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Gender 21

Women's Recommendations to the 2nd Ministerial Conference on Water

an International Networking Project, carried out by
the International Information Centre and Archives
for the Women's Movement (IIAV)

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October 1999 - February 2000



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**“Governments are urged:
To consider developing and issuing by the year 2000
a strategy of changes necessary to eliminate
constitutional, legal, administrative, cultural,
behavioural, social and economic obstacles to
women’s full participation in sustainable
development and in public life”**

**Agenda 21
Programme of Action for Sustainable Development
Rio Declaration on Environment and Development
June 1992**

Editorial

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Foreword

In 1999, the World Water Vision requested the IIAV to stimulate discussions on water management within global women's networks. The aim was to feed the results into the decision-making process that would culminate in the 2nd Ministerial Conference on Water.

As the IIAV is a renowned information centre on issues related to the advancement of women and hosts the largest women's library in the world, we eagerly agreed. Thus began our Gender and Water networking project, an offshoot of our Knowledge Sharing Programme which promotes the use of all available technologies for the circulation of ideas and information between and among women's information centres.

Our staff contacted regional coordinators in Latin America, Asia and Africa, and sent information materials to well over 2,000 women's organisations scattered all over the globe. We set up an electronic listserv and had our materials disseminated via a wide range of web sites and other electronic fora.

We discovered a world that is hardly known, except to a few dedicated (mainly female) researchers. As the information poured in, we began to discern a large uncharted territory of gendered activities in water management spread all over the globe. There were women-initiated, grassroots water-delivery systems in the developing world; masses of research undertaken by female researchers in institutions both in North and South; female decision-makers promoting a gendered approach in large-scale water management enterprises and government bureaucracies; and dedicated female innovators constructing imaginative, sustainable programmes of watershed management.

Those women were a huge inspiration to us. We thank them for sharing their information and insights with us. They opened our eyes to the long tentacles of the water sector, to the intricate relationships between employment and water, economy and water, agriculture and water, gender equality and water, ecological sustainability and water, food and water, health and water, community and water.

By the time the ministerial conference rolled around, the membership of this network had begun to expand in every direction. This subterranean gender/water world had poked its head above the landscape and now refused to subside. The women in our network want their voices to be heard. And they want this, not just now at the ministerial conference, but in the future, when projects are drawn up and initiatives launched. It is clear that there is a lot of future work to be done in maintaining this assemblage of information and making it visible.

We hope that the decision-makers gathered at this conference will take careful account of the views and recommendations listed in this document. It is clear that if they don't, unconscionable mistakes will follow. In the field of global water management, failure is not an option.

*Joke Blom, Director
International Information Centre and Archives for the Women's Movement
Amsterdam, February 2000*

(JJB)

General background

Women produce 80 percent of the food consumed in the poorest parts of the world, in some places 95 percent. To do this, they first produce water. They spend up to eight hours a day finding water sources, collecting water, storing it, and purifying it. They negotiate with their neighbours for access to water, evaluate water sources, analyse supply patterns, lobby relevant authorities, and launch protests when water availability reaches dire levels. In Latin America, they have even kidnapped water officials to force authorities to provide sufficient water for their families' needs.

Water is a matter of livelihood to them, for they have no money to purchase basic necessities. In urban centres, they use water to make ice cream, drinks, snacks, other small scale products that they sell to raise cash income to purchase clothing, medicine, other domestic necessities. For, both in urban and rural areas, they are responsible for family welfare. They lug up to 40 kilos of water a day to maintain their families' health, hygiene and nutrition standards - for cooking, drinking, washing, caring for the sick and for infants.

In many parts of the developing world, women are the sole breadwinners of their families. Female-headed households are growing. In parts of Latin America, they are the majority. Sometimes this is due to war and the resulting decimation of the male population; often the cause is migration of men to cities in search of paid work. Increasingly, women have to provide for all necessities of their children and elderly. Increasingly, women are amongst the poorest of the poor.

“More than 1.3 billion people are absolutely poor, and their number is increasing. In Africa alone, the number of poor is projected to increase by 40 percent between 1990 and 2000.” _ FAO

“In Gambia, Tanzania and Kenya, women's rights to hold irrigated land, and control the distribution of products, have improved family nutrition and the income of female-headed households significantly. Support should be given to irrigation management organisations that promote equitable and efficient use of land and water.” _ FAO

These facts must form the basis of any global deliberations about future water management. When we talk about water as an economic good, we must ask, 'For whose economy?'. For those in the cash economy, participating in the breathtaking development of global trade? Or also for those outside it? Do we value the production of more video cameras at the same level as the production of a handful of rice which is all a family in the developing world may have to eat? For when we talk about making choices about access levels and delivery systems, establishing priorities, making trade-offs, this is what we are talking about. Values. Our own fundamental values - expressed in the economic system we maintain.

We are talking about our sense of ourselves as civilised creatures. Water has always been the basis of human civilisation. Today, our deliberations over managing the earth's water supplies can be a basis for the civilisation of the future. Or they can be a grotesque reflection of power, greed and callous self-interest, masked by the perverted use of management terms such as efficiency and cost effective resource use. These women in the developing world we have described above are not responsible for the massive depletion of the earth's freshwater resources in the last century. It is those of us who have benefited from the impressive process of global industrialisation who have caused the pollution of half of the rivers on earth. It is those of us who drive cars that produce emissions which contribute to climate change - and thus the rapid drying out of the African continent. It is us gourmants who consume food produced far away which has to be trucked to our tables, us holiday-makers who jet around the world to sample its delights.



From the electronic listserv

"I'm delighted to see that SEWA is taking up this millennium campaign to link women, work, and water. The linkages you point out, starting from people's own reality, are often missed by water professionals, who take only a "sectoral" approach.

I've been involved in a collaborative study, that has tried to go beyond some of those sectoral barriers. We have begun looking at the multiple uses of water in irrigation systems. Most systems are only evaluated in terms of "crop per drop"-the output of the field crops. But when I go into any irrigation system, I see that the water is used for many things. I think part of the male dominance of irrigation is related to this focus on field crop irrigation, which may be mostly done by men (although my own field observations indicate that even that is changing quite a bit). But irrigation systems are also used for many other things - domestic water, livestock, home gardens (horticultural production, but often dismissed as 'kitchen gardens'), fishing, and small enterprises. These other uses may not consume as much water, but they are high value, and many of these are mostly women's uses."

RUTH MEINZEN-DICK, INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

Thus any new plans for global management of water supplies must respect the integrity of poor women's livelihoods. They must, first and foremost, avoid creating changes that will place more stress on women.

Hence the need for a gendered approach to water management. All new plans and proposals need to be based on the question: 'who will this benefit?' We cannot simply say 'society at large'. New crop irrigation systems may be designed and installed, but unless women have a voice in the local organisations which control those systems, and a say in the design of those systems, then the new provisions will benefit only male farmers, who are often growing cash-crops. Unless women, specifically, are targeted as a particular category of water users, who need to be consulted on location of installations, design, pricing and management, the health, hygiene, economy and nutrition of vulnerable groups will suffer.

Engendering the global approach to water management creates new challenges in the design and preparation of projects in the field. But it makes these projects more effective and cost-efficient. If we want all water users to take responsibility for protection and conservation of the earth's water resources, then we have to ensure that everybody is able to participate.

LIVELIHOODS

Thus women's capacities for effective participation in the public sphere need to be enhanced. This includes not only giving them access to skills, but also ensuring that their livelihoods are secure. No one can take responsibility for the long-term protection of natural resources when their day-to-day existence is precarious. But when conservation strategies are clearly linked with an increase in women's capacities to earn their livelihoods, they turn out to be extremely successful. Centuries of experience in local water management have left women with a large pool of skills and knowledge of low-cost strategies in this field. When this knowledge is acknowledged, built on and developed, and when women's self-confidence, independence and equitable access to natural, social and economic resources are thereby increased, the result is far more efficient, cost-effective and sustainable systems of water management.

Asking the world community at large to be prepared to make sacrifices and change their way of doing things so as to guard and conserve the earth's water supplies is asking for deep-seated changes. We must therefore be prepared to let these changes spread into the economic sector. The general thrust of global economic development has contributed greatly to the dwindling of water supplies. We need to be prepared to examine the system of global economics and make the necessary changes to ensure that the regenerative power of nature can play its part.

Women's recommendations to the 2nd Ministerial Conference on Water

Based on a comprehensive vision of how sustainable, efficient and effective water management and conservation systems can be achieved

1. New water management policies should be designed in such a way as to safeguard and promote the livelihoods of women, especially those in vulnerable social sectors of the globe.
2. Women should be drawn into the process of consultation at all levels when policy is created, systems developed and mechanisms designed.
3. Women's capacities to engage in public consultation processes should be enhanced so they can contribute to this global endeavour. The constraints on their participation should be addressed: time and costs of participation; timing and location of meetings etc.
4. Women's rights to water should be ensured, as well as women's rights to participate in water-related organisations and institutions. Creative legal mechanisms should be devised and enforced to prevent the restriction of water access and control only to those with land rights, and to prevent the restriction of participation in decision-making processes and institutions to those with land-rights or to 'heads of households'.
5. Women's knowledge and experience of water management should be acknowledged as a global resource to be developed, encouraged and used.
6. Gender analysis should be integrated into all water research, problem diagnosis and formulation of solutions and actions.
7. Strict systems of public control must be designed and put into place to ensure that private companies do not exploit the basic need for water for the sake of profit. Stepped tariffs are essential to ensure that households, small family business and large enterprises be charged for water on a differential basis.
8. Pricing of water must take into account the fact that water is a human need as well as an input into economic activity. Stringent legal mechanisms at an international level should ensure that water is not simply sold to the highest bidder but is first made available on the basis of basic need. Careful studies must be undertaken to discover what women are able to pay for sufficient supplies to maintain adherence to health and nutrition targets, and home production of food. Pricing policies must take into account women's unpaid or underpaid contributions to the economy, and avoid adding further burdens on the shoulders of women.
9. Women should be encouraged to enter the water management industry at all levels, so they can contribute to and benefit from any additional resources going into this sector. Training programmes should be launched to ensure that women and girls are equipped with the relevant technical, managerial, organisational and social skills needed.
10. Gender training programmes must be launched for water management personnel at all levels, so that the design and execution of projects ensure equitable access to all regardless of gender and class.

- 11.** Water conservation projects and programmes should be directed towards involving women - who often have a wealth of knowledge regarding local water circumstances compared with men and outside experts. Women's skills in water conservation strategies should be upgraded.
- 12.** Women's experience in setting up low-cost water delivery systems on a co-operative basis should be built on. Credit facilities should be made available and technical support offered to these initiatives.
- 13.** The Polluter-Pays-Principle should be strictly applied in the case of water sources, so that those who have not benefited from the fouling of the earth's water supplies are not forced to pay for remediation and increased costs of water delivery. The Polluter-Pays-Principle should also be applied retrospectively.
- 14.** The use of chemical fertilisers and additives in agriculture should be more balanced. Further, the international system of food production, distribution, trade, and agriculture in general, should be critically and genuinely evaluated to discover where the wastage of water really occurs. A comparative analysis of mixed versus mono-cropping systems should be made to evaluate relative water efficiency and net nutrient depletion.
- 15.** Governments and public bodies should be asked to enact strict regulation against pollution of groundwater and other water sources. Private industry should be brought into the process of establishing standards and control mechanisms.
- 16.** Increased efforts to slow the rate of climate change and mitigate its impacts under the UN framework convention on climate change and protocols so as to limit its detrimental effects on agriculture world-wide.
- 17.** Public awareness campaigns should be maintained to build a general consensus as to the need for changes in lifestyles to support water conservation and more efficient usage. Non-governmental organisations and women's organisations should be supported to use and develop their information channels for sustaining this campaign. Industrial processes must be redesigned to minimise water use whilst maximising water recovery.
- 18.** Annual water audits, based on gender-disaggregated data, should be published each year on the state of play regarding water resources, water issues, water conflicts, actions taken by national and local governments, and non-governmental organisations.
- 19.** Research into low-cost, innovative, conservation and delivery systems should be stimulated and their application encouraged by local communities and women's organisations.
- 20.** Effective community-created strategies in this area should be documented, their guiding principles explored, and efforts at replication launched. Women's organisations and other community groups should be provided with the channels for sharing their knowledge and experience in this field, and for stimulating other groups to explore new methods.
- 21.** Structural Agreement programmes should be examined and, if necessary, altered, so as to ensure that economic development programmes in the third world do not promote water-polluting or water-wasting industries and agriculture.

International networking project on Gender and Water

October 1999-February 2000

Project objectives

- To distribute information on water management issues to as wide a selection of women's organisations as possible
- To encourage a multilateral flow of information and opinion between and within these groups
- To solicit opinions and information on issues expected to be raised at the ministerial conference
- To generate discussion and concern about water within and between women's organisations and networks
- To generate information about the activities of women's organisations related to water management and conservation
- To generate information about the constraints and concerns of women's organisations in their efforts to participate in an enhancement of water management systems
- To contribute to an understanding of measures needed to encourage and enhance the capacity of women's organisations to contribute to the development of global strategies to achieve more effective, efficient and equitable water management systems and structures
- To help create a global awareness of the need for new approaches to water management



From the electronic listserv

"Our organisation is involved in implementing watershed programmes, sustainable agriculture and Joint Forest Management in Andhra Pradesh, India. Mainstreaming gender in all these programmes is our priority, and lobbying government - to influence the policy related to these programmes to be more gender sensitive. I look forward to hearing more on networking, web site etc." _

A. KALAMANI, CENTRE FOR WORLD SOLIDARITY, ANDHRA PRADESH

Lobbying

Methodology

- Mailings of information materials to international networks of women's organisations
- Appointment of regional co-ordinators in Africa, Asia and Latin America for penetration of local and regional networks and electronic fora, including listservs and web sites
- Requests for information and views from these networks
- Establishment of a web site where information materials could be found, and where further involvement could be initiated
- Placement of information materials on well-known women's electronic fora including the Women and Poverty listserv, Women's Watch network, the Gender Africa Information web site, UNED-UK, and the United Nations Commission on Sustainable Development network
- Publication of materials in the regular Know How newsletter and the encouragement of re-publication in other women's organs
- Approach to networks recommended by the Gender and Vision office in Paris
- Commissioning of information on women's initiatives in Asia from an Indian specialist media professional
- Setting up and management of an electronic listserv through which women's organisations could disseminate information and views on the subject of global water management



"I've placed your messages on the Gender in Africa Information Network (GAIN) which reaches about 80 individuals, most based in African women's organisations (some international), Gennet - South African Gender Network, Women'sNet (it will be loaded on their web site). I've e-mailed it to Len Abrams who hosts the Africa Water Page (<http://www.sn.apc.org/afwater/>), Earthlife Africa based in South Africa (<http://earthlife.org.za>)."

JENNIFER RADLOFF, GAIN, AFRICA

Some networks reached



"I have been lurking on the women and water listserv. However, my lurking has not been passive as I forward many of the materials to our networks and to feature articles and news in our publications. While we are not doing any direct work on water issues, one of our advocacies is women and food security. It is within this area that it is apparent that the link between food security and water is quite interwoven. It is this link that I have also tried to highlight with our networks in the region. The feedback has been positive with groups writing in thanking us for the information. If you like, I will circulate the announcement and have more women and, at this point, maybe even men, join the list. You have done a great job of handling the volume of information on this site." _ LUZ MARTINEZ,

ISIS-INTERNATIONAL, MANILA



"Your listserv has provided an excellent opportunity for networking, and the information generated from this "knowledge bank" has certainly added a lot of value in this process. We hope this networking continues beyond The Hague. Thank you for your hard work. I have been associated in the development sector for 15 years, with experiences from Asia, Africa and Latin America. My area of interest is community and water resource management, and my research experience is in traditional water systems." _

AMREETA REGMI, REGIONAL COORDINATOR FOR GENDER AND WATER PROGRAM, UNIFEM SOUTH-ASIA

- * The Know How network - 400 women's information organisations in 100 countries
- * The International Women's Tribune Centre network - 1,500 active groups scattered all over the globe
- * UN Women Watch network
- * Gender in Africa Information Network (GAIN)
- * South African Gender Network
- * Women'sNet
- * Caribbean Association for Feminist Research and Action
- * Government bureaucrats concerned with the issue
- * Others who heard of this project and made contact with its organisers
- * Scholars from all over the world doing research into water issues

Results/Observations

- * The most remarkable result was the amount of interest generated. Women's organisations all over the world expressed themselves hungry for information on issues dealing with water management. There was a great demand for the policy documents informing the current ministerial conference. Organisations and individuals went to great length to access these documents, despite gigantic constraints posed by inadequate technology (many did not have access to powerful computers or the requisite software to make this a smooth process; others had to depend on ordinary mail).
- * Many organisations expressed embarrassingly profuse appreciation at what they called 'this important initiative'.
- * The membership of the electronic listserv rose steadily, as organisations requested documents from each other, asked questions, volunteered reports and offered opinions. This process is still on-going.
- * The range of organisations involved in some way or other with water issues kept growing. The IIAV discovered organisations in Africa involved in delivery systems, groups in Asia digging tube-wells using money they had generated from credit schemes, an organisation dealing with water rights in North America, indigenous people with entirely alternative concepts regarding water in Latin America, organisations initiating recovery schemes in Eastern Europe, water user groups in Indian slums, a women's university offering courses in water management in Germany, women farmers' groups in Indonesia, many female scholars dedicated to research and activism on water and water related issues, architects, agriculturists, engineers - all with initiatives to reveal and results to share.

Some issues raised

- * The main focus of much of the discussion generated tended to be on the water/economy/livelihoods nexus. Concerns were expressed about water pricing, privatisation, water and land rights. Women were also very concerned about access to water for their agricultural pursuits.
- * Women expressed disappointment about access to decision-making levels, access to local decision-making bodies. They expressed a



"Yes, economic empowerment is crucial - one of the debates we had on access to water while preparing our policy document in South Africa, is that on an economic level one must ensure that not only do previously disadvantaged groups (blacks and women) have equitable access to water, but as importantly, equitable access to the economic benefits arising from use of water. I think this is an important aspect to factor into the equation. But underpinning much of this is the question of education as well, so that women can be empowered to take action on their own behalf." _

BARBARA SCHREINER, CHIEF DIRECTOR,
WATER USE AND CONSERVATION,
DEPARTMENT OF WATER AFFAIRS AND
FORESTRY, GOVERNMENT OF SOUTH
AFRICA



"I am a Delhi-based journalist and have reported on water scarcity in rural India, arsenic contamination of water sources in Bangladesh, urban water supply, and regional water disputes. I feel there is a strong need to 'humanise' some of the emerging challenges/ innovations in this area so that the wealth of information available to select groups like this is also disseminated to the wider public. I find the list serve very interesting and would like very much to continue the association." _

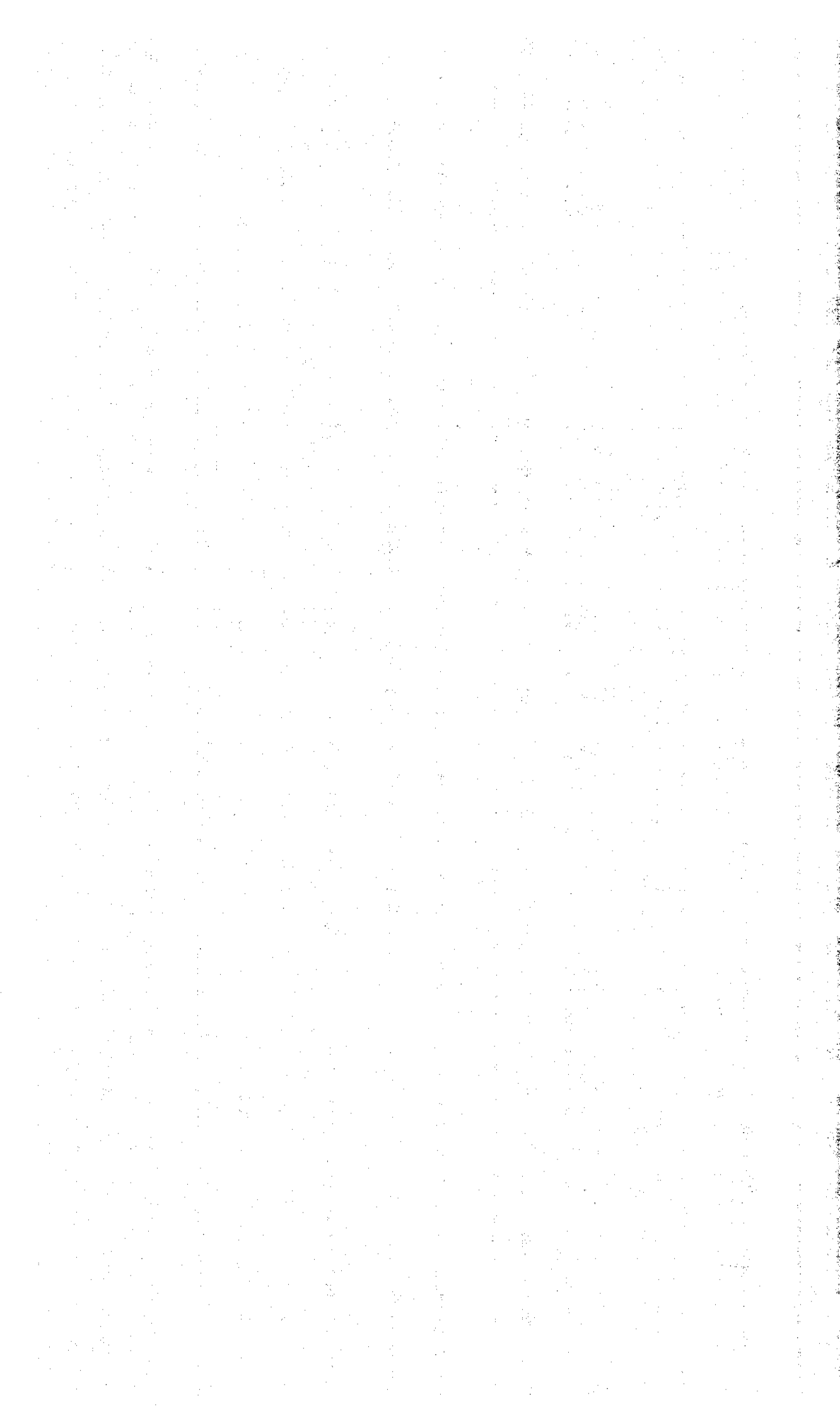
PATRALEKHA CHATTERJEE, INDIA

strong desire for skills development so they could participate in water management and conservation, and about recognition of their capacities as water managers. The women's organisations were extremely aware of the vital role of water and very eager to be privy to any decision-making on this issue.

- It turned out that some of the more successful and innovative water conservation and management schemes launched by women's organisations were those connected with savings and credit organisations, which had a successful track record of creative local initiatives. Where the confidence of women had already been bolstered by collective activities, the scope and ambition of their water projects were greater, their energies and commitment more assured.
- Where women could see a direct connection with improving their own livelihoods, income-earning capacities, skills and status in the community, they launched themselves eagerly into water management.
- The success of these activities propelled other initiatives aimed at community improvement. These included garbage disposal projects (India), organic farming on a co-operative basis, kindergarten assistance, medical supplies acquisition and maintenance, vocational training (Uzbekistan), literacy training and collective savings scheme (Indonesia). In Shantinagar slums in Nagpur, India, it went even further. It helped to reduce tensions among a multi-ethnic population.
- Water management schemes had worked to bring poor, illiterate women into a direct working relationship with municipalities, raising their status and self-confidence, and opening channels for access to more resources from governmental and non-governmental sources so they could continue to struggle for improvements in their general conditions.

Further information activities indicated

- Women's activities in water management need to be further documented and collected so as to provide models, approaches, inspiration and a wider pool of experience.
- Knowledge sharing needs to be further promoted and increased and analysis needs to be further developed and disseminated.
- More research needs to be done on strategies to promote gender-sensitive water management programmes.
- Information on the gender aspects of water management needs to be more widely disseminated outside of the arena of experts and organisations, so as to create public support for this approach.



Extracts from material put up on IIAV's Gender and Water Electronic Listserv

These extracts have been selected to indicate the wide range of material distributed through the network via our electronic listserv. This material included:

- Descriptions of gendered water projects that can provide models for activities elsewhere
- Abstracts of related research papers
- Reports found in web sites and other sources of information
- Notices about conferences, courses and up-coming events
- Links to web sites containing relevant information
- Information from other listservs.

Women and municipal authorities begin to work together in India

Shantinagar, a slum in Nagpur in central India spread over 14 hectares, has an ethnically diverse population. Over 35,000 people of all religions and castes live here. A key issue affecting life has been the continuous tension between women over unequal distribution of water. The water was not safe and the supply was erratic.

Women bore the brunt of the drinking water crisis in Shantinagar. Tension between them over unequal access to water vitiated the life in the colony. They had to fetch water from taps fixed over a drainage line that contaminated the water. Stagnant pools in the colony were fertile breeding grounds for mosquitoes. Like tens of thousands of slums in urban India, Shantinagar faced acute health hazards.

It was therefore decided that women were to be key players in the planning as well as implementation of municipality's new water project. YUVA facilitated meetings among self-help groups and the 'manila manilas' women's groups in the slums and GTZ and NMC officials.

The women learnt to collectively identify locations for water taps, and arrive at a consensus among themselves on timings, maintenance and use of these taps. It was decided that a location for the construction of an overhead the water tank would be provided by the residents, or, alternatively, a public platform would be constructed on top of the underground sump. Minor repairs and maintenance charges were to be incurred by local residents while major repairs charges if any, by the corporation. Emphasis all along was for involving the NGOs/CBOs and users group from the slum for reviewing the developmental work in their area.

An overhead tank was installed in August 1997. This provides water to 225 families in the area. Today, the mahila mandals play a key role in the maintenance, security and monitoring of the water distribution system. They themselves decided that users would pay Rs. 10 a month (25 cents) towards charges of minor repairs and for the salary of the guard at the water tank site. Buoyed by their success at negotiating with local authorities to sort out their drinking water crisis, the mahila mandals have now turned their attention to garbage disposal. They have installed dustbins bought out of the interest accrued to money collected by self-help groups. This spurred the Nagpur Municipal Corporation into providing additional bins need to cover the whole area.

Promote basic irrigation to reduce hunger - FAO

Low-cost, locally produced irrigation technology could help produce more food and could create jobs and income opportunities for the poor, says the UN Food and Agriculture Organisation (FAO) in a published report. Technology like pumps, hose and drip systems can make a significant contribution to reducing poverty and hunger.

Irrigated agriculture currently provides 40 percent of world food production. Around 60 percent of the extra food required to sustain a world population of about 8 billion by 2025 must come from irrigated agriculture, the UN agency said. Rainfed agriculture alone will not be able to keep up with the growing need to feed more people.

More than 1.3 billion people are absolutely poor, and their number is increasing. In Africa alone, the number of poor is projected to increase by 40 percent between 1990 and 2000. Among the world's poor, whose average income is US\$ 1.50 per day, are more than 800 million undernourished people in the developing countries.

Small-scale irrigation could help farmers to "grow more crop per drop", FAO said. Indirectly, they could benefit from a more secure food supply, lower food prices, better nutrition and more water for domestic use. The poor tend to spend a high proportion of their income, between 50-80 percent, on food consumption and water.

By extending small-scale irrigation, increased employment can be created, FAO said. In Bangladesh, for example, ground water irrigation has increased employment in agriculture between 1985 and now by around 250 percent. In Kenya and Zimbabwe, irrigation creates a steady income for small farmers. In addition, with more jobs and a higher income, people in the rural areas will have less reason to migrate to the cities.

FAO stressed that the technology made available to small farmers should be affordable and easy to operate. Men and women should have equal access to irrigation, states the FAO. In Gambia, Tanzania and Kenya, women's rights to hold irrigated land and control the distribution of product have improved family nutrition and the income of female-headed households significantly, FAO said. Support should be given to irrigation management organisations that promote "equitable and efficient use of land and water."

"The poor need to be able to defend their water rights in the face of competition from both larger farmers and from other sectors using water. "Initiatives that involve the landless gaining access to the benefits of irrigation require greater exposure," FAO said.
ROME, 22 Mar (Fd: year unknown)(IPS)

how? —

how

Women solve the water problem in Nepalese villages

Nepal, a breathtakingly beautiful country, is also one of the world's poorest. Its per capita income is less than US\$ 250. Ninety percent of the population lives in villages. Less than half of this tiny land-locked Himalayan nation's rural population has access to safe water, and less than three percent has access to sanitation. Life is particularly trying for those who live in the steep mountainous terrain of Central Nepal. Few roads and no railroads exist in these parts. Travel, communication, and delivery of basic services like drinking water are extremely difficult. Government water systems have reached only one third of Nepal's rural hill villages.

But women in the villages of Okhaldunga district are not waiting for the government to be their deliverer. In Sarsepu, for example, 22 illiterate women have banded together and undertaken small manageable projects linked to literacy, nutrition, protection of community forests, repair of footpaths and even countering social ills like alcoholism and domestic violence.

Finally, they felt they were ready for the big one. Water. There was a spring located about one km away. It served 18 families in the village and required a 30-minute round trip by the female water-bearers. They approached United Mission to Nepal (UMN), an NGO, for technical assistance. Construction of a drinking water system was split equally between male and female volunteers. The women dug the ditches, buried the pipes, carried sand and stones from the river, and helped to plaster the reservoir tank.

But not every family could afford to spare the time to be a construction volunteer. There were households headed by females who had small children. Sometimes the men were simply away. The women's group came up with an alternative. Those who could not donate labour could pay a fee instead. At the end, the spring catchment was erected, the pipe was laid, a tank was built as were eight tap stands. Two local village women along with two men attended a one week maintenance and repair training course.

The next step was a maintenance fund. The Sarsepu self-help group made their own calculation. They assessed that each household could pay about 500 Nepali rupees (US\$ 10). Now, the Sarsepu women's self-help group, along with men from the village, maintains the drinking water system. And they are on to other things - like arbitration in local disputes.

And they have had a ripple effect. Four years ago, Bhotechaur, another village in Nepal, was dithering whether to build a drinking water system itself - with the help of an NGO like UMN - or getting the government to build it. They eventually voted for the former. Government-built systems did not function, whereas Sarsepu's had lasted since the villagers had put in their own sweat and tears and had a stake in maintaining it.

Women and sustainable development

Recommendations in Agenda 21 and related documents

By Minu Hemmati, Northern Co-facilitator of the CSD NGO Women's Caucus UNED-UK (extract)

Introduction

In Rio, women were considered a "major group" whose involvement is necessary to achieve sustainable development. Today, there is a growing emphasis on "mainstreaming" - integrally incorporating women's concerns and participation in the planning, implementation and monitoring of all development and environmental management programmes.

Women and sustainable development issues are an essential component of Agenda 21 and other international agreements. Agenda 21 includes Chapter 24: "Global Action for Women Towards Sustainable and Equitable Development", outlining strategies to achieve the necessary full and equal participation of women in order to bring about sustainable development. In addition to the chapter itself, women's and gender issues are being addressed throughout Agenda 21, reflecting the "gender mainstreaming" approach.

"Human development, if not engendered, is endangered"
(Human Development Report 1995, 1).

Sustainable development requires the full and equal participation of women at all levels. Neither of the three aspects of the goal of sustainable development nor their balance can be achieved without solving the prevailing problems of gender inequality and inequity. Clearly, without gender-mainstreaming of all work towards sustainable development, we will not be able to achieve it.

Agreements from the Earth Summit, the CSD and Earth Summit II

Agenda 21, Chapter 24.2.c

The obstacles "to women's full participation in sustainable development and in public life" listed in the above quoted recommendations can be grouped into three categories which are of course inextricably linked:

1. constitutional, legal, administrative
2. cultural, behavioral, social
3. economic

Agenda 21, Chapter 24

Women have considerable knowledge and experience in managing and conserving natural resources. However, the role of women in achieving sustainable development has been limited by barriers such as discrimination and lack of access to schooling, land and equal employment. Chapter 24 addresses many important areas of sustainable development, pointing out barriers towards women's full and equal participation in sustainable development and in public life and making recommendations on what Governments should do to overcome these barriers.

Countries should increase the proportion of women decision-makers, planners, scientists, technical advisers, managers and extension workers in environment and development fields. It is important to eliminate female illiteracy, assure girls of universal access to primary and secondary education, and provide increased post-secondary training for women in sciences and technology.

Earth Summit II

For the first 5 year review of implementation of Agenda 21 in 1997, the following issues were identified as particularly important to women and sustainable development (UN DPI 1997): poverty; management of natural resources; water; commercialisation of agriculture; environment and women's health; and environmental activism of women's NGOs.

In the Secretary General's Report on Overall Progress Achieved since UNCED (January 1997), it was stated that "the implementation of specific objectives in the major groups chapters of Agenda 21 has not always achieved the level desired. For example, gender balance in decision-making has still not been achieved and national instruments to this effect are not being enforced" (Section II, para 97).

The International Conference on Population and Development (ICPD), Cairo 1994

ICPD reflected the widespread recognition that population is inextricably linked to the full range of human development concerns - including poverty alleviation, women's empowerment and environmental protection.

The Fourth World Conference on Women, Beijing 1995

The Beijing Platform for Action (BPFA) deals with 12 critical areas of concern:

- A. Women and poverty
- B. Education and training for women
- C. Women and health
- D. Violence against women
- E. Women and armed conflict
- F. Women and the economy
- G. Women in power and decision-making
- H. Institutional Mechanisms for the advancement of women
- I. Human rights of women
- J. Women and the media
- K. Women and the environment
- L. The girl-child

Section K recommends actions by Governments, Local Authorities, international organisations, private sector institutions and NGOs to

- involve women actively in environmental decision-making at all levels;
- integrate gender concerns and perspectives in policies and programmes for sustainable development;
- strengthen or establish mechanisms at the national, regional and international levels to assess the impact of development and environmental policies on women;

The World Summit on Social Development (WSDD), Copenhagen 1995

The Copenhagen Declaration and Programme of Action on Social Development deals with 10 Commitments:

1. Creating an enabling environment for social development;
2. Eradicating absolute poverty;
3. Supporting full employment;
4. Promoting social integration based on the enhancement and protection of all human rights;
5. Achieving equality and equity between women and men;
6. Attaining universal and equitable access to education and primary health care;
7. Accelerating the development of Africa and the least developed countries;
8. Ensuring that structural adjustment programmes include social development goals;
9. Increasing resources allocated to social development;
10. Strengthening co-operation for social development through the UN.

The World Summit on Human Settlements, Habitat II, Istanbul 1996

Section III.D. of the Habitat Agenda deals specifically with "Gender Equality". However, the primary role of women in human settlements is strongly recognised throughout the document and several clauses on gender and women were included in the Habitat Agenda. Clauses in Section D.III. and elsewhere address the following issues: women's full and equal participation in urban planning and management; women's equal access to resources, services and opportunities to employment, inheritance, ownership, credit, personal development, and decision-making; women's equal access to safe drinking water and sanitation; women's empowerment and poverty eradication; combating social exclusion and discrimination; reviewing structural adjustment in the light of gender specific impacts; practical methods to integrate gender perspectives in human settlements development; gender disaggregated data; building partnerships between people and Government; education and training for women; shelter policies benefiting vulnerable groups.

The World Food Summit (WFS), Rome 1996

The WFS Declaration and Programme of Action are among the most comprehensive international agreements on

- global food security
- enhancing and empowering women's key role in household food security,
- and, in developing countries, throughout the food chain (production, harvesting, storage, processing/preservation, transport, marketing),
- and in the conservation of bio-diversity and forest and water resources.

Where women are forbidden to participate in public

Gendered strategy offers cost-effective solutions

How to facilitate participatory development in a traditional hierarchical society is an emerging challenge for development professionals. A report by Nahida Aziz and Sarah Halvorson of the Water and Sanitation Programme (WASEP) of the Aga Khan Housing Board for Gilgit, Pakistan illustrates the need for tactical compromises to ensure women's participation in decision making.

In Hoto, water is owned and managed by the community. Women have traditionally been responsible for domestic water work and some irrigation work, and men have made the decisions which affect the management of water resources. In the past, village elders and the traditional leader in charge of managing communal resources, were responsible for the management of water in the community, and for ensuring that every one in Hoto received an equal allotment of water. This system came under pressure as village elders felt ill equipped to deal with the management of new technologies and the institutional structures required for the management of an upgraded water supply system.

Since 1994, a Community Research Team (CRT) has been the catalyst in bringing about an improvement in drinking water supply for the residents of Hoto. A prerequisite for their success has been a good working relationship with the traditional leadership structure in the village. One significant offshoot of the changes has been the induction of women in water management.

gain their trust
good working
relationship with
- this will help
trust/serve
women eg

The steps undertaken to overcome traditional male resistance to women's active participation in community affairs offers important lessons. At the start, the PAR team met with the male members of the community. A major challenge was to convince the men that the 'outsiders' would not be agents of negative change. Women in Hoto, as in other traditional communities in Moslem countries, follow a strict form of purdah and are not allowed to meet outsiders especially other men.

The PAR team had to work hard for more than a year to create the necessary confidence and trust. Finally a female PAR team member was allowed to meet with the women. The next hurdle was to reverse the low self-esteem of the women. The women did not perceive their involvement to be important or even essential to the process since traditionally they had been kept out of community affairs and lacked information. They had been socially conditioned to think that the problem of drinking water was a 'man's problem'. But interestingly, once their views were sought, and the women started participating in the meetings, they began to realise that despite their handicaps they could play an important role in the process of improving water supplies.

The third difficulty was a geographic one. Contacting people was difficult because the village is spread out and has many internal divisions. Strategically, the PAR team did the right thing by approaching the traditional leaders of each mohallah (ward) first as

part of its contact building process. Then, the traditional leaders, assisted by the Community Research Team, started organising ward-based water committees. These committees would then communicate with the households in their wards and ensure that community-wide meetings were organised. The younger and more educated members of the community became the leaders of the five ward water committees. The decision was prompted by the feeling among the traditional leadership that educated people would be better prepared to take on the responsibilities of implementing a water supply scheme. The approach adjusted to the hierarchical nature of the Hoto society, but it was critical to the devolution of power. The Pani ki committee (Urdu for water committee) allowed information sharing and capacity building.

There were separate women's committees. This was the only way to have women participate in the PAR process. But after a point in time, both the men and women met together to develop strategies to solve the drinking water problem-perceived as a common cause. The male members allowed the women to participate in a joint meeting in which various strategies were discussed. The report by Nahida Aziz and Sarah Halvorson notes that "The men felt that the best strategy would be to extend the distribution pipes of the old government water supply scheme to all of the households in the unserved area.

The women argued that this was not the real issue at all. What they felt was needed was a new water tank built on unused land, which would first provide water to non-functioning public standpipes. In the end, the community chose the women's strategy rather than the men's. The women convinced the men by arguing, 'What is the point of a new pipe if the present pipe is not already being used?' The construction of the tank, which the women proposed, came to a cost of Rs. 20,000 and would benefit 70 percent of the community. The laying of new pipe would have been more expensive and would still not have ensured that water would be secured for the system. The men gave up the idea of putting in pipes and instead focused on the construction of the new tank."

The women's 'victory' marked a turning point in the community because it indicated a distinct change from the beginning of the PAR process. Then, the traditional leadership had feared that women's participation in the PAR team meetings would lead the women towards becoming 'baipurdah,' (taking the women out of their traditionally ascribed purdah existence). Easier availability of drinking water has also freed up energy for the women and in many cases this has led to greater attention to personal hygiene.

'We are washing our clothes in the water now that the water is available from the nulka (water) system,' states one of the women members of the Pani Ki Committee.

The female members of the water committees have started articulating new demands on behalf of the women in the community: hygiene education, greater knowledge about disease transmission. Once involved in the design of the drinking water system, the women pitched in to ensure its proper maintenance. The report notes that women of the Pani Ki Committee took it upon themselves to collect money for an operation and maintenance fund for their water system. They went from house to house collecting Rs. 10. This money

provided the basis of the fund. Today the Pani Ki Committee members are exploring other ways to sustain the fund rather than collecting money from each household. One suggestion is to collect one kilogram of apricot kernels from each household which will be sold in the market and the money will go to the maintenance fund.

Probably the most significant effect is the demand by women for the education of their daughters. In 1998 a new school was opened in Hoto, to which girls are being sent.

Women's organisation tackles immense water pollution problems in Uzbekistan

The Aral Sea, once bigger than the Netherlands and Belgium together, has shrunk to half its size. Reason: unsustainable water use. The hardest hit by is Karakalpakstan, a semi-autonomous republic in Uzbekistan. Today it is the poorest region in this newly independent Central Asian state. The environmental disaster has impacted the livelihoods of an estimated 40,000 - 60,000 fisherfolk and fish-processing workers.

The Aral Sea crisis was triggered by the destruction of the traditional system of rice field irrigation and water pricing in the '30s and the introduction of a water-intensive large-scale irrigation system. The mega projects were considered necessary for growing cotton. Cotton production led to toxic pollution of the region. Pesticides like DDT and lindane were used to maximise the total yield of cotton. Today, the use of DDT and lindane is illegal but defoliants and other pesticides are still being used. The entire population continues to be vulnerable.

Dr Oral Atanyazova, a Karakalpak gynaecologist, was among the first to draw attention to the link between the ecological disaster and the deteriorating health of women and children in the region. The matter came to her notice after she studied the case histories of more than 5,000 women in Karakalpakstan for her PhD thesis. Atanyazova concluded that there was indeed a link between the levels of contaminants and the reproductive health of the women in the region. Today, she heads a NGO called Center Perzent which is spearheading the Karakalpak's women's demands for safe drinking water and greater attention to the health crisis.

Center-Perzent is an NGO based in Nukus, the capital of Karakalpakstan. In Atanyazova's own words, "the goal of Perzent (a Karakalpak word meaning "progeny") is to unite the strengths of organisations and progressive people seeking to improve the status and health of women and children by empowering local women's groups." The NGO carries out projects in three areas, research, education and self-help community projects.

Specialists such as Atanyazova who have studied the subject in depth are convinced that the poor drinking water in the region has contributed to documented increases of certain morbidities such as hepatitis, kidney failure, birth defects and spontaneous abortions (Atanyazova 1994, Abdirrov 1993). Local doctors and voluntary organisations say there is a strong link between the environmental crisis and the emerging health crisis in the region. The worst affected are women and children who increasingly suffer from anaemia, liver diseases, cancer and birth defects.

Center-Perzent has initiated a number of projects in Karakalpakstan. These incorporate women's perspective into the research and analysis of the crisis as well as directly involve them in programs such as health education and organic food farming. Some of its key research areas are: assessment of the quality of environment and human health in the Aral Sea region. In collaboration with the another NGO, ECOLOGIA, Center-Perzent has also engaged the public in monitoring water

quality, made recommendations on how to improve household water quality and developed several workshops with local authorities and physicians on water quality and health problems. In addition, it has linked up with Save the Children Fund to provide water filters to kindergartens and environmental educational programs for pre-school children.

Another Center-Perzent initiative is the project 'Sustainable Chimbay,' a self-help, organic vegetable and fruit farming program to improve women's and children's diet and avoid further contamination. The local authorities in the town of Chimbay provided 20 hectares of land for the organic farm. The goal is to use the vegetables and fruits from this farm in meals served at the school, thereby improving the health of the children. The income from the sales goes towards meeting the target group's most serious needs, such as securing additional food, repairing the kindergarten's heating system, building a hand pump, filtering drinking water and obtaining medicines and syringes for the children's clinic. The project also includes plans of capacity building training for women who work on the farm. The training sessions will look at methods of organic farming and methods to reduce exposure to pollution and improve personal health including hygiene, diet and water.

Atanyazova believes that the central issue is of 'cost'. Since women and children have been the worst hit by the Aral Sea crisis, they should not be expected to pick up the tab. Atanyazova hopes to lobby with donor agencies to create a special fund with grants to pay for health care and monitoring programs, using a gender differentiated approach with special attention to the health impact on women and children.

Women's participation regarded as the key to success in Indonesia

Rice is the staple food of more than half of the world's population, most of whom live in less developed countries. Analysts say rice production must go up by 70 percent to support the needs of the world's population by 2025. But without effective and new water management strategies, this target is unlikely to be met. This has economic implications.

In Indonesia, increasing population and the use of irrigation on 70 percent of paddy fields of Java is expected to yield qualitative and quantitative water demand problems before 2020, as the water carrying capacity of the island is outstripped. The Cidurian Upgrading and Water Management Project in Tangerang, West Java, Indonesia conducted a pilot programme for the inclusion of women farmers in planning of the project, after it became clear that their lack of participation was hampering water management projects from achieving their true potential.

Indonesian women have traditionally played a critical role in rice cultivation but female farmers have seldom been involved in the various stages of irrigation development. Surveys conducted by the Cidurian Upgrading and Water Management project in the early '90s came up with some interesting findings: women were active in monitoring water conditions in the fields, (illegal) intake and outlet of irrigation water to the field, control of buffaloes which are the main causes of damage to the canals, use of tertiary irrigation water for household purposes. Special efforts were made to integrate women farmers in the upgrading and water management programme of the Cidurian project.

A pilot project was carried out from January 1991 to April 1992 in two tertiary units to identify the best method of achieving this objective. One of the key lessons learnt was that in a traditional society like Indonesia, in the absence of formal women's organisations in villages, social barriers prevent women from attending extension meetings. Therefore special agricultural information strategies had to be devised to take into account the low educational level of rural women. Separate meetings and four special training sessions for women farmers were organised, with the idea of providing women with basic information on the programme; overcoming women's initial reluctance or shyness; making an inventory of women's interest in participation, resulting in concrete plans; and identifying potential leaders and representatives for water users associations.

An evaluation report of the project by Yvette van Dok, Kurnia Saptari Putri and Avianti Zulaicha, a team of agricultural extension and community development experts, (submitted at the 15th Congress of the International Commission on Irrigation and Drainage at The Hague in 1993) notes that "one advantage of the separate approach to men and women in the beginning was that the women's traditional reluctance to attend meetings together with men was overcome. Consequently, women were well represented during the final meetings when mutual agreement with the men was reached about the division of labour and payments." The increased confidence among women farmers also led to greater participation in water users' associations.

Interestingly, though the contribution of women to farmers' construction committees was poor, it was not difficult to activate women as members of the water users' boards. As a result of the project, women occupy responsible positions such as treasurer, assistant treasurer and secretary of water user association boards. They are responsible for administration of male and female water users, collection and registration of irrigation service payments, establishment and maintenance of a communication and information network among the female members of the water users associations.

One offshoot of greater involvement of women in the water management of the tertiary irrigation system has been a reduction of the number of illegal off-takes, mentions the 1993 evaluation report. Additionally, the project has triggered other women's activities. In one village, women have organised literacy classes among other women. In two other villages, women's groups have been formed to start a collective saving scheme and dry field crop cultivation on community-owned fields.

Women and the handpump revolution - India

In November 1999, a three day women's handpump 'mela' (carnival) took place in Karvi in the Bundelkand region in India. Some 50 women handpump mechanics and masons from around the country, who had played a 'hands on' role in 10 projects involving rural water supply and sanitation, gathered to offer their insights to representatives from donor agencies, NGOs, bilateral and multilateral organisations. UNICEF, the Water and Sanitation Programme-South Asia, and Vanagana, an all women-NGO, were the hosts.

“It was a humbling experience. Just talking to these women. Most of them were low-caste and without education. They had faced awesome challenges. It was not easy getting the community to accept the idea that they should be trained in handpump repair, masonry, and more so if they were getting money for it. But against all odds, they had done it and proved that they were better than the government mechanics. Today they have social acceptability and economic leverage - the women get paid for the work they do,” says Fiona Fanthome, one of those who was in Karvi. Fanthome works with the UNDP Water and Sanitation Program office in Delhi.

The idea of training rural Indian women in masonry and repair of handpumps was originally a donor-driven one. But as the experiences from the field show, it has triggered a mini-revolution in many parts of India.

Women mechanics have triggered a handpump revolution in Kamrup district in Assam. The Northeast Indian state of Assam has abundant rainfall but ironically drinking water continues to be a scarce commodity. About 90,000 handpumps and suction type water lifting pumps were installed in Assam during the water and sanitation decade (1980-90) but as Jalvani, a newsletter on rural water and sanitation in India, notes in its April-June 1999 issue, only 65 percent are in working condition. The main reason is the sloth and inefficiency associated with most government schemes in India. There are bureaucratic delays in sanctioning repairs.

However, the Assam Public Health Engineering department recently decided to change tack. With support from UNICEF, it launched village level operation and management, a novel trial cum demonstration project that trained rural women in maintenance and repair of handpumps installed in their village.

UNICEF modified the design of the handpump to facilitate easy servicing as well as to reduce repair. The women mechanics can repair the pumps using only small tools. Under the VLOM scheme, two caretakers are trained for each installed handpump and are provided with a regular tool kit. Currently the women are in charge of 2500 pumps in two blocks of Kamrup district. The success of the VLOM project has encouraged the Assam PHED to extend the scope of the project. If that happens drinking water would be as easily available in the state as rain water.

Women in some parts of Lakhimpur Kheri and Allahabad in Uttar Pradesh state in northern India have been trained as handpump mechanics with assistance from the Indo-Dutch Water and Sanitation Programme. Uttar Pradesh is one of India's most socially backward states. But despite cultural inhibitions and social resistance, the women have acquired a new role in society. While the benefit for the community is functional, for the women themselves, it has been a heightened sense of self-confidence, both in terms of the community's acknowledgement of their ability and income.

Field reports from similar projects in other parts of India suggest that in many cases women masons and mechanics have used their newly acquired skills to explore a diverse range of work opportunities. Low-cost housing and sanitation systems are two areas that have used the services of women masons and mechanics.

In a few cases, good intentions have gone awry. The 73rd amendment of the Indian Constitution aimed at devolving power to local bodies has strengthened village councils, on the face of it. But village councils in many parts of India are bankrupt and when the responsibility of paying the women handpump mechanics for repair work passed from the water board to the village councils, the women stopped getting money. The village councils pleaded they were bankrupt.

Donor agencies and NGOs in India are exploring other options to ensure that the women handpump mechanics do not suffer. One option is to popularise the idea of 'user fees' which could go towards a maintenance fund.

Course on 'Gender in Land and Water Development'

offered by Wageningen University and Research Centre

Course Profile: GENDER in LAND and WATER DEVELOPMENT

Course: K200-214
Study hours: 2 credit points
Target group: O10, L40, O20, MSc and others
Study phase: from DA onwards
Period: 29th of February March till the 4th of April 2000
Teacher: Ir. Margreet Z. Zwarteveen

Introduction

Many international statements (like for example Agenda 21) make explicit reference to the crucial importance of women as users, guardians and managers of natural resources. New statements of this kind will again be produced during the World Water Conference in the Hague in March of this year. This course aims to look beyond obligatory policy statements by offering concepts and strategies for understanding and accommodating the linkages between gender relations and land and water development. Different approaches - e.g. gender and environment, feminist political ecology, ecofeminism - to understanding these linkages are discussed. The course critically unravels gendered assumptions of current approaches to the management of natural resources. Concepts such as participation, cost recovery and accountability - which all figure prominently in emerging policies and approaches to natural resource management and water shed development - are discussed in view of their gender implications. The course also provides an introduction to gender sensitive planning methods and reviews a number of experiences with these methods in water shed and irrigation management projects.

Admission criteria

The course is open to students in technical and social sciences, from Wageningen Agricultural University and other universities in the Netherlands and abroad, include MSc, MAKS and Erasmus students. There are no admission criteria.

Application

Students wanting to follow the course should register by contacting Margreet Zwarteveen
Department of Irrigation and Soil and Water Conservation
telephone: +31-317-484231
e-mail: margreet.zwarteveen@users.tct.wau.nl

Rainwater harvesting

Nagercoil is the headquarters of Kanyakumari district in the state of Tamil Nadu in southern India. It has a hilly terrain and bi-annual rainfall. Traditionally, communities in rural areas and peri-urban pockets around Nagercoil have depended on open wells and village ponds. But the groundwater has become increasingly contaminated (high salinity/fluoride content) and is available only at great depths. Handpumps, though cost-effective, are not viable because the community does not have the resources to treat the poor quality of water. Even families who have piped supply connected to the main town supply face problems because of the erratic supply of water, which often is of questionable quality.

For the scattered habitations in peri-urban areas around Nagercoil, the traditional technology of harvesting rainwater has brought hope. Rainwater collected effectively can save communities from the strain of trekking long distances and unsafe water sources. Since the task of fetching water for drinking and cooking is usually done by women, a technology which eases women's burden is appropriate. A UNICEF assisted project which has been implemented with the assistance of a local NGO, the Centre for Appropriate Technology (CAT), shows that given sufficient support, such a project can also open up other avenues for women and help integrate them in a substantive way with the cash economy.

The catchment area is the roof-top. The storage tank is essentially a structure of ferro-cement. The programme started as a demonstration project. Initially, local masons built 60 such storage structures while the women worked as head load carriers, helping in mixing of sand and cement. Even at the start, the idea of upgrading the skills of the women so that they could be trained masons had struck the project managers but the first obstacle was to find a suitable way of imparting the training. The women were interested but expressed their inability to attend training sessions far from their homes. At that juncture, CAT, the local NGO, stepped in and offered to train the women in masonry skills for a 15-day stretch. As it was a demonstration project, 12 women were selected.

During the 15-day training period, the women learnt how to construct doors, roofing sheets and water retaining ferro-cement tanks. As Renu Gera points out in her paper, Rainwater harvesting and empowerment of women, "this small group of women gained skills in the construction, maintenance and repair of their own structures and were subsequently able to find employment themselves as masons."

UNICEF, the funding agency, paid Rs. 35 (US\$ 1 at the prevailing dollar rupee exchange rate) per day during the training period because many of the women worked as daily wagers and incentives had to be offered to compensate for their time investment and opportunity cost. When the training was over each group of three women were also provided with equipment they would need - trowels, long strip pan, sieve, mesh cutter, wire tying key, plumbing bob, etc.

The entire process of construction consisted of prefabricated moulds, which were assembled at site. Then cement plaster was applied, once

the plaster had set in, the mould was removed and the plastering was done from inside. The initial structures were not very tidy but did the job of holding water. Two of the women masons who had been trained went on to find work in low-cost housing in Nagercoil.

The success of the Nagercoil experiment has spurred UNICEF to try out similar projects in other states such as the drought-prone areas of Maharashtra and Garhwal Hills in Uttar Pradesh in northern India. UNICEF sources say that though the Nagercoil experiment was a small-scale one, it demonstrated that program viability and gender sensitivity can go hand in hand provided catalysts such as an effective local NGO exists. In Nagercoil and other areas, some of the women whose skills have been upgraded now form groups and even collectively bid for contracts in masonry work, says an UNICEF official connected with the agency's water and environment programme.

Gendered participation in water management:

Issues and illustrations from water users associations in South Asia

By Ruth Meinzen-Dick and Margaret Zwarteveen (extract)

Published in the journal *Agriculture and Human Values* (1998)

This paper examines the implications of gender differences for local management of natural resources, with special reference to the management of irrigation systems in South Asia.

In this context, a highly stratified social structure, as well as common patriarchal norms on the appropriate position of women, provide a clear challenge to notions of homogeneous 'communities' for managing resources. At the same time, the vital nature of water resources for men and women, both for irrigation and other uses, highlights what is at stake in the process of devolution of resource control.

The intrahousehold literature provides an important source of insight and understanding of gender differences. The section following this introduction reviews the major issues from intrahousehold models, and links them to the analysis of gender in community studies. The paper then examines the implications of gender for devolution of natural resource management (NRM), especially irrigation. Because the outcome of devolution programs hinges on the activity of local organisations, the third section of this paper examines the extent and forms of women's participation in these organisations, using examples of water users' association in South Asia and presents evidence on the effect of gender differences in participation on the system management as a whole. Because of the lack of systematic research on gender dimensions of community organisations for irrigation and management of other resources, it is impossible to draw firm conclusions about the need for and impact of female involvement (or non-involvement). This paper tries to draw out the main issues, and illustrate them wherever possible with empirical examples. The concluding section looks at ways to increase women's involvement in resource management organisations and highlights policy issues and critical areas in which further research is needed.

The full paper is available.