



**INTEGRATING GENDER PERSPECTIVES:
REALISING NEW OPTIONS FOR IMPROVED WATER MANAGEMENT**

Cross-cutting Thematic Background Paper

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EDITING: Secretariat of the International Conference on Freshwater –
Bonn 2001

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1 GENERAL DESCRIPTION OF THE IMPLICATIONS OF GENDER RELATIONS IN THE WATER SECTOR, SPECIFICATION OF THE ROLE OF WOMEN

The call for a holistic and gender-sensitive approach to water management should be reiterated as a starting point for sustainable development. "Like race, ethnicity and class, gender is a social category that largely establishes one's life chances, shaping one's participation in society and in the economy. Although some societies do not have racial or ethnic divides, all societies have gender asymmetries – differences and disparities – to varying degrees." (World Bank 2001) Efforts must focus on parallel goals: improving everyday life and living conditions, and long-term planning for an environmentally sustainable future.

Gender mainstreaming in relation to water is defined by the World Water Vision as follows: "It (the gender approach) includes addressing both practical and gender needs such as improving women's conditions through the provision of water and sanitation closer to their houses as well as strategic gender needs: improving women's position in society by increasing her awareness of her situation and her capacity to take decisions and influence change. A gender approach also seeks to prevent further overburdening of women and stresses the importance of not automatically reinforcing and perpetuating traditional roles. This implies the need to address men as well as women, since men are required to change their attitude and behaviour to support this." (World Water Vision 1999) The implementation of a gender approach within institutions and organizations and the establishment of formal and informal networks are crucial.

The role and importance of water in socio-economic, cultural and political systems vary from country to country, there being differences here between, say, urban and rural environments, industrial and domestic applications. There is no universal solution: the success of integrated water management depends on how differences and conflicts are accepted and reconciled. With a view to implementing gender perspectives, the paper gives a brief overview of gender relations in the water sector. It focuses on identifying actions and policy implications. It concludes by presenting success stories and lessons learned, which may serve as examples of practical solutions.

1.1 Strategies for Water and Sanitation for the Poor: Access and Affordability

Women play a key role in environmental sanitation. They assume prime responsibility for the operation and maintenance of sanitation facilities. Aware of their productive roles within the household and as those mainly responsible for preparing food in the home, women play an important role in hygiene and in passing on good habits to children in this sphere. The situation with respect to water and sanitation – and thus the tasks, responsibilities and duties involved here – are different in urban, suburban and rural areas.

Carrying water is an arduous task that takes up a great deal of women's time and energy. As women are the ones that deal most closely with water on a daily basis, they are especially conversant with the need to use water sparingly and with ways of conserving and processing water. Water availability, water quality, portability and simple storage and processing methods – these are elements of the knowledge women derive from their daily dealings with water. But this knowledge is not properly appreciated in water and sanitation programmes.

The link between women's involvement in the provision of water and sanitation and their need for and access to resources is not properly appreciated. Most development initiatives neglect the need to improve women's access, rights or entitlement to resources. They have tended to focus on enhancing female employment opportunities or improving social-sector indicators such as mortality and literacy rates (Agarwal 1996). Development research and planning has neglected gendered access and entitlement to and decision-making for the resource water even more than for other resources.

The affordability of potable water and sanitation is a crucial issue. Water and sanitation services come at a price, and this has two consequences: on the one hand, it means that customers should pay the full cost of service provision; and on the other hand, it means that the water and sanitation supply utilities are obliged to minimize their costs by improving operational efficiency, which requires professional knowledge. Providing water and sanitation at affordable prices means that the price should not only be

based on economic considerations but also on affordability for women and their households. Doing so will help avoid considerable costs for children's health care, etc.

Women play a key role in the area of water and sanitation and developing women's professional skills here is therefore crucial. Achieving this depends on the following:

- Creating the political will to integrate women at decision-making levels where they are currently not represented
- Mobilizing financial resources to create affordability
- Establishing governance and structures to ensure the involvement of women
- Supporting new partnerships to strengthen capacity building

1.2 Balancing Water Uses: Water for Food and Water for Nature

In many areas of the world, water is used primarily for irrigation. Timely access to adequate amounts of irrigation water is the main concern of farming households. All members of these households, men and women alike, share a common interest in the supply of irrigation water. Women's interest here is broader: besides being involved in domestic farming activities, their reproductive roles as wives and mothers make them responsible for a variety of tasks, all depending on the availability of water. These domestic chores include procuring water for drinking, laundering, cooking, bathing, gardening, washing dishes, caring for children and many other activities important for household survival (Jahangir et al 1998). In addition, many women are responsible for watering livestock, maintaining the plaster of mud hoes and processing agricultural by-products.

The gendered division of labour has implications for water delivery, agricultural productivity and poverty impact. Where women grow different crops from men (e.g. vegetables for household consumption as opposed to grain crops for cash sale), they may need water at different times and in different quantities. In such cases, water-delivery schedules that take into account gender specificities in farm production will add to households' well-being. Even where women co-farm with their husbands, they may still have different irrigation preferences because they do different jobs. (Zwarteveen 1996).

Irrigation-related studies, policies and interventions are often based on the implicit assumption that irrigators, farmers and water users are predominantly male and that the labour of all household members is readily available for farming activities (Meinzen-Dick, Zwarteveen 1997). Irrigation and farming are thus seen as reflecting individual behaviour, and men are regarded as the only water users. This assumption is wrong for most parts of the world. Recognition of differences, and their accommodation by adapting rules and procedures, is crucial if women are to have a say here. Establishing equality with regard to the distribution of rights and control over water resources for food and nature is a difficult process and one that can only be achieved over time.

The key role played by women in the use of water makes their empowerment in this area crucial. Achieving this depends on the following:

- Creating the political will to integrate women at levels of decision making
- Establishing governance, integrated management and new partnerships
- Promoting capacity building and technology transfer

1.3 Protecting Ecosystems and Water Resources: Pollution Prevention

Water is regarded as contaminated if it contains infective and parasitic agents, poisonous chemical substances, industrial or other wastes or sewage. Women are seriously affected by water pollution in a number of ways:

- Women's immune system is more susceptible to contamination, which means that their health may be impaired more swiftly and severely than that of men. Polluted water may damage a woman's ability to give birth.
- If water is polluted and there is no alternative water supply, women, especially in rural environments, must search for clean water in the surrounding area. They are frequently obliged to travel long distances to obtain clean water and often have to go back and forth several times

to collect the minimum amount of water required to meet the needs of their families. The greater the distance, the more time women need to fetch water.

- In urban areas, pollution and diffuse contamination of large water resources are often evident. Especially in big cities, large industrial concerns produce a great deal of pollution, some of it highly toxic, which mainly affects water resources. The vast population pressures on basic infrastructural services, as well as pollution from vehicle exhaust and other wastes, severely degrade water quality. The exploitation of urban water resources affects poor families and women more than those who are able to pay higher prices for potable water.
- Women's social role as mothers involves looking after sick children. Polluted water is very often the cause of illness among children. Looking after sick children and relatives is an additional drain on women's time and energy. Women also have to organize medical treatment and pay for it.
- Water pollution has a negative effect on women's time management. Since girls are required to help their mothers, they have more responsibilities and duties when water pollution is a problem and are frequently unable to attend school.

Women's efforts to manage water resources have yielded a number of insights and taught them a number of lessons. First, the process of obtaining water has definite class/gender micro-implications. It is the women of poor households who are most severely affected by water and health problems. Second, the adverse class/gender effects of contaminated water are evident in the erosion of the survival and knowledge systems of poor and low-caste women.

The nature and impact of water management and pollution prevention are closely tied up with development, knowledge generation, ownership of knowledge as well as status, freedom, social justice and women's power. Implicit in water-resource management and pollution prevention is the attempt to carve out a space for an alternative existence based on equality rather than dominance, on cooperation rather than competition, between women and between women and men. Indeed, what is implicitly being questioned is the existing development paradigm, which is gender-biased and devoid of sensitivity to women's issues.

The key role played by women in the area of water-conserving ecosystems and water resources makes it crucial to specifically develop their professional skills in the field of pollution prevention. Achieving this depends on the following:

- Creating the political will to integrate women at levels of decision making relating to the protection of ecosystems and pollution prevention
- Establishing integrated management and governance
- Promoting capacity building

1.4 Transboundary Waters: Sharing Benefits, Learning Lessons

The lack of clean freshwater has led to considerable political instability, occasionally resulting in serious outbreaks of violence. Gradual degradation of water quality or depletion of the water supply can have unsettling effects on the stability of a region, especially in basins crossing political boundaries. There are 261 watersheds that cross the political boundaries of two or more countries. (Background paper, Transboundary Waters 2001)

As a critical, non-replaceable resource, water has caused political tensions between different nations. Transboundary conflicts have already become a reality. At present, many conflicts are related to the multiple uses of water and the increasing competition among water users and sectors. Agriculture is already competing for existing water resources with urban and industrial users and this competition will only intensify with time. Migration from the affected regions has further exacerbated the problem.

Gender relations cut across all these processes, which apply differently to women and men and whose effects are different from one society to another. At the same time, gender and gender relations are shaped and restructured by these transboundary issues. The concentration of negative environmental factors at national borders has led to the large-scale migration of families, women being particularly affected here. In this context, we take a closer look at the aspects of violence and security.

Violence/Security

- The term structural or indirect violence has usefully extended the meaning of violence beyond mere physical violence. It includes the indirect violence done to individuals when unjust economic and political structures reduce their life expectancy through lack of access to basic needs. In situations of transboundary conflict, women are more likely than men to become the victims of violence. Generally speaking, indirect violence also has a greater impact on women than on men because of women's role as caretakers.
- For a woman, the word 'security' has a whole range of connotations¹ that spring to mind before she thinks of it as meaning safety from the state's enemies. In the case of migration due to transboundary conflicts, families – both men and women – leave behind a social infrastructure and justice. This means they are more exposed to insecurity and to physical as well as indirect violence.
- Extending the definition of security to include economic security and justice is also in the interest of women. Once ecological criteria are introduced into debates on security, the gendered implications again become dear. Women's and men's relationship with the environment is highly gender-differentiated².

Just as flowing waters ignore political boundaries, its management, too, puts strain on the capabilities of global institutions. At present, there is no agency responsible for the management of transboundary water resources. More effective treaties are needed on international water resources and cooperative water regimes. The quality of water and bodies of water must be improved in order to better the situation of families and women.

The key role played by women with regard to transboundary waters makes it crucial to develop their professional skills in this area. Achieving this depends on the following:

- Creating the political will to integrate women at levels of decision making with respect to international and regional agreements
- Mobilizing financial resources
- Establishing integrated management and new partnerships, e.g. effective treaties and cooperative water regimes
- Promoting capacity building and technology transfer, e.g. institutions for water sharing and basin management

1.5 Floods and Droughts: Coping with Variability and Climate Change

The incorporation of gender sensitivity into hazard and disaster research and management remains uncommon (Morrow, Enarson 1996). Often a gender-neutral position is adopted, concealing differences in the impact and experience of disaster, or a position in which men's experience is taken as universally representative rather than particular (Fordham 1998). In fact, women's concern about and vulnerability to disaster is broader and different from that of men. Natural disasters like floods and droughts affect women in several ways:

Droughts

- Droughts affect women by reducing the domestic water supply.
- Droughts have a negative impact on women's time management. When nearby wells and water sources run dry, women have to search for water in the surrounding area. They are obliged to travel long distances to obtain water. The greater the distance, the more time women need to fetch water.
- Women are primarily responsible for supplying their families' food, necessitating domestic farming activities. Droughts can lead to serious crop losses.

¹ These range from feeling safe in her own home, to feeling safe on the street at night, to being sure of the safety of vulnerable people she is responsible for (e.g. old people and children).

² To take just one example: it is women who carry most of the world's water and firewood – and supplies of these essential resources are becoming increasingly depleted, involving ever longer carrying distances and ever more hours of labour (Cockburn 2000).

Floods

- Apart from problems relating to the precious resource water, a great many problems are caused by floods. Hundreds of tons of fertile soil are washed away, with long-term effects on agriculture.
- Many of the dwellings in rural areas fail to withstand the force of the floodwaters. Whole villages are inundated with dirt and refuse and the infrastructure collapses. Women are no longer able to fetch clean water from distant wells. Necessity forces them to use rainwater for domestic needs, which, being contaminated, causes a number of diseases.
- The social hierarchy in village communities assigns the parts of the dwellings best protected from the rain and wet to men and animals. Women and children must make do with what is left. Unhygienic conditions, wet clothing and an inadequately protected place to live are their daily lot.

Since the poor and vulnerable are mostly women, they are the ones most severely affected. In the light of the disproportionate losses suffered by women, there is a need to better understand the lives of girls and women before, during and after disasters (Enarson 1998). This is an important aspect of women's disaster work, with important implications for preparedness, evacuation and other key decisions (Enarson, Morrow 1997).

Floods and droughts are also a very much "natural" phenomena, giving rise, in fact, to the demand for irrigation and water-control structures. Irrigation and water-control systems have brought many major advantages. Women are often the most vociferous in demanding such systems where they are lacking.

The key role played by women in dealing with floods and droughts means that there are practical benefits to be had from a gendered perspective on preparedness, relief, recovery and mitigation, adopted at a domestic level but also in the context of organizational practice and macro-economic social forces (Enarson 1998). Taking this into account involves:

- Mobilizing financial resources
- Establishing governance
- Promoting capacity building

2 IDENTIFICATION OF ACTIONS / POLICY IMPLICATIONS

Women have a special relationship with water in terms of its supply and use for sanitation, in terms of its quality and quantity, and they are particularly affected by transboundary water and environmental disasters. Given their daily concern with providing sufficient water for domestic and agricultural uses, women have developed a specific indigenous and traditional knowledge about sustainable water-resource management.

Women's knowledge and skills must be integrated to ensure the success of campaigns and projects in the field of water-resource development and management. New perspectives must be developed for the following areas:

- Creating the political will to integrate women at all levels of decision-making
- Mobilizing funding
- Establishing governance, integrated management and new partnerships
- Promoting capacity building and technology transfer

2.1 Creating the Political Will to Integrate Women at all Levels of Decision-Making

The different ways in which water is used have different consequences and implications for the adoption of a gender-sensitive approach in the water sector. It is therefore important to take into account the respective setting (urban, suburban, rural) because this calls for adapted forms of organization and management participation in the water sector. There is no clear respect to varying situations formulated in water policies.

Good policy generally takes into account the needs of sustainable development.³ Since success depends on having good policies and plans followed by effective implementation, we are bound to adopt a people-oriented approach.

Analyzing the situation helps us to elaborate a gender strategy. The overall goal of the strategy is to develop a framework for mainstreaming gender in the water sector so as to ensure optimal utilization of the facilities available and sustainability of services. Integrating gender-sensitive approaches in water policies requires:

- adequate participation of women in order to benefit from their specialized knowledge
- adequate awareness of gender differences with respect to the use and importance of water services
- responsiveness to demands in project design and development
- gender-sensitive monitoring and evaluation systems in water programmes
- documentation on gender issues and experience
- girl- and women-friendly water facilities
- a water infrastructure that meets the needs and growth of the population
- gender equality in development programmes

An analysis of the situation in the water and sanitation sector by the Government of the Republic of Zambia (2000) brought to light various gender issues and concerns. These were used as input in developing a national strategy for mainstreaming gender in this sector. The specific objectives of such a strategy are:

- to improve the availability of water for domestic and other uses to peri-urban and rural communities in order to meet the diverse practical gender needs
- to promote gender-sensitive networking, coordination and cooperation between communities and water authorities in rural and peri-urban settings
- to promote sustainable development, utilization and management of water in order to improve the quality of life for men, women and children
- to formulate a gender strategy for water for all stakeholders
- to facilitate the formulation of internal policies in organizations

National Level

Awareness of the need for women's integration must be raised. A strong advocacy campaign must be undertaken to highlight the need for gender integration and mainstreaming in water-related projects and programmes. Those responsible at the national level must be sensitized to gender issues and qualified to implement the corresponding measures. A gender strategy must be institutionalized at the national level in organizational structures. Government departments, international agencies and NGOs must network to provide water supplies and sanitation. Networking is possible if a national gender-aware consultative forum is established. This will be able to promote networking, cooperation and coordination of activities. A consultative forum can serve as a platform for sharing experience and prioritizing activities in different sectors like water supply and sanitation.

Internal gender policies should be formulated, adopted and implemented by organizations and institutions active in the water-supply and sanitation field. This will facilitate the mainstreaming of gender in the activities of the organizations and institutions.

A national gender framework and plan should be formulated to serve as a guide in actively pursuing gender and development programmes. If necessary, a gender executive committee could be set up to serve as an oversight body for gender issues. (Francis 2001) (see also Annex p. 20)

³ Good policy generally takes into account:

1) The global nature of environmental concerns. 2) The need for ecologically sustainable development. 3) The need to conserve, improve and protect ecosystems in terms of their biota, soil and water resources. 4) The relationship between efficiency and a clear definition of the roles of different levels of government. 5) The relationship between effectiveness and cooperation. 6) The need for accountability and transparency. 7) The active participation of all citizens and stakeholders.

Provincial and/or District Level

At the provincial and/or district level, a gender-aware coordinating committee should be set up. This committee should be composed of institutions and organizations involved in the provision of water and the promotion of sanitation within communities. In addition, there should be representatives of villages or communities present during the implementation of projects. Such committees should also have adequate gender skills in the area of, say, water and sanitation to enable them to formulate policy at that level. Their functions should include preparing district plans and conducting gender-aware assessments. Useful as a model of gender-impact assessment is "...an instrument designed to analyse potential effects of new (water) policies on the gender relations" (Verloo, Roggeband 1996).

Taking into account women's needs (gender mainstreaming) is an explicit aspect of anticipated project results and environmental policy decisions.

Gender indicators should be drawn up in order to clearly demonstrate the broad consideration of gender aspects. A gender indicator might be a report on women's participation.

Gender documentation centres should be created. There is a need to collect and store information on relevant experience in various parts of a country as a reference guide to gender-related activities.

More importantly, baseline information on gender and gender-related data must be collated. The development of a gender database would be ideal. (see also Annex p. 20)

Community Level

There is a need to set up gender-balanced committees at the community level. Such committees will work closely with committees at the district and/or provincial level. Their work should include prioritization and resource mobilization as well as gender training designed to build skills and capacities at the local level.

When implementing projects, gender-sensitive, community-based organizations should be established. Such organizations should work for gender sensitization and resource mobilization within the communities.

Basically, community building is a new way of working. Promoting community-based action for the Agenda 21 as well as Gender 21 can provide a tool to reinforce official policies and implement them exactly as they were formulated. Although the Agenda 21 and its activities are gaining increasing prominence on the international stage, concrete measures at the household or community level are not being widely implemented. Those encountering the ideas behind this agenda may be indifferent or hostile to them for a number of reasons: they do not want to change their traditional way of doing things; they are preoccupied with the problems of daily survival; or their implementation would mean extra work and require extra energy. It is therefore vital to educate, network and empower women at the community level.

The empowerment of women will be furthered if organizations active in the water and sanitation sector develop gender-sensitive monitoring and evaluation programmes. Such gender-sensitive systems will help target the most affected groups within the communities.

Water policies in this area are basically about knowing how to share control of the choices before us. They are also about knowing how to keep our ecosystem alive by not allowing the kind of leadership based on monopoly and command or manipulation by the 'knowledge-is-power' adherents. All water policy-makers should therefore appreciate the community-building values of coordination, collaboration and cooperation. It is this kind of leadership that is capable of learning the art of sharing power among diverse groups at the local level. Here, the non-governmental organizations (NGOs) play a key role in power and workload sharing.

The fact of interdependence is best appreciated at the local level, where there is also the greatest capacity for adaptivity and creativity in meeting the challenges of our uncertain future. A vast amount of information is obtained by being on the spot, by being a part of the fabric of a changing community. And it is only common sense to call for government to be closer to the life of the people within a community.

More concretely, gender mainstreaming at the community level can be enhanced through gender stratification in research and planning. Most current investigations of users and their needs fail to collect data differentiated along gender lines. This results in faulty assessment of levels and patterns of

need. When information is gathered that takes into account specific gender needs, users are often more willing to pay the costs involved in supply, infrastructure and maintenance. (Francis 2001)

In-depth gender-sensitive consultation processes allow the participation of both women and men in decisions regarding the location of water installations, technology and price implications. This may require separate meetings to ensure that women feel free to offer their opinions, and the use of female as well as male project staff. (Francis 2001) (see also Annex p. 22)

Women's Empowerment in Water Policy

In most developing countries, women possess and use knowledge about the rational use of water for both productive and domestic purposes. There is, however, a strong tendency to see participation in water policy and decision-making as a male sphere. This tendency is reinforced by the institutional lack of gender sensitivity and by the poor training of professionals in techniques and approaches encouraging gender balance. It is therefore essential to promote such gender awareness among water professionals, both female and male, and among women generally. Ideas and proposals relating to women's empowerment must, then, be given top priority in order to redress the present male dominance. To this extent, empowerment is an extension of participatory development. What is needed is the integration and consideration of practical needs and the investigation of strategic interests in order to identify mutually acceptable changes, taking care to relieve gender conflict. Empowerment should be acknowledged as a political instrument for self-development and power acquisition.

The institutional approach creates space, gaps and entry points that can build on opportunities for women's empowerment – although on its own it is not sufficiently empowering to women. Institutions operate in complex ways, are recursively shaped by much broader processes and embedded in complex ways in individuals and society at large. Women's participation and empowerment should thus go further, challenging and transforming the social structures, discourses and practices that define power relations and also addressing disempowering individual agency factors. An effective water-sector policy framework for women's participation and empowerment must therefore take the following into account (Dikito -Wachtmeister 2001):

- The decision-making process in the water sector is also embedded in social institutions: Approaches to women's participation must use both formal and social institutions as decision-making instruments because, in reality, these two types of institutions complement each other.
- Diversity of women's livelihoods: Effective gender participatory models should give consideration to the diversity of women's livelihoods in terms of their social, economic and marital status as well as social capital.
- Gendered identities, gendered spaces: Women's involvement may not lead to their participation or empowerment as anticipated because of the way in which prevailing patriarchal discourses and practices construct public and private space and how men and women relate to them. Mostly, men are culturally perceived as the legitimate, competent and respected leaders on whom women rely.
- Social capital: Social capital refers to horizontal networks, social relationships or connections among individuals in a community. Social networks are said to generate other forms of social capital such as trust and norms as well as facilitating communication, coordination and the provision of information on the trustworthiness of individuals. Social capital has become a popular strategy for empowering people because of its reputation for success, especially in facilitating participation, collective actions and the effectiveness of institutions.
- Women's groups can be vehicles for both individual and collective women's empowerment in decision-making. Women in areas that have dense networks of women's associations have played a more effective role in decisions relating to the location of water points, management of finances for the repair of their water pumps, the formulation of water regulations and other aspects of water management. Such women have also been more likely to occupy important positions on water committees and to be involved in collective decision-making. Such networks lead to more participation and trust and create a virtuous circle of participation.

Conclusions

Gender issues are inevitably an integral part of sustainable water policies. The practicality of sensitizing all stakeholders is an immense challenge. A key step in the process is raising the gender aware-

ness of policy-makers and professional planners. This is likely to require prolonged and intense public debate as well as investment in training. Professionally competent, morally responsible and courageous people are often those who most resist gender sensitization, despite their desire to include social impact as a key factor in water policy. Social impact is not only an issue for end users; it is a concern at all levels of policy-making.

At the same time, it is important to examine the links between grass-roots men and women and decision-makers, with particular attention being paid to motivational issues and power balances. Sustainable and effective water policies will depend on the participation and commitment of all interest groups. (Francis 2001)

The influence and efforts of NGOs, who uphold moral principles in the defence of people's interests, will help build a harmonious civil society. This will enable sustainable and effective water policies to be formulated. The first step here is to introduce gender issues into water policy.

Institutionalization of Gender in All Water-Management Projects and Programmes (Francis 2001)

Policy changes are vital in bilateral and multilateral organizations to mainstream gender as part of the strategy of water management. This means incorporating gender-equality concerns in all policies, programmes, administrative and financial activities as well as organizational procedures, thus contributing to a profound organizational transformation. In particular, it integrates the results of gender-related socio-economic and policy analysis into all decision-making processes within organizations and monitors the outcome.

By institutionalizing gender, gender principles are formally mainstreamed within an organization, its work processes and culture. This means identifying priority areas for organizational action to promote gender equality.

Institutionalizing gender basically involves:

- Understanding and commitment: clarity about gender issues at both senior decision-making and working levels and commitment to pursuing this goal by an organization and the individuals working within it.
- Structures and mechanisms: ensuring that gender issues are raised within planning and decision-making processes, monitoring progress and holding individuals accountable on gender issues.
- Information, data and research: the availability of necessary inputs, such as research on differences and disparities and adequate gender-disaggregated data to support policy and programme formulation.
- Analytic, planning and management skills: to identify and respond to gender issues in the context of an organization's mission, institutional arrangements and work.

Attention to these elements in the mainstreaming strategy will serve to reinforce an organization's policy commitment to focusing on gender concerns in both its internal operations and external programmes and projects.

2.2 Mobilizing Financial Resources

The water and sanitation sector in developing countries tends to be dysfunctional. Water may be the commodity of the 21st century, but its supply in the developing world is not exactly attracting investors. Fiscal policies in these countries are unfavourable, the political climate is volatile and uncertain, lack of tenure limits investment by residents, and inflexible government service standards restrict affordable choices and create barriers to other service providers.

The water crisis is largely a financial crisis, too, because the entire water sector in the developing world is under-financed. Current financial arrangements exclude billions of people from regular access to safe water. At present, the bulk of costs for infrastructure and ongoing costs for maintenance are borne by governments drawing on the tax base and, to some small degree, on external assistance. The private sector is making a relatively modest contribution. The beneficiaries of most water services, whether for drinking water or irrigation, are frequently exempted from contributions or are under-charged, irrespective of their ability to pay. Contrary to common belief, the poor who suffer most from inadequate services pay the biggest price – directly by being charged high prices by water vendors for

water of dubious quality (especially in peri-urban areas), indirectly through illness due to inadequate water and sanitation, and through the long, unpaid hours women spend fetching water.

There are four possible alternatives regarding who should pay for the infrastructure and services required: government subsidies, user contributions, private investment or external aid. The private sector may supply the initial investment, but it is ultimately the government, users or external aid that pays the follow-up costs. Often, the private sector will only undertake the investment if it is ensured a good return on it, either from users, the government or other donors. Supplying water is usually a monopoly business and it is crucial that regulations exist to make sure that service providers deliver adequate quality and service at an appropriate price (Meinzen-Dick 2001)

It is not easy to find a compromise between the two opposed positions: on the one hand that water should be a commodity or “economic good”, and on the other that it should be a “free resource”. It is essential to focus on the more immediate challenge of mobilizing the financial resources needed to supply water to different users. Almost half of the developing world, however, lacks a taxation base. There, governments’ ability to raise the initial investment and sustain operation and maintenance will remain limited. There is a good case for governments to concentrate their investments on those aspects of water infrastructure that are directly related to poverty reduction and on better serving the largely unserved sections of the population.

Principal Elements in the Implementation of Gender Perspectives

To improve water and sanitation services and develop integrated water -resource management, external funding would appear to be needed. To this end, donors must be persuaded that funding will support sustainable investment. There is great potential for public-private partnerships, linking up public institutions and private business to raise money and provide expertise to water-management utilities. A current major challenge is to develop more gender-oriented incentives that will attract more private-sector investment. Experience has shown the sustainability of projects implementing gender perspectives:

- Greater and more intensive involvement of women results in better maintenance of water and sanitation services (e.g. water utilities for pumping, storing, purifying, etc.). Costs for repairs and replacement services are reduced.
- Women’s indigenous knowledge is integrated.
- Self-help and innovative micro-arrangements can give women an understanding of the set up, operation and maintenance of water services.

Another way of attracting more private investment would be to fully explore all options relating to the legal status of non-governmental water utilities where either only women work together or where their contribution to decision-making, management and maintenance is equal to that of men. Problem-solving self-help groups at the local level have implemented a number of successful schemes (Annex). For these to be effective, it is imperative to empower women to form their own water and sanitation committees or irrigation user groups. Local communities can be the best guardians of good water-management practices.

Where the poor cannot be expected to pay the full cost of their water services, alternatives must be sought to provide subsidies for their basic requirements from the municipal or national budgets. Women must be involved in defining these basic requirements. They must contribute to the creation of tariff systems in which the rich cross subsidize the poor through increasing socially targeted tariff systems.

Water can be saved and costs lowered by means of closed cycles using technologies such as rain-water harvesting, low-cost sanitation, ecological sanitation and condominium approaches where resources are developed jointly. These general ecological approaches can be optimized by the integration of gender perspectives, as shown in rainwater-harvesting projects in India (Kunst, Pathak, Devasia 2001, see also Annex p. 24) or by strengthening the position of individual households and women as the main water managers, enabling them to exploit their indigenous knowledge of appropriate water storage, etc. to make more efficient use of water. The challenge we face today is to scale up successful approaches, continue targeted learning efforts and support reforms that will ensure the adoption and replication of sustainable gender-oriented investment. What is needed, then, is strong field experience, a well-established network of sector specialists and the ability to understand and respond to the changing demands of clients. The output may support and influence the formulation of policy,

strategy and institutional reform of advisory services or result in innovative solutions to water-supply and sanitation problems.

Generally speaking, a major obstacle to providing water and sanitation services in peri-urban areas is the high cost of conventional water and service networks. Utilities may be unable or unwilling to extend a network if they do not expect to recover the investment costs. Finding new ways of reducing the cost of access to improved water and sanitation services is therefore crucial. It must be demonstrated, e.g. by pilot projects, what are the benefits of an alternative low-cost, say, sewerage technology (condominial) and which new institutional relationships between a private concessionaire and its customers in poor peri-urban areas can stabilize infrastructural improvement.

Heavy dependence on public funding and unclear financing policies are what characterize investments in Eastern and Southern Africa. To address this issue, a Regional Workshop on Financing Community Water Supply and Sanitation in SA was organized by WSP. This showcased best practices in setting up and managing financial resources from the private sector, NGOs and communities. Recommendations were formulated for

- factors influencing the design of effective financial mechanisms
- management of funds
- conditions to attract private-sector finance, especially micro-finance
- partnership arrangements with clearly defined roles for all actors

2.3 Governance, Integrated Management and New Partnerships

Integrated management is not merely a technical task. It takes account of the many interconnections between the different sectors (e.g. water supply, sanitation, water quality) and social groups (e.g. industries, agriculture, households comprising women, men and children) that are affected. It requires governance and the establishment of new partnerships. Integrated water management means taking a fresh look at technologies for water use. There is a perceived need to further investigate the use of low-cost technologies that have a largely positive effect on the efficiency of water use. From a gender perspective, too, such technologies should focus on saving, reusing and recycling water.

New partnerships must apply international management principles in, say, river-basin projects. For women to feel they can make an effective input, it is essential to have a critical mass and significant ratio of women active in decision-making bodies at all levels. Establishing this critical mass may require quotas as well as special training for women. Women should develop their own management strategies using the “female” skills of integration and consensus building.

Part of the basic consensus here is a vision of sustainable water management – which means, for instance, that the amount of water extracted should not exceed that re-entering the groundwater as a result of rainfall.

User awareness of the benefits can be promoted by special resource-management strategies based on participation and gender-sensitive approaches (meeting practical needs such as reliable access to water resources) and more income and strategic needs such as independence and education). An integrated, holistic approach must combine technical sustainability with reasonable funding. A useful feature here is user management of financial resources (e.g. cost recovery, maintenance system). There is also a danger, though, that projects will simply increase women’s responsibilities, given their competence, especially in relation to the domestic water-supply sector. This would mean ignoring women’s productive and community-managing role. What we need to do, then, is to look at women in relation to men and the existing deeply rooted power structures, and at how gender relations should be addressed by both women and men. Getting men “on board” will require men and women to debate these issues during decision-making processes and move towards gender- and women-sensitive policies.

Governance

Cultural taboos, norms and laws prevent women’s involvement in the productive water sector. As Agarwal (1996) points out, it is not enough merely to give women rights on paper through policy, laws or institutional reform. The context in which they are to exercise these rights must also be modified if they are to benefit from them. For instance, statutory and Islamic law in Pakistan stipulates that

women may own land, and on paper they do. Land ownership also means they have rights to water and are eligible for membership, and even entitled to hold office, in water-user groups. However, traditional and customary law compels women to “voluntarily” relinquish their rights to inherit land in favour of their male relatives, thus forcing them to waive all other associated benefits. In Southeast Asia, it is only through common property that women have had some sort of access to water resources. Women’s ability to fall back on such common resources has been gradually eroded as the availability of these resources, especially in rural communities, has rapidly declined as a result of their appropriation by the state. This demonstrates how important it is, in terms of implementing gender mainstreaming, to create legal provisions ensuring equal rights for women as regards access to and use of resources.

What is needed is a structural and attitudinal change in institutions, including new integrated management systems for human, financial and natural resources. One way to achieve this is by increasing the attention given to women in human resource development (HRD). It is important to make explicit provision, as regards institutional arrangements for water-resource management, to help countries involve women in research and training as well as capacity-building programmes. It is also important that governments not only make possible a gender disaggregation of the specific monitoring indicators already identified, but also promote the capacity to identify new and crucial gender-sensitive indicators. We may have entered an era in which policies will have to be reformulated for all water activities in order to ensure sustainable development and rational utilization of resources. Women, as the users, consumers, managers and collectors of water, are a factor in this problem and a major factor in its solution – for integrated water-resource management and its further development.

Concepts are needed to operationalize gender in integrated water-resource management. Addressing gender means demystifying it; addressing value systems means making institutional changes in the water sector as a whole. These are crucial points on which future programmes must focus. To promote gender-oriented approaches, data on water services and integrated management should be gender-disaggregated. In addition, the development of gender databases should be initiated. The development of systems incorporating the gender development index (similar to the human development index) should be promoted. Furthermore, in their reports and analysis, future research programmes must build on the strengths and interests of both men and women.

New Partnerships

New partnerships should be based on awareness of the importance of achieving equity and accountability in communication between stakeholders. The term multi-stakeholder processes (MSPs) describes processes that seek to bring together all major stakeholders in a new form of communication, decision-finding, decision-making and implementation of practical solutions on a particular issue. Involving equitable representation of three or more stakeholder groups and their views, they are based on democratic principles of transparency and participation and aim to develop cooperation and strengthen networks between stakeholders. (see also Annex p. 25)

While not a universal tool, such processes cover a wide range of structures and levels of engagement. Their exact nature will depend on the respective issues, objectives, participants, scope, timelines, etc. Multi-stakeholder processes have emerged because there is a perceived need for a more inclusive, effective way of addressing the urgent sustainability issues currently facing us. Since such processes are people-centred, people need to assume ownership and responsibility for them, using and refining them to serve their own purposes and the broader interests of the global community of which they are part.

(Thein, Source: <http://www.earthsummit2002.org/msp>)

2.4 Capacity Building and Technology Transfer

Much of the \$ 30 billion invested each year in the water sector in developing countries is used ineffectively (Water and Sanitation Program 1999). In most urban systems, as much as 50% of the water may be unaccounted for. Disused pipe networks, the maintenance of which would be unaffordable for users, litter the countryside from Cape Town to Cairo. The human cost of inadequate sanitation is even higher than of water, faeces being the origin of so many infectious diseases.

Important measures for successful capacity building and technology transfer are the development of innovative, gender-sensitive technologies and the improvement of local and indigenous methods. There can be no one single water-management strategy. Other factors that need to be taken into con-

sideration are each country's climate, precipitation rates, temperature variations, level of industrialization and urbanization, living standards, economic situation, organizational structures, cultural practices, religion, ethnicity, etc.

The use of gender-sensitive, participatory methodologies is recommended. Such methodologies allow both men and women to participate equally, ensuring that the practical and strategic needs of both are taken into account.

Capacity Building

The gap between those who have and those who do not have access to clean water and sanitation can only be closed by using knowledge and resources more effectively. There is a need for constructive alliances between policy-makers, technical experts and the people who use water and sanitation services. The social aims of politicians and people's desire for environmental protection, health and clean water must be brought into line. In short, capacity must be built to ensure that society is equal to the job. Inequality between the sexes in the division of labour and responsibility must be avoided.

Statistics show that 40% of the water-supply infrastructure built during the 1980s was no longer working by 1998. The main reasons given were the lack of women's participation and the use of inappropriate technologies. Technology transfer was unsuccessful and the results were poor in terms of capacity.

The involvement of women provides a valuable contribution to decision-making and conflict prevention. Teaching women and men integrated water management is one of the good practices for preventing confrontations between water users. Integrated water management means taking a new, gendered view of technologies for the use of water based on interdisciplinary and cross-sectoral approaches.

Capacity Building through Knowledge

As a basis for both institutional frameworks and national and environmental policy-making, capacity building is the key to success – success in terms of the national economy and public health based on sustainable development and a clean and healthy environment. This is why the knowledge base, skills and attitudes (the capacity) of individuals, institutions, and organizations must be strengthened (Thein 2000).

There is a need to better organize the sharing of knowledge as well as bridging gaps between engineers, economists and social scientists. Knowledge from the South must be shared with the South and the North. Water saving as well as indigenous techniques that use water sparingly and are particularly suitable for water-stressed environments should be made accessible to both the South and North.

Networking Knowledge (Khin Ni Ni Thein 2000)

Networking can mainstream this important perspective. At the same time, networking itself can be empowered by the 'Information and Communication Technology, ICT'. If a village, community, network or organization gains access to the Internet and uses it innovatively; this can benefit everyone, even if majority of people there never use a computer. This is due to the fact that information and knowledge received by e-mail is redistributed via other channels. Such channels may include traditional forms of communication such as popular theatre and community radio, demonstrating a creative integration of old and new technologies. This repackaging of Internet-delivered information enables much larger numbers of women to be reached, including those in remote areas where there is little prospect of ICT access.

3 SUCCESS STORIES AND LESSONS LEARNED / IMPLEMENTATION OF IDENTIFIED ACTIONS / POLICY IMPLICATIONS

An overall development objective of sustainable water-resource management is to increase understanding of the links between gender, demand and sustainability and, by doing so, to give poor women in particular a greater voice and choice in the services they use. Gender analyses and gender-sensitive participation strategies are important tools for implementing projects and action. The aim here is to empower women and men to lessen their burden and to achieve gender balance and equality. (Annex p. 26)

Based on these approaches, projects have different strategies and aims, but follow the needs of the environment as well as the concerns of men and women.

3.1 Examples from the Field of Sanitation

The World Health Organization estimates that 12 million people die each year from water and excreta-related diseases, including 4 million children under the age of five who die from diarrhoeal disease; 80% of the morbidity in developing countries is due to this problem.

Human waste and poor sanitation are the most important biological contaminants of water supplies. Inadequate sanitation conditions allow human waste to contaminate soil. Then rainwater washes such waste into the water supply.

The examples below describe different, gender-focused water-sanitation programmes.

3.1.1 *Planning for Recycling: Integral System for Recycling Organic Waste (Mena-Abraham 2000)*

This project is concerned with sanitation, specifically with the processing of organic waste using dry toilets, thus avoiding wasting water for flushing systems. The excreta are fermented after being directly mixed with organic waste. In peri-urban situations, wastewater is also treated using a system called wet SIRDO. This system is an innovative technology combining the treatment and composting of organic waste with the biological treatment of wastewater. Its inventors are women and members of the NGO GTASC who faced terrible hygienic conditions in their villages. Most of the communities suffer from waterborne infections.

"...the SIRDO project from México mobilised women to control their environment through an age-old tradition devised by women: the conservation and recycling of waste. The instinct is old but in this case it addresses a problem that is a creation of our present day civilisation. Extension of the debate about women and development from a narrow definition of economics to encompass the wide range of challenges facing humanity today such as environmental problems will be ... the great leap forward..." (Mazumdar V 1989). (Annex p. 26)

3.1.2 *Kerala's Women Masons: New Skills, New Lives (Mathew 1998)*

The Jeevapoorna Women Masons Society (JEEWOMS), an offshoot of Socio-Economic Units (SEU), Kerala, was formed in 1989, becoming a registered charitable society in 1995. SEU itself was established in 1988 following bilateral agreements between the Dutch, Danish and Indian governments to implement W&S (Water and Sanitation) projects in Kerala, its main responsibility being to ensure people's full participation in projects, from planning to monitoring.

Women assisting skilled male masons in all construction projects, especially the building of low-cost latrines, soon became a common sight. The Programme Officer (Health Education), based at the central unit, decided that the next step was to initiate masonry training for these women. At first, the women were highly sceptical, but gradually they began to believe in their own ability. (Annex p. 27)

3.2 Examples from the Water-Supply Field

Clean water changes lives. Many water-supply programmes help families to cope with their daily water needs. The two examples given below look at water-supply programmes at different levels of technology in terms of demand, strategy, planning, construction, function, cost recovery and benefits.

3.2.1 *Boreholes Mean Business (Touré 1998)*

Before 1991, the women of Diass suffered water shortages. In this area of Senegal with its 2,000 inhabitants, all the wells had dried up. In addition, when water from Lake Guiers, supplied through water points, was no longer available, women were forced to travel long distances to fetch water. Five years ago, a Chinese-financed borehole was built.

Voluntary Managers: Under the supervision of the local authorities, the local people elected a six-member management committee. An auditing committee helps ensure that the borehole and its two water points are properly managed. Committee members – all volunteers – include four women, who are vital to the smooth running of the borehole as women are responsible for their families' water supplies. The local authorities retain overall supervisory rights.

Profitable and Long-Term: A mechanic and two salespeople are paid each month from the proceeds of the sale of water.

Loans and Small Businesses: In March 1996, the management committee made its first loan – of more than CFA 1 million (over \$1,600) – to seven women's groups. Each group then redistributed the money to individual members for their businesses – selling fruit, vegetables and groundnuts. (Annex p. 28)

3.2.2 *Water – and More – for the Barrios of Tegucigalpa (Metell, Mooijman 1998)*

Tegucigalpa, the capital of Honduras, is situated in a valley surrounded by steep mountains. Since the early 1970s, people from all over the country have migrated to settle in the urban areas and formed barrios marginales – marginal or peri-urban communities.

In 1986, studies indicated that the available potable water resources were insufficient for the rapidly growing peri-urban population. Given the prospect of an overall water shortage and the fact that it would not be possible to provide an increasing number of city-dwellers with tap-water from the regular system in the short term, another solution had to be found.

To alleviate the pressing problems, Unicef and the National Water Board, SANAA, developed a programme for peri-urban areas, which was launched in 1987. The government agreed to create a special body for peri-urban water provision, the Executive Unit for Settlements in Development (UEBD).

The resulting safe, potable water comes from two sources: boreholes – from which groundwater is extracted, and surface water which is treated by SANAA. Groundwater is pumped untreated to the community using an electric pump – sometimes an expensive option as electricity costs have spiralled in recent years. Treated water is distributed both through the conventional network, and by trucks to public water points or in-house connections. (Annex p. 29)

3.3 Examples from the Field of Capacity Building

Capacity building is a complex issue and the range of programmes to enhance capacity is broad. The aim is invariably to empower those concerned and enhance their ability and competence to deal with existing problems. Access to information plays a key role here. Education programmes and networks are important tools for capacity building. This is illustrated by the following examples.

3.3.1 Training Programme: Agua Para Beber – Drinking Water (Liebmann 2000)

An example of a training programme combining outreach education with the distribution of low-cost water receptacles and making use of volunteer health promoters for its implementation is *Agua Para Beber* (Drinking Water), which was piloted in 1994. It was developed by the Center for Environmental Resource Management (CERM) at the University of Texas at El Paso. The goal of the programme is to offer an interim solution to help improve the safety of drinking water – and thus the quality of life for border residents.

The programme trains volunteer health promoters from the community in hygiene promotion and water-purification techniques. *Agua Para Beber* is currently being transferred to community-based organizations. (Annex p. 29)

3.3.2 Women's International Network for Sustainability (by Dolly Wittberger)

Crucial to new partnerships in gender-sensitive and sustainable water management is the process of building women's networks. How can lively networks be established and nourished? The project area Water at the International Women's University (Hanover, Germany 2000) provided an interesting environment for such a dynamic process. By way of a concrete example, the essential aspects that led to the successful establishment of the Women's International Network for Sustainability are summarized below. (Annex p. 29)

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5 ANNEX

5.1 Annex of Point 2

Annex to Section 2.1 (Francis 2001)

Examples of and Contributions to Mainstreaming Gender at the National and District Levels:

- Emphasis on mainstreaming gender perspectives in the water sector reflects recognition of the fact that the interests and needs of women as well as those of men must be systematically pursued in the development of all national/regional policies and programmes. In other words, attention to gender issues cannot be confined to a sector called "women's development" or addressed through isolated or marginal programmes within the water sector (OECD/DAC, 1998).
- Legal frameworks and institutional reform to incorporate gender considerations, giving women and men equal access to productive resources such as land, loans, fertilizer, etc. At present, 90 countries have not yet fully adopted the UN convention on the elimination of all forms of discrimination against women. This means that women do not always have rights of property or inheritance.

'In Dakiri, Burkina Faso, the current study shows, allocating smaller plots separately to men and women instead of allocating bigger plots to household heads has positive production and social benefits. When both men and women have irrigated plots, the productivity of irrigated land and labour is higher than that in households where only men have plots. Women are equally good or even better irrigation farmers than men, and those who have obtained irrigated plots are proud of their increased ability to contribute to the needs of their households. Women prefer to contribute to their households by working on their own plots rather than providing additional labour to their spouse's or to the collective plots. As they become economically less dependent upon their husbands, they can help support their relatives and increase their own opportunities for individual accumulation of wealth in the form of livestock. The effects of having an individual plot significantly improve the bargaining position of a woman within a household and are a source of pride in the household and the community.'

Burkina Faso

- Building capacity is designed to increase understanding of gender implications for water management. This is part of an effort to empower women so that they can acquire the skills needed to enter water management at a senior level. It involves improving opportunities for women in terms of technical and scientific education.

'US women make up less than a quarter of the science and engineering labor force: only 8% of engineers are women, according to the National Science Foundation. One of the encouraging signs that the future may be different is the emergence of a number of organizations formed to encourage girls to get involved in mathematics and science... A mother with a Ph.D., Corinna Lathan, founded Keys to Empowering Youth, designed to interest middle school girls in science and engineering. To find real role models in science and technology, girls can also turn to a program called Advocates for Women in Science, Engineering and Mathematics. In this after-school club, girls from 11-18 years old meet college students majoring in science, mathematics and technology. Teen Women in Science and Technology is another program, developed by the Oregon Institute of technology, to encourage teenage girls to discover mathematics, science and technology in a unique hands-on summer residential program. In 1996, the theme of 'water' sent the group on a problem-solving quest and discussion of careers from a water-related perspective. Teenagers were asked to investigate a water pollution problem scenario.'

United States of America

- A proactive effort to gender-sensitize water-management approaches at senior policy-making levels in national structures as part of a strategy to ensure equity and increased women's involvement in these processes.

Engendering the development paradigm involves radical changes in the long-standing premises regarding social, economic and political life. The free workings of economic and political processes are unlikely to deliver equality of opportunity because of the prevailing inequities in power structures. Where such structural barriers exist, government intervention is necessary – both through comprehensive policy reforms and through the wide application of affirmative action.

UNDP, 1995

- Gender training for men and women working in water-related national and regional bodies, non-governmental organizations and private water companies.

'In Sulawesi in Indonesia, the Pompengan Integrated Areas Development Project organized gender training for male and female extension staff working in rural development, food crop, irrigation, family welfare, land planning and agriculture. The participants became aware that the activities of their projects affect men and women differently. They learned to adopt a gender analysis approach and developed ways to practice gender in their work. In Tanzania, the Health through Sanitation and Water project developed training and a training file on gender as well as a gender strategy.'

Indonesia, Tanzania

- Policy changes so that gender becomes an intrinsic part of countries' water resources management strategy.

'Water resources will be managed in a way which recognizes the distinctive roles of men and women. Priority will be given to activities which facilitate traditional gender roles and strengths. In particular the interests of women in vulnerable positions (such as low income, female-headed households or migrant workers) will be supported in all aspects of water resource management. The water resources policy should be interpreted in a gender sensitive manner.'

Draft National Water Resources Policy, Sri Lanka

'Recognizing the principal role of women in water supply and sanitation, gender equality will be given adequate attention. Increasing women's participation and reflecting women's interests in the project development will be two major strategies to implement the principle of gender equality. Detailed work procedures will be guided by the principle of gender equality.'

National Water Supply Sector Policy and Strategy, Nepal

Sri Lanka, Nepal

Examples of and Contributions to Mainstreaming Gender at the Community Level:

More concretely, gender mainstreaming at the community level can be enhanced by:

- Gender stratification in research and planning. Most current investigations of users and their needs fail to collect data differentiated along gender lines. This results in faulty assessments of the levels and patterns of need. When information is gathered that takes into account specific gender needs, users are often more willing to pay the costs involved in supply, infrastructure and maintenance.

'In Ghana, Nigeria, Tanzania, India, Thailand and Indonesia, only male heads of households and authorities were interviewed, even about women's issues such as water needs, water transport and use, laundry provisions, and preference for a foot or handpump. Nor is a distinction between the sexes always made in analysis and reporting. In a number of cases males heads of households were consulted on topics which are outside their sphere of knowledge, views and influence, or topics were discussed on which women have different knowledge, views or demands from those of men.'

Ghana, Nigeria, Tanzania, India, Thailand, Indonesia

- In-depth, gender-sensitive consultation processes that allow the participation of both women and men in decisions regarding the location of water installations, technology and price implications. This may require separate meetings, to ensure that women feel free to offer their opinions, and the use of female as well as male project staff.

'Wells often run dry after a few years and pumps frequently break down. Although it is the women who stand to lose most, they are rarely involved in the construction of wells or trained in the operations and maintenance of pumps. A project in the Upper Volta dug wells to inadequate depths because only men were involved in its design and implementation. Village women were not consulted, although they were responsible for collection of water from the well and had better knowledge of the depth to be dug to retain water year-round.'

Ghana

- Care in ensuring gender-balanced participation in management at community levels. Since the provision of water has long been women's responsibility in many societies, there is a great danger that efforts to increase community participation may have the grotesque effect of increasing the work women are expected to undertake. Women continue to provide unpaid, manual labour, while men secure any managerial or decision-making positions that become available.

'Failure to address gender biases in community organizations can undermine project performance, as shown by the Macina Wells Project in Mali. An evaluation of this project in 1994 found both women's and men's work to be substandard. Women, assigned the tasks of well cleaning by older, authoritative male caretakers, neglected this task because it was added on to their already overloaded work schedules and because many of the male imposed rules of the well were impractical and illogical. Women were given minimal influence over project planning, kept out of key decision-making responsibilities, and excluded from all technical aspects of the project. The allocation of men to high status also proved to be counterproductive since men lacked the incentive to carry out work related to water provision and sanitation which they felt to be in the women's domain.'

Mali

- Capacity building to enable women to perform managerial functions. This includes the development of skills in financial management, decision-making, community participation, leadership, confidence building and communications.

'The effects of female participation in management on the women and men in communities are manifold. Recognition of women's management tasks and training for new tasks and skills has increased their status and self-confidence. Women in Visayayas in the Philippines reported that their views are increasingly met with respect and their needs met with regard to time of meetings, design of water supply and design of latrines. They now believe that they can really contribute something for the good of the community and be 'partners in progress' and not 'for decorative purposes only'. In a project in Indonesia women grew in knowledge, self-confidence and leadership, and autonomous management of water systems increased.'

Philippines, Indonesia

- Gender training for both men and women at local levels, so that men understand and support the changes taking place in terms of social organization. This also means training trainers, both men and women.

'In Dosso, Niger, the issue of gender was first raised by the external support agency. However, the manager of the community participation program remarked that the program itself had also noted the overburdening of women in the villages. For the water supply, sanitation and hygiene program, it was also a matter of common sense to involve women more in the water management and get more male support in matters of health and hygiene. But how to change behaviour across the board: of men and women in villages as well as staff? To start off, gender-determined tasks and authority were investigated for old and young women and men and boys and girls in five villages in the program area. The workshops have led to a greater gender consciousness of staff and also to some changes in their own practices. Acceptance and pursuit of gender measures in the program – organizing separate meetings with women; shared committees; conscientization of men on responsibilities in water payments – have increased.'

Niger

- Capacity building to equip women to perform technical functions.

'...Available research tends to indicate that women perform technically as well or better, and that the costs of maintenance to the agency are lowered. This is reported, for example, by projects in Tanzania, Bangladesh, Zimbabwe and Uttar Pradesh in India. In the case of Rajasthan, both frequency and duration of handpump breakdown were lower for female than for male mechanics. However, the opportunity costs are high. The amount of time the women spent on preventive maintenance was almost seven times higher than men. Having still to carry out their domestic work, they also face a double workload.'

Tanzania, Bangladesh, Zimbabwe, India

- Strategies to ensure that both women and men share the benefits of changes in water-supply management.

'The imbalance increases when work done by women is voluntary while the same or similar work by men is paid. In Samoa, indigenous water sources were managed by women's groups on a voluntary basis, under the supervision of an older public health nurse. When the public health policy was changed, the women's work was not recognized but taken over by salaried male health inspectors. The result was that environmental conditions deteriorated, at a higher cost to the government. Similar tendencies are reported in Kenya and India. In Western Province, Kenya, the project replaced paid repairmen by voluntary women pump attendants for reasons of misconduct and because the men moved to town. In Rajasthan the project trained male mechanics, but also 72 female mechanics. The women did not get the same working and payment conditions as the men and the local councils have not agreed to take on the payment of their salaries. Similar reports on women trained and doing the work but not being recognized comes from Karnataka, India.'

Samoa, Kenya, India

- Institutionalization of gender in all water-management projects and programmes.

Many different departments within SIDA work on SIDA's policy for promoting equality between women and men, both in the context of bilateral projects and programmes and in specific targeted inputs from NGOs and other institutions. Details of their mainstreaming strategy are included in the individual action plans of these departments.

This policy is clearly established as an important criterion for overall country-strategic development, influencing the choice of which sectors to support in a country, the choice of interventions within sectors and the approach taken in provision of support.

SIDA –Swedish Development Cooperation Agency, 1997

Annex to Section 2.2 (Francis 2001)

Public-Private Partnership:

In Bolivia, a highly successful pilot project was conducted in a peri-urban area. The project has received international recognition for its innovative public-private partnership model, its use of condominium technology and its high degree of community participation. Condominial systems reduce costs. This technology provides a wastewater-collection network costing approx. 50% less than conventional ones. Condominial systems reduce the cost of in-house connections by using fewer and narrower pipes and by laying the pipes in shallow trenches. Using this technology has made it possible for a private concessionaire in Bolivia to meet the coverage goals and cost margins set out in the concession agreement for low-income peri-urban areas – and to keep within its own economically acceptable margins.

Annex to Section 2.3

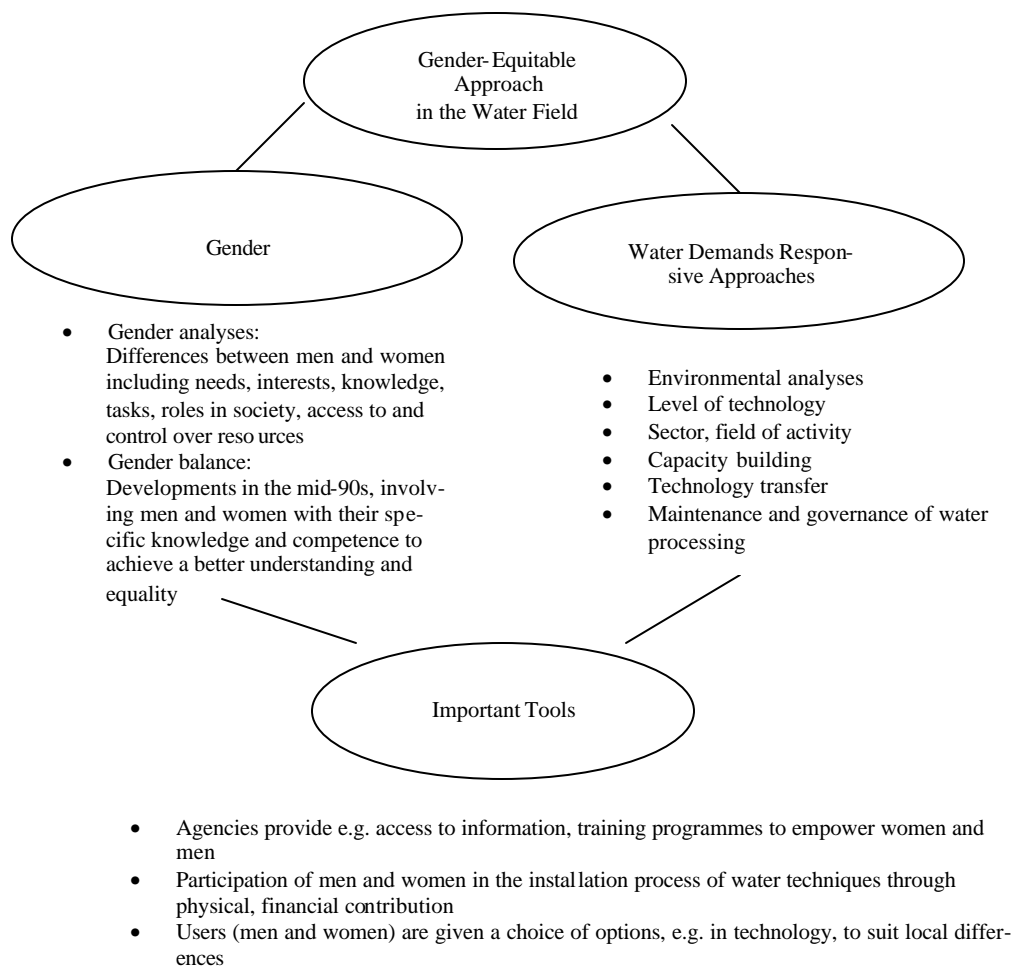
Partnership, Staffing and Management

In South Asia, the Water and Sanitation Program works through partnerships with a wide range of agencies. It is spearheading a private-sector research initiative. The first partnership agreement of the initiative was signed between Suez Lyonnaise des Eaux and the Program in the context of an applied-research programme involving several private water companies. In Pakistan, the Program has established a partnership with a development consulting firm for an urban research programme. It has also worked with the World Bank to organize workshops to help shape government strategy for service delivery to the poor (Water and Sanitation Program 1999/2000).

“Mahila Housing SEWA Trust’s partnership with the Water and Sanitation Program has been very valuable. Through MHT poor women members of SEWA express their difficulties related to housing and infrastructure, while WSP has provided the forum to take these issues to the national and international level. This has resulted in real policy changes that have directly improved the lives of these women” (Jhabvala 1999/2000)

5.2 Annex of Point 3

Figure: Gender-Equitable Approach in the Water Field



Annex of Section 3.1.1 (Mena-Abraham 2000)

GTA (Grupo de Tecnología Alternativa, S.C.) is a non-profit organisation focused on developing alternative technologies to recycle liquid and solid domestic waste. It was established in 1978 by a group of five Mexican professionals. The multidisciplinary team expands and contracts according to the projects underway and it is co-ordinated by Josefina Mena Abraham, Arch., and M.Sc. in Regional Planning.

During the last 22 years GTA has developed a technology and a planning methodology for recycling involving social participation by means of economic incentives, registered as SIRDO (Sistema Integral de reciclamiento de desechos orgánicos, C.I. 6758 M.R. 338568 SECOFI + Certificado de condición sanitaria de la Secretaría de Salud) which means Integral system for recycling organic waste. The SIRDO is an eco-technology because it achieves 3 main indivisible principles: a) it is socially needed, b) it is ecologically sound and c) it is economically viable.

The SIRDO is a Mexican Patent able to recycle liquid and solid organic wastes generated by housing and its main services. Its design is based on the biochemical process which characterises the Mexican indigenous *Chinampa*.

It has been developed under two main patterns for two different situation: 1) the wet treatment (with a collecting pipe system for grey and black waters, either mixed or separated) for situations where water is available and sufficient; 2) the dry treatment (similar to a composting toilet) for situation of water scarcity or bad quality. Nevertheless both patterns are based on the same principles, and there exists several models for the wet and dry situation. Also there are family size models and collective models.

All models include the use of solar energy as an active factor in the decomposition process, and the conception of a proper habitat for micro-organisms that actually do the job of recycling; the function of technology is to provide the right environment for these micro-organisms to work efficiently.

The products generated by the SIRDO are: water for aquaculture, water for agricultural irrigation and bio fertilizer rich in carbon and free of pathogens. It enable us to recycle 60-70% of the water supply and use it s a substitute of potable water for tasks such as cleaning pavements, cars, etc. and produces 25-30 Kg/hab/cosecha of bio fertilizer.

The SIRDO integrates to modern life an ethno biological indigenous principle consisting on employing the sanitary sludge as inoculant to achieve the decomposition of organic solid waste. GTA has been monitoring SIRDOS for the last 2 decades in 23 states of México. In some cases as that of Tres Mariás, Morelos, the impact on health and local economics generated by the social and technical recycling process was very considerable. This case has been largely documented with the financial help from the International Development Research Centre (1889-92).

The project has had a multiplier effect. One of the elements that contributed to the success was the smooth operation with a small group of upper-middle class private citizens. The community is limited in size, the residents, who "own" and operate the SIRDO, are focused on the importance of ecological issues. No outside agencies participated.

Annex of Section 3.1.2 (Mathew 1998)

Water-supply activities were carried out in close collaboration with the Kerala Water Authority, but the sanitation programme was launched independently. SEUs have been involved in the construction of 53763 household latrines, 253 institutional latrines, and two pay-and-use latrines, with full community-group (ward water committees), local government (panchayat), and user participation.

Supply and Demand

The first batch of 12 women began in 1989 but, as they began to marry outside their villages, they dropped out. So in 1990, when the second group of 14 began, they had to meet the following criteria:

- Women had to be married, below the age of 45, and from below-poverty-line households;
- The intensive years of child-rearing should be over, their children should be more than three years old;
- Widows, deserted women, and single parents – in greater need of extra income – were preferred; and
- All candidates should have previous experience as a mason's helper.

The training comprised: cement-block making: mortar and cement proportions; mortar constituency; cement-block quality; and curing and strengthening. The women then learned the practical skills of bricklaying, level-checking, plastering, floor construction, making and fixing concrete slabs, reinforcing steel work, using moulds to construct rings for latrines and wells, and how to construct low-cost twin-pit latrines.

Social Pressure

What proved really difficult was persuading the women that they could learn masonry. A participatory training programme was developed to:

- Build up the women's confidence that they could become skilful masons;
- Strengthen team building – solid bonds are very important, and only as a team could they face the men's jeering, neighbours criticism, and the culture shock; and
- Awaken the women's obvious but latent potential.

The training also touched on savings and money management, and hygiene, so that the women can be agents of change within their communities. Male master masons provided the construction training. After a month of intensive training on a single site, the group was sent out, in twos, with a mason to work on household latrine construction. This enabled them to gain experience in different panchayats. Later on, two to three women worked together in allotted panchayats. From the beginning they earned equal pay.

Now the idea is catching on – more of Kerala's district panchayats are training women in masonry as a main plank of their women's-empowerment initiatives.

Annex of Section 3.2.1 (Touré 1998)

The mechanic remains at the borehole each day, but the salespeople only work part-time, when the water is distributed. Their pay is modest, helping keeping borehole costs low and, therefore, the cost of water.

This six-month loan came with an interest rate of 12 per cent, 6 per cent going straight into the borehole kitty, the other half destined for the women's groups funds. The exercise worked well and, since then, loans totalling CFA3m (almost \$5000) have been made. Repayment has not been a problem, with some groups even making payment before deadline. The women's businesses are all doing well.

The women are well aware that failure to make repayments is bad for everybody:

- Unless the balance of the borehole kitty is healthy, water supplies cannot be sustainable. The women are anxious to avoid a recurrence of the pre-1991 situation;
- The loans help women to build up capital. With their new revenues, traditional credit associations – for example, Idr in Amharic, and Njangi in Nigeria and Cameroon – are working better than ever; and
- The groups can develop as their coffers are replenished from 6 per cent interest. It is now possible to envisage collective investment projects.

Management Problems

Naturally, even this successful water management initiative experiences problems. For example, the finance available is inadequate for supplying water to all parts of the village, because rain erosion has created deep ravines, making it expensive to pipe water from one place to another. The occasional conflict breaks out at water points, showing that more are needed; and; disturbingly, water is lost from some of the water points.

New Perspective

In spite of these difficulties, progress is being made. With the interest earned from loans and the revenue from the sale of the water, an extension to the network is under construction, and water points are being added. What is important is the sustainable management of the borehole, both in terms of finance and maintenance.

This is a beautiful story about women: water finances water! This is a profitable circuit because it allows the time that is saved in fetching water to be reinvested in money-making activities; the women have been able to develop small business initiatives. Their living conditions improved as well as their buying power. Women sit on the management committee, which gives them power over the use of water – leading to more equitable relations between the sexes. And last, but not least, water-borne diseases have practically disappeared from the villages involved.

Annex of Section 3.2.2 (Metell, Mooijman 1998)

The uncontrolled settlements worsened existing problems, with access to basic social services lagging severely behind.

In the early 1980s, most of the urban communities in Tegucigalpa lacked access to a drinking-water source – a family could spend as much as a third of its income on water from a vendor.

Plans to open a new source were developed and financing for the expansion of the main network was sought.

It was estimated at the time that families in the barrios marginales were paying private vendors up to US\$13 million per year. If just a proportion of that money could be diverted, lower-cost and non-conventional water systems could be constructed – paying for themselves within a few years.

Cost Recovery

In 1998, each household is paying around 350lps (\$27) to join the water scheme. This covers the purchase of materials such as sand and gravel, and tools. In addition, every family agrees to provide manual labour for the construction work. Once the water system is operating, they contribute between 25 and 40lps (\$2-3.50) a month. Part of the fee is secured in a revolving fund managed by SASAA, which goes towards programme expansion and high-cost system repairs. The community's contribution amounts to approximately 40 per cent of the total cost of the water system; SANAA contributes 25 per cent, and Unicef covers the rest through donor contributions from the Swedish Government.

Through additional public and private donations and other donor partnerships, the construction of water systems has progressed quicker than expected; by 2000, all Tegucigalpa's legalized peri-urban communities should have their own water system installed and functioned.

Annex of Section 3.3.1 (Liebmann 2000)

The promoters introduce the Know How and the practices to their communities. Information given to the families by the promoters is reinforced through the educational labels on the water containers and drums, as well as through information in an easy-to-understand comic book regarding water disinfection and hygiene practices.

This allows the program to achieve a greater multiplier effect, reaching the largest number of families possible, and to enhance program sustainability. Training trainers encourages long-term program sustainability as it allows the agency or organisation to implement the program directly. More important, the community-based organisations have an existing network within the community and are better equipped to work directly with families in need of safe water.

Annex of Section 3.3.2 (by Dolly Wittberger)

Meetings that Matter

In project area Water, over 100 women from all over the world found a space for physically meeting, talking, discussing, learning, analysing, disagreeing and working. This space provided women with the opportunity to acknowledge the diversity of their professional, cultural, religious and ethnic backgrounds and to build upon this equally enriching and challenging diversity. In this way, mutual understanding, empathy and trust were built.

Furthermore, the space was used for intensive training in scientific, technical and sociological matters concerning water management and sustainable land use, resulting in the empowerment of participants on the professional level. This individual and local experience was extended by two activities: the intensive use of computers and the internet, and the planning of future projects and collaborations.

Projects that Matter

The Women's International Network for Sustainability (WINS) is a continuation of the synergistic efforts and connections established in project area "Water" during the Women's International University (IFU). As a registered NGO, WINS serves as the link between former IFU-participants, members, experts, organisations and local communities, and maintains a project-driven network.

All WINS projects are developed locally by and for women and communities where the projects take place, and focus on site-specific ecological systems and livelihoods; projects are considered the property of the concerned communities. Women are involved on all levels of decision making in the development as well as the implementation of projects and actively participate in project evaluation. Projects have to demonstrate some type of local support, either in kind or financially, rely mainly on volunteer efforts, and promote ecologically sustainable principles, cultural diversity and gender equity. Since knowledge of a specific situation in water management is based on experience, responsibilities and daily practice, local women are considered to be the primary experts. Throughout a project, community participation is also facilitated by focusing on local knowledge, technology and materials.

In these dynamic processes, WINS members who are trained in gender-sensitive approaches to water management act as catalysts, mediators and role-models from within their local communities. Via the women's network they have access to information and may turn to women experts from outside their community whenever the need for technical, financial and advisory help is identified.

One of the main challenges for women's networks like WINS is the limited access to information technologies like telephones, computers and/or the internet for women in the global South. Awareness of this fact has to result in the search for solutions to actively reach, address and include women especially in rural and poor areas.

Networks that Matter

Women's networks with a clear focus on participatory action projects serve multiple empowerment purposes: in addition to providing technical and financial support for actual projects, they connect individual women activists and ensure the continuous exchange and sharing of information and experiences. If committed to the consensus of mutual understanding and trust, they have the immense potential to encourage women in their work and to function as a source of energy and hope. As a point of reference, they give credibility to women's efforts in their respective societies and aid in establishing women's roles as experts, agents and decision-makers.

Policy Implications

- National and international meetings, workshops and courses for women in water management and sustainable land use with an explicitly interdisciplinary, multicultural and holistic approach to sustainable development
- Provision of physical meeting space for women in order to facilitate eye-to-eye contact interactions and the building of trust
- Gender-sensitive training for the planning and implementation phases of participatory action projects
- Support for women's networks beyond the initial phase
- Encouragement and financing of women's participatory research projects in water management

Awareness of and efforts towards the inclusion of women and women activists who do not have access to computers and internet