example of such techniques in an urban programme is the Participatory Urban Appraisal carried out in a low-income settlement in Chittagong, Bangladesh. One of the main objectives was to ensure women's participation in a hydrant management programme, since female-headed households are more numerous than male-headed ones. Other objectives were to prepare the community to take decisions, develop a sense of local ownership and gain access to government resources. During the exercise, participants (mostly women) analyzed their own situation, so as to be able to participate in planning. They were also introduced to the concept of cost/benefit analysis in the context of hydrant water sources, set up a hydrant committee and identified its responsibilities (*AJW 6: 33*). Although the exercise experienced difficulties (selection of participants, heterogeneity, lack of cohesion, fear of loss of tenure, scheduling, power politics and the shyness of women), it helped to ease a variety of constraints to gender-sensitive programming and created a positive learning environment in which the participants determined the agenda, led the discussions and drew up the conclusions.

While training for women's caring or reproductive roles is well accepted and tends to bypass men, women tend to be left out of formal and informal education for productive work on the assumption that they do not contribute to income generation or do not need a professional status. Lack of information on the potentialities of female education and employment leads to gender inequality which should not be accepted. Although often invisible and unexpected, women's education has a high return. Women's education, health, nutritional status and low fertility has a high correlation with the level of education, health and productivity of future generations. The returns of female labour to household health and assets proves that 'gender equality is not only a question of social justice but also of good economics' (*AJW 6: 5*).

Realizing this omission, a number of urban projects give training in setting up micro-enterprises, obtaining and handling credit and community banking (*AJW 6: 48, 60, 64*). Training of members for small business has helped increase family income and promote the members' ability to be wiser in expenditures, and save for home improvements in general and sanitary facilities in particular (*AJW 6: 64*). The mobilization of financial resources for water supply and environmental sanitation programmes has clearly benefited from such training programmes. Credit and banking systems programmes for urban residents and the mobilization of resources are considered to be essential elements for participation in the upgrading of households and the families' well-being (*AJW 6: 3, 4, 5, 15, 21, 25, 36, 32, 39, 41, 42, 62*).

Training should not only concern the community level. The training of project staff working in urban water and sanitation should also be a concern. For the recruitment of personnel, government institutions and agencies should assess their sensitivity for a gender approach (*AJW 6: 11, 21*). Special gender-sensitive training and programmes, focusing on both conceptual and practical topics, have been provided to personnel at all levels of agencies, preferably in small and heterogeneous groups (*AJW 3: 44, 46, 49; AJW 6: 62*). For the implementation of projects, staff of government institutions and agencies should be acquainted with gender analysis both at community and at agency level, and provide staff with tools and other resources for gender-sensitive programming (*AJW 4: 54; van Wijk, de Lange and Saunders, 1996*). Many tools exist for gender analysis and assessment of gender impact (*AJW 2: 24; AJW 4: 51; AJW 5: 38; Gianotten, Groverman, Van Walsum and Zuidberg, 1994*). They assist agencies in planning, implementation and the evaluation of indicators. A gender-conscious multidisciplinary team rather than a 'gender specialist' can promote overall gender thinking within the agency and government departments (*AJW 2: 24*).

Due to the complexity of the conditions in peri-urban areas (socio-economic situation of residents, cultural heterogeneity, diverse professions) staff should form a multidisciplinary and flexible team, with a predisposition (Wegelin-Schuringa, 1992) towards working with women and men. One example given by CAESB's coordinator of the low-cost condominial sewerage system is that a precondition for the recruitment of staff (engineers, social workers, sociologists and technicians) is their willingness and ability to work with communities (Eng. Cesar Rissoli, personal communication). Another important element is the clarity of the commitment of the government/external financial body to community management. When this commitment was lacking in a project in Sudan, the management of the water supply reverted to centralized control (*AJW 6: 50*).

Gender and service management

A better male/female balance in the division of management work, functions and training is one of the key elements for the management of participatory water supply and environmental sanitation services (*AJW 4: 25; AJW 6: 49*). A precondition for creating the circumstances which will enable women to manage water and sanitation initiatives is that they are involved in all phases of the project (*AJW 6: 1*). However, while policies on a more equitable involvement of women and men exist, there is a shortage of proposals to support them (*AJW 6: 9*). This is clear especially concerning management skills. Many times women are asked to take a leading role in an intervention, yet problems arise when they, due to their traditional roles, are not capable or not motivated to do so (*AJW 6: 26*). Strategies for training or improving their performance are not always available. To overcome this constraint, gender-sensitive training for management tasks has been important (*AJW 4: 25*). Suggested topics in a management training are: linking water supply projects and broader community development; negotiating and planning with implementing agencies; understanding and managing operation and maintenance; financing and financial management, and health aspects (*AJW 1: 8*). To get a better balanced presence of

Projects should encompass training for managerial skills and new roles for men and women in the WSES with a view at a more equitable division of tasks. Literature and assessments should be clear about actual roles and responsibilities of men and women so that decision making, project design and implementation can be more efficient

men and women, training should be physically accessible to women who cannot easily leave children alone (*AJW 1: 8; AJW 3: 71; AJW 4: 22; Van Wijk, 1995*).

Gender-sensitive community management contributes to the long-term sustainability of a water supply and environmental sanitation project (AJW 4: 25). Since women play a central role in the sector, they should also contribute to the operation and maintenance of projects. For that purpose a project in an urban area of northern Ghana included monitoring of gender involvement, guaranteeing that 50 percent of Community Liaison Workers are women; providing gender analysis training; using gender-sensitive male Community Liaison Workers to disseminate a positive influence; making Water and Sanitation Development Board membership favourable to women; enabling women to be chairmen and members of the executive committees of WSDBs, and employing a Gender Equity Advisor (AJW 6: 49).

A gender approach in process and service management goes further than just having women in a committee. It implies overcoming constraints such as resistance from men, illiteracy, lack of self-confidence, the failure to reduce women's work load to allow time for greater

community participation and the control of women by men (AJW 2: 19; AJW 3: 13; AJW 6: 15, 49). To achieve a balance between men's and women's opportunities, men must contribute a fair share of time, labour and money and share influence with women (AJW 3: 71, AJW 6: 17, 49). Women and men together must manage projects to ensure their sustainability (AJW 4: 9, 25; Arrais, 1993).

Looking at how work, power and benefits are divided between women and men can prevent the eventuality that women take the initiative in managing change, only to see men take over when the initiative has positive results. It can also occur that women initiate a project, and when income opportunities become apparent, men want to participate and women fear losing control. This happened in Brasilia Teimosa and Pina, two low-income neighbourhoods of Recife, where women's groups collect and recycle solid waste. Both communities have associations and councils lead by men. The women's groups have made a proposal to form a cooperative to make solid waste collection and recycling a source of permanent income. Because the women fear that they might lose control over the management of the activity to men, the submission of the proposal has been postponed until roles of men and women are clearly defined. (Arrais, personal communication). In La Sirena, a low-income neighbourhood of Cali, Colombia, women held the elected position of president and treasurer of the Community Action Committee which implemented the water supply. Men now have the formal management positions. Women have paid jobs in the administration of the aqueduct and have set up businesses with the use of the improved water supply (AJW 6: 44). Whether this situation meant a worsening of the position of women depends on the benefits of the change for them and their families.

In many other cases women have held management positions in the initial phases of water supply and sanitation interventions. In Mukuni, an impoverished settlement outside Livingstone, Zambia, women initiated actions for safer and more convenient water for their families. Due to their effort, a new system managed by women was implemented. Women learned the mechanics of the pumps installed and their O&M, they collect fees from users, created a maintenance fund and hold weekly health discussions. Many other initiatives are now being taken by residents, motivated by the new water supply system (AJW 6: 37).

In Bo-Sevana, a small low-income shanty settlement in Colombo, Sri Lanka, where a sewer disposal system was constructed, women played an essential role in community mobilization and a woman was given leadership of both the Community Development Council (CDC) and the women's group (AJW 6: 45), meaning that women are the key decision makers and implementers. Other examples exist where women are in managing positions (AJW 1: 15; AJW 2: 19; AJW 3: 13, 44, 46, 68; AJW 4: 22; AJW 4: 44). However, it should be clearer if the men are contributing their fair share or the burdens rest mainly on women alone. The literature compiled so far calls for the participation of women in management, but is less specific about the real division of work in management positions between women and men.

The different sector policies and levels of government organizations active in low-income urban areas might represent a constraint for project implementation. Women and men should have an equitable division of tasks when dealing with these different agencies

Intersector and interlevel links

In low-income urban areas, water supply and sanitation projects often deal with combinations of subsectors and different levels of decision making. Poor environmental conditions and high health risks are related to the interaction of several circumstances, calling for an integrated approach of several sectors. The lack of water affects adequate excreta disposal, which in turn contaminates water sources. Lack of drainage causes waterlogging and environmental health problems, poor solid waste disposal attracts vectors and blocks drains (Wegelin/IRC, 1995).

Such an integrated approach requires cooperation between services at different levels to avoid that the local water company (local level) extends a pipeline and the holes are never covered because that should be done by the provincial division of works (province level). Residents - men and women holding different tasks - through their

associations or neighbourhood councils, play an important role in the negotiations with different levels of decision making and implementation of works, and in the establishment of links between various entities. Urban development programmes could make use of techniques for participatory approaches and methods to help reach this objective (*AJW 6: 34*).

More than in the rural areas, in peri-urban settlements interventions in WSES are undertaken in the context of urban upgrading. Access to roads, transport, health centres, electricity, housing, shops and other improvements for the upgrading of settlements are often linked to improvement in sanitary conditions. If infrastructure is provided, residents themselves are motivated to undertake other activities and to upgrade their houses and streets, similar to what also happened in Planaltina, to the upgrading of slums around the Guarapiranga River Basin in the São Paulo city area and in many other peri-urban neighbourhoods (*AJW 4: 19, AJW 6: 35*; Sanesul, 1996; Borba and van Waegeningh, 1996).

An example of intersectoral development based on an initiative of local women to improve their conditions is the case of the Barrio San Jorge in Buenos Aires, Argentina. Here the first activity was the foundation of a women's club which, through sewing and knitting as income-generating activities, worked for the formation of a fund to establish a crèche for children of mothers who needed to work. This initiated a whole series of improvements in which men later on also participated. The improvement of housing conditions and sanitation followed. Links with other neighbourhoods' associations were also established with a view of diminishing costs (*AJW 6: 35*).

Although an integrated approach is desirable, differences in sector approaches may hamper the involvement of the community. It is a common experience that different institutions, agencies and donors do not share a uniform concept of community participation, nor how to put it into practice (*AJW 6: 62*). In this case, the combination of all sectors, actors and institutional policies could be facilitated through genuine residents' organizations or associations, acting as negotiators vis-à-vis the various agencies. In these negotiations, women and men play different roles. While women motivate their neighbours and exert pressure at local government level (*AJW 3: 13*), it is sometimes the case that, due to their higher level of education and knowledge, men go on with negotiations at other levels and neighbourhoods (*AJW 6: 35*). While this division may reflect the existing gender culture, it will be important to make sure, as mentioned in the previous section, that women do not do most of the physical work at the lower level, as, for example, in a shanty settlement outside Livingstone, Zambia (*AJW 6: 37*), while decisions at the higher levels are made exclusively with the men (*AJW 4: 6, 22, 24*).

4. *Towards a gender perception in urban water supply and sanitation*

In policy statements and documents gender is commonly being included. It is recognized that men and women have different needs, tasks and access to power in dealing with their urban environment. It is also recognized that without a gender approach women easily become marginalized or overburdened and that this is bad for the women and their families as well as for the programmes.

The sections on field experiences show that operationalization of a gender approach is still in its initial stages. Projects that plan and train for a gender approach and implement this approach are still in the minority, although very interesting initiatives are taken. A number of urban programmes introduce participatory programmes with unconventional technologies and sometimes give men and women a choice in the type of system and level of service they can manage and afford. Women and men are trained for old *and* new tasks and women are prominent in the initiation and sometimes in the management of urban environmental improvements and services. Other projects and programmes reinforce existing gender inequalities, for example when they bypass male responsibilities for health, hygiene and management of the environment, or relegate women to physical tasks for mobilization, maintenance and management, without concurrent remuneration and/or decision-making roles.

What can be done to prepare a gender approach in the improvement of urban water supply and environmental sanitation services, or to evaluate the gender aspects of existing projects and programmes?

The following are some basic questions which projects can ask when preparing for or looking at a better gender balance:

- How is *physical work*, in cleaning, mobilization, technology and so forth, divided between women and men at the different levels?
- What are the *preferences* of men and women for improved services?
- Who makes the *decisions* at each level, men, women or both?
- Who holds what type of *function*?
- Who receives what type of *training*? For existing or new roles?
- What are the *benefits* and/or the *negative consequences* of the changes for men and women in terms of: new or old knowledge or skills, more or less remuneration/income, better or worse services, more or less influence and control, a cleaner environment or new environmental problems, a lighter or heavier workload?
- Who has *access* to land/house tenure, credit and loans for the improvement of household (sanitary) conditions?
- Are the *3Rs* (the existence of *Rules* - supporting the integration of gender issues in agencies's policies, *Referees* - who check to make sure rules are followed, *Rewards* - for those who follow the rules) (Wakeman, Davis, van Wijk and Naithani, 1996) present in agencies and government organizations active in infrastructure services for the urban poor?

Some recommendations at policy, implementing agency and field levels emanate from the literature reviewed. Despite decentralization of the provision of services, central governments retain the responsibility of providing enabling policies and regulatory frameworks. For these, gender-sensitive policy makers may ensure that gender is taken into consideration. At agency level, staff should form a multidisciplinary team, with the willingness and flexibility to work with the residents. Engineers used to conventional systems should not regard low-cost technology for urban areas as substandard solutions but see it as a challenge and a possibility of universalization of coverage. Furthermore, due to the large number of female-headed households in low-income urban areas, at the municipality level regulations should envisage that women have access to land and house tenure. Women proprietors are more likely to undertake sanitary upgrading of their houses and nearby environment than tenants. Women should also have the possibility to apply for credit and loans for the acquisition of a house and/or the upgrading of housing conditions.

The debate on urban upgrading, and its corollary urban poverty alleviation, will certainly find a strong supporting case in water and environmental sanitation. In fact, interventions for better water and sanitation facilities, for waste disposal and water treatment, for the promotion of hygiene and for advocacy for a safer environment can provide a strategic entry for further and sustainable improvements of living conditions in low-income settlements --provided men's and especially women's opinions are taken into account.

Maria-Lúcia Borba

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