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The World Water Vision exercise is a program of the World Water Council.

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WORLD WATER VISION

RESULTS OF THE GENDER MAINSTREAMING PROJECT:

A Way Forward

MARCH 2000

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WORLD WATER VISION: ITS ORIGIN AND PURPOSE

Over the past decades it has become gradually evident for those directly involved that there is a chronic, pernicious crisis in the water world. The participants in the First World Water Forum in Marrakech in 1997 called for a World Water Vision to increase awareness of the water crisis throughout the population and develop a widely shared vision of how to bring about sustainable use and management of water resources.

By 2025 we hope that we will have achieved the three primary objectives of integrated water resource management:

1. Empowering women, men, and communities to decide on the level of access to safe water and hygienic living conditions that they wish and to organise to obtain it;
2. Producing more food, creating more sustainable livelihoods for women and men per unit of water applied (more crops and jobs per drop), and ensuring access for all to food required for healthy and productive live;
3. Managing water use to conserve the quantity and quality of freshwater and terrestrial ecosystems that provide services to humans and all living things.

The World Water Vision draws on the accumulated experience of the water sector, particularly through sector visions and consultations for Water for People (or Vision 21), Water for Food and Rural Development, Water and Nature, and Water in Rivers. It draws on the contributions of regional groups of professionals and stakeholders from different sub-sectors that have developed integrated regional Visions through regional and national consultations in more than 15 geographic regions. As the Vision developed and evolved, more and more networks of civil society groups, NGOS, women, and environmental groups joined in and contributed to the consultations.

The participatory process that led to the World Water Vision makes it special. Since 1998, about 15,000 women and men at local, district, national, regional and international levels have shared their aspirations, as well as developed strategies for practical action towards the sustainable use and management of water resources. The recent availability of Internet communications made such a consultation possible in the short timeframe. This is not an academic exercise. It is the start of a movement. Over the coming months and years stakeholders will develop action plans to implement the recommendations of the World Water Commission and the strategies presented herein.

The World Water Vision aspires to be an inspiration to women and men to overcome obstacles and achieve fundamental changes. Its message is for everybody, particularly for the leaders and professionals who have the power and knowledge to help people to turn visions into reality. It challenges those directly affected by the water crisis to initiate action and to call on their leaders to bring about sustainable water resources use and management.

The Vision recognises that if sustainable water resources use and management is to be achieved, people's roles must change. The main actors will be individuals and groups in households and communities who, with new responsibilities for their use of water and water-related services, form/are part of a collective strategy. Public authorities will need to empower and support them, and carry out the work that households and communities cannot manage for themselves. Water sector professionals and environmentalists will provide these stakeholders with the information they need to participate in decision-making and help implement their decisions. All these groups working together can achieve this Vision.

In our World Water Vision the five key actions to achieve these objectives are to:

- *Involve all stakeholders in integrated management;*
- *Move toward full-cost pricing of water services for all human uses;*
- *Increase public funding for research and innovation in the public interest;*
- *Recognise the need for co-operation to improve international water resource management in international basins;*
- *Massively increase the investments in water.*

Let's have a Vision today for water tomorrow!

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Mainstreaming a gender perspective: Is the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes in all areas at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally, and inequality is not perpetuated.

(UN-ECOSOC 1997)

INTRODUCTION

Over the past years, Gender has become a major challenge for humanity. Gender refers to the socially constructed aspects of differences between women and men. It is related to how we are perceived and expected to think and act as women and men because of the way society is organised, not because of our biological differences. It refers to specific roles and responsibilities for women and men in a society. In the water sector, Gender has not really been taken into account mostly because the concept of Gender is misunderstood. Gender mainstreaming highlights the complex relationship between productive and domestic uses of water, the importance of participation in decision making of men and women, and to the equitable distribution of benefits from improved infrastructures and management structures (SIDA 1997).

In order to ensure a balanced participation of men and women in the Vision exercise as well as the incorporation of gender issues in the process, the World Water Vision Unit has launched a special project on mainstreaming gender in the development of the Vision. Our main objectives were:

- *The integration of a gender perspective in the design and implementation of the World Water Vision and its implementation plan, a 'Framework for Action', prepared by the Global Water Partnership;*
- *The enabling of men and women to express their opinions, by participating in the regional, sectoral and networking Vision consultations and discussing gender issues;*
- *Putting gender issues on the international agenda in the 21st century.*

To achieve the objectives of mainstreaming gender in the project, the Vision Unit worked closely with several organisations:

- *Both ENDS: involved women's non-governmental organisations in discussions about the Vision exercise as well as about Integrated River Basin Management;*
- *International Information Centre and Archives for the Women's Movement (IIAV): involved women's organisations in Vision consultations;*
- *IRC International Reference Centre for Water and Sanitation: ensured the participation of women in the Water for People (Vision 21) regional consultations as well as the insertion of a gender perspective in the final Vision 21 report;*
- *International Union for Conservation for Nature (IUCN): ensured that gender issues were incorporated into the Water and Nature Vision;*
- *International Water Management Institute (IWMI): ensured the incorporation of gender issues in the Water for Food Vision;*
- *United Nations Development Fund for Women (UNIFEM): involved regional stakeholders at the grassroots level in discussions and incorporated gender issues into the South Asia regional consultation (SASTAC) as well as into the final document.*

In addition to sponsoring women participants to attend different vision consultations, Gender Ambassadors, selected by the project team and the Vision Extended Team, ensured the mainstreaming of a gender perspective in the regions. The collaboration was further strengthened when network officers of the Global Water Partnership and various regional coordinators agreed to become gender ambassadors themselves.

To ensure the participation of women's organisations, including at the grass-roots level, Both ENDS, IIAV and UNIFEM actively guided the participation of more that 5000 networks. The activities included discussions and interactive dialogues on the overall Vision project and the future of water. These organisations also raised awareness through newsletters and media coverage. In order to reach out to youth organisations, a close cooperation was established with the Vision Youth program.

A Gender Advisory Committee, composed of distinguished water professionals and other experts, continuously ensured greater credibility for the team's work by giving advice on allactivities and outputs.

The World Water Vision, which includes the results of the gender mainstreaming activities, will be presented at the 2nd World Water Forum and Ministerial Conference, 17–22 March 2000 in The Hague, the Netherlands. Gender issues will form part of the Forum's activities in various ways, including by cross-cutting through the regional and sectoral Vision discussions and as an issue in one of the four major group sessions.

This document is a synthesis of the Gender Mainstreaming results. Contributors include the Gender Project Team; Barbara van Koppen, Gender Coordinator, International Water Management Institute (IWMI); IRC International Water and Sanitation Centre; IUCN-World Conservation Union; Both ENDS (a non-governmental organisation working on environmental issues); IIAV (International Centre of Archives and Information of the Women Movement); and UNIFEM (United Nations Development Funds for Women). This document reflects the views of the Gender project team and not necessarily the views of the World Water Council.

We hope that this synthesis will serve as a starting point for follow up to ensure greater gender integration in water resources management. We hope the long-term impact of the Vision exercise includes movement towards equal opportunities for men and women in participation and decision-making in the water sector.

Malia Bouayad-Agha
Gender Coordinator
World Water Vision Unit

CHAPTER ONE

GENDER MAINSTREAMING IN THE SECTOR CONSULTATIONS

A Way Forward

1. FROM BUCKET TO BASIN

IWMI's contribution to the Gender Mainstreaming Project of the World Water Vision[1]
Barbara van Koppen, IWMI, Sri Lanka

INTRODUCTION

Carrying buckets and having to drink unsafe water is one aspect of poverty that water policy and interventions help to eradicate. Boosting agricultural incomes of poor smallholders through irrigation is another aspect. Under pollution and growing competition for water resources at a basin level, the perspective fundamentally changes from a scope for further poverty alleviation to the risk of mere poverty aggravation. The role of water policy and interventions becomes even more pertinent in these situations. Without any measures, the burdens of the needed water savings are in danger of falling disproportionately on poor people. Those who still do not have access to infrastructure to tap sufficient water of sufficient quality are at risk of being excluded forever. Those who obtained some access to infrastructure, tend to use the less powerful infrastructure and to tap the most polluted sources. Moreover, their voices are the least heard. Changing the perspective of poverty aggravation again into a perspective of poverty alleviation can only become a reality if basin-level water management institutions are developed and take up this cause. The interests of those who now still carry buckets should be at the center stage of new basin level policy and institutions.

There has been no comprehensive framework that conceptualizes the multiple linkages between poverty, gender, and water that can orient future water policy makers in developing effective and multi-pronged strategies for poverty alleviation. In fact, the linkages between poverty, gender, and water have only been well established for the drinking water and sanitation sector. Linkages between poverty, gender, and water used for economic wealth creation are asserted, but evidence is still piecemeal. Moreover, the growing recognition that water is used for multiple purposes and also that the sector boundaries and urban-rural dichotomies should be overcome has not led to much practical change yet. This report aims to fill that gap.

Section Two starts by defining what precisely the problem is that water policy and interventions for poverty alleviation aim to tackle. This is defined as poor people's multi-faceted unmet water needs or, in other words, water deprivation. Water deprivation jeopardizes health, incomes, safety, and freedom from drudgery and is typically one of the dimensions of poverty. A holistic and comprehensive understanding of the different facets of water deprivation also highlights interrelationships and allows the formulation of multi-pronged strategies to combat water deprivation.

The problem of water deprivation is a state of lack of wellbeing, but for policy formulation and intervention the analysis of the processes that contribute to the creation and perpetuation of that state is at least as important. Two forms of water deprivation processes are key to understanding and combating water deprivation. The first processes are those by which society develops and distributes the physical means to abstract water resources and convey water to homes, fields, and enterprises. Water infrastructure development benefits some, but excludes others. Poor people are often asset-less in this sense. The second set of water deprivation processes concerns the naturally available resources from which water is abstracted. If water in a basin becomes scarce, water consumption by the one directly affects the water resources available for the other. In other words, water consumption by the one deprives the other in the direct and literal sense. Poor people are often disproportionately affected.

[1] *This report is complementary to the rich analysis and valid policy recommendations in the contributions by IRC, IIAV, UNIFEM, Both Ends, Grassroot Consultations Africa and Asia. Here, the focus is on the poverty and water in general and irrigation in particular.*
The author gratefully acknowledges the very inspiring and insightful discussions on the contents of this report with Dr. Tushaar Shah, Dr. Doug Merrey and Dr. Constantina Safiliou. Discussion and feedback by, among others, Tshepo Khumbane, Barbara Schreiner, Marna de Lange, Manoshi Mitra, Malia Bouayad, Annelie Joki-Hubach and Amreeta Regmi was highly appreciated as well.
We are grateful to the Ford Foundation New Delhi, the government of Sweden, Luxembourg and The Netherlands, and other donors for this research. This report has been prepared as part of a long term research program in IWMI and as a contribution to the World Water Vision.

The analysis of the underlying social water deprivation processes debunks the myth that water deprivation is primarily the result of the natural scarcity of water. Water deprivation is human-made. In our analysis of the varying aspects of the state and processes of water deprivation, we focus on irrigation. Improved water management is an important way to increase incomes if land resources are limited. Moreover, smallholders are the largest group of the poor, at least in Asia and Sub-Saharan Africa.

Section Three discusses the gender dimensions of irrigation. Although promoting poor women's incomes has top priority in general development policy by now, stimulating women's irrigated businesses is not yet on the water policy agenda. On the contrary, irrigation intervention in the past even weakened women's economic resource base. Gender-inclusive irrigation policy and intervention is sensitive to the factual gender relations in agriculture and includes both women and men farmers in any new process of infrastructure construction and institution building. This is the lesson to be learned from the experiences in the last three decades.

Section Four presents the broad implications of this comprehensive approach for pro-poor and gender-inclusive water policy and interventions under growing water scarcity.

1.1. WATER DEPRIVATION

The state of water deprivation

POVERTY MEANS WATER DEPRIVATION

It is widely recognized that water is vital for multiple and universally recognized aspects of well-being: health, incomes, safety, and freedom from drudgery, to mention the four most directly water-related dimensions. Water deprivation is the other side of precisely that coin. More than a billion people are deprived of access to water of sufficient quantity and quality to meet even minimum levels of health, incomes, safety and freedom from drudgery. Poor women, moreover, disproportionately bear the burden of the unpaid chore of fetching water, while they are excluded from many opportunities to create wealth with water.

THE NUMBER OF POOR PEOPLE IS INCREASING

Although living standards have risen over the past 25 years, 1.2 billion people still live on less than $1 a day. In many countries in Asia, where there has been a reduction in the percentage of the population below the poverty line, the absolute numbers have continued to increase with the growing populations. In Sub-Saharan Africa, there has not only been an absolute increase in numbers, but, in many countries, there has also been a relative increase in the proportion of the poor. In Latin America and the Caribbean, the debt and development crisis have severely aggravated existing pockets of poverty.
The poverty line of $1 a day suggests that some 60 percent of the world's poor live in India and China – and that 12 countries, each with more than 10 million people in poverty, account for 80 percent of the world's poor (e.g. Brazil, Nigeria, Indonesia, Philippines, Bangladesh, Ethiopia, Pakistan, Mexico, Kenya, Peru, Nepal) (World Bank 1998).

POPULATION LIVING ON LESS THAT $1 A DAY IN DEVELOPING REGIONS, 1987 AND 1998

	Number (millions)		*Share of population (%)*	
	1987	*1998 (estim)*	*1987*	*1998 (estim)*
East Asia and the Pacific	*415.1*	*278.3*	*26.6*	*15.3*
Eastern Europe and Central Asia	*1.1*	*24.0*	*0.2*	*5.1*
Latin America and the Caribbean	*63.7*	*78.2*	*15.3*	*15.6*
Middle East and North Africa	*25.0*	*20.9*	*11.6*	*7.3*
South Asia	*474.4*	*522.0*	*44.9*	*40.0*
Sub-Saharan Africa	*217.2*	*290.9*	*46.6*	*46.3*
TOTAL	**1,196.5**	**1,214.2**	**28.7**	**24.3**

Source: World Bank Poverty Net Data on Poverty October 1999, http://www.worldbank.org

Poverty is commonly defined as multi-dimensional deprivation, or welfare below the thresholds that societies judge to be minimally required for human welfare. Water deprivation is typically one of its dimensions. The contribution water policy and intervention make to poverty alleviation is combating water deprivation and ensuring that water primarily helps to improve the health, incomes, and safety of poor people, and that it is easily available at modest costs.

POVERTY: A RURAL, AGRICULTURE-BASED PHENOMENON

In the early 1990s it was expected that by 2000 poverty would be a predominantly urban phenomenon (UNDP 1990). This was already the case in most Latin American low- and middle-income countries, where urbanization rates were very high. But today, poverty in many developing countries is still predominantly a rural phenomenon. Data for the period 1985 – 1995 in 35 Southern countries show that in 31 out of those 35 countries the proportion of people below the poverty line in urban areas is lower and often substantively lower than in rural areas (World Development Indicators, World Bank 1998/9). These higher proportions, combined with the absolute numbers in Sub-Saharan Africa, South Asia, East Asia and the Pacific, where more than two thirds of the population live in the rural areas (World Bank 1998), indicate that poverty is a predominantly rural phenomenon. It is expected to remain so for the next two-three decades. Industrialization and rural-urban migration is a path to increased wellbeing for a significant part of the rural poor, although many of the rural-urban poor migrants join the ranks of the urban poor - the unemployed, informally employed or badly paid wage laborers in the lower segments of the labor markets, living under the harsh conditions of the urban slums.

Data from 1988 highlight that agriculture was the main basis of income for 86 percent of the rural people in developing countries. Agriculture-based livelihoods had even become more important in Africa and Latin America over the earlier two decades.
On the other hand, off-farm activities and non-agriculture employment provided incomes to an increasing percentage of rural population in the Near East (up to 27 percent in 1988) and Asia (up to 17 percent in 1988) (Jazairy et al 1992).

In most developing countries arable land per head of agricultural population declined between 1965 and 1988, with the exception of countries such as Argentina, Brazil, and Chile where the availability of land per capita increased due to an expansion of the land frontier, and/or a decline in agricultural population. These trends have continued since. Arable land area will still expand in Africa and to some extent in Latin America, but in Asia the land frontier has been reached. Decreasing sizes of per capita available land is primarily due to population pressure and affects farmers of all holding sizes (Jazairy et al. 1992).

THE MULTIPLE FACETS OF WATER DEPRIVATION

One facet of water deprivation is sub-minimal access to near, safe water and sanitation facilities, resulting in severe water-borne diseases. The time-consuming and laborious efforts to obtain water for domestic uses in rural areas, or the exorbitant high financial costs for many urban poor households, are manifestations of human deprivation, which, in patriarchal societies, are mainly imposed on women. Water has never been a "free good" for poor women. The importance of improved access to drinking water and sanitation for poverty alleviation is well established. But a comprehensive approach is needed, one which recognizes that poor people's water needs are multifaceted—just having clean water to drink is not enough.

Water also critically affects income generation. Income in cash and kind is another key aspect of human wellbeing of which poor men and women are deprived. Poor people's self-employment and wage employment opportunities in urban and especially rural areas depend on water. The dependence on water is most evident for a large, and in many countries the largest, group of poor people: smallholders. As the land resources of poor smallholders are typically scarce, a major income-generating strategy is to improve the agricultural output of their holdings through intensification. Among the many factors that enable intensification, a crucial one is water in the form of year-round irrigation, supplementary irrigation, and water harvested and conserved with a range of water management techniques. It improves yields, allows for better-yielding varieties, enables continuing production during the otherwise slack season, and, last but not least, reduces risks due to erratic rainfall (although risks associated with the higher investments or failing water delivery are added). Harvests used for household consumption and sale directly contribute to food security and fulfillment of monetary needs. More substantive wealth creation and even escaping income poverty through intensification often depends upon the access to markets and rewarding prices. Growing labor-intensive irrigated high-value crops for important market niches is feasible on small rural holdings, or homesteads, or peri-urban plots.

Water is also indispensable for other rural income sources for both smallholders and landless people, such as raising livestock. Trees and shrubs for fuel wood, timber, fruits and medicaments need water. Catching fish for family consumption can provide a major source of protein for poor households and provides incomes for small artisan fishermen and -women. Water is also needed for the various small industries and crafts, like brick-making, pottery, or beer-making.

Besides being direct water-users and gaining from water-related incomes, poor people gain from wage employment in water-dependent businesses. The expansion of irrigated agriculture and expenditure-related growth during the last five decades provided massive wage employment and pushed up wage rates for both poor women and men. Infrastructure construction and maintenance has been identified as one of the few self-selecting poverty alleviation measures. It has created wage employment for men, and in countries where previous taboos against women's participation in construction are being lifted, increasingly for women as well – although the wage differentials between men and women persist. Water used for off-farm employment, such as garment industries or mining, or urban employment also creates jobs for the poor.

Water deprivation in the economic domain, then, refers to the extent to which this wide range of opportunities to create wealth with water is denied to poor people. Improved direct access to water for the range of uses by the poor and water allocation to other poverty-alleviating businesses foster income poverty alleviation.

Lastly, flooding affects poor people more severely than the non-poor. Only economic distress forces people to live on the riskiest land behind dikes or in threatened polders without places of refuge. Social isolation, which often goes hand in hand with poverty, prevents poor people especially from being reached by early warning systems. This is even more strongly the case for women who are less mobile and more deprived of contacts with the public world than men.

POOR FOOD BUYERS BENEFIT FROM POOR FOOD PRODUCERS

The main indirect relationships between water and poverty concerns urban poor people and the landless rural poor. As net food buyers they may spend up to 80 percent of their incomes on food. A higher supply of their primary food sources through irrigation lowers price levels and increases price stability, and, thus, improves consumption. This underlines the importance of a productive agricultural sector.

Ample evidence suggests a synergy between promoting smallholder irrigated production and agricultural growth. Studies that have assessed the influence of holding size on land productivity in the green revolutions areas like India, Pakistan, Sri Lanka, Bangladesh and the Philippines, show that small holdings, compared to large holdings that have access to irrigation, tend to:

- *have higher net sown proportions of their land irrigated;*
- *have higher cropping intensities;*
- *apply more fertilizer per unit of cultivated land;*
- *cultivate more diversified, higher-value, and more labor-intensive crops;*
- *obtain higher yields per crop per unit of land.*

(cf. Berry and Cline 1979; cf. Hossain 1989; Boyce 1987, Jazairy et al. 1992).

This inverse relationship between farm size and land productivity has existed throughout history and is worldwide. According to Sen (1962) the crucial explanatory factor for this inverse relationship is not the size of the holding as such, but the system of farming, i.e., whether it is wage-based or family-based. Family-based farming reduces supervision inefficiencies, while hiring and exchanging labor are on a more mutual basis. Hossain (1989) suggests that the need of poor families to meet the consumption requirements of all their members also compels them to work at below-average wage rates. This need to fulfill basic requirements for food encourage poor farmers more strongly than the better-off to adopt the green revolution package, including irrigation. Poverty induces technological innovation (Boyce 1989).

The inverse relationship between land productivity and farm size has not been found, however, in cases where the larger holdings are considerably better mechanized (Berry and Cline 1979). Studies have also shown that smallholders are less productive in households that give priority to distant off-farm employment and that cultivate only intermittently or lease-out their land (Sobhan 1993, Castellanet 1992).

A COMPREHENSIVE APPROACH TO THE PROBLEM OF WATER DEPRIVATION

As water deprivation refers to sub-minimum levels of various dimensions of wellbeing, strategies to meet basic water needs should be comprehensive and multi-pronged as well. People who lack access to sufficient water of sufficient quality are found in all sectors, drinking water, sanitation, irrigation, livestock, forestry, fisheries, and industries, and both in urban and rural areas. Poverty and gender issues will never emerge if the analysis only compares sectors and ignores intra-sector differences.

Defining and combating water deprivation starts by:

- *identifying poor people;*
- *assessing their current water use for multiple purposes; and,*
- *tracing which needs are still unmet, and why.*

Such an approach is likely to immediately reveal, for example, that poor people are more dependent upon irrigation water for their domestic needs than their non-poor neighbors who often have access to private domestic water supply facilities. Such a recognition is extremely important for poor women.

The male irrigation sector still has the strong tendency to see women's efforts to satisfy basic family water needs as a nuisance, if not as an illegitimate use of water. Denying women this access to water burdens them even further. The recognition of poor people's multiple water needs would lead to other scheme design, to the consideration of multiple water uses, and to the inclusion of multiple users in the hitherto very narrowly defined "water users" associations.

Such a cross-sector approach that primarily aims at meeting the basic water needs of poor people is also able to evaluate the impact of different water-dependent employment opportunities on poverty alleviation. It assesses in which ways most jobs per drop for poor women or men are created, whether in self-employment or in wage employment, in on-farm or off-farm employment, or in the rural or urban areas, and, certainly, in combinations. It informs decision-making on water allocation accordingly.

1.2. WATER DEPRIVATION PROCESSES

Deprivation in water asset building

Processes that create and perpetuate a state of water deprivation are, in the first place, related to the ways in which the physical means for water abstraction or conveyance are developed and are appropriated by the one and not by the other. Neither state-supported and subsidized developments nor privately steered developments have particularly reached the poor. While the wealthier people got access to infrastructure to tap the available water sources in sufficient quantities and quality to satisfy their various needs, the poor were often excluded or included under adverse terms. Poor people are "water-assetless".

This is well documented for urban drinking water supply. In spite of huge public subsidies it is primarily poor people who still depend upon collective taps, expensive private water vendors, or ancient but neglected drinking water systems. Moreover, agencies persistent unwillingness to properly assess women's preferences for site selection, technology choice and management forms has reduced the beneficial impacts of interventions.

In irrigation, which consumes 70 percent of the world's water resources, the patterns vary, but point, overall, in the same direction. The evidence of clear pro-poor impacts suggests that irrigation asset building primarily endowed poor farmers with access to infrastructure if:

- *settlement schemes, for example in Sri Lanka and Ethiopia, or other subsidized schemes were accompanied by well-targeted land expropriation and allocation programs[2];*
- *irrigation agencies purposively selected poor people's land for improvement by subsidized schemes;*
- *appropriate technology which is low-cost in terms of up-front price and energy consumed and which is apt for use on very small plots, for example, the treadle pump, was developed and spread; (Shah et al. 2000) and if;*
- *poor egalitarian societies developed collective schemes, as occurred in the Andean region.*

Action along these lines in the future is likely to achieve the same results. Partial subsidization of collective schemes may still be justified on grounds of poverty alleviation and poor people's very limited benefits from state subsidies in the past. Or subsidies can be replaced by long-term loans with insurance that are accessible for poor women and men.

Participatory planning processes, in which the prospective users choose the technology and build water rights through co-investments in the construction, will create not just a sense of ownership, but real ownership.

This positive evidence and the lessons to be learnt are overshadowed by evidence of the opposite in all other public and private irrigation development. In all other publicly subsidized irrigation development, agencies selected the sites in a way which reproduced prevailing patterns of skewed land distribution, or even favored larger farmers by selecting their land for improvement. Governments promoted the latter in the belief, which now has been recognized to be false, that large farms were more efficient, and that the sector's best hope lay in capital-intensive modernization.

[2] *In the Chingazo-Pungales scheme in Ecuador and the Aandhi Khola scheme in Nepal, the water users association got a loan from a public institution and purchased certain pieces of land to redistribute for reasonable prices to those who had less land (Ecuador), or to those who were identified as the poorest (Nepal) (Martinez, 1998). Measures were also taken to prevent poorer and less informed farmers from being persuaded to sell their lands to other farmers long before infrastructure is constructed. The latter typically are informed in advance about the plans for irrigation development and the future increase of the value of the land (Chambers, 1984).*

Smallholders, on the other hand, were viewed as unlikely to respond to market incentives. In many economies, therefore, the excessively large and capital-intensive farms that employed very little labor enjoyed preferential access not only to irrigation development, but also to credits and other subsidies. Social and political influence also led to preferential installation of schemes on the land of the larger farmers and to their stronger control over water, even if the irrigation development program primarily aimed at poverty alleviation.

In these ways the huge subsidies benefited the larger farmers most. If we take irrigated land size as a proxy for water use, larger holders now use the bulk of water. Nevertheless, wage employment creation and lowering food prices still alleviated poverty. On the other hand, in a number of schemes in which land was expropriated and reallocated, poor occupants who used the site of the scheme and reservoir before the project lost their access to land without being sufficiently compensated.

Stronger poverty alleviation through publicly subsidized schemes can be expected if, in the future,

- *new schemes are better targeted, as mentioned above; and,*
- *compensation for people who are displaced improves.*

Not only state subsidized irrigation, but modern private irrigation development also excluded the poor as asset owners because only the better-off farmers can afford to purchase or borrow money to purchase the technologies that are currently for sale on the shelves, such as mechanized pumps, sprinklers, and drip irrigation. These technologies are typically designed for larger scales of farming, with the few exceptions already mentioned.

In India, Bangladesh, and Pakistan, differential opportunities of mechanized pump ownership are strongly mitigated by the fact the pump owners sell their excess water and thus create a competitive water market. This also occurs in conjunction with canal irrigation. These markets deliver good water services at low prices for millions of poor smallholders. The availability of smaller pumps not only allows less well-off farmers to become owners as well, but also fosters competition. Many smaller pumps rather than one or few larger ones have this effect by themselves. Moreover, less well-off pump owners have not much land to irrigate themselves and depend on the income from water sales to make their enterprise profitable, so their services tend to be better (Shah, 1993). If the hydro-physical environment allows competitive private water markets to emerge, they have perhaps the most potential for pro-poor irrigation development, provided over-abstraction from the water source can be prevented.

So water markets, also in conjunction to canal irrigation, can be more pro-poor if:

- *equipment is available that is very small and cheap and can be used by individual poor farmers;*
- *equipment is available that is relatively small, but still provides excess water that the owners cannot use on their own land;*
- *there is a competitive offer of water.*

Lastly, traditional collective schemes and tanks in the more hierarchical societies, for example in South Asia, reflect these hierarchies in the distribution of irrigated land and control over water. However, their decay and the loss of the collective management arrangements, as reported for, for example, tanks in South India, has particularly affected poor farmers and users of the water for other purposes. They do not have access to the better options that wealthier farmers have chosen over maintaining traditional schemes. Poverty will be alleviated if: *traditional schemes that have deteriorated are upgraded to satisfy the water needs of the former poor users without alternatives.*

In the annex data are given on the percentage of irrigated land among smallholders and the national percentage of irrigated land.

PRO-POOR WATER CHARGES IN IRRIGATION

In schemes in which water use can be measured, stepped tariffs would limit the costs for the small users and also encourage water saving by the larger water users. Labor obligations for construction and maintenance based on land size are more advantageous for the smaller holders than household based obligations. If specific pumps are particularly used by poorer people, a reduction of electricity rates for such pumps benefits poor people.

TENANCY

Vesting water rights and membership of water users associations in the tenant rather than in the landowner is efficient if tenants are already the actual irrigators, already fulfill obligations for maintenance work, already pay water fees either directly or indirectly in the tenure contract, and are more motivated than land owners to ensure the proper functioning of the scheme. Moreover, in irrigation schemes in which the majority of tenants are poor and lease-in land, this could also decrease tenants' dependency upon the landowner for water, and thus empower the poor. However, this strategy becomes complicated if prevailing Land Tenure Reform law discourages any public registration.

To conclude, poor people have been less able to get access to the means to tap water of sufficient quantity and quality to meet their basic needs. In the drinking water sector, even minimum requirements for a healthy life are not met, and the labor and financial costs are high. In the economic sector the scale of business of poor people is smaller, and so is their per capita water use, if they have access to infrastructure. In irrigation, in particular, publicly financed and modern private irrigation development tended in the past to favor the larger farmers even further. More poor farmers can gain access to infrastructure in the future if:

- *Collective infrastructure development that is subsidized or for which loans are available is better targeted to poor people. Either the site selection favors poor people's land or forms of distributive land reform are implemented on the selected site. Disintegrating traditional schemes that provided water to poor people should also be upgraded in this way;*
- *Appropriate technology for the range of water management techniques is widely spread and credit facilities are provided, also to women;*
- *Water markets are promoted in regions with many poor farmers. Competition in the offer of water will generally improve the service.*

These strategies to promote asset-building for meeting poor people's basic health and income needs suppose that water resources in the basin of sufficient quantity and quality are available. This raises the issue of the second, 'direct water deprivation' processes that create and perpetuate a state of water deprivation.

DIRECT DEPRIVATION

If fresh water resources in a basin are abundant, the fact that other people in the same river basin are better able to capture water, even in large quantities, does not directly negatively affect poor people. There are still the trickle-down benefits for the poor like the mentioned effects on wage employment and food prices.

However, the number of basins and sub-basins in which all water resources are already committed and in which water used by the one literally and directly deprives the other from using water to satisfy their needs, is growing. Moreover, growing pollution further degrades water quality. Pollution and competition for water in a basin fundamentally change the scene.

As small water users, poor people play minor roles in causing scarcity and pollution, but they often bear the consequences disproportionately. South Asia's lowering ground water tables have already shown that owners of the more expensive and deeper-boring wells were able to continue pumping, at least for a while. However, hand pumps for drinking water and shallow irrigation pumps were the first to fall dry. As a result, women's burdens increased, and smallholders' plots that critically contributed to family income had to be taken out of irrigated production.

Poor people are generally less able to prevent the people with the more powerful water infrastructure and voices from using and polluting large quantities of water, and from literally depriving them from the scanty quantities of water they are using. Either there are no basin-level institutions to effectively regulate anybody or, if formal basin-level forums develop, direct water deprivation is hardly an issue, and poor people are not represented. The deprivation of those who are already deprived is placed high on the agenda only in informal forums, for example through NGOs (Hildyard et al 1998).

In the future the most likely scenario is, that without any intervention, competition for water will push poor people further below the sub-minimal levels of health and income, and increase drudgery, especially for women. It will hit poor people hardest because they have lesser alternatives for safe drinking water and they have lesser alternative employment opportunities. Moreover, any perspective for a better future is jeopardized both for those who have at least some access to water and for those who do not have even that. Water security in closed basins is fundamentally the issue of those people in society who are already the most water insecure and the most strongly threatened to be further deprived.

If water policy and intervention is to combat water deprivation under competition for water, radical measures are needed to ensure that more water resources become available for use by the poor.
Water that is currently used by other non-poor users needs to be taken to that end. Inequities from the past need to be redressed. The feasibility of this endeavor is not easy to conceive without effective basin-level regulatory institutions. Indispensable elements are, in any case, that:

- *it is strongly recognized that poor people are not the ones to save water, but the ones to use more water of better quality for varying purposes in order to meet at least minimum human needs;*
- *water saving among the non-poor and pollution prevention are strongly promoted;*
- *combating water deprivation is the absolute priority of basin-level water management institutions;*
- *accelerated development of new infrastructure targeted to poor people is actively promoted;*
- *the vague requirement of 'people's participation' in formal and informal basin-level water management institutions is sharply specified as inclusion of poor women and men, either directly or indirectly through genuine and accountable representatives;*
- *A water reserve to meet poor people's water needs is defined and quantitatively estimated and all means to implement priority allocation according to this reserve are exploited.*

COMBATING WATER DEPRIVATION IN THE NATIONAL WATER ACT OF SOUTH AFRICA

The purpose of the National Water Act of South Africa (Republic of South Africa, 1998) is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways in which take into account among other factors

(a) Meeting the basic human needs of present and future generations;

(b) Promoting equitable access to water;

(c) Redressing the results of past racial and gender discrimination.

(Article 2)

The water supply and sanitation sector receives high priority. The government has assessed the gap between the current level of water services and the minimum standards in all villages in South Africa. This data set is publicly available on CD and supports decision-making among all stakeholders involved.

The South African Water Act explicitly states that the achievement of social equity is one of the considerations in setting differentiated charges (Chapter 5).

For the management of South Africa's basins, most of which are water-scarce, the National Water Act prescribes the formation of public catchment management agencies to which the Ministry can delegate and assign far-reaching powers over water allocation and licensing. For developing the proposal for a catchment management agency, consultations with all stakeholders in the river basin concerned must be held (Article 77.f). After appointing members to the board, the Minister may appoint additional members, in order to, among other reasons, achieve representation of disadvantaged persons or communities which have been prejudiced by past racial and gender discrimination in relation to access to water (Article 81.f).

Intra-sector differences within agriculture are addressed, for example, by proposing two representatives: one representative from the large-scale (white) farmers and one from the emergent (black) farmers, for example in sub-basins of the Incomati Catchment Management Agency. In the ongoing public consultations for the proposal of the Olifants River Catchment Management Agency, it has been recognized that smallholders, the majority of whom are women, have not sufficiently been reached. They are typically not organized yet, while the large-scale farmers are. A new round of consultations among smallholders has been initiated, building upon informal networks and NGOs among the smallholders. This is to lead to a smallholders Forum that will have a direct input in the Catchment Management Agency.

1.3. GENDER AND IRRIGATION

Deprivation along gender lines has already been mentioned for domestic water supply and sanitation. In this section we elaborate the gender dimensions of productive water use, particularly in irrigation. Promoting poor women's irrigated businesses is the crucial contribution that irrigation policy and intervention can make to the widely endorsed policy priority of improving poor women's incomes. The rationale for this policy is manifold. Especially among the poor, the incomes of both men and women are required to meet basic family needs. Reportedly, women's incomes benefit the family relatively more than men's because women spend a higher proportion of their incomes on family expenditures than men do (Agarwal 1994). In female-headed households women's incomes are usually the major source of income. Lastly, women's own economic security has proved to be a crucial micro-level factor to explain a macro-level reduction in fertility rates (Safiliou 1991).

A major obstacle for implementing the promotion of women's irrigated businesses is the persistent assumption that the managers of the businesses for which irrigation water is an input are men. The further implications of this assumption are that men are the main responsible for field irrigation, are vested with water rights and responsible for the obligations, negotiate the effectuation of their water rights, participate in formal and informal decision-making at field canal level and at the higher tiers, and are also exclusively the ones to invest in and own private equipment. As a corollary, women would not directly need irrigation water, and not be the primary members of the water users association, but at best proxies for their male kin. In short: women would not be key stakeholders in irrigation. Women would nevertheless be involved in irrigated agriculture if they assist their husbands in agricultural activities and even field irrigation. Women would of course benefit from the irrigated crops to the extent that this is

used for family welfare. Moreover, as mentioned above, they could be users of irrigation water for other than irrigation purposes. Such relationships could still justify women's stronger involvement in management than now, but not as key stakeholders.

Under a range of conditions this first assumption is wrong and therefore its implications are not valid either. The assumption is wrong, in the first place, because worldwide, women have their own farm businesses for which they themselves need water, or they are keen to develop those businesses. Women-led businesses are found among:

- *women who are either de jure or de facto heads of households;*
- *women managing their production sub-unit within the household.*

Women who de jure or de facto lead their households are usually the main ones responsible for all or the largest part of their households' farming. Another type of female-headed household that has often been missed in the past, are the consumption and production units in polygamous households headed by the respective wives.

DOES AGRICULTURE FEMINIZE OR DO WOMEN BECOME MORE VISIBLE?

What is called "the feminization of agriculture" is at least partly the result of the better visibility and appreciation of women as heads of households and women's agricultural work. In the past, estimates of female-headed households often undercounted their real numbers, because in most countries a man was still perceived as the "boss" and the head of the household. More recent and better concepts and research methodologies reveal both higher numbers of female-headed households and larger involvement of women in agricultural work. For example, the 1988 percentage of female-headed households in Latin American and the Caribbean is 17 percent according to the data of Jazairy et. al in 1992. A more recent study (IICAIDB, 1994) shows that in Central America, households headed by women account for between 29 and 48 percent of the total cases analyzed. In the Andean region, the number of such households ranged between 29 and 55 percent.

The proportion of de jure and de facto female-headed households varies between and within countries. For example, in Southern African countries the proportion of female-headed rural households and women-led farms in incidental districts may go up to 50 to 90 percent (Safiliou 1994). In Zimbabwe's communal areas women constitute 61 percent of the farmers and comprise at least 70 percent of the labor force in these areas (FAO, 1998). In rainfed and irrigated agriculture in the former South African homelands, their proportion is estimated to be 70 to 90 percent (Makhura 1996; Van Koppen, 1999).

The extent of land cultivated under the control of women, whether in male-headed or female-headed households is also often underestimated. In Burkina Faso women cultivate independently one fifth to one quarter of the total land (Imbs, 1987; Burkina Faso, Ministère de l'Agriculture et de l'Elevage, 1989).

The other form of women's businesses is related to intra-household specialization of production along gender lines, which shapes the division of production units and women's and men's water needs. Women's plots in many African countries are an example. Homestead cultivation in Indonesia or Bangladesh is also primarily a women's domain (Westergaard 1993). These women-managed businesses are certainly market-oriented, and sometimes even stronger than men's farming activities.

Women farm managers do not necessarily own the land they cultivate. Women who cultivate the lands of their in-laws, often have life-long use rights, which are quite secure at least until a divorce or the death of the husband. Women may be more interested in long-term investments in improving a piece of land than, for example, tenants are. The assumption that only landowners are farmers has seriously contributed to the invisibility of many women farmers and their water needs, and indeed their other needs for credits, training, access to markets etc. as well.

WOMEN ARE MOST PRODUCTIVE IF THEY HAVE ACCESS TO INPUTS AND HUMAN CAPITAL AND CONTROL THE OUTPUT

Two studies that compare the land productivity of irrigated plots under women's management to those under men's management indicate a higher productivity of female-managed plots. This was the case in the Dakiri scheme in Burkina Faso (Zwarteveen, 1997). In Senegal a higher density and variety of crops was observed in women's irrigation schemes compared to men's schemes (Deuss, 1995).

Most estimates of male-female differences in technical efficiency show that male and female farmers are equally efficient managers, controlling for levels of input and human capital (Quisumbing, 1996; Udry et al., 1995; Adesina and Djato, 1997). In one Kenyan case (Moock, 1976), a simulation model predicted a 22 percent increase in women's yields on maize, beans, and cowpea plots if women farmers were given the human capital and input levels of male farmers (Saito, Mekonnen, and Spurling, 1994: all cited in Quisumbing, 1996).

Women's productivity also depends upon their control over the output. In a Kenyan study by Ongaro (1988), the introduction of new weeding techniques increased yields by female heads of households by 56 percent and those of the farms of male heads only by 15 percent. Ongaro argues that female household heads may have a greater incentive to adopt better weeding practices (traditionally a women's task) when they control the proceeds of their increased effort (cited in Quisumbing, 1996, citing Elson, 1995).

Jones (1986) studied the relation between women's labor input and their control over the output in the SEMRY irrigation scheme in Cameroon and Carney (1988) in the Jahally Pacharr irrigation scheme in the Gambia. Lack of control over the output of husbands' production units and too limited compensation by husbands were important reasons for women to reduce their overall labor input on their husbands' irrigated plots to the minimum level of culturally defined obligation (Jones 1986, Carney 1988). This was also one of the reasons for women in the Mwea settlement scheme in Kenya to completely abandon irrigated agriculture and to return to their original villages (Hanger and Morris 1973).

MEN'S BUSINESSES

Under other conditions, cropping is men's business, and women's involvement varies. However, the assumption that, if women farm together with their male kin, this is basically as unpaid and right-less "helpers", is not universally valid either. One extreme is women's non-involvement, as in some high-caste rural farm households in South Asia. At the other extreme are the cases of joint enterprises in the literal sense that not only the labor is shared, but also land and other resource rights, decision-making and say over the output, as seems to occur in places in Madagascar and some Andean regions.

Poverty affects women's participation in agriculture in general. It is not only higher in poor countries than in wealthier countries, as shown in table 1, but it also varies within countries. Studies in low-income countries like India and Bangladesh show a stronger participation of women in family farming or in the agricultural labor force among poorer households than the better-off (Agarwal 1986, Safiliou and Mahmud 1989). In Bangladesh it was also found that in poorer households women and men make important farming decisions more often jointly than the better-off respondents (Safiliou and Mahmud 1989). Ethnicity and caste play a role as well in women's participation in agriculture in male-headed households. In India, tribal women are more active in farming tasks and decision-making than Hindu women, for instance (Agarwal 1994). In Africa, patterns in the division of productive activities also vary between ethnic groups that would be equally poor in terms of incomes.

The figures and trends on men's and women's participation in agriculture in Table 1 show, first, that both men and women are leaving agriculture, and that proportional changes for women are slightly stronger than for men. However, as men still constitute a larger part of the labor force in absolute numbers, the absolute number of men leaving agriculture may well be higher than the absolute number of women. In such cases agriculture is really 'feminizing'.

TABLE 1 - *Employment in agriculture (as percentage of total economically active population in agriculture, industry, and services), and female participation in total labor force (as percentage of total labor force)*

	Employment in agriculture (as percentage of total economically female % of total active population in agriculture, industry, and services)						Female % of total labor force**	
	Percentage of economically active male population*			Percentage of economically active female population*				
	1980	1994	Change	1980	1994	Change	1980	1996
LOW INCOME	69	66	-3	80	76	-4	40	40
LOW INCOME-EXCLUSIVE								
China/India	69	65	-4	79	75	-4	40	40
Lower middle	35	35	0	35	35	0	39	39
Upper middle	31	25	-6	23	14	-9	32	35
LOW & MIDDLE INCOME								
East Asia & Pacific	69	67	-2	75	72	-3	42	44
Europe & Central Asia	25	23	-2	27	22	-5	47	46
Latin Amer. & Caribbean	29				12		28	33
Mid. East & N. Africa	39	29	-10	53	55	+2	24	26
South Asia	64	59	-5	82	75	-7	34	33
Sub-Saharan Africa	69	65	-4	80	75	-5	42	42
HIGH INCOME	8	6	-2	8	4	-4	38	43
World	50	48	-2	56	52	-4	39	40

Source: World Bank, 1998; Table 2.5 and 2.3***

*** World Bank 1998 defines labor force as the supply of labor in an economy. Unpaid workers, family workers and students are usually omitted.*

PREVAILING GENDER RELATIONS IN IRRIGATION

The diversity of gender relations in agriculture is reflected in gender relations in irrigation. For example, rice cultivation in in-land valleys in West Africa is a farming system in which the proportion of women cultivating on their own accounts is high. In one traditional rice scheme in Southwest Burkina Faso, it is even taboo for men to enter the scheme during the cropping season, as this would cause inundation (Van Koppen 1998).

In egalitarian farmer-managed irrigation systems in the mountains of Ecuador and Bolivia, both sons and daughters can inherit water rights (Krol, 1994; Arroyo and Boelens, 1997, Prins, 1996).

Very generally speaking, the stronger the role of men in farm activities and the higher the level of decision-making on scheme affairs, the stronger men dominate in irrigation matters. In South Asia, for example, women's role in male-headed households is often helping in irrigating, or replacing men during their absence. If women are sent to fulfill the obligations for canal maintenance, this is usually counted in their husbands' names. Attendance of informal meetings in bars and teashops and, even more so, attendance of formal meetings on water management are left to men. In extreme cases, like in Pakistan's canal irrigation, even the suggestion of women touching field gates may provoke strong disapproval, at least in the higher caste. In male-managed farms men are the main ones responsible for irrigation and are vested exclusively with water rights and membership of water users association. Men are also the ones to invest and own private equipment if the business is theirs. Women and children contribute labor by, for example, pedaling the treadle pump, and they also enjoy part of the higher yields (Shah et al. 2000). However, this does not affect the basic production relationship which is that men make the final decisions over the farm business and its output.

A common solution for the minority of women who manage their own farms in schemes in which the majority is male, is that they solicit men's mediation in ensuring water for their plots, fulfilling labor obligations, and especially in representing them in meetings. This may work well, especially if water is abundant, as was found to be the case in Peru (Lynch, 1991), Ecuador (Bastidas, 1999) and also for better-off women in the head-ends in the Chhattis Mauja Scheme in Nepal (Zwarteveen and Neupane, 1996). But male mediation was also found to be time-consuming and to entail high costs, if it worked at all. In the rainy mountainous areas in Kenya, where local law often forbids women to acquire water rights by contributing to construction work, women are reported to face high transaction costs in mobilizing others to do the work, or in purchasing water from men who are legitimate right holders (Adams et al. 1997). Women's marginal position in the irrigation hierarchy also relegates them to the less favorable night turns, as observed in Nepal (Von Benda-Beckmann et al. 1996).

In specific cultural contexts women are not supposed to do maintenance work and they must find men to do this instead. If women do not find such men they have to pay expensive fines for non-participation. Women would prefer to come themselves, but when they do so, they are, for example, laughed at and do not try again. Prohibition from maintaining the canals as women used to do in the past, is also newly imposed by governments. Tanzanian women complained that they could hardly protest any longer when they did not get their water turn (Van der Grift 1991).

To conclude: women who need water for their businesses in an environment in which irrigation management is perceived as a male activity face gender-specific constraints in their access to irrigation water, in fulfilling obligations, and certainly in participating in decision-making on water allocation.

GENDER AND SUBSIDIZED IRRIGATION DEVELOPMENT

Ample evidence of the gender aspects of construction and institution building in the many new subsidized schemes in the past decades highlights two points. First, irrigation agencies themselves have been the strongest adherents and promoters of the norm that irrigation water should only serve men's businesses. Their action, based on this belief, has even eroded women's existing businesses, while only men directly benefited from the 'free good' of new irrigation infrastructure. Second, once this bias was recognized, some agencies at a small scale successfully developed and implemented intervention methods that respect rather than polarize prevailing gender relations.

- *First, women lost their land rights and businesses in the in-land rice valleys in West Africa, that were upgraded by government projects. Later, the same agency reallocated the improved land to the former predominantly female title holders (Carney 1988, Van Koppen 1998).*
- *First, improved land in irrigation schemes was exclusively allocated to male heads of households. Later, women got their own plots as well, either in the mixed scheme (Diemer 1990) or in separate and women-only vegetable gardens or rice schemes (Projet Sensibilisation et Formation des Paysans autour des Barrages 1993, Carney 1994, De Lange et al. 1999).*
- *First, women who wanted to create their water rights through co-investments in the construction of a new scheme, as was the local custom, were literally sent home (Prins 1996). Elsewhere, agencies included both women and men were in scheme construction and both obtained water rights (Arroyo and Boelens, 1997; Video Irrigation in Andean Community: a social construction).*

The crucial element of the successful cases is the understanding of the local-specific gender relations in agriculture and the agency-steered process of selecting, timely informing, and organizing both men and women at community level in a decision-making forum for joint planning of the future intervention. Since membership of these forums is based upon the prevailing gender relations in agriculture, it is readily accepted by men. Or, in case there was no irrigated agriculture yet, the opportunities that were new to all were opened up to both men and women. This successful intervention method is replicable elsewhere and in the future. This is basically a conservative approach.

There have been few pro-active efforts to redress the prevailing gender inequities. The Traditional Irrigation Improvement Program in Tanzania which upgrades small water schemes in mountainous areas where local law forbids women to establish water rights, is one of the few exceptions (Kitunga 1989). This project challenges prevailing gender inequities by attempting to include women in planning and construction and to build water rights accordingly, and to conduct legal literacy training on women's land rights (TIP 1993).

ESTABLISHMENT OF GENDER-BALANCED WATER USERS ASSOCIATIONS IN DUAL FARMING SYSTEMS

The importance of early inclusion of all stakeholders and membership criteria at the very start of new organizations and the need and scope for a better reflection of the stakes of both genders was realized by the Provincial Irrigation Unit in the Nyanza Province in Kenya. In this region women contribute over 60 percent of all hours spent in rice farming, including irrigation, and manage 64 percent of all plots (Hulsebosch and Van Koppen, 1993). Till the 1990s the project's policy was to include predominantly men as members of water users associations. In its new policy the project requires a minimum of 50 percent attendance by women at the preparatory meeting of new water users associations. Parallel to these meetings, women are organized in women-only groups and trained to articulate their interests and to participate effectively in the mixed meetings. This policy proved to be effective. Women's attendance in the preparatory meetings and committees today is higher than in the male-biased forums in other schemes that continued in the usual way. Furthermore women's knowledge on project matters has increased, as well as the participation of women in water distribution and maintenance. Performance of women leaders is judged to be similar to that of male colleagues (Hulsebosch and Ombarra, 1995). The Small-scale Irrigation Program Dodoma in Tanzania also starts meetings only if the target composition of 50 percent women and 50 percent men is reached (SNV Tanzania, 1996).

In all mentioned cases, having stakes as irrigating farmers was more conclusive for water rights and management than having titles to the land. This line of thinking is also pursued by the Government of South Africa. The National Water Act 1998 vests water rights in the persons who use the water productively on a certain portion of land, irrespective of the land rights of that person (Republic of South Africa 1998). Legal clarity on water rights and membership is needed for the creation of the new formal water users associations under the Act. Disconnecting water rights from land ownership, but still attaching it to land, is especially relevant in the former homelands where communal land tenure prevails and ownership issues are extremely complex. This arrangement also removes formal blockades for the many women farm managers and irrigators, who do not own the land they cultivate. They can now become formal members. As for tenants, this arrangement is likely to be more efficient, if women are the actual irrigators, fulfill obligations for maintenance work, pay water fees, and are more motivated than their non-cultivating husbands to ensure the proper functioning of the scheme.

Membership criteria in the male irrigated farming systems in South Asia are based on land ownership and formally exclude the large majority of women (Meinzen-Dick and Zwarteveen 1998). But even women landowners reportedly still do not automatically get new shares in their names[3], nor attend meetings (L.K. Joshi, personal communication). Being male seems the most important criterion in practice. Joint water titles for both spouses that cultivate an irrigated plot and sensitization on the legitimacy of such titles, could especially facilitate women in female-headed households in their hitherto tedious job to obtain water and fulfill responsibilities. Water users associations can impose joint ownership for all member households, or just actively promote the option and leave the choice to the households concerned.

The active promotion of women in the newly established water users association committees under irrigation management transfer in India and Nepal[4], is still a mainly token affair and not effective yet to address the problems of poor women farmers.

[3] *In the West Gandak scheme in Nepal irrigation management transfer was accompanied by the sale of new water shares. Shares were allocated to the 10 year-old grand son rather than to the widow who manages the farm and owns the land.*

[4] *A study in the large-scale West Gandak irrigation scheme in Nepal, that is now almost completely turned-over to the users, reveals a wide gap between concrete problems for women irrigators and women who use water for other purposes, and the efficacy to address those by female (or male) committee members. The policy led to the rapid appointment of a woman member in 145 of the 173 newly established lowest-tier committees, and 10 percent women on the Board of Directors. However, interviews with 13 of these women office bearers highlight that most do not feel well informed about their tasks in the organization. Four women have no idea what their function implies; other women can indicate some of their tasks but express the wish to be further informed.*
Some women feel that relevant information is purposely hidden by the male members of the organization. The female members of the Board of Directors report that their fellow farmers refuse to allow them to at the constitution. Some women do not know if they really are invited for every meeting. Lastly, female office bearers face difficulties in being accepted by males who occupy a lower rank in the organization. There are no indications that women committee members would be more sensitive to poverty issues (Van Etten et al. 1999).

CONCLUSION

It was primarily irrigation agencies' own assumption, that irrigation water is only used as input for men's businesses. Since local gender relations were much more varied, imposing this norm eroded women's existing businesses and water rights in traditional systems. The 'free good' of new irrigation infrastructure exclusively benefited men. Women who would have been keen to develop their own irrigated businesses were denied that opportunity.

Gender-sensitive irrigation intervention that opens up the new opportunities of creating wealth with water or establishing water users associations to strengthen the businesses of both women and men is feasible if:

- *both male and female stakeholders are identified and brought on board in the earliest stages of agencies' local contacts and organization; and,*
- *water use for farming is the functional criterion for membership and water rights, either for women individually or jointly with their spouses.*

There is ample scope for more daring approaches in which not only the already existing businesses of women are provided with the needed water, but in which the promotion of new and stronger women's businesses is pro-actively pursued.

1.4. FROM BUCKET TO BASIN: POLICY RECOMMENDATIONS

POLICY AND IMPLEMENTATION

- *Meeting multi-faceted water needs of poor people to reach basic levels of health, income, and freedom from drudgery should be a priority in macro-level international, national, and basin-level water policies.*
- *Poor women's and men's current water use for multiple purposes, their unmet water needs, and any negative impact of growing competition for water, should be identified and monitored.*
- *Multi-pronged strategies to combat water deprivation should be developed and integrated into current programs.*
- *In open basins, where water resources are still being developed, new water infrastructure development and rehabilitation should be targeted to poor women and men, through appropriate technology, clear, equitable water rights, inclusive management institutions, partly subsidized collective schemes on poor people's land, and competitive water markets that deliver good services at low costs.*
- *In closing and closed basins where competition for water is growing, a water reserve for poor people's needs should be established, poor people's use of more water of better quality promoted, and water savings imposed on non-poor water users.*
- *Pollution of surface and ground water should be prevented, applying the Polluter-Pays Principle, retroactively. Governments and international agencies should approve new water policies and programs by national and international agencies only after an ex-ante assessment indicates a positive impact on poor women's and men's water use, and should also monitor and evaluate the implementation.*

Women's water businesses should be promoted through women's active inclusion in infrastructure development programs and water users associations for productive water use.

ANALYSIS

- *Linkages between poverty, gender, and water in different contexts need to be systematically analyzed as a basis for designing pro-poor policies.*
- *Constraints and opportunities of different water technologies, targeting to enhance poor people's access to water, inclusive organizational designs, competitive water markets, and stepped pricing systems for poverty alleviation need to be studied and tested in varying contexts.*
- *The potential impact of water-related anti-poverty strategies needs to be assessed in the context of overall economic development and off-farm employment opportunities for the poor.*
- *Research is needed to assess the impacts of competition for water on poor people and their coping strategies, including arrangements that safeguard their access to water resources and that stimulate non-poor water users to adopt measures for water saving.*
- *If water is scarce, options for productive water use in on- and off-farm employment in rural and urban areas needs to be evaluated in terms of 'jobs per drop for the poor'.*
- *The conditions under which women's irrigated businesses can be promoted and under which women can effectively participate in water management institutions at scheme level and basin level need to be further identified.*

WATER WISE MOVEMENT

Information exchange, dialogue, capacity building, and training on strategies to combat water deprivation need to be promoted among poor women and men, other water users, urban and rural local community organizations, civil societies, private water delivery enterprises, government agencies, and researchers from all water sectors, from local to international levels and from user-level to policy-level. Water users who carry buckets now will be basin managers tomorrow.

ANNEX. THE DISTRIBUTION OF IRRIGATED LAND

For 20 developing countries data are available on the extent to which smallholders' land is irrigated, compared to the national percentage of irrigated land. In 11 countries, the percentage of area that smallholders irrigate out of the total area that smallholders cultivate is lower than the national percentage of cultivable land that is irrigated. In the other 9 countries, the percentage for smallholders irrigated land is equal or higher. The proportions of the absolute irrigated areas are much stronger skewed, because of inequities in land distribution. So the absolute area irrigated by considerable numbers of smallholders is much smaller than expected on the basis of the national average. If irrigated area is used as a proxy for water use, few larger holders use the bulk of water. The opportunities for wealth creation with water in the rural areas have largely been exploited by the better-off.

TABLE 2 - *Distribution of irrigated land according to holding size (1988)*

Country	*Smallholder farmer population (percentage of rural population) (i)*	*Share of smallholders in total arable and permanent crop land (percent)*	*Area irrigated by smallholders as percentage of total area cultivated by smallholders (ii)*	*Area irrigated by smallholders as percentage of nation's total cultivable land*	*Total irrigated area as percentage of nation's total arable land*
	A	*B*	*C*	*D = B*C*	*E*
Bhutan	*76*	*25*	*12*	*3*	*31*
Bolivia	*45*	*13*	*37*	*5*	*6*
Ecuador	*58*	*8*	*47*	*4*	*18*
Guatemala	*47*	*20*	*2*	*0*	*8*
Haiti	*81*	*63*	*4*	*3*	*13*
Jordan	*16*	*7*	*20*	*1*	*20*
Lao, PDR	*75*	*60*	*2*	*1*	*14*
Madagascar	*70*	*62*	*31*	*19*	*35*
Mauritania	*?*	*41*	*12*	*5*	*25*
Morocco	*36*	*11*	*15*	*2*	*15*
Nepal	*66*	*55*	*25*	*14*	*39*
Niger, The	*23*	*13*	*4*	*1*	*2*
Nigeria	*83*	*71*	*3*	*2*	*1*
Pakistan	*?*	*14*	*76*	*11*	*73*
Philippines	*40*	*37*	*19*	*7*	*28*
Sierra Leone	*30*	*11*	*25*	*3*	*6*
Somalia	*21*	*11*	*8*	*1*	*18*
Swaziland	*77*	*60*	*2*	*1*	*33*
Thailand	*41*	*21*	*16*	*3*	*23*
Yemen AR	*67*	*50*	*18*	*9*	*23*

Source: Jazairy et al. 1992 (A-D) and FAOSTAT 1988 (E)

(i) Note that Jazairy et al use 3 hectares as the cut-off point for "smallholders", which is high.

(ii) The cut-off points for 'smallholder' used in these particular studies are not known.

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2. RESULTS OF MAINSTREAMING GENDER IN VISION 21

IRC International Water and Sanition Center, Jennifer Francis & Teun Bastemeyer

IRC International Water and Sanitation Centre was responsible for mainstreaming gender in the Vision process particularly in the sector consultations on water supply and sanitation - Vision 21.
Gender ambassadors participated in regional consultations of Vision 21 in Africa, Asia, Latin America and the Caribbean to ensure sufficient attention and strategic application of Gender Mainstreaming within regional visions for the 21st century.

The results of the discussions and outcomes of the Vision 21 regional consultations pertaining to gender mainstreaming are presented here below. It must be noted that these outcomes are placed in the framework of strategies required for immediate follow-up after the 2nd World Water Forum.

2.1. MAINSTREAMING GENDER IN THE VISION AND IN THE FRAMEWORK FOR ACTION: MOMENTUM GAINED

- *The process of mainstreaming gender has so far been successful and a lot of momentum has been gained. The human dimension, where every woman and man must have access to water and food, but also be responsible for ensuring maintenance of the integrity of the ecosystem, has been integrated in the Vision.*
- *However, how to achieve a situation where burdens, benefits and responsibilities will be shared more optimally so that all women and men irrespective of their age, status, economic levels, religion or culture have equal opportunities, will be a question asked more frequently over the coming years.*
- *Ensuring that all women's and men's concerns, needs and experiences are an integral dimension of integrated water resources management, is the challenge for achieving greater efficiency, greater effectiveness, improved environmental sustainability and greater equity.*
- *Many more women and especially men in key positions at the international level are now sensitive to the message that sharing burdens, benefits and responsibilities makes a difference, and are willing to contribute to putting this into practice.*
- *Most politicians support the principle of equity, but few are able to translate this into practice. They need assistance in embedding gender and equity practices into legislation, policies, decision-making processes, and technology choices that ensure equitable participation of all interest groups.*
- *It is expected that through the Framework for Action, the following will transpire: There is a need to advocate the gender and equity principles and show how it works in practice when "Investing for the water future".*

Although gender sensitive approaches have been encouraged to be applied in programmes and projects over the years, many sector professionals are battling with the concept and definition of gender, which still requires refinement, based on socio-cultural understandings of each region. The following message is recommended for sector professionals to use as a basis for further refinement of the definition suitable for each region.

THE MESSAGE

- *Gender is not the same as women.*
- *Gender refers to women and men: the culturally attributed roles, responsibilities and rights of being "male" and "female".*
- *The roles, responsibilities and rights available to women and men are also determined by the differentiation of women and men in age, economic level, status, and religion and ethnic group.*
- *Gender is not a western concept, it is universal.*
- *Gender relations is a human construct. It is not static, but changes and is changeable made by women and men themselves.*
- *Equity refers to fairness and impartiality so that women and men should have equal opportunities and benefits irrespective of their age, economic status, culture and ethnic, tradition or religion.*
- *Actions and programmes are more effective and efficient when integrating gender and equity practices and have a higher percentage in achieving sustainable impact on the well being and development of all people.*
- *Gender specific analysis at all levels and involving all stakeholders has proved to be effective as a joint learning process whereby new opportunities and alternative ways of working towards common goals are identified.*
- *Knowledge gained through gender specific analysis gives impetus to changed attitudes and practices for greater equity.*
- *Changing practices for greater equity results in more logical sharing of burdens, benefits and responsibilities and makes mobilisation of human resources and capacity building more effective.*
- *Examples of success are effective advocacy and training tools. However, more are needed to translate lessons learned into practice on a wider scale.*

2.2. FROM PRINCIPLES AND THEORY TO PRACTICE: TOWARDS ACTION

SEIZING THE OPPORTUNITIES NOW: THINK BIG, ACT SMALL... AND STIMULATE SYNERGIES

Mainstreaming gender in the vision and the organisation of the main group and other events on gender have offered a unique opportunity to take stock of the knowledge and experience available, and to show good examples. Various good cases from all regions, on how to embed gender and equity into policies and programmes and integrated water management at local level have been identified and will be presented during the Gender Day at the Forum.

Sharing this knowledge and experience helps to devise the strategies for the future, and to identify the actions that can be jointly undertaken as of today. These actions should aim to help all stakeholders, governments, NGO's, municipalities, water agencies, and the women and men therein to share their roles and responsibilities optimally and create the synergies needed to face the challenges of the coming decades. For this it is important that the principles and theory of gender and equity (as summarised in the box) are politically endorsed. The message on gender and equity should be advocated coherently making it easier for political leaders to encourage the professionals and their networks to help introduce and replicate gender and equity practices in integrated water resources management.

PRIORITY ON BUILDING CAPACITIES TO USE AND REPLICATE LESSONS LEARNT

Many organisations and programmes now realise that it is necessary to address gender and equity issues. The main reason for not giving this higher priority is that they lack the know how to mainstream gender and equity practice as an integral dimension of design, implementation, monitoring and evaluation of policies and programmes. To enable this required change, women and men working in these organisations need to have access to information, tools, methodologies and learning experiences as well as opportunities for advisory or training support to build their capacities.

More effective and professional networking and information management would make it possible to establish a collective memory bank and knowledge base. Such a memory bank and knowledge base would make organised information about good practices accessible. Furthermore, it should facilitate the use of this information in specific political, historical and cultural contexts. Added to this, it would enable organisations and people in different sub-sectors to better share knowledge and achieve integrated water resources management.

Presently, there is no such organised global memory bank and knowledge system. There is just lobbying and advocacy by different organisations and groups. It is therefore necessary to give higher priority and to pledge financial resources for the establishment and organisation of effective and professional sector support capacity, to translate the principles and theory of gender and equity into practice on a much wider scale.

'This is a pre-requisite for effective and sustainable integrated water resource management, for the achievement of the vision for the 21st century'.

2.3. MAIN STRATEGIES FOR CONCERTED ACTION ON MAINSTREAMING GENDER FOR EQUITY AND SUSTAINABILITY AFTER THE FORUM

- *Transforming gender and equity theory into practice through the synthesis of knowledge, experience, tools and devices.*
- *Embedding relevant gender and equity practices in policies and programmes, through piloting in countries.*
- *Replicating gender and equity practices on a wider scale, building on lessons learnt from the pilot programmes.*

It is recommended that during the 2nd World Water Forum through the Gender Day, a steering committee of interested partners from all sub-sectors be established to commit themselves to the follow-up action required for mainstreaming gender in the 21st century. The main responsibility of this steering committee will be to work out the detailed action plans to translate the strategies presented below suitable to the needs of each region.

The desired situation and possible actions for follow-up are presented in the table below.

STRATEGIES	*Transforming gender and equity theory into practice programmes*	*Embedding gender and equity practices into policy and*	*Replicating gender and practices on wider scale*
DESIRED SITUATION IN 2010	*Gender and equity knowledge, experience, tools and methodologies available and organised for integrated water resources management legislation, policies and all programmes for IWRM*	*Equal opportunities in dialogue and decision making become an integral dimension of design, implementation, monitoring and evaluation of*	*Enhanced IWRM through good practice of equitable sharing of roles, responsibilities and decisions.*
LINES OF CONCERTED ACTION *(To be worked out in furtherdetail during the Forum)*	• *Forming group of NGO's and resource centres into a professional alliance and information network on gender and equity.* • *Collecting, documenting and organising information about existing good practices of gender and equity in IWRM* • *Inventorise, develop, test and adapt tools, methods and devices* • *Develop modules and manuals for training at various levels* • *Participatory learning action research on gender in IWRM* • *Training of trainers, planners, managers and decision-makers for use of the tools, methods and devices.*	• *Identify organisations and programmes interested in piloting* • *Carrying out national level gender and equity analysis* • *Determine opportunities for change with stakeholders at sub-national levels* • *Setting national targets and milestones for change* • *Implement capacity building programme for use of tools, methods and devises at appropriate levels.* • *Implement pilot programmes* • *Document and disseminate the processes and results of pilot programmes*	• *Political lobbying and advocacy for increased use of gender and equity practices in IWRM* • *Identifying new organisations and programmes interested in applying gender and equity practices* • *Capacities building at appropriate levels for use of tools and methods.*

3. RESULTS OF GENDER MAINSTREAMING IN THE WATER AND NATURE SECTOR

IUCN Social Policy Programme, Cristina Espinosa

Mainstreaming a gender perspective in water management is an important step in achieving people-centred conservation. IUCN's involvement in the World Water Vision process confirms its its commitment to integrating social equity in conservation. Linking social equity, diversity and security with environmental security and sustainability is central to IUCN's Mission and to its program, which is to assist societies throughout the world in ensuring that the integrity and diversity of nature is conserved and that any use of natural resources is sustainable and equitable.
The Social Policy Program, in collaboration with the Freshwater Initiative, moved the discussion of water issues from a narrow focus on physical scarcity, to considering the social structures shaping unequal access, control and use of water resources. Social hierarchies such as gender, class, ethnicity, North and South, local and national interests, among others are necessary in order to understand how decisions are made within countries, communities and households, and other social and economic institutions affecting the use of water and natural resources. There is a need to address the fact that environmental degradation and water scarcity, as well as pollution among other problems have a severe impact on these different social groups. Unless these social differences are addressed and reduced, any initiative to enhance environmental sustainability of water management will lack social sustainability and will serve to further sharpen social inequities. Since gender is one of the most relevant hierarchies affecting water management, especially within households and communities, mainstreaming gender within water management is an important step in enhancing social equity.

The Vision exercise's efforts also fit within IUCN's focus to promote equitable sharing of costs and benefits (both material and non-material) from natural resource management, among different social groups, with an explicit focus on gender, and other variables of social differentiation (ethnicity, class, age, among others).
One of the main bottlenecks to mainstreaming gender and social equity within conservation and natural resource management, is the lack of empirical evidence showing the connections between gender, natural resource management and environmental dynamics. For instance, for the case of water, the lack of case studies is a clear constraint. For this reason we have to expand partnerships with academic institutions with expertise on gender and natural resource management (IUCN and the University of Florida have already signed a collaborative agreement). We have also developed a proposal to establish a clearinghouse on gender and water. This clearinghouse service will better link field practitioners, academics and policy makers focused on the interactions between gender and the diverse aspects of water management.

3.1. BACKGROUND

IUCN took the lead on the Water and Nature Vision, part of the World Water Council's Vision for Water, Life and the Environment in the 21st Century (or World Water Vision).
IUCN's Social Policy Programme (SPP) was also commissioned by the World Water Vision Unit to mainstream gender in the Water and Nature Vision. The following activities were developed: They started early collaboration with the Technical Co-ordinator of the Water and Nature Vision, to ensure that social and gender equity were mainstreamed in the consultations, discussions and vision drafting.

SPP made a presentation to the IUCN staff (including the principal authors of the Water and Nature Vision) about the outcomes and discussions of the Vision Unit's Gender Writing Sessions (August 1999, Stockholm). SPP ensured that gender issues were raised and discussed with the principal writers. One of the meetings involved an in-depth briefing of the gender mainstreaming document entitled, "Mainstreaming Gender in Water Resources Management".

Following discussions with the main writer, SPP submitted a two-page document highlighting some specific gender issues related to freshwater management accompanied by a summarised case study describing the importance of incorporating gender into freshwater practices. This was subsequently included in the Vision document following several discussions and revisions by SPP and the principal authors together. SPP also gave several references to other valuable documents and papers. In addition they, consulted with its network within and outside IUCN and ensured that those interested or involved in gender issues liaised closely with the Water and Nature Team. In addition they reviewed and closely followed the drafting process and ensured that gender equity was incorporated.
SPP circulated the second draft to the Vision Unit's Gender Mainstreaming Team, the Gender Advisory Committee, and to IUCN Gender Mainstreaming Team.

During the two-day Water and Nature drafting meeting, held in Gland during October 26-27, SPP provided critical input on issues related to gender and social equity for the sections on economic security and environmental security. SPP reaffirmed issues raised in previous meetings with the authors and held several informal discussions with the authors and made several suggestions on potential improvements. For example, SPP raised issues of unequal access and control over resources and that water rights are often tied to land tenure arrangements, which are often transferred with land. Thus, although women may be using water and working on land, they very often have no right to participate in organisations that make decisions regarding management.
SPP briefed the principal authors of the comments provided by the Gender Advisory Committee.
Following up on the drafting meeting, SPP is providing critical input to documents related to the Water Vision, such as those developed by the World Commission on Dams.

3.2. A GENDER APPROACH TO FRESHWATER ECOSYSTEM MANAGEMENT

(The following text has been submitted for integration into the Water and Nature Vision)

Many areas of the world face water stress, millions of people die annually from water-related diseases, and both the need and demand for water continue to escalate. The finite and vulnerable nature of water creates competition and conflict among different users. Water has also become a strategic resource, because it is a source of power, a key to economic development and can be a trigger to socio-political stress. Gender relations shape most use and management practices of water resources, and men and women make different contributions to the family, community and society. In most societies, gender relations are not balanced and women often make their contributions with unequal access to, control over, and benefits from, resources. As a consequence, it is imperative that the struggle to build greater socio-economic security and change current water use practices includes an in-depth understanding, analysis and work on the socio-economic and institutional mechanisms through which different user groups gain access to, and control, water resources.

Understanding the role of gender in water resource management requires attention to the complex relationship between productive and domestic uses of water, to the importance of participation in decision-making processes, and equitable distribution of benefits and costs. A gendered approach to water management would ensure that the complimentary nature of men's and women's roles and responsibilities is mobilised to the best possible effect, and that the creativity, energy and knowledge of both genders contribute to making projects and water schemes work better. Broader and more equitable participation in planning, implementing and decision-making processes will ensure that benefits and costs of water use accrue more equitably to all groups and people, which in turn can help resolve potential water conflicts, social insecurity and improve strategies for water conservation, pollution protection and demand management.
To create favourable conditions for more equitable and sustainable water use and management practices, gender equity concerns need to be integrated in policies, programmes, administrative, financial activities, and in organisational procedures at the global and international level. It also requires organisations to address the ways gender inequity has been manifested or is latent within their structures and procedures. At the regional and national level more emphasis must lie on empowering local communities, and on facilitating situations whereby all users have greater control over their lives and greater choices about how they will respond to challenges.
A gendered approach at the local level would provide more effective mechanisms for men and women to recognise and re-value

existing patterns and to look for possible actions to improve the balance of work, control and benefits over resources. The following case study from Tanzania highlights how identifying obstacles to broad and fair participation in resource management is fundamental to sustainable and equitable resource use.

A GENDERED APPROACH TO MANGROVE PROTECTION IN TANZANIA

Mangroves are often treated as non-renewable resources although they are a highly productive renewable resource under appropriate management, providing a sustainable supply of food, timber and fuel for human use. The sustainable use of freshwater resources in many coastal zones and delta's depends on the degree to which mangroves are protected and managed in a sustainable way. In the Tanga coast of Tanzania mangrove degradation is a serious ecological problem. In 1996, an IUCN-integrated coastal management programme initiated a project as part of an effort to help local people find more sustainable ways to use their coastal environment and protect the mangroves, which are vital for protection of freshwater resources in the area.

Up to 1998, women were among the poorest in the village and owned and controlled few resources. After identifying the obstacles to women's participation in the meetings to discuss new strategies for sustainable use of the local mangrove and freshwater resources, new forums were convened which brought together men and women of the village to discuss the issues.

Despite the potential conflict between the struggle to achieve gender equity and the need to reduce fishing pressure by developing alternative livelihoods, the programme has in general had positive results. In the pilot villages, both the environmental committees and village management committees are more gender-balanced today. Levels of gender awareness, participation and motivation have increased women's self-confidence and some are now even actively participating in typical male activities like village patrols. The situation improved gradually as the women gained self-confidence after participating in training courses, workshops, and study tours and seeing the results of their activities. Women are now engaging in planning, monitoring and evaluation activities and they are actively participating in the formulation of a fisheries management agreement. Illegal mangrove cutting and destructive fishing practices, including dynamite fishing, have declined through the enforcement efforts of the villagers themselves, and there is a voluntary mangrove replanting and weeding programme.

The main message from this project is that a gender approach in water projects can be a very effective instrument for achieving sustainable use of water resources, thereby protecting valuable resources, while promoting social security, sustainable livelihoods and combating inequities and poverty.

3.3. A CLEARINGHOUSE ON GENDER AND WATER MANAGEMENT

The lack of adequate sharing of information, resources and expertise on how gender interfaces with the different aspects of water management (food production, sanitation, nature and ecosystems, etc.) was identified as an important gap within the Vision project. The need to develop a clearinghouse on gender and water management was discussed and IRC expressed interest in partnering such a service with IUCN. Responding to this need, IUCN SPP developed a concept paper on a gender and freshwater clearinghouse and began discussions with the principal authors of the Water and Nature Vision, IRC and others involved in the consultation process. Following a positive reaction from all of the above, SPP developed a full proposal called "A Gender and Freshwater Management Clearinghouse Service". This proposal aimed to initiate interest among the main stakeholders in the Water and Nature Visioning process and will be presented at the Second World Water Forum and Ministerial Conference in March 2000.

3.4. ASSESSMENT

The success of the mainstreaming process has been restricted due to the lack of empirical material on the interactions between gender and water management for conservation and sustainable use of natural resources. Most examples of case studies have been developed in the context of irrigation or agriculture projects. We felt that our conceptual understanding of gender and water management issues in the context of conservation, was not backed up by empirical evidence, that would convince the authors of the need to include the suggested issues at the conceptual level.
This constraint made us focus on developing the concept and proposal first so as to establish a Clearinghouse Service on Gender and Water Management.
This constraint encouraged SPP to expand its partnership with academic institutions, so that it can have better access to the empirical research results needed to illustrate the connections between gender, conservation and natural resource management.

RECOMMENDATIONS

- Strongly support the Clearinghouse Service on Gender and Water Management;
- Further promote the involvement of researchers and field practitioners in the process, in order to better capture the empirical diversity of situations in which gender and water for nature interfaces;
- Allocate more staff time for the process of mainstreaming gender in draft documents and in the consultation process.

CHAPTER TWO

GENDER MAINSTREAMING IN THE NETWORK CONSULTATIONS

A Way Forward

1. BOTH ENDS FEEDBACK ON GENDER, POLITICS AND PARTICIPATION:
A summary of views and considerations which surfaced during the NGO Water Vision consultations[5]

Stefanie Jeukens, Edit Tuboly, Paul Wolvekamp, Danielle Hirsch

During the World Water Vision process Both Ends focused mainly on Integrated River Basin Management, thereby taking the angle of local people's livelihoods, with special attention for the position of women. To follow is a summary of perceptions and considerations, notably from a gender perspective, which surfaced during the various consultations. These can be presented under three main headings, namely: 1) Economic politics; 2) Political decision making; and 3) Knowledge and Technology.

1.1. ECONOMIC POLITICS

The conditions of most river basins in both the North and the South reflect the distribution of power and the dominant socio-economic trends in society, which directly affect gender conditions. Analysing the recent history of river basin planning, one has to conclude that decision making has predominantly been determined by:

- *The notion that "development" is to be achieved through economic growth; and that natural resources and ecosystems are considered as exploitable goods/commodities.*
- *The principle of "eminent domain": the state has a legitimate right to override local objections and expropriate private or communal property in the name of 'national interest'.*
- *Insufficient opportunity for meaningful participation by local stakeholders, in particular women and disadvantaged groups.*

There is a strong bias towards centralised and capital intensive structures to transfer water to fulfil the perceived national demands[6]. These large scale, sectoral interventions fail to protect the fundamental social and ecological functions of rivers and watersheds. National demands are often being fulfilled at the cost of local demands and often lead to gender imbalances to the detriment of women and their households[7].

The notion that "development" should be achieved through economic growth and that natural resources and ecosystems are mere commodities dominates. During the NGO consultations it stands out, however, that local people who have sufficient access to natural resources to meet their basic needs, generally do not consider themselves poor. Therefore, integrated water management should focus on 'sustainable livelihoods' and enhancing quality of life, instead of the reduction of poverty in narrow monetary terms.

From a gender perspective, the tendency towards the establishment of markets as the major mechanism of water management is a serious cause for concern. While accepting that access to water increasingly becomes a function of access to money, existing income distribution mechanisms are accepted implicitly. However, due to skewed income distribution mechanisms, financial resources are often gender differentiated, often with negative consequences for women. Accepting the "ability to pay" as the primary rule for water allocation might very well lead to serious discrimination of women. Thus, whilst they might be willing to pay for improved water services and management, they might personally be unable to commit resources to their priorities. In times of need their willingness to pay will increase exponentially, as they are risk managers to unexpected and life threatening situations.

In fact, the daily activities of hundreds of millions of women, in terms of water management, are among the greatest non calculated input to what one could call a "free riding" economy.

[5] *This report has greatly benefited from the views, writings and personal comments of a.o. Margreet Zwarteveen, S.T. Somashekhare Reddy, Linden Vincent, Vijay Paranjpye, Patrick McCully, Narasimha Reddy, Marcus Colchester, Sandra Claassen, Irene Dankelman, Malia Bouayad, Gemima Cabral Born, Daoud Tari Abkula, and Jennifer Francis.*

[6] *In this respect, dams, navigation channels, flood control and irrigation structures are the most obvious signs of intervention in the flow of rivers.*

[7] *Disadvantaged groups all over the world experience the 'enclosure' and degradation of their commons due to privatisation and other interventions in river basins.*

RECOMMENDATIONS

- *The degree to which gender considerations and people's livelihoods are being met should be accepted as a major benchmark to judge success or failure of interventions at any scale.*
- *The promotion of more equitable gender arrangements will enhance the survival of whole households and local economies. That is why the workings of these gender arrangements need to be understood at both the micro level and at higher levels, such as watersheds and river basins*[8]*.*

1.2. POLITICAL DECISION MAKING

Serious clashes over large river infrastructure projects have sharpened the general controversy regarding the conflict between local needs vis-à-vis national needs and international demands. River basins all over the world are subject to serious manipulations - e.g. canalisation, impoundment, pollution, poldering, and ground water extraction. Under such conditions there is insufficient opportunity for meaningful participation in decision making in river basin planning. The enforcement of such major interventions are legitimised, however, by the assumption that growth and development in general, no matter who determines it and how it takes place, or no matter what scale or technology is used, will eventually lead to wealth and income generation which will trickle down to satisfy the needs of the poor. Unfortunately, this trickle down approach is failing, and gaps between the 'haves' and 'have nots' have increased extensively over time[9].

Although increasing lip service is paid to 'participation' and 'gender aspects', a number of obvious and more insidious factors limit effective participation by women and other disadvantaged groups:

- *Opposition by 'the powers that be';*
- *a misplaced sense of consensus;*
- *lack of (eco-)systems approach (sectoral instead of holistic);*
- *top-down planning;*
- *standardisation of institutions;*
- *planners are plagued by 'blind spots';*
- *lack of information sharing and accessibility*[10]*.*

RECOMMENDATIONS

- *Governments, donors and scientists should link up with local initiatives and give primacy to understand and promote better gender arrangements in water management.*
- *Alternative strategies to large-scale water infrastructure schemes should be presented and developed during the earliest stages of the decision making process. As a rule, both women and men should have equal acces to information on water availability and water use priorities. All relevant information should be made available to all stakeholders. International development agencies and the private sector should reject a top down approach and establish a bottom up approach.*
- *Before introducing new legal and institutional measures, these should be scrutinised for their different impacts on men and women and how they will affect their distinct rights and responsibilities in water management: notably regarding land tenure, choice of corps, technology, and individual and collective work arrangements. Political recognition and security of local land and water rights as the basis for ecosystem preservation and the well being of local people is vital. At the same time, the empowerment of women, and the promotion of gender equality, may require progressive legal reforms that enable women to obtain more and better rights than they currently have*[11]*.*
- *It is crucial to pay more attention to the degree of gender sensitivity of existing and newly created institutions and the adequate representation of women therein. Households are important in day-to-day water management. It is on this level that gender biases can be solved effectively. Policy makers and researchers should focus more on changes at this level.*
- *Gender related criteria and indicators should guide both the assessments of (potential) impacts and decision making regarding existing and new water development projects. Notwithstanding compensation, interventions in land and water resources with substantial (direct and indirect) negative impacts on women and their positions are unacceptable.*

[8] *Better understanding of gender roles will give better information about water uses, and will enhance the effectiveness of institutions for water management.*

[9] *E.g. see the subsequent UN Human Development Reports.*

[10] *See "Towards People Oriented River Basin Management. An NGO Vision". By Both ENDS et al. February 2000 (www.bothends.org/agenda/watercont.html)*

[11] *It should also be acknowledged that traditional or customary right systems can be highly gender skewed.*

1.3. KNOWLEDGE AND TECHNOLOGY

Modern techniques[12] have certainly contributed to the improvement of food security, welfare, better health conditions and political influence of selected groups of people. At the same time, however, these are also a major cause of the collapse of numerous local systems of natural resource management, which were socially and ecologically well embedded. Consequently, an increasing number of people are at risk of loosing their livelihood, without any assurance that they will enjoy the opportunities and facilities offered by modern society. This has also directly affected the division of labour, rights and responsibilities between men and women.

In all parts of the world, women are key water managers. And yet, their expertise, hydrological knowledge and intricate survival strategies are rarely considered. At present, their local techniques tend to be neglected because they are difficult to locate and even more difficult to comprehend in terms of modern development co-operation jargon. Also, since their techniques are usually small-scale initiatives, they are not amenable to institutional funding or integration in large-scale development initiatives. There is, however, most often a proven need for small scale technologies, based on existing management capacities and on currently existing or re-established local management systems.

RECOMMENDATIONS

It is essential to support the inventory and recognition of local and indigenous knowledge - of which both men and women are the guardians - and to start more systematic inventories of existing approaches to water management. "Appropriate" technologies, which fit the socio-economic and cultural context, stand the best chance to succeed and benefit the disadvantaged.
Technologies should ideally be instigated by the people who apply them and will benefit from them The people in whose name technology is being installed should willingly accept it and participate in its implementation; where they are not, the supposed beneficiaries - men and women - must understand what the technology is, how it works, and who stands to benefit and who it stands to hurt.

[12] *E.g. mechanised pump sets, high yielding varieties.*

2. IIAV FEEDBACK FROM WOMEN ORGANIZATIONS: TOWARDS A GENDER 21

Joke Blom, Niala Maharaj, Lin Pugh

These recommendations were generated on the basis of an international networking exercise among women's groups, carried out between October 1999 and January 2000, by the International Information Centre and Archives for the Women's Movement (IIAV).
IIAV was asked by the World Water Vision secretariat in Paris to stimulate discussions with global women's networks on future directions and strategies for water management. This initiative was undertaken as part of IIAV's Knowledge Sharing Programme, which aims to develop the use of new, as well as traditional technologies, so as to increase 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 listserver to facilitate fast communication, and had our materials disseminated through a wide range of websites and other electronic fora.
The result of this activity is collected in this report. The main concern of our networks was to have their views heard by the Ministerial Conference in March 2000.

We hope that the relevant decision-makers gathered at this conference will take careful account of the views and recommendations, listed below. Effective and sustainable programmes for better water management at a global level cannot be achieved unless they take into consideration the interests and concerns of all sections of the world community.

INTRODUCTION

Women produce 80% of the food consumed in the poorest parts of the world and in some places 95%. For this they need water. They spend up to eight hours a day finding water resources, collecting water, storing it, and purifying it – all part of their $11 trillion dollar unpaid contribution to the world economy. Women negotiate with their neighbours for access to water, evaluate water resources, 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 women, for they often have little 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. They are responsible for family welfare in both urban and rural areas. 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 infants and the sick.

In many parts of the developing world, women are the sole breadwinners for 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, but often the cause is due to the migration of men to cities in search of paid work. Increasingly, women have to provide for all necessities of their children and the elderly. Increasingly, women are amongst the poorest of the poor.
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 the same as the production of a handful of rice which is all a family in the developing world may have to eat?

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 persons. Water has always been the basis of human civilisation. Today, our deliberations over managing the earth's water supplies can serve as a base for future civilisations. 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.

The women from developing countries 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 world's rivers. 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 gourmands 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. Hence, any new plans for global management of water supplies must respect the integrity of poor women's livelihoods. Plans 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 truly want to make water everybody's business, if we want all water users to take responsibility for protecting and conserving the earth's water resources, then we have to ensure that everybody is able to participate. 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 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 powers of nature can play their part.

RECOMMENDATIONS

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 ensuring that households, small family business and large enterprises are 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 input to 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 ensures 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 resources, 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 monocropping 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 resources. 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 worldwide.

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-disagregated 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.

3. UNIFEM GRASSROOTS FEEDBACK

Aggrey Chemonges, Regional Consultant UNIFEM Africa

This study was part of the global process that sought to mainstream gender perspectives in the World Water Vision. It covered the countries of Eastern, Central and the Horn of Africa whose vision is a region in which everyone has access to safe, sufficient and affordable water within reasonable walking distances for domestic use. A region where women and men have equal rights of access to water for drinking, crop and livestock production, sanitation and improved incomes while ensuring the integrity of ecosystems.

THE MAIN RESULTS OF THE STUDY WERE THAT:

- *There is still inadequate supply of safe and affordable water within reasonable walking distances from homes in the rural areas.*
- *There is inadequate sanitation facilities and hygiene education in both rural and urban areas.*
- *The poor in urban areas, especially women, continue to pay more for water and sanitation services.*
- *The female-male disparity in socio-economic status is widening and has led to the unequal division of burdens, decisions and benefits in the management of water resources.*
- *The presence of women on water management committees alone does not assure them of a user voice and choice in the planning and implementation of the water projects.*
- *Appropriate and affordable technological options in sanitation are not readily available to the poor in both the rural and urban areas.*
- *Women are interested parties in the management of water resources because the responsibility for domestic water supply including water collection, storage, utilisation, sanitation and hygiene practices depends on them.*
- *Though a majority of water projects purport to be demand-driven with community participation in service initiation, choice of technologies and service levels, the reality is that most decisions are still taken by external support organisations.*
- *There is now recognition of women's knowledge, interests and skills in water resources management. The increasing number of women pumps mechanics, women water vendors and women committee members attest to this.*
- *Women are not yet systematically incorporated in the water resources management in an appropriate manner. Due to lack of streamlined gender efforts, the recognition of their involvement and participation is often, still at a theoretical level. This insufficient level of gender awareness is caused in part by both implementing agencies and the societies at large.*
- *Other than the recent sector initiatives of the demand responsive approach and the Participatory Learning Action, there is insufficient formulation of participatory methodologies, which indicate and measure the degree of women's involvement and participation in water resources management.*
- *There is inadequate capacity building for women in terms of training, material and finance, which can ensure their meaningful involvement and participation in water resources management.*
- *The existing institutional arrangements do not recognise the necessity of focal points responsible to implement, monitor and evaluate the degree of women's participation both at the regional and community level. Also missing are the systematically formulated information exchange systems at the two levels.*

A Way Forward

DIRECTIONS FOR THE FUTURE

- *Some countries like Uganda, Eritrea and Ethiopia have already formulated gender policies and can, therefore, share their experiences in this regard.*
- *There are participatory tools and methodologies available that should be shared and put to better use.*
- *Affirmative actions on gender imbalances, representation and benefits should be adopted as a number of countries in the region (for example, Tanzania and Uganda) have enacted them.*
- *The growing understanding and support for gender analysis and participation should be enhanced.*

QUOTES FROM GRASSROOTS WOMEN

- **ON EDUCATION**

"The education of our girls has been affected by lack of water because they are often taken out from school to help their mothers fetch water during the drought seasons".

- **ON HEALTH:**

"Every women and young girl in our community has a depression on the head due to carrying heavy loads of water on the back supported by a strap around the head".

- **ON TIME MANAGEMENT**

"A woman wakes up at 5:30 a.m. to start her daily chores. After waking up, she cleans herself, sweeps the kitchen and goes to milk the cows. Then she starts to prepare breakfast, which she serves to the family at 7.00 a.m.. Then she rushes to the river to fetch water coming back home at around 9.00 a.m. Soon after she goes to the farm where she works for three hours and comes back at noon, to start preparing lunch. When lunch is ready she serves it to the family members at around 1.00 p.m. After lunch, she rests for one hour while weaving her sisal basket. At 3.00 p.m. she goes to collect firewood and comes back at around 4.00 p.m. carrying yet another heavy load on her back. Soon after she cleans the utensils used during lunchtime and leaves for the river to fetch water. She gets back home at around 6.00 p.m. and starts preparing super for the family. Super is eaten at 8.00 p.m. and the children go to bed.

The woman now cleans the utensils used for supper and thereafter starts to weave her sisal basket. At around 10.00 p.m. the tired woman retires to bed".

The above quotations were from women of Wakililye Sub-Location in Kitui District - Kenya.

- **ON PUMP MAINTENANCE**

"The choice of women as pump mechanics was surprising to many people in Busia. It didn't occur to a man that a woman can know what he knows or learn anything".

"Many of the women were also surprised; women in Busia District were amazed that they could learn to do repairs. The spanner was a shock", recalls one young woman, "I never knew in my whole life I would hold a spanner".

Quoted from Women pump attendants in Busia District.

- **ON COMMITTEE MEETINGS**

"At the beginning of the project we listened to the men who did the talking. Later we gained courage and confidence and started to contribute during the meetings. Now we contribute equally and make decisions which affect the whole community".

Mwakuhenge Community in Kilifi District.

- **ON SANITATION**

"Our biggest problem is to get a clean place for the children and ourselves to go for long calls".

Women in the Kibera Slums of Nairobi

- **ON AFFORDABILITY**

"When water is scarce sometimes we pay Kshs. 20 for 20 litres of water from the Water Vendors".

Women in the Kibera Slums of Nairobi

4. MAINSTREAMING GENDER: GRASSROOTS REALITIES, DILEMMAS AND ASPIRATIONS

Gender Vision Synopsis Statement for South Asia, Amreeta Regmi, Regional Consultant UNIFEM South Asia

"A society, which has established sustainable, equitable and efficient use of its water resources fostering gender-balanced social, economic, environmental and economic lives".
Engendering the South Asia Vision, January 18-19, 2000, New Delhi, India

4.1. OVERVIEW

This synopsis is the culmination of diverse opinions and perspectives expressed by many individuals and a number of grassroots organisations from October 1999 to mid-January 2000. While this synopsis represents only a small fraction of their experience, it is hoped that what is reflected here captures the essence of their thinking and the concerns raised by them. These perspectives are to a large extent portrayed in the updated South Asia Vision and Framework for Action (FFA) documents.

An analysis of the underlying limitations of the current gender relations in water management in South Asia, both at the policy and at the grassroots level, implies that these practices directly influence and correlate with the social and economic development of grassroots women. Based on the information generated, various platforms for action are presented to manifest and validate critical needs and priority areas for the promotion of water security in the region by taking cognisance of the social and economic aspects of the grassroots women.

4.2. GENDER AND GRASSROOTS REALITIES

South Asia unfolds and validates a multiplicity of peculiarities inherent in this region. These peculiarities, which form the basis of ideological and societal biases, negate women's development in their capacity as individuals and change agents. The water resource management sector is no exception to the influences of these biases.

This region is known and often quoted as the least gender sensitive region in the world. The region's Gender Empowerment Measure, which measures the access to political, economic and social opportunities, stands at 0.23, and is the lowest value among all regions of the world. The disparity in human deprivation between South Asian men and women is reflected by the Gender related Development Index with a value of only 0.40 for South Asia 25 per cent lower than the average for other developing nations.

South Asia had one-fifth of the global population in 1999 and it is projected that by the year 2025, the region will contain about one-fourth of the total world population. Over 500 million people live below the poverty line, surviving on less than US$1 a day. In South Asia, 18% of the population lives without access to safe water and 64% without access to sanitation. Yet, the region has the staggering hydropower potential estimated at 250,000 megawatts for the Ganga-Brahmaputra-Meghna river basin alone, which, if properly harnessed, could transform the whole region.

4.3. EXISTING DILEMMAS

With water emerging as an "economic good", renewed challenges are presented when this concept is entrusted with "service delivery"; "demand driven" and "willingness-to-pay" components. For grassroots women, service delivery still signifies trudging up and down the source of the water; demand-driven adheres to the minimum daily household requirements and willingness to pay signifies the loss of her productivity, time and opportunity costs. Women at the grassroots are paying more for water, yet community employment of women in water resource projects tends to include women only in casual roles where they are not paid the same wages as their male counterparts.

Additionally, "markets" with unregulated pricing policies and protectionist structures (tariffs, customs, surcharges, licenses, quotas, etc), where very often water is subsidised to supply those who are privileged and can afford to pay the price, further marginalize the poor.

South Asian women constitute a major workforce in the region and predominate in the agriculture sector. With the need for increasing competition in "water markets" and shifts in the distribution of water in favour of low water use sectors, adverse impact on the lives of the grassroots is imminent. The adverse impact gets further compounded with a low literacy rate and the limited technological skills of women. This increases their risk of becoming marginalized and unable to benefit from new opportunities that arise from international policies and competitive markets.

4.4. ALTERNATIVE SCENARIO

Based on the projections and implications of demographic changes and the impact of globalization on the grassroots, the understanding of gender and water needs to be embedded within the overall social and economic development context. Water resource management cannot be confined to operate within the construct of either a social or an economic good but of one that coherently addresses both these values and meets both the strategic and practical needs of the grassroots. The social and economic aspects of water are not mutually exclusive but are expected to reinforce each other in the overall development of women and of water security.

- **SOCIAL DIMENSION OF WATER RESOURCE MANAGEMENT**

The cultural, religious and traditional values and practices are not neutral, and the impact of these values and practices on water resource management that currently prevail is very strong. These influences are seen as impediments and require addressing the associated issues through appropriate frameworks that can adapt to local contexts. Positive elements of such norms do exist. Grassroots initiatives and traditional practices in managing water that are eco-friendly and sustainable need to be supported.

Water resource management can benefit from a more concerted consideration of gender issues so that it leads to equitable social development of both men and women. The social fabric of gender relations and the variables that affect societies and communities in South Asia are bound with caste, class and income considerations, which overrule the hierarchical and patriarchal structures. These influences have to be taken into consideration in analysing and promoting women's participation and involvement in water resource management.

- **STRATEGIC ECONOMIC DIMENSION OF WATER RESOURCE MANAGEMENT**

The cost differential for men and women for livelihood security cannot be overlooked given the current status of women and their involvement in the agriculture sector. The projections of loss/gain due to anticipated shifts in migration patterns, differential purchasing capacities, access to capital, access to water and land, changes in the utilisation of water and household responsibilities negate women's economic rights.

Gender in water resource management is directly influenced by the shifts in water utilisation from agriculture to non-agricultural domains as well as its diversion to the comparatively higher income sources. The cost-benefit accounting of water resource management shows a negative trend if a woman's lost opportunity costs are taken into account. To promote women's involvement in water-related activities, the economic benefits from water should balance equally between men and women in both agriculture and non-agriculture sectors.

4.5. EMERGING ISSUES AND REQUIRED RESPONSES

New policies, plans and mandates will have a direct impact on the lives and livelihood of millions of women in the region. Continuous gender-related inequities in terms of unequal access to land, productive resources, information, technology, skills and training programmes will put South Asian women in a disadvantaged position. The thrust to rebuild and reorient based on the needs and aspirations of women requires a re-examination of water security issues. Critical areas for focus that have been highlighted include integration of gender in International Water Resources Management (IWRM) initiatives, governance structures/institutions, common property resource, water rights, water markets, gender and agriculture, options and choices in technology, traditional knowledge systems, groundwater management, water quality, capacity building and research/development. Required responses and actions for platforms are presented below:

- **STRATEGIC ACTIONS**

– *Formalising Affirmative Action: Appropriate legislation to enable affirmative action to ensure gender parity within decision-making bodies at all levels of society and institutions.*
– *Planning and Monitoring Tools: Mainstreaming gender to be carried out on an ongoing basis where IWRM programmes adopt gender analysis, approach, impact assessment and audit.*
– *Networks and Information Centres: Identification and formulation of advocacy and lobbying mechanisms such as `peer pressure groups' and networks with constituencies representing multi-stakeholder group.*
– *Appropriate Institutional Framework: Designing initiatives that are conducive to local contexts that encourage both the strategic and practical links between plurality of organisations at the local level.*

- **THEMATIC ACTIONS**

– *Gender Sensitive Legislation Regarding Water Rights: Delineation of land and water rights with the recognition of water as a common property resource. This may require separating land and water rights as statutory laws related to land rights are not the same for men and women in South Asia.*
– *Combining Innovative Solutions with Traditional Technology: Incorporation of traditional knowledge base, local wisdom and experiences in developing strategies and drawing best practices in IWRM initiatives for the future.*
– *Promotion of Women Friendly Technology: As users, providers, collectors and managers of water, provision for the choices and options to enhance gender needs.*
– *Recognition of Women as Farmers: Advocating for livelihood security, promotion of appropriate technology, credit schemes and all extension services associated with agriculture to be provided to women farmers.*
– *Water Pricing: Establishing pricing structures and norms that adjust to local community realities to protect the interest of those who cannot afford generic structures.*
– *Gender Training Programmes: Gender sensitisation training programmes for water resource managers and professionals at different levels of governance structures.*
– *Compensation and Safety Nets: Identification of alternative employment opportunities for women and compensation for loss of livelihood as a result of capital intensive infrastructure programmes (dams, inter-basin transfer, etc) on individual rights basis.*
– *Research and Development: Documentation and research to explore gender relations in water resource management and dissemination of best practice approaches.*
– *Gender Needs and Disaster Mitigation: Adoption of gender sensitive response in disaster mitigation and management by involving the affected community.*
– *Water Quality and Groundwater Management: Standardisation of procedures through a gender sensitive framework in distinguishing the quality of water through health awareness and by encouraging the grassroots to use local solutions for testing.*

4.6. PROCESS ANALYSIS

South Asia is one of the two regions that has applied a systematic approach to integrating the gender perspective in the Vision and FFA documents with the collaboration of South Asia Technical Advisory Committee and the Gender Ambassadors from this region. However, the integration occurred only towards the last phase of the exercise and only in Bangladesh and India, and within the regional process. Nepal, Pakistan and Sri Lanka were not able to involve UNIFEM in the formulation of their national vision. This is mostly attributed to the lack of co-ordination between different countries in the region where the national consultations overlapped or occurred too closely, making attendance at all meetings unfeasible. In some cases, the importance of effective communication did not predominate as a priority and thus information was not available. Differing views, receptivity and responses to gender mainstreaming in the South Asia Vision and FFA demonstrate the need for increased dialogue and improved communications to achieve viable water partnerships within the region. Further, it is important to emphasise that the involvement of the community, civil society organisations, implementing agencies and government institutions in policy formulation can provide solutions required to resolve issues related to their context, social needs and technical requirements.

CONCLUSION

The Vision document for India estimates that the water demands in 2025 will need increasing the water availability from around 520 Billion Cubic Meters (BCM) in 1997 to more than 1,000 BCM in 2025. Devising actions to meet such demands that simultaneously benefit the poorer communities will remain a formidable challenge for the Vision 2025. The scarcity and rising demand for water will require collective reflections and consultations to attain appropriate solutions. Moving beyond the limitations of individuals and organisations and constraints of financial resources and time encountered in this mainstreaming exercise, greater attention needs to be invested in democratic local processes. This consultative process will require the active participation of all grassroots stakeholders, including women and others currently marginalized.

The challenge for South Asia now is to carry forward the momentum of mainstreaming gender beyond The Hague and the 2nd Ministerial Conference so that gender and grassroots become important agendas for the Plan of Action in realising the gender vision 2025.

ANNEX - UNIFEM SASTAC MATRIX FOR GENDER MAINSTREAMING CONSULTATION FOR THE SOUTH ASIA VISION & FRAMEWORK OF ACTION

GOVERNANCE AND ENABLING ENVIRONMENT	INSTITUTIONS	CAPACITY BUILDING	INVESTMENT	TECHNOLOGY	INFORMATION	R&D
Legislation in place which provides an enabling environment for women.	*Gender parity in regulatory bodies*	*Need for change in the attitudes, Skills and knowledge of both men and women with respective to gender aspects.*	*Stress mobilising local resources and human resources.*	*Use of women friendly technologies and giving women choice in technological options in the water sector.*	*Access to information for all, men and women alike.*	*Increase initiatives to get women interested in undertaking research on water resources management*
Water rights for women, which are not linked to land rights.	*Focus on local level institutions.*	*Important to focus on capacity building in the private and public sector.*	*There should be adequate resource allocations for gender programmes and plans.*	*Greater networking and sharing of information and technological options in the South Asia Region. Women are repositories of this information and can help to share it with others.*	*Monitoring the gender aspects of all programmes and projects.*	*Inclusion of women farmers in research.*
There should be 50% representation of women in SASTAC with immediate affect.	*Systematic inclusion of women at the mainstream implementation level rather than hiring of women on a project by project basis in an ad hoc manner.*	*Gender sensitisation of men working in public sector organisations.*	*Gender audit policies, budgets and financial allocations.*		*Incorporation of traditional knowledge base, wisdom and experiences in developing strategies and drawing lessons for the future in integrated water resource management.*	*Focus on training of engineers in a manner that makes them aware of social and gender context.*

ANNEX

MAIN CONSTRIBUTORS TO THE GENDER MAINSTREAMING PROJECT

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- **Mwabungo Mwembeni Community group**
- **Maji kwa afya Bora group**
- **Similani Woman group**
- **Manufaa women group**
- **Roka women group**
- **Upendo women group**
- **Kibuyuni water group**
- **Zambia women group**
- **Mwembe Baa women group**
- **Mwenengo women group**
- **Korogocho water and sanitation project**
- **Mutirithi Andu water tanks project**
- **Longonot water supply project**
- **Simba water project**
- **Nyati water project**
- **Orinie water project**
- **Imurtt water project**
- **Sagana Maganjo water project**
- **Maka Green Growers water project**
- **Kigecha water project**
- **Kikuyu masanary water storage tank project**
- **Makukuba water project**
- **Tabata Development Fund**
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Remember Gender- It makes a difference!
Sharing burdens, benefits and responsibilities