V. Women and water management: an integrated approach

"Women play a central part in the provision, management and safeguarding of water."

Dublin Principle 3, International Conference on Water and the Environment Development Issues for the Twenty-first Century, Dublin, 1992

Awareness is growing of the importance of a gender approach to water supply and management issues (Francis, 2003). The present chapter examines the value of water systems and looks at women's reproductive and productive roles as they relate to using and managing those resources. It also explores lessons drawn from recent experiences in policies and programmes.

Box 20: Water is life

Water is essential for all forms of life and crucial for human development. Water systems, including wetlands, coastal zones, surface waters and aquifers, provide a vast majority of environmental goods and services, including drinking water, transport and food. Globally, irrigated agriculture draws down 70 per cent of all renewable water resources, and industry and energy supply also consume a sizable share.

As the world's population has tripled over the last century, the use of renewable water resources has grown sixfold. But water's sustaining role in ecosystems remains undervalued, despite the fact that minimum flows in water bodies are needed to support environmental health and increasing human demands. Faced with shortages and a grim future if current trends continue, there is a growing understanding that sustainable water management requires water governance, including integrated water resource management.

Integrated water resource management coordinates the development and management of water, land and related resources. It seeks to maximize social and economic welfare in an equitable manner, to sustain ecosystems and to bring together the technical, ecological, social and political spheres. An essential part of an integrated approach is the participation of stakeholders, including local communities.

At the root of poverty

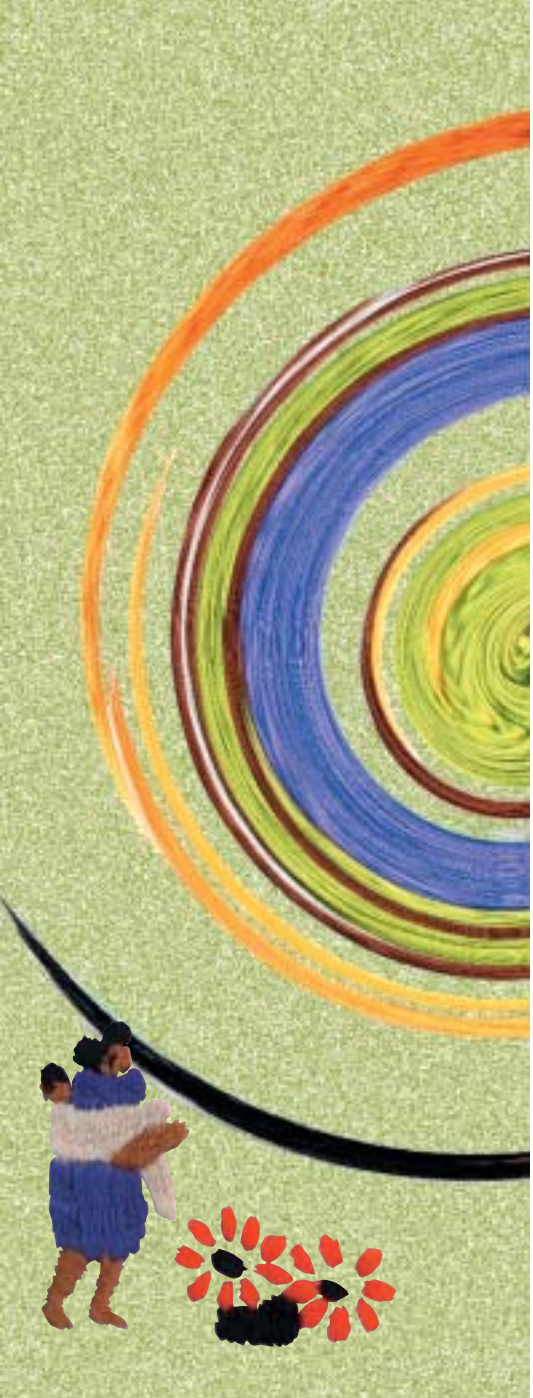
"Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation."

Millennium Development Goal 7, target 10

Water deprivation is a major concern, involving both the quality and the availability of water. According to the United Nations Food and Agriculture Organization, over 230 million people live in 26 countries classified as water deficient, of which 11 are in Africa. It is expected that by 2025 almost two thirds of the world's population are likely to experience some type of water stress, and for 1 billion of them, the shortage will be severe and socially disruptive. Water scarcity hits the poor and most vulnerable first and hardest, as impoverished families draw most heavily on "common property" resources such as water bodies and inshore fishing grounds. At the same time, the wealthy and affluent, and also industry, tend to draw more heavily on these.

There are several primary threats to water supplies, starting with pollution with organic and chemical substances, a major concern in many industrialized and developing countries. Major sources include inadequate sewage systems, waste disposal, industrial effluents and agricultural residues. Pollution disrupts not only the ecological balance but also harms the health of the entire community. Eighty per cent of all sickness in the world is attributable to unsafe water and poor sanitation, and water-borne diseases – such as diarrhoea, malaria, schistosomiasis and hepatitis A – kill 3.4 million people (mostly children) every year.

Water may also disappear through the irreversible degradation which takes place when wetlands, flood plains and coastal ecosystems are destroyed (Gender and Water Alliance, 2003). Deforestation, in particular in catchment areas, and the damming of rivers are another danger, while the impact of climate change on water systems – through droughts and



flooding, as well as extreme weather conditions – are becoming more and more visible. From 1991 to 2000, over 90 per cent of the people killed by natural hazards lost their lives as a consequence of extreme hydrological circumstances. This translates into major economic consequences, as the 2000 floods in Mozambique clearly demonstrated: GNP subsequently plummeted by 23 per cent (Prince of Orange, 2002). And whenever clean water is scarce, the livelihoods of the poor and women are often the first to suffer the consequences.

Women's reproductive and productive roles

Women and men assume distinct responsibilities in using and managing water and water systems. In most societies, women and girls collect every litre of water for cooking, bathing, cleaning, maintaining health and hygiene, raising small livestock and growing food. Rural men need water for irrigation and larger livestock, but women often care for the milk cattle and young animals. They also oversee family health. Because of these differing gender roles, women and men have different stakes in water use. There is a tendency to overemphasize women's reproductive roles in relation to water resource management – in other words, those tasks that span providing, managing and safeguarding water for use by the family. Water is also used in building and repair work (for example, in making bricks and in plastering), for crops and food processing, and in transport. But women have pressing needs too for water to engage in economic production, including agriculture and microenterprise. Gender disparities ensure that those needs frequently go unmet, with discrepancies in land tenure, access to water, participation, resource control, capacity and skill development, marketing and commercial linkages (GWA, 2003).

Sometimes women's needs are in direct conflict with those of men: for example, food production can be an important source of family food and income for women, but women's access to irrigation is minimal (UNDP, 2002). Gender analysis also reveals that women cope with disproportionate economic and other forms of fallout from floods, dam construction and water pollution. In 1991, after the flood action plan of

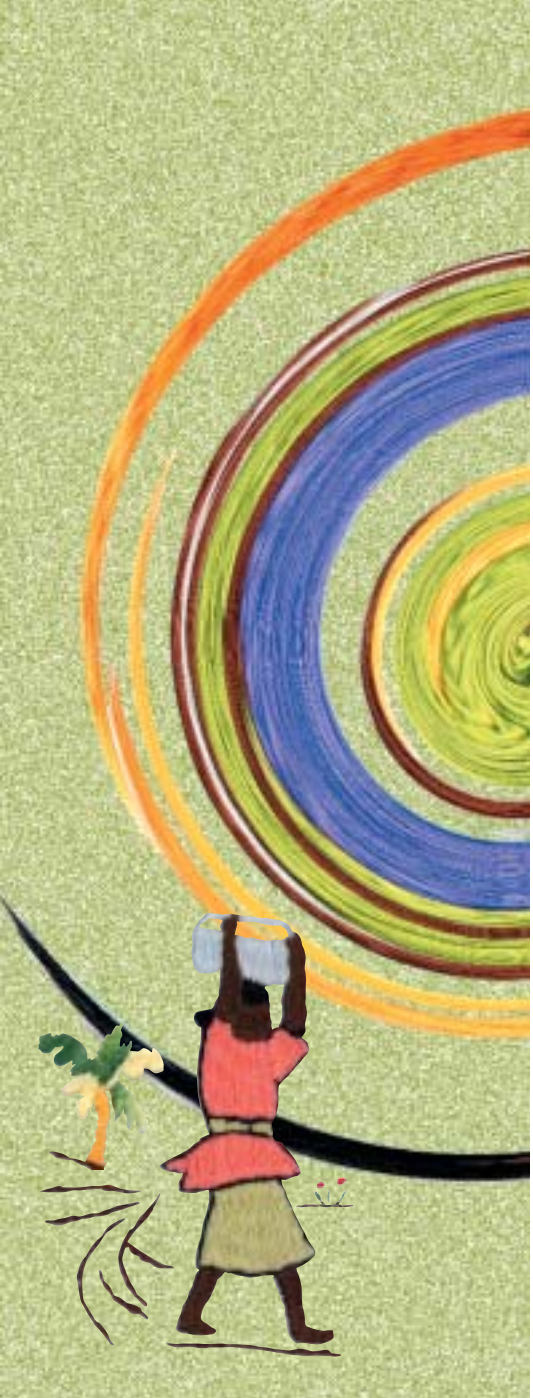
Bangladesh began – including gender analysis – it soon became clear that women bear a greater burden in contending with those natural disasters: not only do their normal responsibilities increase, but female-headed households are disadvantaged in terms of relief and rehabilitation. Many resort to a distinctive pattern of emergency borrowing and selling of assets, such as jewellery and utensils. Women also tend to be at greater risk of long-term economic loss than men (GWA, 2003). From a gender perspective, therefore, conservation of aquatic ecosystems can be viewed as critical in terms of improving women's access to resources essential for livelihoods, such as forests, fish species and agricultural land.

This imbalance extends also to the purely domestic arena. All over the world, women and girls assume what can be the time-consuming and dangerous duty of supplying the water needs of their households. Many walk long distances to fetch water, spending four or five hours per day burdened under heavy containers and suffering acute physical problems, especially in drought-prone areas (see box 21). In some mountainous regions of East Africa, for example, women spend up to 27 per cent of their caloric intake in collecting water (Lewis, 1994). In urban areas, women and girls wait hours queuing for intermittent water supplies. Many then have no time for other pursuits, such as education, income generation or cultural and political activities.

Box 21: A single source for drinking

In Nepal, around 200 families in some villages in Ramechaap district have struggled with acute water shortages for the past few years. They have just one source for drinking: a natural spring. Families sometimes have to wait four hours to collect a single bucket of water. "Night and day, the spring is ever occupied by containers and people", says Jhuma Shrestha, a local woman standing in the queue. "We rely on the spring just for drinking water. For washing, bathing and providing water to our animals, we go to faraway Khahare stream."

Source: Kathmandu Post, 2003



Since they are in regular contact with poor-quality water, women face a higher exposure to water-borne diseases and pollution, as has been the case with the arsenic-infused well water in Bangladesh. Seventy per cent of the world's blind are women who have been infected, directly or through their children, with trachoma, a blinding bacterial eye infection occurring in communities with limited access to water (GWA, 2003). Even when water-borne diseases do not afflict women personally, their burdens increase in caring for others who are ill, while the cost associated with family illness deepens family debt and poverty. There are also strong links between women, water and non-water-borne illnesses. In particular, the exploding number of people infected with HIV/AIDS – for example, in southern Africa – has made collecting and using water more difficult as women strive to keep up with the competing demands of caring for the sick as well as doing their own work and that of ill or deceased household members. Many are infected and ill themselves.

When water is scarce, people must buy it, frequently without any guarantee of quality. High prices can swallow large proportions of family income, highlighting the importance of distinguishing between cultural and socio-economic categories, even within a gender analysis: class, wealth, age, religion and caste are important factors. Better-off women might have private wells for irrigation and domestic purposes, resources to buy safe water or treat unsafe water and domestic help to bring water from other sources. Poor women and girls do not have such options and end up with contaminated supplies. Many also lack basic education on efficient use and pollution prevention, even as they may have learned strategies to conserve water.

Similar considerations apply to a related and sometimes major problem for women: sanitation. In most communities, women must walk long distances to find some privacy, often in bushes or fields, where their personal safety is at risk. There is an increased incidence of sexual and physical assault when women have to walk to remote areas to defecate. Deforestation and loss of vegetation aggravate the situation. Because of

the absence of clean and private sanitation facilities in schools, 10 per cent of school-age girls in Africa do not attend school during menstruation or drop out at puberty (GWA, 2003). Proper sanitation facilities are therefore a top priority for women and girls.

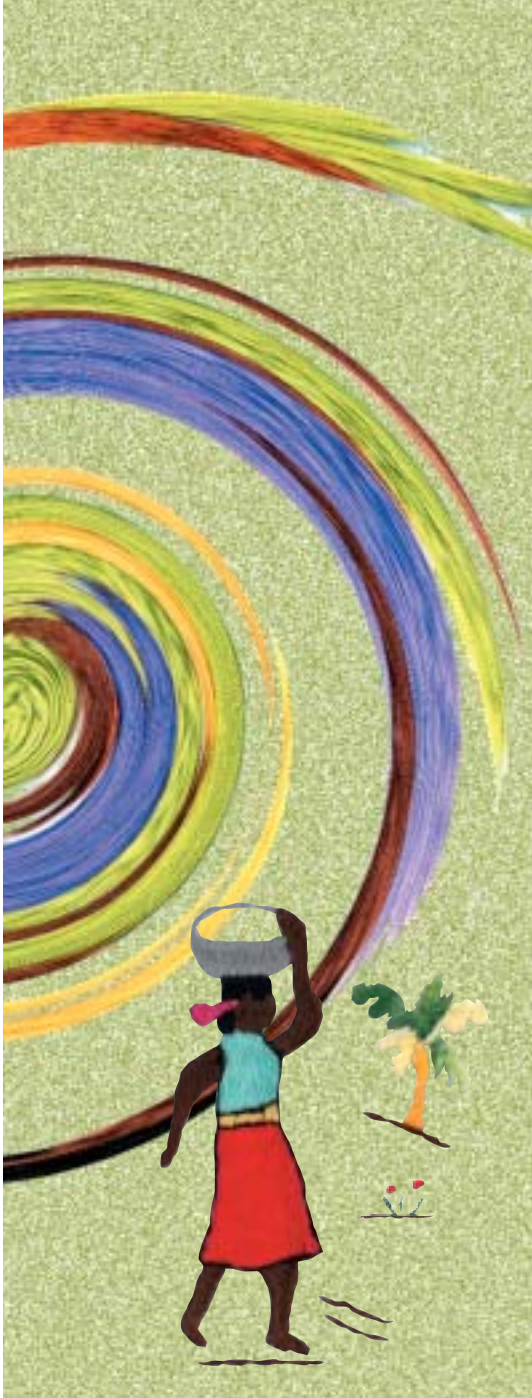
Access to and control over water resources

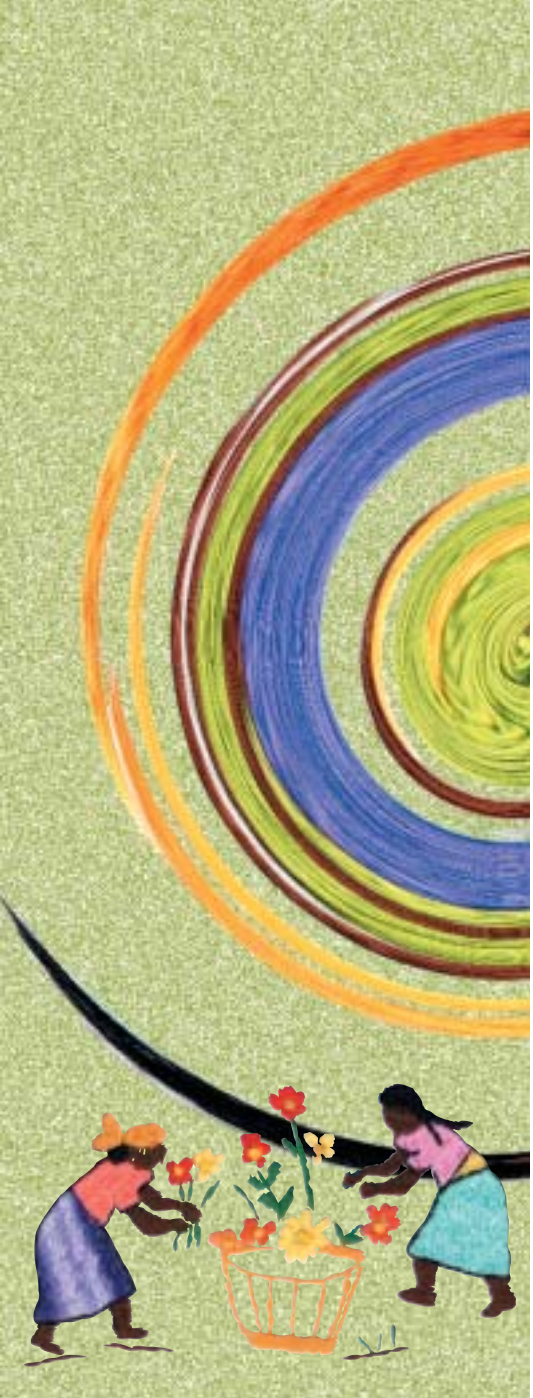
"The human right to water is indispensable for leading a life in human dignity. … The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses."

Committee on Economic, Social and Cultural Rights, Geneva, November 2002, United Nations document E/C.12/2002/11

Commonly, entitlement to water is linked to entitlement to land, but land tenure laws may be informed by customary and formal legal systems with built-in inequalities, a recipe for aggravating the gender disparities in ownership and rights that distort women's access to environmental assets in many parts of the world (NEDA, 1997). In Sudan's Wadal Abbas region, for example, women traditionally enjoyed the right to own land and have access to water. Then the British established the Blue Nile Irrigation Scheme in 1954, taking land away from the existing farmers, both women and men, and reallocating new plots exclusively to men. Female farming declined as the scheme expanded (Bernal, 1988).

Colombia and Costa Rica maintain some of the most progressive, gender-sensitive land reform policies, which typically link land and water rights. But most countries in Latin America have put an end to State redistribution of land and have moved towards "parcelization" of cooperative or communal land. Many women, already seriously disadvantaged in the land market, have lost what little share they had in communal land and water (GWA, 2003).





Some other countries, such as Lesotho, have sold their water resources to neighbouring countries, leaving local women facing shortfalls and stoking conflicts over access. Others have flung open the water sector to privatization, arguing that water management by large corporations will be more efficient, a position backed by World Bank policies. Worldwide, women have been the first to signal the problems that have followed: lack of access, huge price hikes, water cut-offs because of unpaid bills, lack of systems of accountability, deterioration in water quality and threats to hygiene. Sharp debates between stakeholders have sprung up, with proponents of privatization arguing that applying that model to water provision services does not imply privatization of water resources; that privatization can add value; and that Governments continue to have a major responsibility to provide a framework for water-use rights (Prince of Orange, 2002). However, many of the experiences to date – such as in Cochabamba (Bolivia), Atlanta (Georgia, United States of America) and Dar es Salaam (United Republic of Tanzania) – clearly underscore that safe and affordable access to water can be at stake, and that poor communities lose out when common, public resources become commercialized.

Box 22: No payment, no water

"The one truck is the security of the Uni-city, the other is the boys', which they use to cut off the water", says Cecilia Davis, a resident of a township on the outskirts of Cape Town. The trucks are the town's enforcers. "These are the people that come in and cut the water off of people. What they are going to do without water?"

Davis is a single mother with four children still living with her and no income – a plight that is not uncommon in the township, where 60 per cent of people are unemployed. Home is a cold, dark, three-room cement shelter with a tap but no water. In recent years, Davis' monthly water bill has soared by 300 per cent.

Since she is unable to pay it, the city cut her water off 12 months ago. Davis' life now revolves around fetching water from neighbours – several pots a day.

Source: Carty, 2003

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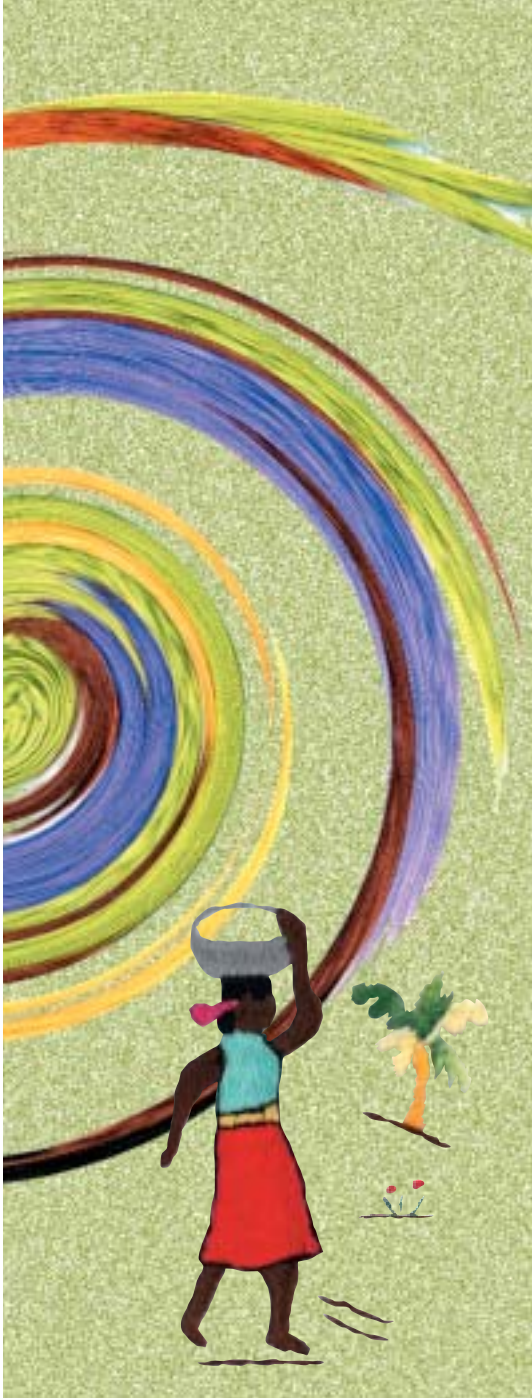

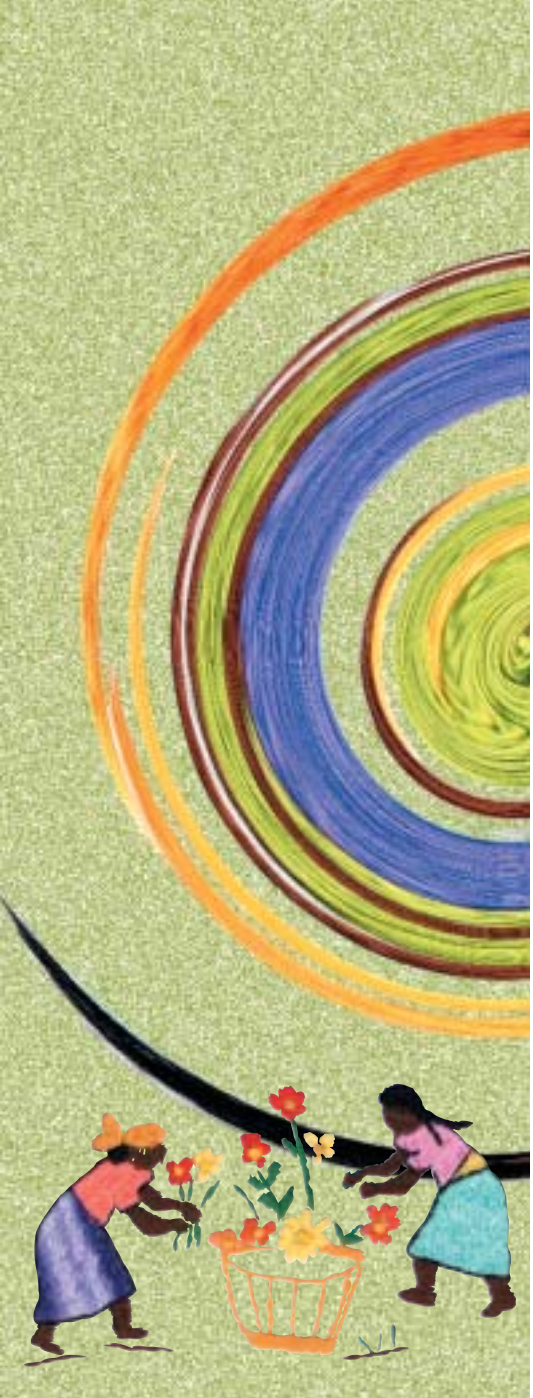

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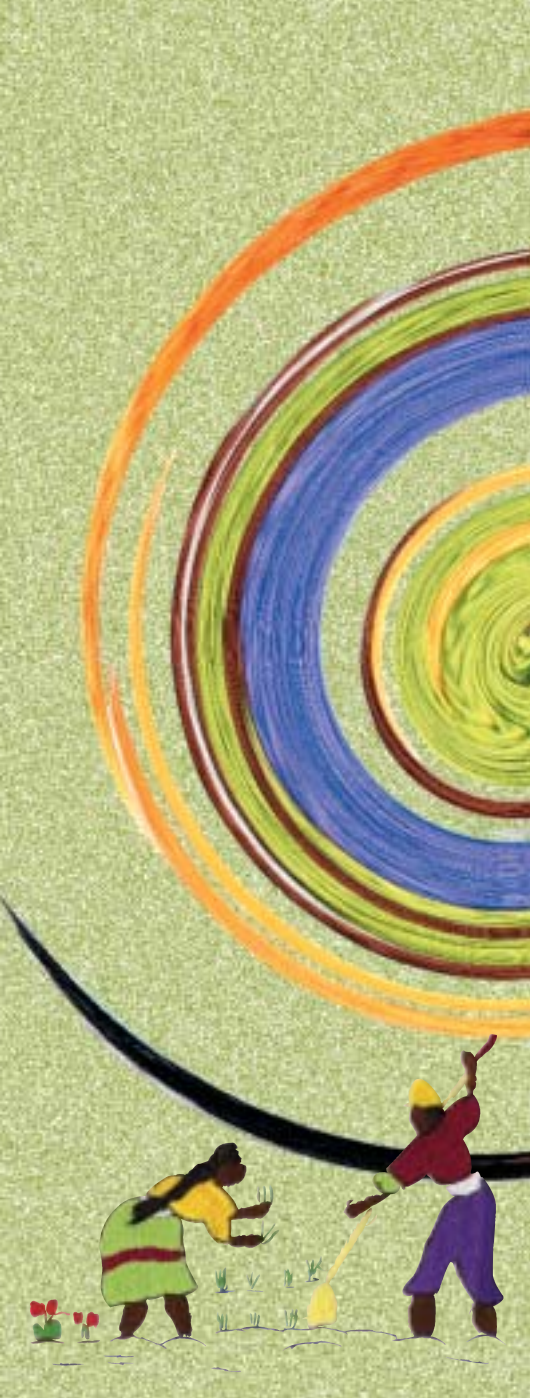
Source: Carty, 2003

On the whole, women's equal participation in decision-making is a prerequisite for more equitable access to both water and sanitation, and could lead to services that respond more effectively to men's and women's different demands and capacities (Francis, 2003). Women playing influential roles at all levels over the long term could also hasten the achievement of sustainability in the management of scarce water resources. But only a few make it to the water corridors of power today (GWA, 2003). Even in community-based projects, men usually make the decisions, chairing the local water users' association or water committee, for example, while women linger in the background doing the hard work, as treasurers, of collecting water fees. Also, women in some cases cannot make well-informed choices because they lack exposure to science and technology (Rathgeber, 1996).

However, they do possess extensive knowledge, experience and common sense regarding the use and management of water resources, and these could be tapped. Ignoring this can be counterproductive: in the Tihama region of Yemen, for example, a project planted trees without consulting the local people. The selected species consumed a large quantity of water in an area facing scarcity. A dialogue with local women, who are responsible for plantation on marginal land, would have helped to avoid this problem from the start.

Women's voices and actions

By the 1970s, women in several parts of the world had started actively organizing to stop degradation of their water systems. Village women in the Chipko movement in India held on to the water-saving capacity of their forests by opposing felling by contractors. Narmada Bachao Andolan (the Save the Narmada Movement), also in India, has struggled for years to stop the damming of the Narmada river. Women, under the leadership of Ms. Medha Patkar, are in the forefront of the Movement. Although the submergence of villages has started, the crusade for justice continues.



In Cameroon, women withheld their labour in an irrigated rice project as they were not assigned land but were expected to work in their husbands' fields. They started growing sorghum for family subsistence outside the irrigation scheme, where they had control over their own labour. Similar cases have occurred in Burkina Faso, the Gambia and Kenya (World Resources Institute et al., 1994). In Bolivia, Ukraine and the United States of America, among many other countries, women are protesting the sale of water services to multinational corporations. They are also cleaning up rivers, maintaining watershed areas and initiating a diverse array of water projects. The women of Limaï, in Indonesia, formed a women's group that started a water project, first choosing the locations and then raising the initial capital by cultivating a communal field. They later invited the men into the local water committees that manage the service (Francis, 2003).

Other situations find women coming together to mainstream a gender perspective in water management, such as through the international Gender and Water Alliance, or, at the local level, the Network on Gender, Energy and Water in Nepal (Network on Gender, Energy and Water, 2003). The alliance promotes gender mainstreaming in all aspects of water-resource management through studies, publications, information sharing and training (www.genderandwateralliance.org).

Policy entry points

In the area of formulating policies to foster a gender approach to water management, a number of principles have already been articulated. The challenge lies in their implementation, along with a series of other international, national and local commitments (WEDO, 2003). Some of these are listed below.

For example, the International Conference on Water and Environment, held in Dublin in 1992, recognized the central part that women play in the provision, management and safeguarding of water (Dublin Principle 3) and recommended positive policies grounded in addressing women's specific needs. It called for equipping women to participate at all levels in

water resources programmes, in ways which they themselves define. Chapter 18 of Agenda 21 later reflected this same focus on gender in water management.

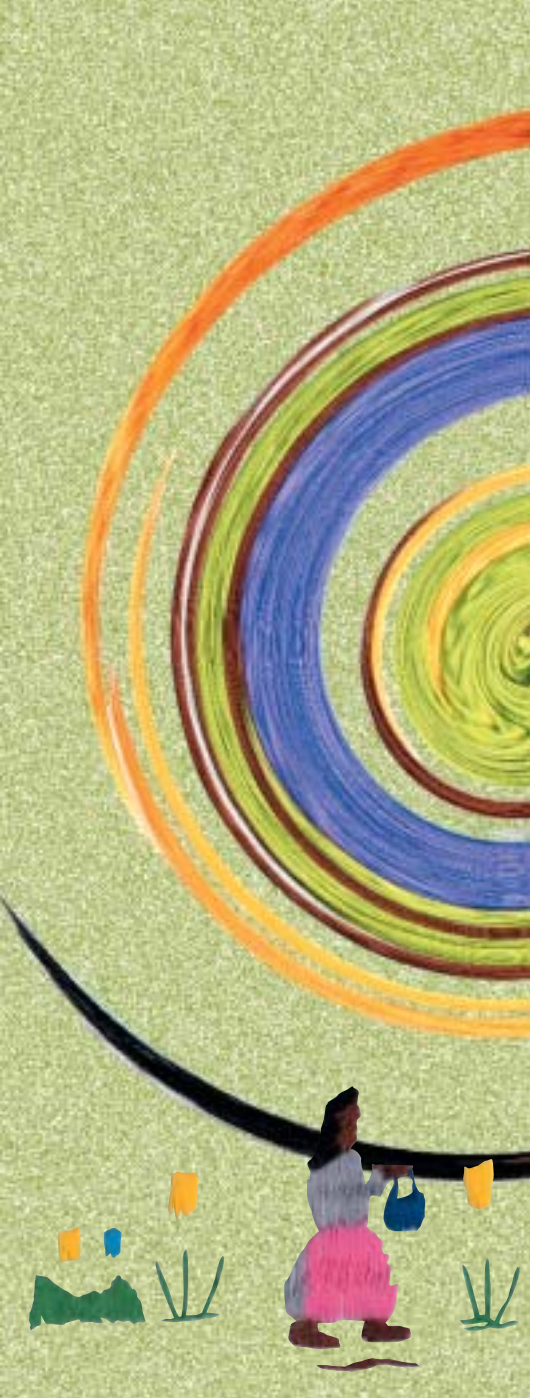
In March 2000, the second World Water Forum issued The Hague Ministerial Declaration (http://www.worldwaterforum.net/Ministerial/declaration.html). It outlines seven challenges, including:

- Meeting basic needs: to recognize that access to safe and sufficient water and sanitation are basic human needs and are essential to health and well-being, and to empower people, especially women, through a participatory process of water management.
- Governing water wisely: to ensure good governance, so that the involvement of the public and the interests of all stakeholders are included in the management of water resources.

The 2001 Ministerial Declaration of the Bonn International Conference on Freshwater (http://www.water-2001.de/outcome/Ministerial_declaration.asp) says, among other things, that "Water resources management should be based on a participatory approach. Both men and women should be involved and have an equal voice in managing the sustainable use of water resources and sharing of benefits. The role of women in water related areas needs to be strengthened and their participation broadened." Also, the Declaration's recommendations elaborate steps to promote gender equity in governance.

In 2002, the World Summit on Sustainable Development issued the Johannesburg Plan of Implementation (http://www.johannesburgsummit.org). The Plan of Implementation underlines in its paragraph 25 that the implementation of the Millennium Development Goal on safe drinking water and sanitation should be gender sensitive and that access to public information and participation by women should be facilitated.

At the third World Water Forum, held in Kyoto, Japan in 2003, a strong gender lobby organized several gender theme sessions. This effort found



its way into the first paragraph of the Ministerial Declaration (see http://www.world.water-forum3.com), which declares: “Water is a driving force for sustainable development including environmental integrity, and the eradication of poverty and hunger, indispensable for human health and welfare. Prioritizing water issues is an urgent global requirement. Each country has the primary responsibility to act. The international community as well as international and regional organizations should support this. Empowerment of local authorities and communities should be promoted by Governments with due regard to the poor and gender.”

Other efforts to implement gender-sensitive water and sanitation activities are taking place both within and outside the United Nations system. The United Nations Inter-Agency Network on Women and Gender Equality (http://www.un.org/womenwatch) established the inter-agency Task Force on Gender and Water in 2003, while several countries have moved forward on integrating gender and social equity in water policies, legislation and regulations. For example, the 1997 National Water Policy of Uganda has the full participation of women at all levels as one of its principles. In Zambia, the 2000 Mainstreaming Gender in Water and Sanitation Strategy recommends the formulation, adoption and implementation of internal gender policies by organizations and institutions that are involved in the provision and promotion of water and sanitation.

The Water Code of the Philippines explicitly defines the right of access to water as a resource for various primary uses, irrespective of whether it is from a natural source, drinking water supply or irrigation scheme. It implicitly recognizes the rights of poor women and men. In South Africa, after an extensive consultation exercise on a planned water policy, the Government issued a White Paper strewn with references to poverty and gender and stressing the importance of women’s representation and information. These guiding principles shaped the 1997 Water Services Act and the 1998 National Water Act (GWA, 2003).

Conclusion

Water is a basic human need. The present chapter has highlighted the work, efforts and skills that women put into the management and use of this essential resource. These pertain not only to their reproductive roles in the household but also to their productive tasks and income-generating activities. Critical stumbling blocks for women regularly arise in terms of land tenure, access to water, resource control, affordability of privatized resources, participation and capacity. As a result, water scarcity, pollution and additional limits on access pose extra burdens on them.

Managing water in an integrated and sustainable way can actually improve gender equity by easing access, both to water and to related services (UNDP, 2002). Experiences around the world have shown that moving in this direction calls for mainstreaming gender. At the same time, women themselves are already strong advocates for their own concerns, which have become a central part of the water agenda at many levels (Yoon, 1991). Frameworks still need to be developed that ensure that both women's and men's concerns and experiences consistently appear as an integral dimension of water projects, legislation, policies and programmes (Francis, 2003).

International recognition of the need to fill this gap is growing, and countries are devising inclusive water policies and programmes that account for the differing demands and needs of women and men. These do not preclude the involvement of men or children. And, in general, they must link clearly to the broader goals of economic development and poverty eradication, given the centrality of water as a resource. In many of these efforts, formal and informal women's networks can play important and stimulating roles.

Case E: Romania. A village improves drinking water and women's participation

By **Sascha Gabizon, Margriet Samwel, Kitty Bentvelsen** *(Women in Europe for a Common Future)* and **Iona Iacob** *(Medium & Sanitas [Environment & Health])*

In rural Romania, over 7 million people draw drinking water mostly from wells. These are often polluted with nitrates, bacteria and pesticides that flow in from latrines, waste dumps and agriculture. The health effects are both long-term (thyroid and brain dysfunction) and immediate (blue-baby syndrome, diarrhoea, hepatitis), and can be lethal to small children.

In 2002-2003, the NGOs Medium & Sanitas and Women in Europe for a Common Future (WECF) carried out a multistakeholder pilot project to develop replicable, low-cost, short-term solutions to Romania's water-related health hazards (see http://www.wecf.org/WECFRomaniaproj.html). Targeting primary-school children and newborns, the project aimed to understand women's needs and give them tools to contend with some of the problems they face. It began in the village of Garla Mare, with 3,500 inhabitants, as the health statistics there revealed many cases of methaemoglobinemia (blue-baby syndrome). The illness is caused by high nitrate levels in water used to prepare baby formula.

Water quality tests showed three prominent types of pollution in the village: faecal bacteria, nitrates and the endocrine-disrupting pesticide atrazine, which is now banned in a number of countries. None of the 78 wells tested had safe water. Latrines in people's gardens were the primary cause of bacterial and nitrate pollution, while agriculture (and possibly leaking pesticide storage) contributed atrazine and some of the nitrates.

A 12-member project committee was formed, balanced by gender and ethnicity. Its objective was to consider ways to reduce water pollution, in co-operation with the mayor of the village and Medium & Sanitas. A first step involved opening a project information office under a local coordinator. On a given day, villagers could come with a sample from their well and check its nitrate levels, which made water testing a very visible and convincing experience. For its part, Medium & Sanitas conducted a survey among 480 inhabitants about their knowledge and experience with health effects from water pollution. It showed that there was little awareness about the link between polluted water and health: people assumed that if the water looked clean, then it was clean.

An in-depth socio-economic and gender analysis followed. The study revealed that the unemployment rate in the village was very high, with most families depending only on pensions or children's allowances, which were so low that they could hardly cover sufficient food and electricity. All respondents recognized the principle that they would have to pay for an improved water supply; however, over half would not be able to do so.

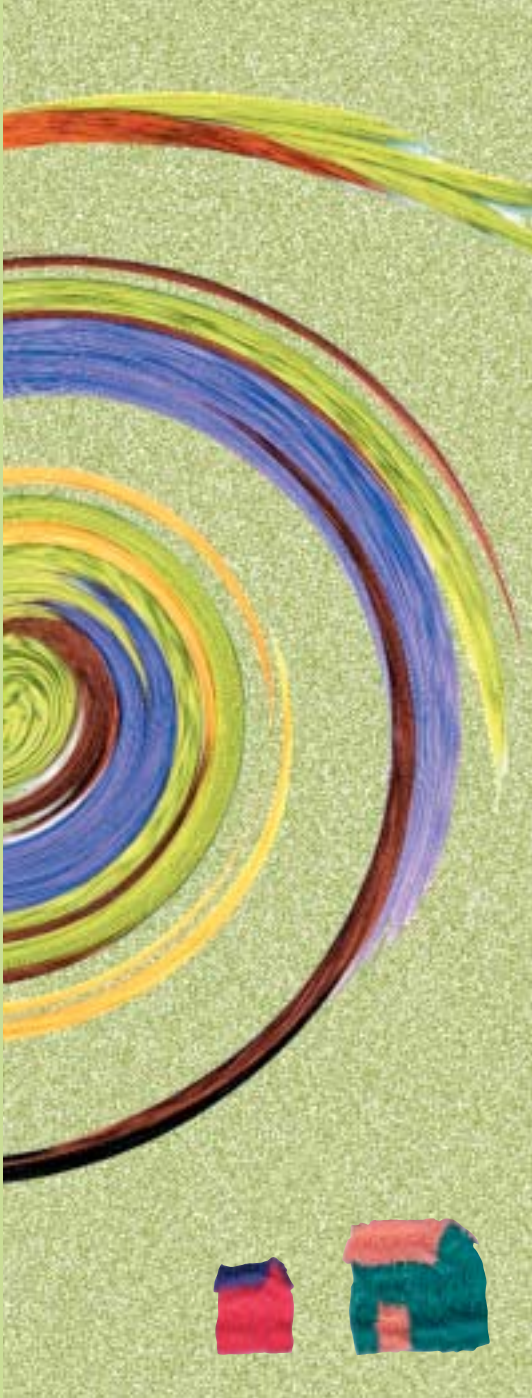
The assessment of gender differences in terms of roles and activities found that these differences were not always rigidly applied. Especially in families without daughters, the husband or son(s) assisted the mother in several tasks typically performed by women, such as fetching water. In general, though, women were dealing with water supply issues: hauling buckets from the private or community hand-wheel well and going down to the spring to do the laundry. During the summer, up to 90 buckets a day could be fetched for animals, the garden, dishes and clothes. Only a few families possessed an electric pump on their well. Most used a non-sealed pit latrine. These were generally not emptied when the pit became full – rather, a new hole would be dug.

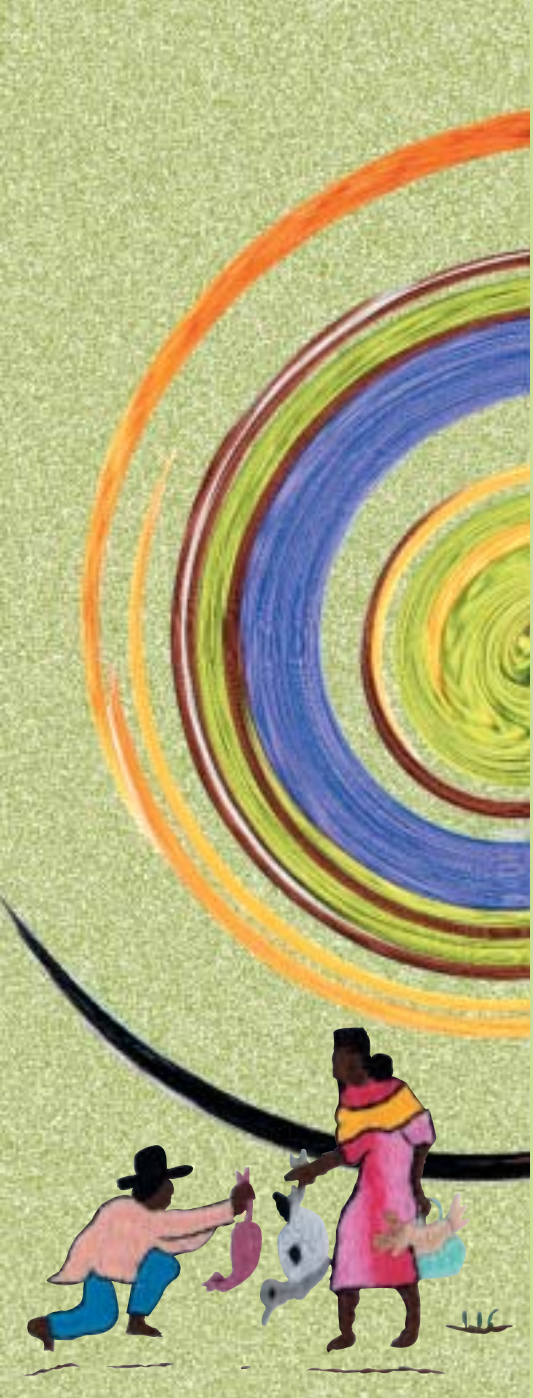
An additional finding of the analysis was that several women who were able to breastfeed were using a Government scheme providing formula milk to women unable to breastfeed. Formula milk was perceived as better and a status symbol, but the polluted well water used to prepare it carried a risk of blue-baby syndrome.

Villagers discussed the results of the water tests, the survey and the gender analysis at a town hall meeting. A number of experts presented solutions, ranging from a centralized water supply connected to a large filter to preventive measures such as eco-sanitation and organic farming. The local Government did not have any funds to improve the water situation, however, and since most villagers could not afford to pay for drinking water, a financial scheme with bank loans and a long-term payoff was impossible. The community opted to focus on preventive actions for the short, medium and long term.

To supply clean water and promote better hygiene immediately, a water filter was especially designed to cut down on nitrates, micro-organisms and pesticide pollution and was installed in one of the schools. Villagers with small children and other persons at risk could now come and collect clean water. In both schools, the project built hand-washing basins and disseminated educational materials on how to use the filtered water.

For the medium term, hygienic dry compost toilets, which separate urine and faecal material and do not pollute groundwater, were placed in one school and in two





private homes, serving as examples of how easy, low-cost and comfortable these toilets are.

Addressing agricultural pollution was a critical long-term issue. The project initiated cooperation between the farmers in Garla Mare and organic farmers in Constanza and Sibiu (Romania) and the Netherlands. Organic farming does not pollute the groundwater, is better for the health of the villagers and is appropriate from an economic point of view given the high demand from importers of organic produce in Western Europe, who are willing to pay premium prices. A training visit for 21 women and seven men farmers from Garla Mare was organized to study an organic farm in Sibiu. If sufficient interest exists, an organic farmers' cooperative will be established in Garla Mare to set up contracts with importers from Germany and the Netherlands. For the villagers, this should reduce unemployment and also their exposure to pesticides in the course of their work and in their drinking water.

During the project, a women's club became active and discussed ways to improve the village's standard of living. One meeting highlighted the advantages of breastfeeding when drinking water is polluted, even if breast milk contains pollutants, as the positive aspects compensate for the higher intake of pollutants. Other initiatives, some of which are still continuing, have concerned reforestation, collection and recycling of waste, organic agriculture and employment opportunities involving second-hand clothing.

Project results

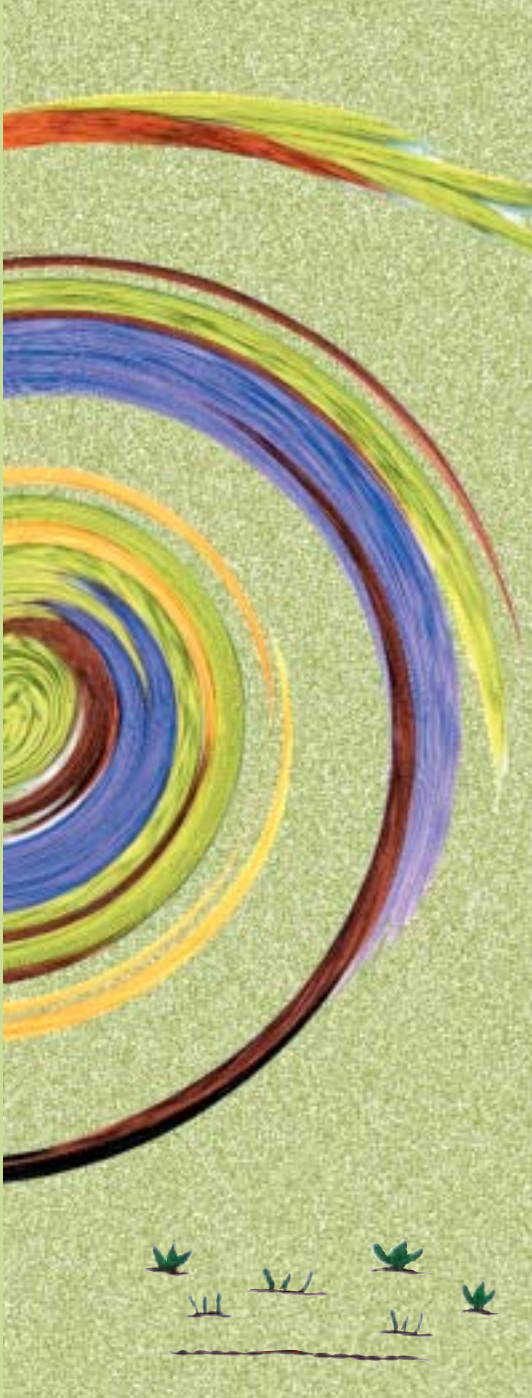
The start of the Garla Mare project was not always easy. Political or personal interests sometimes swayed cooperation between the mayor and the committee, while associations with the Communist past tarnished the concept of voluntary contributions to the community. Lower-income people were in some cases reluctant to participate, and it took time for the villagers to accept the idea of participation in general.

However, the active women's group demonstrates that it is possible to inspire women to reflect on their own situation and come up with feasible improvements. Other achievements include the fact that both parents and children in the two schools now benefit from better hygiene and clean drinking water. No new cases of blue-baby syndrome occurred during 2002 and 2003, and the project has increased knowledge among the villagers and schoolchildren about the link between health and the environment.

In retrospect, the socio-economic and gender analysis gathered essential insights

into the needs and views of the villagers, particularly the women. Women mostly did not dare to speak up in public meetings, but they did in the focus interviews and in the women's club, and became instrumental in highlighting issues such as the use of polluted water for baby formula.

Overall, the project serves as an example of how to provide better-quality water and sanitation at a low cost. Clearly demonstrating that the people most directly affected are themselves the best qualified to identify and tackle their most pressing needs, this project could be readily adapted to many rural areas of Eastern Europe and in the Commonwealth of Newly Independent States, which face similar problems.



Case F: Ukraine - In search of safe water, young mothers mobilize on multiple fronts

By **Anna Tsvetkova** *(MAMA-86)*

In Ukraine, water resources are limited and unequally distributed. Large-scale dams, irrigation schemes and navigation canals cut across the major rivers, while the chemical industry, mining, metalworking, hydropower generation, transport and agriculture have severely polluted these and other water sources.

The situation has reached a breaking point, yet there are few funds to contend with it. As a result, the quality of urban water services is low. In rural areas, over 75 per cent of the population uses traditional wells, often polluted by nitrates, pesticides and micro-organisms. Over 800,000 people have to buy water, usually of poor quality, on the retail market. In some areas, water-borne diseases, such as hepatitis A and rotavirus infections, and nitrate poisoning (blue-baby syndrome) run rampant.

Data and decision-making

In 1991, following the Chernobyl nuclear disaster, a proactive group of young mothers established MAMA-86 as a Kyiv city public organization. From the start, its principal objective has been to secure the environmental rights of Ukrainian citizens, primarily of children and women. Today, MAMA-86 has blossomed into a national environmental NGO network of 17 organizations from various regions of Ukraine and is an active partner in Women in Europe for a Common Future (WECF). Its activities call upon the public to take charge of the sustainable development of their society, with a special focus on the environmental challenges of an economy in transition.

With water being such a serious problem, MAMA-86 kicked off the Drinking Water in Ukraine campaign in 1997, together with 11 organizations from its network. The goal is to improve access to safe and affordable drinking water through public awareness, participation in decision-making and the development of pilot projects. One early initiative addressed a lack of information disclosure, which makes it difficult for the public to obtain the kinds of reliable official data, including data on water, that help people decide on practical steps which they can take. Believing that education on the uses of information can revive citizens' sense of ownership and personal responsibility for resources, MAMA-86 began carrying out regular data-gathering and independent research on drinking-water quality, along with polling public opinion on the issue. It presented the results at round tables, workshops, seminars and conferences at the local, national and international levels.

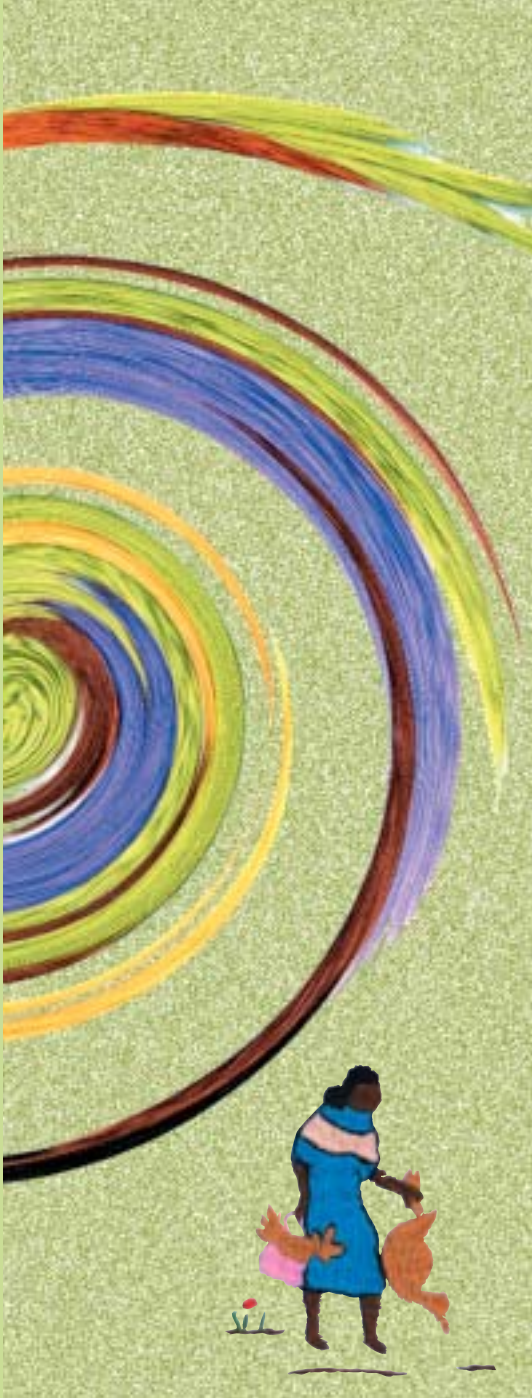
Broad public consultation led to efforts to advance public participation in law-making. MAMA-86 prepared a list of public amendments to the draft drinking water act based on the discussions, and concerted lobbying convinced Parliament to consider a third of the proposals. In 2002, it passed the Drinking Water and Water Supply Act of Ukraine, granting citizens better access to information on drinking-water issues and the right to organize public hearings on water-related issues. The Act is not gender sensitive, but it provides the basis for water-sector reform in Ukraine and improves the protection of consumer's rights. Subsequent public hearings have already delved into local water reforms, tariff reforms, consumer rights and drinking-water quality.

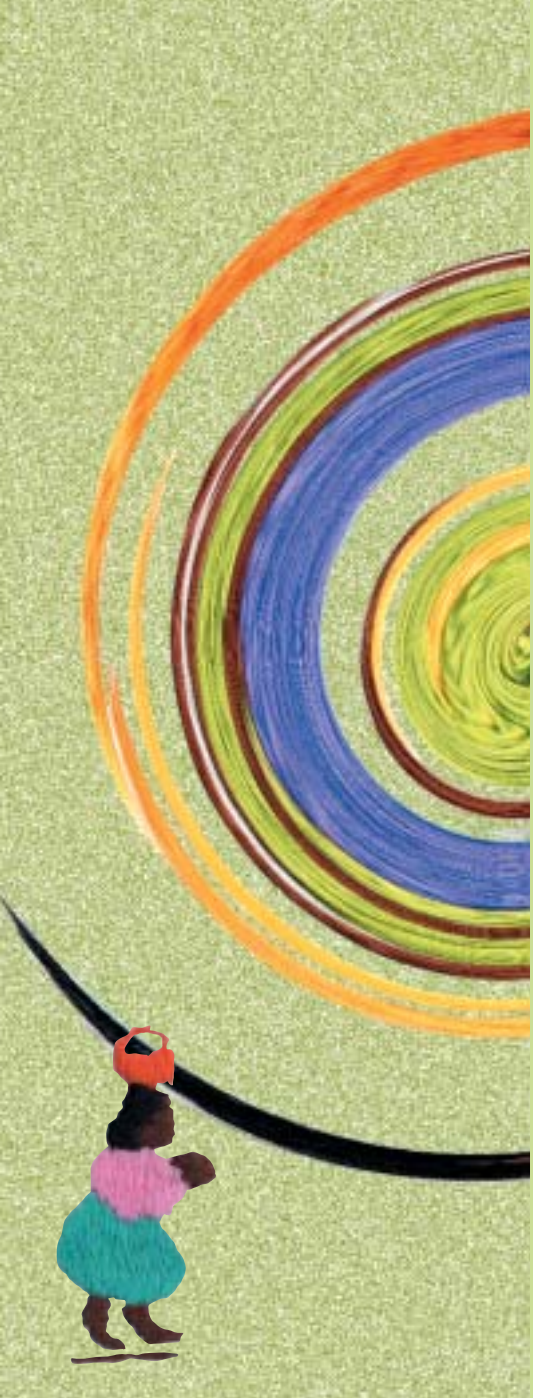
In the area of pilot projects, the MAMA-86 network has raised funds to demonstrate how various suggestions for solving water problems that emerge from public consultations can work in practice. Many small-scale and low-cost alternatives are later replicated – an exchange of knowledge and positive experiences that catalyses public attention. The first pilots debuted in Tatarbunary – in the Odessa region – and in Sevastopol. They involved, respectively, developing a community-based water purification project, and treating wastewater from the Infectious Diseases Hospital, along with repairing water supply, sewerage and heating systems.

Since 2001, MAMA-86 has been implementing a specific programme of technical solutions for improving access to safe drinking water in urban and rural areas. It consists of 11 pilot projects that work on the local level, fostering public involvement in sustainable solutions through partnerships between the authorities, the public, science and business. There is a strong emphasis on public education on water saving and resource protection, the use of water meters, reliance on local water instead of long-distance transportation, cost-benefit analysis and shared responsibility for funding and co-maintenance.

One pilot study, for example, which began in 2002, seeks to ease the severe pollution in local wells used by over 11 million people in rural areas. Many are decades old and have never been cleaned, due in part to a lack of public information about maintenance as well as limited funds and services for cleaning. Among 100 wells tested near the town of Nizhyn, the concentration of nitrates in 70 per cent of them exceeded safety standards by two to ten times. MAMA-86 established well-cleaning services in Yaremche and in Nizhyn, supplied pumping equipment and enlisted private firms to provide services in outlying areas. The project itself cleaned 25 collective wells.

Another initiative focuses on children's morbidity rates from gastrointestinal diseases and cancer in Poltava oblast, where the figures rank very high. From 10 to 15 cases





of acute nitrate poisoning among children under three months were registered between 1999 and 2001, most probably caused by nitrates in drinking water used for baby formula. In response, MAMA-86 launched a broad public information and education campaign on nitrate contamination in 2001 (lectures for medical personnel, lessons at schools, meetings with villagers, multistakeholder round tables at local and regional levels and wide dissemination of the information through all available channels, including TV and radio). In the village of Pesky, a partnership with local authorities and businesses embarked on the rehabilitation of old artesian wells. It replaced aging pumps and parts of the water supply network, and added a water purification system. Now over 4,500 people in Pesky and some nearby settlements can drink clean water.

All these activities are initiatives by women who work actively on environmental and health issues, research the negative consequences of environmental pollution on human health and share their knowledge to help people survive in the conditions they live in. As women are responsible for the future of their children and families, they are highly motivated to be active and to achieve success in the struggle for life.

MAMA-86 is drawing lessons from the experiences gained in the pilot projects and will give the models which it develops for solving drinking water problems wide dissemination. In November 2003, MAMA-86, in partnership with WECF, started a new Matra (social transformation programme run by the Ministry of Foreign Affairs of the Netherlands) project on cooperation for sustainable rural development, with a focus on water supply, eco-sanitation and organic agriculture. It is a follow-up to the MAMA-86 drinking water campaign in Ukraine, and of WECF experience in eco-sanitation in Romania (see case E above). The main objective is to protect drinking-water sources in rural areas through new approaches such as eco-sanitation and organic agriculture, to raise public awareness concerning these issues and to develop pilot projects run by local communities.

Case G: Women replenish the Aral Sea

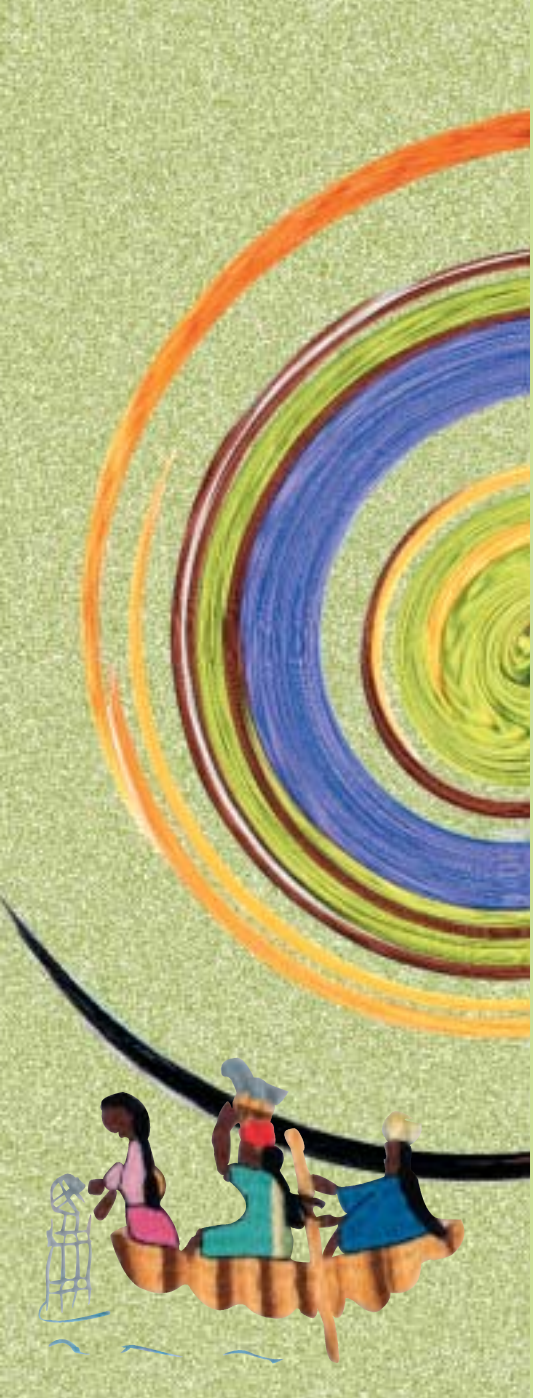
By **Kitty Bentvelsen** *(Women in Europe for a Common Future)*

The Aral Sea was once the world's fourth-largest inland sea, located between Kazakhstan in the north and Karakalpakstan, an autonomous region of Uzbekistan, in the south. The local population used to draw its livelihood from fishing, commercial shipping, industry (including fish processing) and agriculture. But problems started in the early 1960s with the diversion of the Amu Darya and Syr Darya rivers, both feeding the Aral Sea. The water was destined for irrigation for the large-scale cultivation of cotton in Uzbekistan and wheat in Kazakhstan. At that time, the Soviet Union hoped to become independent in its production of those commodities. What it did not predict was the impact on the Aral Sea: suddenly, inflows dropped drastically, with the water level falling 23 metres. The surface area shrank by approximately 60 percent, and the volume by almost 80 per cent, while salinity increased from 10 to 45 grams per litre. The Aral Sea has now split into two parts, south and north.

Pollution also struck the sea, largely as a result of chemical and biological weapons testing, industrial projects and the mixing of the inflowing river waters with agrochemicals and defoliants. As the water disappeared, vast salt plains were left behind. Storms carried salt dust up to 180 miles away, dumping it on pastures and arable land. Across the region, winters became colder, summers hotter and the agricultural growing season shorter.

Today, the Aral Sea is a shadow of what it once was. A recent study has predicted that the western part of the much larger south Aral Sea will vanish by 2018; the eastern part could last indefinitely. The north Aral Sea is expected to be saved by the construction of an $86 million concrete dam, which will allow the water in that part to rise while salinity decreases.

These steps are important, yet the consequences have already been enormous and tragic: the Aral Sea is considered one of the world's largest human, economic and environmental disasters. Deserts have surrounded former harbours, fish have disappeared, shipyards and fish-canning industries have closed, agriculture has been badly affected, trees have died and biodiversity has diminished. People have lost their jobs and many have either moved away or remain only because they are too poor to go. Health problems from pollution have been aggravated by the lack of healthy diets and the declining number of health facilities.



Within Uzbekistan, the incidence of health problems is actually several times higher in Karakalpakstan than in the rest of the country. There are alarming rates of kidney disease, anaemia, tuberculosis, liver cancer, miscarriages and birth defects.

Breast milk polluted with residues of organochlorine pesticides is common, and maternal and infant mortality are high. Women are commonly worst hit by this environmental crisis: they bear the burden of caring for ill family members, while their own health, particularly in terms of reproductive issues, falters as well. Many suffer the intense frustration of no longer being able to provide adequate food for their families.

In the north Aral Sea, some ongoing initiatives are trying to restore local livelihoods. The Kazakh NGO Aral Tinesee, established in 1998, encouraged people who fish to return to the sea, after it reintroduced salt-water fish as well as appropriate nets.

Zannath Makhambetova, a young and enterprising woman, served as the first president of the organization, elected by its 600 male members. Today, she is the director and co-founder of the NGO Centre in Astana (formerly Almaty).

At a presentation prior to the World Summit on Sustainable Development, she concluded: “You saw many men in my pictures. They have been doing the actual fishing work. But the initiators, the organizers, were us, the women. In post-Soviet countries, it is the women who are more adaptable to new things. Women are less easily corrupted and they are more flexible to work with. I would like to recommend that you put in your recommendations to the Governments meeting in Johannesburg that sustainable development projects should always work with women in key positions” (Makhambetova, 2002).

Case H: Water-mining for profit-making

By **Biju Negi** *(Beej Bachao Andolan (Save Our Seeds), India)*

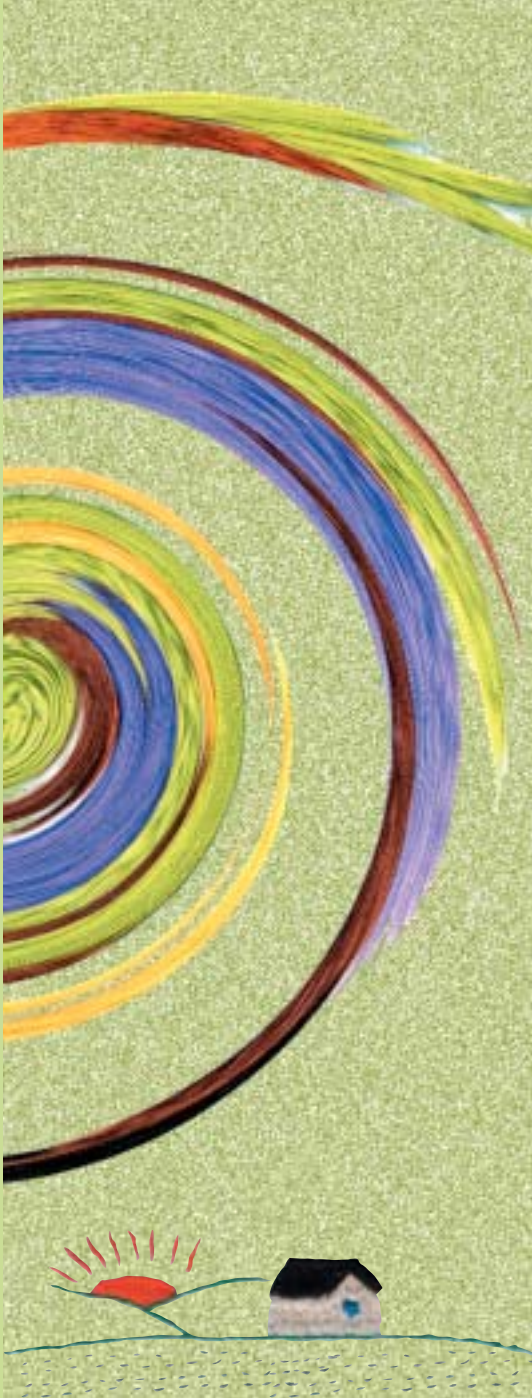
Since April 2003, indigenous people's organizations covering almost 50 villages in Kerala, India, have been protesting against "water mining" by a major multinational bottling plant. The giant factory has been sucking 1.5 million litres a day from the common groundwater resource, thereby denying local people water for their household and agricultural needs.

The bottling plant was set up barely five years ago on a 40-acre plot of what was once paddy land used for multiple crops. By the end of the first year, water shortages began. The lowering of the groundwater table within five kilometres of the facility has now become alarming. In fact, the factory itself has been hit by this scarcity, and lately it has been able to extract only a little over half of its water requirement from the company boreholes. To make up the shortfall, it extracts water from the boreholes in neighbouring villages.

Another impact has come from chemical and other wastes. Barely six months after the plant opened, the water in local wells turned brackish and milky white in colour. Scientific analysis showed it to be very hard and full of salts, with high concentrations of calcium and magnesium. This rendered it unfit for human consumption, domestic use and irrigation. Farmers now worry about decreasing yields in rice, coconut and peanuts, with cultivation stopped completely on over 600 acres of land. Local agricultural wage labourers find fewer employment opportunities and overall food security is at risk.

With the stakes so high, the people's growing protest, in which women actively participate, is demanding an immediate closure of the bottling plant. Despite death threats and evidence of local corruption, there are calls for criminal proceedings against the factory, which people believe is responsible for the destruction of their livelihood resources and of the environment. Requests for compensation for all those adversely affected have also been received.

The case could set a precedent because it is not an isolated one. Similar protests against the same company are ongoing in the States of Uttar Pradesh, Maharashtra and Tamil Nadu.



Case I: The women for water initiative: act locally, lobby internationally

By **Alice Bouman-Dentener** *(Women in Europe for a Common Future)*

Since the second World Water Forum, in 2000 in The Hague, Women in Europe for a Common Future (WECF), the Netherlands Council of Women (NVR) and a growing number of national and international partners – including Business and Professional Women International, WEDO, MAMA-86, and Medium & Sanitas – have come together to work on water, sustainable development and gender. In partnership, they have formed the Women for Water Initiative, which focuses on the full and equal participation of women as a "major group" in integrated water resources management.

The Hague forum acknowledged that the current water crisis relates more to governance than water shortage. Since then, integrated water resources management has grown in popularity as a framework for good water governance. An important aspect of this approach is public participation and the inclusion of relevant stakeholders at all levels in decision-making and implementation. The water sector in fact recognized participation early on as an important step towards more sustainable development. As early as the International Conference on Water and the Environment in January 1992 in Dublin, two out of four basic principles for sustainable water management dealt with public participation in general (Dublin Principle 2) and the crucial role of women in particular (Dublin Principle 3). The Dublin Principles have now become widely accepted, but implementation remains patchy. The Women for Water Initiative therefore backs efforts to transform Principles 2 and 3 into tangible progress.

The momentum behind the Women for Water Initiative first picked up steam in 1999, when the NVR, an umbrella organization for 54 national women's organizations that represent approximately 1.5 million women in the Netherlands, put together a consultation exercise on water and gender. A subsequent session at the second World Water Forum drew over 400 women and men from all over the world. Together, they defined priorities for bridging the gaps between policies and practices in integrated water resource management. There was a strong call for a new form of grass-roots globalization, and a transnational social movement focusing on water to achieve equitable and sustainable development.

During the 2002 World Summit on Sustainable Development, and the third World Water Forum, a strong "women for water" advocacy effort took shape. The

Women's Caucus at the Forum effectively pushed forward a gender agenda, helping obtain various commitments on gender-responsive budgeting. Through WECF, close cooperation began with the European Commission's Directorate-General for the Environment for future integrated water resources management and other sustainable development projects. Outreach to other sectors also grew. Business and Professional Women International agreed to set up a special task force, covering all its regions, to engage its members as water ambassadors.

The Women for Water Initiative has now emerged as a fully fledged partnership between women's groups, particularly local organizations, which use integrated water resource management as a tool for socio-economic development. The Initiative stimulates women to act locally while joining forces globally, irrespective of political affiliation, professional background or religious orientation. Guidelines for engaging with the private sector encourage joint development that is bottom-up, demand-driven, small-scale and gender-sensitive. The Aqua for All Foundation, established by Dutch water utilities, now provides financial and technical support to some of the projects, particularly those that aim towards poverty alleviation and sustainable development at the community level.

Recent activities have included the promotion of gender-responsive budgeting in the water and sanitation sector and the establishment of a resource centre in Amsterdam in collaboration with the International Information Centre and Archive for the Women's Movement in Amsterdam, Netherlands. A toolkit has been developed that includes best practices for partnerships between women's groups in the Netherlands and their overseas local partners.

For 2004, a working conference is planned which will include presentations on three cases of Dutch women's groups twinning with sister organizations in developing countries. In collaboration with local experts and all stakeholders, the cases should develop into projects that Aqua for All can consider supporting. In years to come, this approach may result in the replication of other local partnerships tailored around local needs related to sustainable development, water, gender and poverty.