

Why Gender Matters in IWRM: A tutorial for water managers

FULL RESOURCE DOCUMENT



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Foreword

Seven years ago, Cap-Net UNDP and GWA posed the question “Why should gender matter to water managers?” We attempted to provide some initial answers to this question by producing a self-learning tutorial aimed at water professionals that would demonstrate the benefits of including gender considerations in water management planning and practices. It intended to show how addressing gender would improve efficiency of water use and environmental sustainability. We were, and still are convinced that a gender approach brings significant social benefits and improves equity in use of water resources.

After seven years, the ‘Tutorial for Gender Mainstreaming in Water Management’ is due an update. We never travelled without at least 50 copies of the interactive CD version of the tutorial in our suitcases, and to date we have distributed about 7000 hard copies worldwide. The number of downloads of the full document is even higher.

This new edition does not differ in its gender approach, but is updated with new developments, new insights and recently developed processes. Like the previous version, the chapters deal with different gender and water themes, explaining why smart water managers should mainstream gender in their work. But in this version, the ‘how’ question is addressed more thoroughly, as we have included various tools, case studies, and references to useful websites and literature on promising practices, as well as examples of evidence of impact.

We have included a Quick Guide at the beginning of the tutorial, for ease of reference. We hope that technical water managers in particular find this tutorial helpful, but that others will benefit from its contents as well.

A group of high-level gender and water experts were involved in writing and screening the text and selecting photographs. GWA and Cap-Net guarantee its suitability for technical water managers, who aim for their work to benefit people of different backgrounds: poor and better off; rural and urban; majorities and minorities; differently abled and vulnerable women, children and men.

Bekithemba Gumbo, Director

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Acronyms

Cap-Net	Capacity Development in Sustainable Water Management Network
FAO	The Food and Agriculture Organisation of the United Nations
GWA	Gender and Water Alliance
IMF	International Monetary Fund
IPC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation for Nature
IWRM	Integrated Water Resource Management
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
UNICEF	United Nations Children's Fund
UNDESA	United Nations Department of Economic and Social Affairs
UNEP	United Nations Environment Programme
UN-Habitat	United Nations Human Settlements Programme
WATSAN	Water and Sanitation
WB	The World Bank
WHO	World Health Organization
WSP	Water and Sanitation Programme

Introduction

This tutorial is a self-learning tool for water managers in the water sector. It is designed to help them account for the different needs of the women and men that will be affected by their work.

The Tutorial “Why Gender Matters” was first produced 7 years ago, and was written with the purpose of making gender and gender mainstreaming relevant to the professionals and managers working in the water sector. This revised tutorial takes the ‘**why**’ a bit further by examining evidence through a wide range of case studies, and takes a stronger look at the ‘**how**’, the approaches to gender mainstreaming that water managers and professionals in the water sectors can apply and incorporate in their work.

The tutorial details the various ways in which men and women are affected differently by water management decisions. Despite the challenges, there are numerous benefits in considering gender from the design stage through to implementation of water policies and practices. The benefits can be seen in improved economic sustainability, economic efficiency and social equity and better water governance. The tools needed to achieve these benefits are discussed in the context of different sectors.

As a self-learning tool, it can be used by a wide range of professionals and managers working in the water sectors, designed to help increase the sustainability, effectiveness and efficiency of their work. It will guide water professionals to take into account the different needs, interests and knowledge of different categories of people who will use their technical interventions, or who will be influenced by their work.

This tutorial consists of 5 chapters; the first one deals with general IWRM and gender concepts. The subsequent chapters deal with the different sectors of water management and water interventions: domestic and drinking water; sanitation; agriculture; environment, climate change and waste management. All chapters follow a prescribed format for consistency and have the following sections:

- ▶ Main problems and issues in the sector, referring to the intersection with gender
- ▶ Benefits of a gender approach
- ▶ How to get the benefits of a gender approach
- ▶ Tools, websites, further reading and bibliography

Every chapter provides basic knowledge about gender and its linkages with IWRM, as well as sector-specific strategies for integrating gender concerns and implementing a gender approach to IWRM. For those users that are interested in more details or would like to start applying a gender approach, a range of case studies, resources for further reading and a bibliography for extended references, as well as tools that can be used for gender mainstreaming, are provided. This will allow the users to get as much detailed information as desired, from very basic to comprehensive.

For those that want a quick overview of the strategies and approaches explained and elaborated in this Tutorial a “how to” quick-guide can be found after this introduction.

Gender Mainstreaming: Quick Guide to Strategies and Approaches

Gender mainstreaming is a process for improving the relevance of development agendas and achieving gender equality goals. Gender equality means that women's and men's rights, responsibilities and opportunities will not depend on whether they are born male or female. It means that opportunities and benefits of water sector interventions will be equally available to both men and women.

For that reason, gender mainstreaming is an integral part of IWRM and essential for improving the effectiveness of the four pillars of IWRM; environmental sustainability, economic efficiency, social equity and water governance. The tutorial establishes the linkages between gender and these four pillars.

This is a quick-guide to the methods and strategies generally used for gender mainstreaming, which can be applied by water managers and professionals in different areas of water management.

There are two sections to this guide. The first section is a summary of strategies for gender mainstreaming into four pillars of IWRM; environmental sustainability, economic efficiency, social equity and water governance. The second section is a summary of common approaches to mainstreaming gender in three main action areas; policy and legal frameworks, institutions and institutional arrangements, and operational aspects.

More elaborate information and sector-specific approaches or strategies can be found in the separate chapters of this tutorial.

1 Strategies for Mainstreaming Gender in IWRM

FOR ENVIRONMENTAL SUSTAINABILITY

- ☐ Collect gender sensitive data and use a gender and empowerment approach to create understanding of men's and women's tasks in using and impacting the environment;
- ☐ Work with affected communities and stakeholders to find creative solutions that are good for both people and the environment.

FOR ECONOMIC EFFICIENCY

- ☐ Understand who is to benefit from investment, who will pay for the benefits and who will be negatively affected;
- ☐ Make gender sensitive investment decisions and technology choices through consultations with users and inputs from expected beneficiaries;
- ☐ Establish gender sensitive management to identify:
 - who is in charge of each task in water management
 - how tasks can be better distributed to maximize efficiency, fairness and effectiveness
 - who pays for water services

- willingness and ability to pay and the best way to overcome constraints on timely payment
- who is best positioned to effectively solve minor and major technical problems in water services;
- ❑ Utilise all available expertise, knowledge and skills. Women and men have different tasks in water management, so also different skills, knowledge and expertise.

FOR SOCIAL EQUITY

- ❑ Examine the distribution of benefits from water uses, services and management. Gender analytical tools, participatory methods and gender-sensitive data reveal who participates, who benefits (men, women, rich, poor), who is most affected, and how;
- ❑ Examine the effects of cuts in social investment during financial crises. Poverty and gender audits of policy and fiscal instruments will reveal who benefits, who loses out most, and how;
- ❑ Incorporate actions with poverty reduction. Gender-sensitive analysis and gender budgeting help managers to decide on systems that allow improved access to water services for disadvantaged groups and ensure that negative impacts are allocated to users (user/ polluter pays principle);
- ❑ Promote more transparent systems of allocation and accountability that report gender-based information, allow for and promote gender sensitive participation, and analyse water budget effects on women's and men's welfare;
- ❑ Support people empowering themselves by deciding on management systems that recognise, respect, promote and use the skills and expertise of both women and men of different categories.

FOR GOOD WATER GOVERNANCE

- ❑ Ensure that gender-sensitive men and women are involved in planning water programmes and facilities;
- ❑ Understand the local context and local initiative systems for water provision, recognizing that men and women have different needs and different opportunities;
- ❑ Ensure that efforts to crack down on corruption in the water sector do not inadvertently provide further hardship for poor men and women;
- ❑ Recognize that women tend to be disproportionately affected by climate change and ensure that they have a voice in local and regional water governance aimed at climate change adaptation strategies.

2 How to Use a Gender Approach

FOR POLICIES AND LEGAL FRAMEWORKS

1. Make analyses

- ❑ Make an analysis of the current and proposed, relevant laws and policies to determine the existing position and status of women and men in relation to water laws and policies;
- ❑ Conduct a gender and poverty audit of post economic-crisis austerity measures;
- ❑ Collect gender-disaggregated information and data about stakeholders from micro- to macro-levels.

2. Promote equitable rights

- ❑ Make an analysis of existing distribution of access to and control over resources of women and men related to their position and status;
- ❑ Advocate for:
 - explicit recognition of women as users and managers in water laws and policies
 - legal mechanisms to allocate and protect access to water for all: women and men, rich and poor, etc.
 - equitable access to credit and insurance.

3. Promote participation

- ☐ Promote recognition of stakeholder participation as a principle of water law;
- ☐ Identify those likely to lose their stake, and ensure that their interests are taken into account;
- ☐ Set up mechanisms for equitable and meaningful participation of men and women from different social groups;
- ☐ Develop capacity of men and women to participate in joint forums.

4. Ensure accountability

- ☐ Set up accountability mechanism for reporting on improved gender equity using gender-disaggregated data;
- ☐ Ensure the implementation of existing commitments in the area of gender and water.

5. Build alliances

- ☐ Form networks and alliances with like-minded organizations and institutions for advocacy support.

FOR INSTITUTIONAL ARRANGEMENTS**1. Conduct a gender audit or scan**

- ☐ Conduct an internal gender audit or scan of your own institution to assess the relevance of gender to day-to-day work and effectiveness.

2. Develop an equal opportunity policy in staffing

- ☐ Promote equal salary and equal professional opportunities for women and men;
- ☐ Appoint women and men in functions where they are underrepresented; e.g women in technical and managerial functions and men in supportive and administrative functions;
- ☐ Set up support structures that enable women to work such as child-care facilities, flexible working hours, etc.;
- ☐ Aim for a diverse staff; women and men, young and old, from different ethnic background, etc.

3. Build capacity on gender and gender mainstreaming

- ☐ Train technical and managerial personnel in gender and participation analysis and methods.

4. Make use of gender sensitive budgeting

- ☐ Ensure that there are appropriate budget allocations to address gender issues;
- ☐ Introduce gender responsive budgeting.

5. Use gender sensitive indicators

- ☐ Collect data disaggregated by sex, age, socio-economic class;
- ☐ Develop sex disaggregated indicators;
- ☐ Develop gender sensitive qualitative and quantitative indicators.

FOR OPERATIONAL ASPECTS**1. Conduct a gender analysis related to water resources**

- ☐ Conduct a gender analysis using gender assessment tools to understand and collect information about the differences between men and women, rich and poor, able and disabled, young and old, etc, in:
 - Interests and motivating factors
 - Perceptions on problems related to water
 - Control of and access to vital resources that enable/disable access to improved water resources and water supply systems
 - Needs, demands, practices and motives with respect to infrastructure.

2. Use participatory planning processes

- ☐ Ensure a gender-balanced expression of ideas, targeting women's opinions about household water use, irrigation, accessible options, technology and administration;
- ☐ Seek equitable participation giving consideration not only to gender, but also to other variables such as age, wealth and education.

3. Use appropriate economic instruments

- ☐ Take into account the gender differences in willingness to pay and ability to pay for domestic and irrigation water;
- ☐ Understand gender implications of any economic instrument designed to assure cost-recovery in water supply projects;
- ☐ Consider gender differences in access to subsidies and extension support.

4. Ensure information reaches and is understood by both men and women Consider the cultural context and seek communication channels that reach both men and women

- ☐ Ensure that information is presented in such a way that it enables both women and men to participate in decision-making and make informed decisions and choices.

5. Target both women and men

- ☐ Provide gender-targeted programmes by involving women as well as men in the various stages of development projects including water system infrastructure and operation and maintenance;
- ☐ Provide men and women with productive resources, ensuring that development interventions promote access to productive resources to both men and women;
- ☐ Emphasize and encourage women's roles as change agents and not just as beneficiaries of development interventions.

Chapter 1

General Concepts



KEY MESSAGE: GENDER IS A CENTRAL PART OF IWRM

1.1 What Is Integrated Water Resources Management?

Integrated Water Resources Management (IWRM) is a process which promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment (GWP, 2010). This module focuses on four aspects of IWRM that contribute to the sustainable use of water resources: Environmental Sustainability, Economic Efficiency, Social Equity, and Water Governance. (Fig 1)

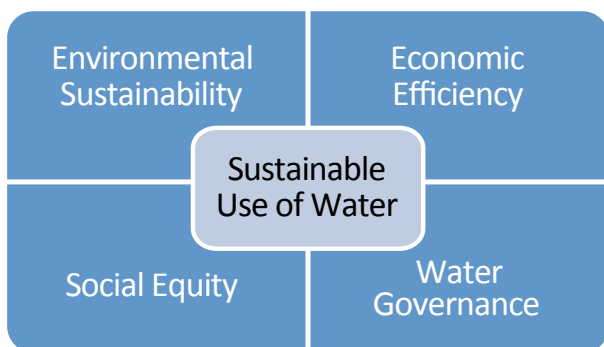


Figure 1

Environmental sustainability assures the capacity of nature to support life. Within the context of IWRM, this means a healthy water cycle, adequate water for nature, and less water pollution. Forests and wetlands, among other ecosystems, help regulate water flow and quality. Efforts to manage water resources and ensure long-term water availability must include integrated actions to protect ecosystems and ensure environmental sustainability. Poor

management of water resources will result in largely negative and often irreversible changes to the environment. Long-term water availability requires that ecosystems are able to continue to regulate water quality and quantity.

Economic efficiency. Water is vital for economic and social development and is indispensable to sustain and increase urban and rural livelihood activities. Given increasing water scarcity, the choice as to how each drop should be allocated and managed becomes central to maximizing social and economic benefits and ensuring sustainability. This effort also includes sectoral and cross-sectoral actions for cleaner production, water reuse and recycling, recognizing that freshwater is a limited resource, and investment in water projects must be viable.

Economic efficiency also refers to financial sustainability to build, operate and maintain the diverse projects and facilities required to improve water access and assure water quality and quantity over the long-term through cost recovery and payment systems.

Social equity. Water is a basic human need. Not only is it a central part of the basic rights for all people under the Universal Declaration of Human Rights, but in 2010, access to safe drinking water and sanitation was also recognized by the UN General Assembly as a human right, essential to the full enjoyment of life (UN, 2010). When considered in this light, social equity is embedded in actions that support the sustainable management and use of water resources. Social equity requires that

a fair share of water benefits and responsibilities be transmitted to women and men, poor and rich, young and old. This means fair opportunities to access, use, and control of water resources, as well as equitable acceptance of responsibility for the negative side effects produced, so as to avoid placing higher burdens on the poor or disadvantaged members of society.

Water governance. Water governance refers to the management of water and water systems. It is defined by the political, social, economic and administrative systems that are in place, and which directly or indirectly affect the use, development and management of water resources and the water service delivery at different levels of society. Water governance addresses principles such as equity and efficiency in water resource services allocation and distribution, the need for integrated water management approaches and the need to balance water use between socio-economic activities and ecosystems. It also includes the formulation, establishment and implementation of water policies, legislation and institutions and clarifies the roles of government, civil society and the private sector with respect to ownership, management and administration of water resources and services (Water Governance Facility, 2013). (<http://www.watergovernance.org/whatiswatergovernance>)

1.2 What Is Gender?

Every society has specific expectations of men and women and often their positions and opportunities vary greatly. A gender approach deals with these differences between women and men and our perceptions about what men and women should do and how they should behave. A gender approach includes methodologies, tools and strategies for examining and addressing the relations between men and women, differences in levels of power, needs, constraints and

opportunities and the impact of these differences on their lives.

The differences in tasks and relative status of men and women, lead to a difference in access to and control over means of production, including water. Most frequently, this implies that women and men do not have the same level of access to water or the same level of control over how (often scarce) water is used.

Gender interacts with and reinforces other power differences based on age, socio-economic class, ethnicity, caste, etc. Gender relations vary from one country to the next because they are shaped socially and culturally. What is acceptable behaviour for a woman of a certain age in one culture, may be totally unacceptable in another culture. Unequal gender relations are often considered 'normal' as well as static but over time societies and perceptions about gender can change and consequently, gender relations can also change.

A gender approach places emphasis on the empowerment of women and vulnerable groups. Empowerment is the strengthening and broadening of a power base, a process in which categories of people or individuals manage to improve their positions. There are four aspects of empowerment, which are integrally linked: physical empowerment, economic empowerment, political empowerment and socio-cultural empowerment.

1. **Physical empowerment:** leading to full control over one's own body, sexuality and fertility. Access to health care, the availability of clean water and a toilet close to the house can improve people's health, or help women to avoid harassment while they are fetching water, thereby contributing positively to this aspect. Another aspect of physical empowerment is to be able to resist violence.

2. **Economic empowerment:** leading to equal access to and control over means of production and economic independence. This relates to the ability to decide on how the household budget is spent, the ability to decide on how to spend the money one earns, receiving the same income for the same work, etc.
3. **Political empowerment:** leading to a political voice and self-determination. It includes the right and ability to organise and to take part in democratic processes, e.g. being able to participate in a decision making body in a water users committee.
4. **Socio-cultural empowerment:** leading to the right to an independent identity, a sense of worth and self-respect. It includes the right to have one's opinions and suggestions taken seriously, and not waved away as irrelevant. In the water and sanitation sector, it includes respect for people who clean toilets. Clean toilets are very important for a healthy environment.

Groups and individuals at the lower end of the power hierarchy, can empower themselves, if they are able to examine their own situations and become aware of other possibilities. Outsiders cannot empower vulnerable groups, but they can help by creating awareness and providing instruments for change. For example water managers can advocate for improved laws and regulations that address the needs of vulnerable people with respect to water management.

GENDER TOOLS

There are several tools that can be used by water managers for integrating or implementing a gender approach in their work. As an important first step, water managers should begin with an understanding of gender related differences within the specific context of their work and use this knowledge and information to develop and implement appropriate strategies for adopting a relevant gender approach.

Gender equality

refers to the equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not mean that women and men will become the same but that women's and men's rights, responsibilities and opportunities will not depend on whether they are born male or female. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration – recognizing the diversity of different groups of women and men. Gender equality is not a 'women's issue' but should concern and fully engage men as well as women. Equality between women and men is seen both as a human rights issue and as a precondition for, and indicator of, sustainable people-centred development. (<http://www.un.org/womenwatch/osagi/conceptsanddefinitions.htm>. Last accessed 27 February 2014.)

These are the most widely used tools for a gender approach:

Gender-disaggregated data: In every situation where social or community information is being collected, it is important to obtain separate data on men and women. If interviews are being done, efforts should be made to interview men and women separately and in some cases, depending on local customs, it is best to ask women to interview women and men to interview men. Politicians need valid quantitative data with distinction between the numbers for women and those for men.

Gender analysis is the collection and analysis of sex-disaggregated information. Men and women both perform different roles. This leads to women and men having different experience, knowledge, talents and needs. Gender analysis explores these differences so policies, programmes and

projects can identify and meet the different needs of men and women. Gender analysis also facilitates the strategic use of distinct knowledge and skills possessed by women and men. (<http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/BSP/GENDER/PDF/1.%20Baseline%20Definitions%20of%20key%20gender-related%20concepts.pdf>. Last accessed 11 September 2014.)

Gender mainstreaming: The UN defines gender mainstreaming as the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and 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. The ultimate goal is to achieve gender equality (UN ECOSOC, 1997).

Gender budgeting: When budgets are being calculated for any aspect of water management, it is important to ensure that funds are made available to address gender issues. Experience has shown that when there is no budget allocated to gender, it is often difficult to find funds to support gender aspects of projects and programmes. Gender mainstreaming requires adequate budgetary allocations.

Monitoring and evaluation: Projects should include gender objectives and goals at the design stage and based on this appropriate gender indicators can be developed in a participatory way. Gender impact and outcome assessments should be part of the M&E exercise.

1.3 How Does Gender Fit into IWRM?

Gender mainstreaming is an integral part of IWRM, including reasons of equity and efficiency.



Water can be managed effectively and sustainably, if targeted interventions take into account the different duties and needs of men and women

One of the pillars of IWRM is the recognition that women are central to the provision, management and safeguarding of water.

The IWRM approach moves beyond the basic task of providing or managing water and water-related events by considering the social context within which these services are delivered and used. It is a process which aims to “maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment”. In order to maximise the economic and social welfare aspects in an equitable manner, it is important to adopt a gender approach.

In many cases, gender discrimination can limit women's and men's chances to access vital water resources, by restricting their independence. Attitudes such as, “Women should – or should not – do this and that” or “Men are supposed to do this – but not that”, may hinder women's or men's water use, access or management. These beliefs often result in unfair and self-perpetuating impacts on the lives of both women and men. It can reduce their access to productive resources and their chances to capitalize on opportunities that may be offered (e.g. education, entrepreneurship, etc.).

To manage water effectively and sustainably, it is important to understand the different duties and needs of men and women and to target action appropriately. It is economically smart to make use of the different skills and knowledge of women and men, related to water. Assessing how women and men manage water will allow us to:

- ▶ Make use of water more effectively and sustainably;
- ▶ Share benefits from access to water more equally;
- ▶ Maximize social and economic benefits from sustainable use of water;
- ▶ In the contexts of economic crises, enable more effective use of financial instruments and national policies to protect the most vulnerable groups from suffering disproportionately.

Gender mainstreaming in IWRM becomes increasingly urgent in a situation where water is becoming scarcer and competition among users is growing.

In Table 1 an overview is given of the linkages between gender and the four elements of IWRM; Environmental Sustainability, Economic Efficiency, Social Equity, and Water Governance.

In the following paragraphs strategies for strengthening these elements through a gender approach are suggested.

1.4 Gender and Environmental Sustainability

ENVIRONMENTAL SUSTAINABILITY AND IWRM

Within the context of IWRM, environmental sustainability means a healthy water cycle, adequate water for nature, and minimal water pollution. A self-sustaining healthy environment helps to regulate water flow and quality in

all ecosystems. Poor management of water resources will result in largely negative and often irreversible changes to the environment. Long-term water availability requires that ecosystems are able to continue to regulate water quality and quantity.

ENVIRONMENTAL SUSTAINABILITY AND GENDER

- ▶ Water is essential to the environment. People's use of water is mediated through their social and economic activities. Poor people may pollute water at the local level (e.g. through the use of household phosphates). However major pollution can occur through industry. Poor people frequently are negatively affected by industrial pollution of their water sources.
- ▶ The impact of flood and drought events often is felt most severely by women because they lack the means to cope with disaster
- ▶ Women are often at the frontline with respect to climate change impacts and are hardest hit by the negative consequences.

A gender approach for promoting environmentally sustainable use of water could include the following:

Targeted actions: Women and men use and access water, land and ecosystem resources in different ways. When these differences are properly understood, actions can be targeted towards those who have real influence in the issues addressed. For example, men and women both contribute to the problem of deforestation. Major land use changes, and large-scale logging activities and wood use are often linked with wealthy men or corporations; minor land changes and local logging are usually done by middle class or poor rural men and women; and wood collection, where trees are seldom chopped, is normally conducted by poor women worldwide. In order to prove effective, actions designed to curtail deforestation should take into account these differences.

Table 1: Linkages between gender and IWRM**GENDER AND ENVIRONMENTAL SUSTAINABILITY**

- ▶ Water is essential to the environment. People's use of water is mediated through their social and economic activities. Poor people may pollute water at the local level (e.g. through the use of household phosphates). However major pollution can occur through industry. Poor people frequently are negatively affected by industrial pollution of their water sources.
- ▶ The impact of flood and drought events often is felt most severely by women because they lack the means to cope with disaster.
- ▶ Women are often at the frontline with respect to climate change impacts and are hardest hit by the negative consequences.

GENDER AND ECONOMIC EFFICIENCY

- ▶ Increasingly, and especially in urban areas, with privatization of drinking water infrastructure, water users are asked to pay for drinking water. However many poor people are finding it difficult to make large monthly payments. Allowing users to pay smaller amounts more frequently makes water more affordable for them.
- ▶ Technology choice affects affordability. Consulting female and male users may result in a more acceptable, user friendly and sustainable service. For example poor people, for financial reasons, may prefer to access water from a community standpipe rather than to have taps in their homes.
- ▶ In the context of the current economic crisis, post-crisis austerity measures that were put in place by international institutions and national governments, compounded by falling tax revenues and foreign aid, are leading to big cuts in public sector spending on water services. In rural areas the poorest households are increasingly cutting back on the quality and quantity of their drinking water as the price rises, and their income declines.

GENDER AND SOCIAL EQUITY LINKAGES

- ▶ Powerful groups in society, usually male dominated, can exploit resources systematically and on a large scale as well as drive industrial transformation of the environment, thus their potential to do damage is higher.
- ▶ When water is not supplied by a piped system, the burden of water collection usually falls on women and children, who must expend considerable time and energy on this activity.
- ▶ Women and children are the most susceptible to water borne disease due to their tasks in water collection, clothes washing and other domestic activities.
- ▶ It is clear from the gendered impact of the economic crisis on employment, welfare, income shocks, and austerity measures that women's prime responsibilities for unpaid domestic work, and their concentration in the informal economy (with lower earnings and less social protection) places them in a weaker position to survive crises.
- ▶ Economic crisis can also deepen gender inequalities within households and negatively impact the health of family members. Women are often the first to cut down on food and water in the event of income loss and financial problems. Violence against women tends to increase during times of economic crisis, as a result of the ongoing stress on families and communities.

GENDER AND WATER GOVERNANCE LINKAGES

- ▶ Water planners often must choose among competing demands: industrial, agricultural and domestic. Frequently domestic needs are given lower priority and women must spend more time accessing sufficient water to meet household needs.
- ▶ During the current economic crisis, financial stimulus packages, and post-crisis budget cuts increase gender inequality. Jobs created in physical infrastructure tend to employ men over women, cuts in social sector spending negatively impact women's responsibilities in the reproductive economy (e.g. as water providers or child-carers). Resources for subsistence agriculture are limited, which negatively impacts food security of poor rural households.
- ▶ Often only land title holders are asked to participate in water users associations in irrigation schemes. They tend to be men, which mean that women farmers often have no voice in decision making, leaving them with less or no irrigation water.

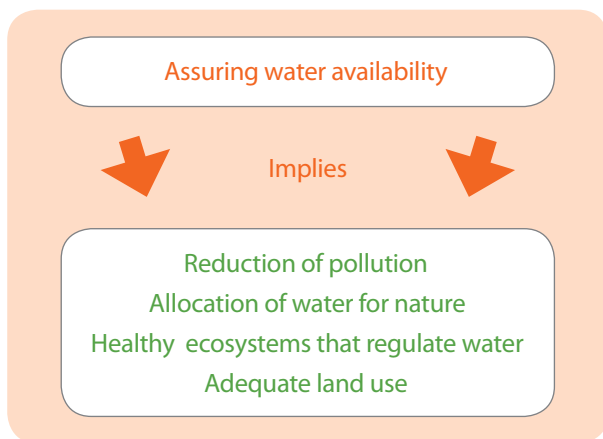


Figure 2. Sustainable environment and IWRM

Creative solutions: Women and men are the keepers of different indigenous knowledge that has proved beneficial in identifying interventions that are suited to local natural and social conditions. Examples of gender-based knowledge that enables effective solutions include better choices of species to reforest, identification of less vulnerable water sources and more effective project management schemes.

Increased flexibility: Responses to foreseen and unexpected changes in water resources and environment are more effective when all people in the area can express their ideas about how to respond to the challenge. Under these conditions, women have become champions in ecological restoration initiatives that reduce vulnerability to droughts and floods.

Effective participation: Women's and men's participation facilitates freshwater ecosystem maintenance and protection. Each person has an interest in promoting a healthy environment. When these interests are made transparent, it improves the chances of finding feasible solutions and handling trade-offs through dialogue and negotiation. This allows potential or existing conflicts around water to be addressed and resolved. For instance, women in India formed the Chipko Movement when they recognized the link

between deforestation and recurring floods and landslides. Through lobbying and pressure, they prevented tree felling and achieved a 10-year ban on logging in the affected area. In Kenya, the Green Belt Movement has mobilized more than 80,000 women to plant more than 51 million trees (UNDP & WEDO, 2004).

GENDER AND CLIMATE CHANGE

Climate change is increasingly recognized as a global crisis. Natural influences and anthropogenic factors such as burning of fossil fuels are the primary drivers increasing global temperatures that in turn, are affecting sea level rise, precipitation patterns and extreme weather events. The entire globe is experiencing increasingly frequent occurrence of floods, droughts and flash floods, cyclones, storm surges, salinity ingress, etc. These have profound economic and social consequences. Women are often at the frontline with respect to climate impacts and are hardest hit. This requires greater attention.

Gender inequality intersects with climate risks and vulnerabilities. Women in many countries have limited access to water, land and common property resources. Moreover, limited mobility and a muted voice in shaping decisions make them highly vulnerable to climate change. Climate change is and/or will magnify existing patterns of inequality, including gender inequality, thus pushing more women towards greater risks, even to the extent of survival. Adequate and effective gender responsive approaches to adaptation and mitigation measures are needed to reduce these risks.

Women, in every society have traditional knowledge, experiences and in-built skills/expertise, and play an important role in supporting households and communities to mitigate and adapt to climate change. For centuries, women have passed on their skills in water, forest and

biodiversity management. Their capacity and skill as agents of change need to be accepted and utilized along with that of men.

Responding to climate change is not simply a matter of reducing the amount of greenhouse gas emissions into the earth's atmosphere, but also about helping diverse communities especially the most vulnerable to build adaptive capacity and develop a sense of preparedness. In order to achieve this, it is important to address gender specific vulnerabilities, adaptation, mitigation and the manner in which engagement can take place.

1.5 Gender and Economic Efficiency

ECONOMIC EFFICIENCY AND IWRM

Water is vital for economic and social development and is indispensable to sustain and increase urban and rural livelihood activities. Economic efficiency within IWRM also refers to financial sustainability to build, operate and maintain the diverse projects and facilities required to improve water access and assure water quality and quantity over the long-term through cost recovery and payment systems. The viability of investments in water projects depends upon choices made about how each drop of water is allocated and managed for maximizing social and economic benefits and ensuring sustainability.

ECONOMIC EFFICIENCY AND GENDER

- ▶ Increasingly, and especially in urban areas, with privatization of drinking water infrastructure, water users are asked to pay for drinking water. However many poor people are finding it difficult to make large monthly payments. Allowing users to pay smaller amounts more frequently makes water more affordable for them.
- ▶ Technology choice affects affordability. Consulting female and male users may result in a more acceptable, user friendly and

sustainable service. For example poor people, for financial reasons, may prefer to access water from a community standpipe rather than to have taps in their homes.

- ▶ In the context of the current economic crisis, post-crisis austerity measures that were put in place by international institutions and national governments, compounded by falling tax revenues and foreign aid, are leading to big cuts in public sector spending on water services. In rural areas the poorest households are increasingly cutting back on the quality and quantity of their drinking water as the price rises, and their income declines.

Below are some examples of how economic efficiency can be improved by using a gender approach.

- ▶ **Effective investment:** Water infrastructure can be more widely and optimally used, maintained and sustained when women's and men's demands, expectations, experience, involvement and knowledge are considered. Such consideration enables targeted solutions in technology, payment and management systems, and other domains and can result in better use of limited funds, human resources and water.
- ▶ **Enhanced cost-recovery:** Recovery of investment in water services can be improved if traditional women's and men's roles in water management are recognized and promoted in an equitable manner. (Box 1)
- ▶ **Enhanced ownership:** Communities feel more committed to water projects that properly target gender-specific issues. A World Bank study of 121 water projects showed that the systems that include both male and female users in planning, building and management usually perform better than those that lack participation, especially in rural areas (Van Wijk-Sijbesma, 1998). Gender-sensitive participation was consistently a factor for success in quality of design, quality of implementation, project efficiency, operation and maintenance. (Box 2)

Box 1. Enhanced cost-recovery by considering gender

During the 1990's, the Malawi government designed a highly innovative community management system to deliver piped water to low-income households. While technically successful, the effort was economically unsustainable due to problems with fee collection. This issue was resolved by recognizing the men's inability to collect fees effectively as they usually worked outside of town. Cost recovery and financial security was achieved (granting effective supplies to 24,000 families) by shifting responsibility for collections to women who were able to deliver systematic collection in a timely and less conflictive manner (Maharaj, et al., 1999).

- ▶ **Reducing the negative impacts of the economic crises:** Gender and poverty audits to examine the post-crisis austerity measures and stimulus packages of national governments and international organizations (WB, IMF, etc.), could be undertaken in order to ensure that jobs have been created for both men and women. This would help safeguard against discrimination against women entrepreneurs and farmers by formal credit institutions. Directing funding to resources (water, inputs, credit) for women farmers increases food production for families, and reduces dependency of food imports, thus addressing the balance of payment deficit.
- ▶ **Conflict prevention:** Conflicts are expensive in social, economic and political terms. Consideration of gender in water management may help reduce potential conflicts related to:
 - **Water allocation:** Potential for conflict can be reduced if the impacts of water allocation (some of which are gender specific) are properly recognized early in the allocation process. This allows for the development of targeted mitigation measures and the creation of new allocation schemes.

Box 2. Enhanced ownership – price differentiation

In Nepal, a crowded ward of Kathmandu with 1200 households and 6000 inhabitants faced severe problems of water scarcity. A programme was developed in 2010 to bottle surplus water from a safe drinking water supply system 6 kms away. This water was to be distributed to the consumers by transporting the clean water in water tanks. The costs incurred in transportation of the water is an important factor for pricing the water, which held the risk of marginalising the poor.

Therefore inclusive water users committees were formed to help in setting the water prices. As it are women in the household that are responsible for managing water, specific attention was paid in ensuring the participation of women, especially poor women, in these committees. The committee is responsible for covering all the costs of the clean water provided and consumers buy their water from the committee. The committee has developed a system where the price per bottle of water is set depending upon the individual's capacity to pay. In this way cost recovery and financial security is achieved and also the poor can use clean drinking water (GWA, 2012).

- **Water tariffs:** Recognizing the differences in payment ability and understanding who pays the water bill within families can reduce the potential for conflict and lack of payment. Many studies reveal that women usually pay for water even though the financial burden compared with income is greater than it is for men. A gender sensitive approach enables the creation of tariff systems that are both affordable and economically sustainable in the socio-economic context of a population.
- ▶ **Privatization and public private partnerships:** In some cases, water privatization

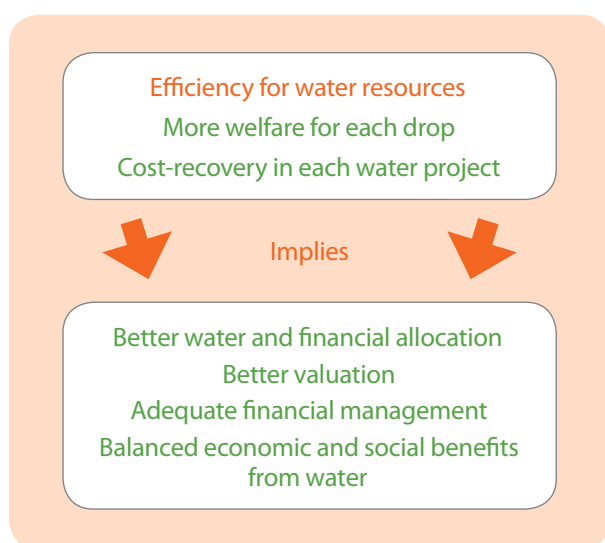


Figure 3. Economic efficiency and IWRM

has led to significant cost increase, impacting the most vulnerable groups, poor services, and the disconnection of public standpoints. This has had a severely negative impact on the lives of displaced women, and children (e.g. in Cochabamba, Bolivia and Conakry, Guinea). In other cases the experience has been more positive, leading to increased efficiency in water delivery, and a positive impact on the health of water users. For example in the Soweto suburb of Johannesburg, South Africa, privatization led to a massive reduction in leakages and unaccounted-for-water losses (Blanc & Ghesquieres, 2006). However, privatization almost always leads to increased water tariffs and this places an additional burden on poor men and women.

1.6 Gender and Social Equity

SOCIAL EQUITY AND IWRM

Social equity is embedded in actions that support the sustainable management and use of water resources. Social equity requires that a fair share of water benefits and responsibilities be transmitted to women and men, poor and rich, young and old. Within the IWRM context this would mean fair opportunities for all users

to access, use, and control water resources, as well as equitable acceptance of responsibility for the negative side effects produced so as to avoid placing higher burdens on the poor or disadvantaged members of society.

SOCIAL EQUITY AND GENDER

- ▶ Powerful groups in society, usually male dominated, can exploit resources systematically and on a large scale, as well as drive industrial transformation of the environment, thus their potential to do damage is higher.
- ▶ When water is not supplied by a piped system, the burden of water collection usually falls on women and children, who must expend considerable time and energy on this activity.
- ▶ Women and children are the most susceptible to water borne disease due to their tasks in water collection, clothes washing and other domestic activities.
- ▶ It is clear from the gendered impact of the economic crisis on employment, welfare, income shocks, and austerity measures that women's prime responsibilities for unpaid domestic work, and their concentration in the informal economy (with lower earnings and less social protection) places them in a weaker position to survive crises.
- ▶ Economic crisis can also deepen gender inequalities within households and negatively impact the health of family members. Women are often the first to cut down on food and water in the event of income loss and financial problems. Violence against women tends to increase during times of economic crisis, as a result of the ongoing stress on families and communities.

A gender approach helps to achieve social equity goals in water management in several ways:

- ▶ **Enhanced distribution of benefits:** Gender sensitive projects can determine and take into consideration the effects that water allocation has on women's and men's welfare and the whole economy. By informing water plans, policies and programmes, this knowledge can help reduce inequity.

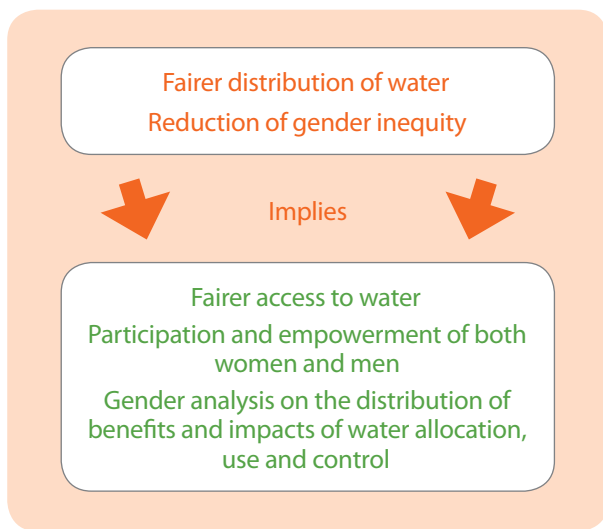


Figure 4. Social equity and IWRM

- ▶ **Multiplier effect on welfare:** A 2012 WHO study showed that every \$1 invested in water supply and sanitation brings \$4.30 dollar in benefits at the global level, ranging from \$2 in Oceania to \$5 in the Latin American and Caribbean and East-Asian countries (Hutton, 2012). Such benefits can be even better distributed and assured, if gender is taken into account. For example, many poor women use a fraction of supplied water in small-scale productive activities that give them new income sources. In agriculture, gender sensitive irrigation can help improve food security and income-generation. In addition to the social benefits produced under these scenarios, better nutrition has a multiplier effect on the economy.
- ▶ **Reduction of social cost:** Society is paying a huge opportunity cost due to lack of water. In 2012, WHO estimated that the total global economic losses associated with inadequate water supply and sanitation is US\$260 billion annually. More than 70% of these costs is the loss of productive time through health-problems, caring for the sick, and time spent on the collection of safe water (Hutton, 2012). That time and energy, mostly of women, could be invested in other productive, domestic and community activities to benefit people and societies.

- ▶ **Reduction of poverty:** 70 percent of the world's poor are women (UN WOMEN, 2013). Women tend to have lower incomes and are more vulnerable to unemployment, even as the number of female-headed households is rising. Gender sensitive water projects can improve targeting of such differences and seek creative ways to reduce the burdens of those who are more vulnerable. In many cases, such projects can provide an alternative source of income.
- ▶ **Reducing the deepening gender inequality that results from economic crises:** Social protection policies and other gender-sensitive mechanisms should increase social infrastructure investment in areas such as drinking water, sanitation, public health, education, and child care. This will not only ease women's care burden but also generate jobs for them, as they are well represented in these occupations.
- ▶ **Enhanced management and empowerment:** New IWRM water management systems can perform better by drawing on the experience, knowledge and creativity of men and women. Women tend to manage water use in an informal way. Consideration of gender balance in water management has at least two positive effects. First, women's and men's expertise is recognized and wisely used. Second, women and men are empowered to contribute to society's welfare in innovative ways.

Creating a beneficial cycle, positive social effects not only enhance water management itself but can also create unique opportunities for people. Many water projects provide spaces for education, training and jobs. New water policies and legislation reform can change property and access rules. When wisely applied, all of these strategies can reduce inequity and benefit development.

1.7 Gender and Water Governance

WATER GOVERNANCE AND IWRM

Water governance refers to the management of water and water systems. It is defined by the political, social, economic and administrative systems that are in place, and which directly or indirectly affect the use, development and management of water resources and the water service delivery at different levels of society. Water governance in IWRM addresses principles such as equity and efficiency in water resources and services allocation and distribution, and the need to balance water use between socio-economic activities and ecosystems.

WATER GOVERNANCE AND GENDER

- ▶ Water planners must often choose between competing demands: industrial, agricultural and domestic. Frequently, domestic needs are given lower priority and women must spend more time accessing sufficient water to meet household needs.
- ▶ During the current economic crisis, financial stimulus packages, and post-crisis budget cuts increase gender inequality. Jobs created in physical infrastructure tend to employ men over women, cuts in social sector spending negatively impact women's responsibilities in the reproductive economy (e.g. as water providers or child-carers). Resources for subsistence agriculture are limited, which negatively impacts food security of poor rural households.
- ▶ Often only land title holders are asked to participate in water users associations in irrigation schemes. They tend to be men, which means that women farmers often have no voice in decision making, leaving them with less or no water for irrigation.

A gender approach to water governance has many benefits.

- ▶ **Focus on priorities of both women and men:** Increased participation of women in water governance will help to ensure that the priorities

of both men and women are given consideration. It will also contribute to empowerment of women in general and to the achievement of gender equity goals. For reasons of efficiency and equity, both women and men should be involved at all stages:

- **Planning stage:** Who is involved in planning the water facility? How are priorities determined? Do men and women both have a voice?
- **Facility design:** Who makes the final decisions about design? Are the needs of both women and men taken into account?
- **Facility management:** Are both men and women involved in the management of the facility?
- ▶ **Enhanced management:** Women are often blocked from participation in water management institutions by formal and informal obstacles. Formal obstacles can include lack of title deeds to land, thus making them ineligible for participation in water user associations or lack of technical qualifications that are assumed to make them unsuitable candidates for planning and management jobs. Informal obstacles can include male hiring committees that are reluctant to bring women into all-male environments or job requirements for frequent travel or long hours that make it difficult for women to reconcile work life with family life.



Increased participation of women in water governance can ensure that the priorities of both men and women are taken into account

- ▶ **Improved integrity:** Corruption leads to unsustainable projects and to services that do not meet people's needs. According to the World Bank, 20-40 percent of finance to the water sector is lost because of corrupt practices (UNDP/WGF-SIWI; WIN; CAP-NET; Water-Net, 2011). At a macro-level, the draining of public funds by corrupt officials commonly leads to fewer resources in social services areas such as water supply and sanitation, education and health (Transparency International, 2008).

WHY IS CORRUPTION IN THE WATER SECTOR A GENDER ISSUE?

In all regions of the world, women are over-represented among the poor, and their capacity to pay for water, their bargaining abilities and their overall ability to negotiate corrupt water systems is highly dependent on the power and gender relations in their cities, villages and cultures. In both urban and rural contexts, women's water needs, whether for domestic purposes, or for economically productive purposes, are given low priority by water managers and decision-makers.

At the micro-level, women also suffer from the negative consequences of corruption:

- They are usually the primary providers of water for household use and are at the frontlines of having to deal with dishonest suppliers of water.
- Even if women are not asked to pay extra in monetary terms, they may be subjected to sexual harassment or even forced to provide sexual favours.
- If women cannot afford adequate water for their families, they may have to use dirty, contaminated water and ultimately to assume the burden of caring for family members who have become ill through exposure to water-borne diseases. They themselves might become ill and they will lose opportunities of earning income.

1.8 Why Is It Sometimes Difficult to Include Gender?

Despite all the benefits that a gender approach could bring to water resources management, women still face major obstacles to participating in and benefiting from full use of water resources. In day-to-day practices, water managers often overlook how valuable a gender approach may be and when it should be used. The main barriers to adoption of this approach include:

- ▶ **Gender blindness:** Many men and women involved in water decision making, policy making or implementation still question the relevance of gender. They fail to recognize differences between men and women with regard to demands, knowledge, access and control of water resources and capacities.

This perspective obstructs the capacity of some water managers to understand and address water issues. The primary obstacle is a traditional point of view that assumes that communities are homogeneous. In reality, societies are not a collection of equal people living in a particular region, but rather a heterogeneous assortment of individuals and groups who command different levels of power, wealth, influence and ability to express their needs, concerns and rights.

- ▶ **Gender neutrality:** Governments and citizens tend to assume that all government policies and legislation, and their associated budgets and programmes are gender-neutral, even though this is not the case. When there is no explicit mention and identification of the different positions, responsibilities and circumstances of men and women, boys and girls, rich and poor, the resulting programmes will probably benefit some groups more than others. A lack of differentiation hides differences in the impacts of land and water rights, education, employment, etc. of women and men.

Box 3. Some common stereotypes

Farmers are male. While the proportion and role of women change from place to place, 70% of farmers worldwide are women. Nonetheless, women neither own 70% of the land nor have access to 70% of agricultural water (Ferguson & Moosa, 2011).

- ◆ **Fishers are male.** Women and men divide functions in fishing. In many cases, women collect shrimp and shellfish near the coast while men catch fish using boats, nets and other devices. Freshwater fisheries also involve substantial female labour in drying, processing, making and repairing nets and fishing.
- ◆ **Men do the work while women care for the family.** This misconception neglects the role of men as fathers who may also contribute domestic labour and have a fundamental task as behaviour models. Children learn how to use water according to both the mothers' and the father's examples, and the father's influence grows when boys and girls are older.
- ◆ **Men do all the heavy work, and women help with the lighter tasks.** In general men are physically stronger than women. Nevertheless women do the lion share of drudgery work in most countries, whilst men take over these tasks, only when mechanised.

- ▶ **Cultural stereotypes:** Many gender stereotypes exist around water and its uses. Some of the most common misconceptions are listed in Box 3.
- ▶ **No recognition for unpaid activities:** Lack of attention for the unpaid activities that reproduce, care for, maintain, and develop families, communities, and labour forces, leads to undermining the contribution of these activities to the well-being, health, and food security of families. Consequently, women's needs

and priorities in water provisioning, sanitation, and subsistence farming tend to be ignored in national and international development agendas.

- ▶ **Lack of attention for the powerless:** Some women, ethnic, caste or age groups find it hard to or are hindered from speaking out about their water problems and needs. Allowing broad participation in water management will not in itself remedy this situation. In the absence of efforts to promote self-confidence and the expression of their ideas, inclusion is far from complete. This requires explicit action from the water manager, who is rarely trained in how to enable an inclusive dialogue on water issues.
- ▶ **Tokenism, isolation and policy evaporation:** Although many governments have included gender issues in the water agenda, implementation efforts have been insufficient.
 - In many cases, gender is considered a marginal issue, and gender concerns are relegated to separate, powerless gender units or contracted gender consultants, making real change impossible.
 - In other cases, water institutions and decision-making processes include women based on quota policies, which often fail to empower such representatives to raise gender issues and make a difference.
 - In other instances, implementation of water policies on gender is not evident in day-to-day operations because of a lack of know-how, interest, or commitment on the part of those responsible for implementation.

1.9 How Can Gender Be Included?

IN ENVIRONMENT

- ▶ **Collect gender sensitive data and use a gender and empowerment approach** to create understanding of men's and women's tasks in using and impacting the environment

Expected Results:

- Information on who, by gender, age, ethnicity and class, is using natural resources and why



IWRM solutions can be found by using gender-sensitive participatory methods for project management and policy development.

- The impact of such uses on the ecosystem and water resources
 - Information on who, by gender, social group and location, is benefiting from various natural resource uses
 - Which uses and users by gender, age, ethnicity and class are generating negative impacts on water resources, as well as types and reasons for the generation of negative impacts?
 - Information on who of these categories of people is being negatively impacted due to water uses in other sectors that affect water for environment.
- **Work with affected communities and stakeholders to find creative solutions** that are good for people and good for the environment. Using gender-sensitive participatory methods for project management and policy development facilitates greater expression and consideration of both women's and men's voices – a worthwhile effort since those most intimately involved with the problem often have good ideas for the solution.

Expected Results:

- Solutions in aligning with IWRM principles are found and linked with national or local IWRM initiatives

- Solutions incorporate traditional good practices and knowledge of women and men about the environment
- Solutions build on the knowledge and experience of women and men and provide a foundation for local ownership and commitment to action
- Benefits and disadvantages are not confined to specific gender or social groups.

- **Capture the interests of men and women in sustainable solutions** via gender-sensitive stakeholder analysis and gender-sensitive participatory methods. Participation in decisions and implementation enhances accountability, ownership and flexibility and can contribute to the decentralised management goals of IWRM.

Expected Results:

- Women's and men's stakes in water and environment are better represented
- Participation raises the awareness on environmental vulnerability with all involved
- Trade-offs among water uses, use of natural resources and environmental conservation are more thoroughly analysed and tackled, thereby enhancing environmental sustainability without jeopardising livelihoods.

IN ECONOMIC EFFICIENCY

- **Understand who is to benefit from investment**, who will pay for the benefits and who will be negatively affected. Who will be most



Financial incentive packages in line with IWRM principles can help protect livelihoods.

negatively impacted by economic crises? Using a gender approach, it is possible to consider how priorities for investment, post- economic crisis budgeting measures, and financial incentive packages are determined, whether they are in line with the principles of IWRM and whether increased consultation with both women and men would yield different results.

Expected Results:

- Gender inequities in water sector investment become visible, enabling the development of better mechanisms
- Gendered impact of the economic crisis on employment, welfare, income shocks, and austerity measures becomes visible, enabling formulation of gender equitable post-crisis financial incentive packages, fiscal instruments, and budget measures
- As the stakes of women and men are properly identified, priorities for investment better reflect consensus among different stakeholder groups, politicians and water resource management goals.

► **Make gender sensitive investment decisions.**

Technology choice and investment decisions always require consultation of the users and input from expected beneficiaries. Consultation with both women and men through gender-sensitive participatory tools is essential, as experience, needs and expectations almost always differ.

Expected Results:

- Chosen technology is appropriate, affordable, and acceptable to the main targeted beneficiaries (women and/or men)
- Increased satisfaction
- Easier and longer operation and maintenance.

► **Establish gender sensitive management.**

Gender-sensitive consultation identifies who is in charge of each task in water management, and

how tasks can be better distributed to maximize efficiency, fairness and effectiveness. Gender sensitive research on household income allocation can identify who pays for water services, the willingness and ability to pay, and the best way to overcome constraints on timely payment. Additionally, a gender sensitive analysis of operations and maintenance procedures helps managers understand who is best positioned to effectively solve minor and major technical problems in water services.

Expected Results:

- Risks of gender biased or inequitable solutions are reduced
- Existing good management practices are made visible and supported
- Operational systems are appropriate to the category of people most affected and sensitive to gender bias
- Appropriate water technologies are chosen to facilitate maintenance from those women or men who first detect the problems
- Cost-recovery in water related services is improved
- Women and men are more satisfied with the services delivered in their communities
- Reduction of conflicts due to tariffs and/or discontinuity in service.



Gender analysis and participatory methods reveal who participates, who benefits, who is most affected and how.
Photo: CGIAR

- ▶ **Utilise all available expertise, knowledge and skills.** Women and men have different tasks in water management, so also different skills, knowledge and expertise. It is economically not smart to leave out 50% (or more) of the skills of people, and especially of the category with most local knowledge.

Expected Results:

- Policies and practice of water management at all levels is more relevant and adequate
- The number of unused toilets and broken water supply points will become much smaller
- All users will become more interested in taking care of the infrastructure.

IN SOCIAL EQUITY

- ▶ **Examine the distribution of benefits from water uses, services and management.** Gender analytical tools, participatory methods and gender-sensitive data reveal who participates, who benefits (men, women, rich, poor), who is most affected, and how.
- ▶ **Examine the effects of cuts in social investment during financial crises.** Poverty and gender audits of policy and fiscal instruments will reveal who benefits, who loses out most, and how.

Expected Results:

- A fuller understanding of strengths and weaknesses in present management to support the identification of opportunities for improved management
- An understanding of gender related inequalities and their relationship to and potential for correction through improved water resources management
- A better understanding of how social infrastructure investment in areas such as drinking water, sanitation, public health, education, and child care can ease women's care burden and generate jobs for them.



Greater protection for vulnerable people in the face of droughts or floods is important for protecting livelihoods.

- ▶ **Incorporate actions with poverty reduction.** Gender-sensitive analysis and gender budgeting help managers to decide on systems that allow improved access to water services for disadvantaged groups and ensure that negative impacts are allocated to users (user/ polluter pays principle).

Expected Results:

- Gender inequity pathways in water issues become transparent, allowing for the design and implementation of mechanisms to reduce some causes of inequity
- Gender-sensitive programmes are targeted to prioritise the most vulnerable groups.

- ▶ **Promote more transparent systems of allocation and accountability** that report gender-based information, allow for and promote gender sensitive participation, and analyse water budget effects on women's and men's welfare.

Expected Results:

- Gender and other social inequities are made more visible, facilitating awareness and progress toward addressing the root causes of the problem.
- ▶ **Support people empowering themselves** by deciding on management systems that recognise,

respect, promote and use the skills and expertise of both women and men of different categories.

Expected Results:

- Poorer people are supported and their capacities are enhanced
- Gender inequity is reduced.

IN WATER GOVERNANCE

- ▶ **Ensure that gender-sensitive men and women** are involved in planning water programmes and facilities

Expected Results

- Facilities will be designed to take account of both men's and women's needs
- Both men and women will have a sense of ownership in water facilities, especially at the local level.

- ▶ **Understand the local context and local initiative systems** for water provision, recognizing that men and women have different needs and different opportunities.

Expected Results

- New programmes that are put into place take account of the existing local power structures and create opportunities for everyone to access water on an equitable basis.

- ▶ **Ensure that efforts to crack down on corruption** in the water sector do not inadvertently provide further hardship for poor men and women. For example, although informal water vendors are sometimes corrupt, they may be the only affordable source of water for the poor.

Expected Results

- The needs of poor men and women will be given attention.
- ▶ **Recognize that women tend to be disproportionately affected by climate change** and ensure that they have a voice in local and regional water governance aimed at climate change adaptation strategies.

Expected Results

- Greater protection for the poorest sectors in face of water-related emergencies (droughts or floods)
- Increased food security for the poor
- Women will have access to new skills such as learning to swim and apply Early Warning Systems.

Tools

1. **Budlender, D. & Hewitt, G., 2003. Engendering Budgets. A Practitioner's Guide to Understanding and Implementing Gender-Responsive Budgets. London: Commonwealth Secretariat.**

This is a guide to enable practitioners to design gender-responsive budgets adapted to their local conditions, as well as to assess the gender-responsiveness of existing budgets. It can be used by policy-makers or by advocates for gender-responsive budgeting.

http://internationalbudget.org/wp-content/uploads/2011/01/Engendering_Budgets_final_doc.pdf

2. **GWA, 2002. Gender Mainstreaming in Integrated Water Resources Management. Training of Trainers Package. s.l.:s.n.**

This training package and the activities in it are intended to give managers, planners, and trainers who are concerned with policy development and implementation of IWRM programmes and projects, a sufficient grounding in the gender approach in IWRM, so as to help them in their work.

<http://genderandwater.org/en/gwa-products/capacity-building/tot-modules>

3. **GWA, 2003. Policy Development Manual for Gender and Water Alliance Members and Partners. s.l.: s,n.**

This manual provides guidelines designed to help development organisations – government, donor or civil society – concerned with water management or service delivery to develop gender policies appropriate to their own organisational context. The Guidelines have been developed

in response to demand from GWA member organisations – but will provide useful information to staff in any organisation striving to address gender issues in their work.

<http://genderandwater.org/en/gwa-products/policy-influencing/policy-development-manual/view>

4. **GWA, 2005, Travelling Exhibit on Gender and Water**

A photo-exhibit geared to different geographical regions and in different (local) languages. Its main objective is to raise awareness about gender and water issues and to strengthen capacity in community-based groups and organisations to address gender equity in integrated water resource management.

<http://genderandwater.org/en/gwa-products/exhibit-materials/traveling-exhibit>

5. **GWA, 2009. Cartoon Booklets on Gender and Water. s.l.:s.n.**

GWA and Ziraldo Alves Pinto had developed four booklets about gender and water, specifically targeted at school children and illiterate people. They are: 1. A Vision of Gender. What's this?; 2. Gender, Water, Sanitation and Health; 3. Gender, Water and Climate Events, and; 4. Gender, Water, Agriculture and Food. Hard or digital copies of these booklets can be got free of charge by contacting Gender and Water Alliance. Use of the booklets is free of charge, as long as users acknowledge GWA and Ziraldo. Booklets are available in English, French, Portuguese and Spanish.

6. **GWP, 2006. Mainstreaming Gender in integrated water resources management strategies and plans: practical steps for practitioners. s.n, s.l.**

This leaflet gives some practical steps and checklists for mainstreaming gender into IWRM programmes.

http://www.gwp.org/Global/GWP-CACENA_Files/en/pdf/tech_brief_5_gender.pdf

7. **Thomas, Helen, et al., 2002. A Gender Perspective in the Water Resources Management Sector. A handbook for Mainstreaming. Stockholm: SIDA.**

This handbook analyses the linkages between gender equality and water resources management, and gives some practical guidance for mainstreaming gender during the planning cycle in water projects.

<http://sidapublications.citat.se/interface/stream/mabstream.asp?filetype=1&orderlistmainid=1264&printfileid=1264&filex=1822881408432>

Relevant Websites

ORGANIZATION	SUBJECT	WEBSITE
GWA	Information related to Gender and IWRM: case studies, reports, studies, manuals, etc.	http://genderandwater.org/
MetaMeta, Nymphaea, UNESCO-IHE, and Cap-Net	The Water Channel	http://www.thewaterchannel.tv/
UN	UN water video library	http://www.un.org/waterforlifedecade/video_library.shtml
UNDESA	UN Documentation Centre on Water and Sanitation-Gender	http://www.zaragoza.es/ciudad/medioambiente/onu/en/listadoPer_Onu?sub=gender
UN-Water	UN-Water Gender taskforce	http://www.unwater.org/activities/task-forces/water-and-gender/en/
UN Women	UN Women website	http://www.unwomen.org/
UN Women	UN Women channel	http://www.youtube.com/unwomen
WFW	Women for Water partnership website	http://www.womenforwater.org/openbaar/index.php

Further Reading

GWA; UNDP; IRC; Cap-Net, 2006. *Resource Guide. Mainstreaming Gender in Water Management*. s.l.:GWA.

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Chapter 2

Domestic and Drinking Water



KEY MESSAGE: DAILY ACCESS TO SAFE WATER IS A HUMAN RIGHT

2.1 Problems

Although more than 2 billion people have gained access to improved drinking water sources since 1990 and the global MDG target for safe drinking water was said to be achieved in 2010, there are still 780 million people worldwide without access to improved drinking water (WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, 2012). The United Nations identified access to water as a basic human right in 2010 in Resolution 64/292.



Allowing users to pay smaller amounts more frequently and nearer to home makes water more affordable for them

Access to regular and safe water is embedded in power relations of class, gender and ethnicity. People without access are mainly poor, concentrated in rural areas and slums around big cities, and in developing countries. Women tend to be over-represented among these groups.

At a global level the burden of rising food and fuel costs, combined with the growth of the informal economy due to the economic crisis, means the poor have less money, time, and social capital, to

The MDG drinking water target had been reached

- ◆ An estimated 89 percent of the global population now use improved drinking water sources. Despite this enormous accomplishment, 780 million people remain unserved.
- ◆ Four out of 10 people without access to improved drinking water live in sub-Saharan Africa. While coverage of improved water supply source is 90 percent or more in Latin America and the Caribbean, Northern Africa and large parts of Asia, it is only 61 percent in sub-Saharan Africa.
- ◆ The number of people in rural areas using unimproved water sources is five times greater than in urban areas. Eight out of 10 people living in urban areas have piped water connections on their premises, compared to only 3 in 10 people in rural areas.
- ◆ In sub-Saharan Africa, almost 90 percent of the population in the richest quintile use improved drinking water sources, compared to only 35 percent of people in the poorest quintile

Source: (WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, 2012).

access or purchase water. This reduces the quality and quantity of water used in poor households, and negatively impacts family health. Since the onset of the economic crisis, more children, and especially girls, have been taken out of school,

often to help with household duties like fetching water and taking care of the sick and elderly.

In most cultures the responsibility for collection, transport, storage and use of water, as well as cleanliness of public and private facilities is considered to be an extension of domestic work and therefore the work of women and children, especially girls. The access to water of poor families in general and poor women in particular, interacts with a number of issues: competition for water and scarcity, the costs of water and affordability, lack of clean water and inefficient water management.

COMPETITION FOR WATER

- ▶ Around 1.2 billion people, or almost 20% of the world's population, live in areas of physical scarcity, and 500 million people are approaching this situation. Another 1.6 billion people, or almost 25% of the world's population, face economic water shortage (UN Water, 2006). Competition among users is often aggravated by droughts, land use, climatic variation, over-extraction, misuse, contamination, and economic crises. During such crises pre-existing gender inequalities are re-enforced. These include under-representation of women at all levels of decision making, their dominant responsibilities in unpaid household work, and their over-representation in informal, vulnerable, and casual employment. As a result when conflicts arise more powerful groups usually are at an advantage in accessing water.
- ▶ Women are disadvantaged by water competition if they have few or no water rights.
- ▶ According to the IPCC (the Intergovernmental Panel on Climate Change (Climate Change 2007: Synthesis Report, 2007) there is a 90 percent probability that the extent of drought-affected areas will increase due to climate change. This will increase the competition over water, as rainfall decreases and droughts lead to higher demand for irrigation water and at the same time the availability of fresh-water for domestic use is reduced. During times of

scarcity or increased competition, men's water use often comes first, forcing women and children to travel further to find water for the household.

- ▶ Women usually have a higher stake in productive use of household water, though such use is rarely recognized or given priority.

AFFORDABILITY

Water supply systems would be more sustainable financially and cost recovery instruments more effective if the differences in people's financial capacity and the impact of tariff systems would be taken into account.

- ▶ In many societies women have mobility restrictions and payment constraints. Low-income households, particularly those headed by women, struggle to pay large lump sums for water connections and even monthly payments. Allowing users to pay smaller amounts more frequently and nearer to home makes water more affordable for them.
- ▶ Falling tax revenues and foreign aid, as well as cuts in public sector budgets as a result of financial crises makes governments withdraw from development of water supply infrastructure, leaving it to the private sector, especially in urban areas. In some cases, water privatization has led to huge cost increases for the most vulnerable groups, poor services, and the disconnection of public standpoints.
- ▶ Economic crises further reduce the ability of poor households, and especially women to pay for water, by severely limiting their access to income and credit. The credit freeze at national level, as well as shrinking donor financing, means that micro-finance institutions have fewer funds to loan to clients (mainly women). With no other choice than to borrow from informal moneylenders, women are drawn into further indebtedness and poverty.
- ▶ Technology choice affects affordability. Consulting users of both sexes may result in a more acceptable, user-friendly and sustainable service.

Gender and water in Dhaka

A study undertaken in the slum of Korail, in Dhaka, Bangladesh, found that water scarcity and limited decision-making power increased women's daily physical workloads, deepened their emotional strain, and had high opportunity costs, resulting in recurring sickness, limited educational or employment attainment, and stagnant social mobility.

The large majority of women surveyed in Korail desired public water because it holds the promise of access for all at a more affordable cost. Also, they saw public access as a way to gain citizenship rights and to redress injustices in the urban fabric that are reinforced by inequitable water provision. The research also unveiled important class inequalities among women that need to be addressed in order to build a truly equitable, sustainable and accountable public system.

Views articulated by women from Korail slum wove a narrative of water justice, an ethic of collective need, and a desire for community-wide access to a public good. The study underscores the importance of questioning local power hierarchies by integrating a gendered perspective in debates on alternatives to privatization of water services. Source, (Sultana, Mohanty, & Miraglia, 2013). <http://www.municipalservicesproject.org/publication/gender-justice-and-public-water-all-insights-dhaka-bangladesh>. Accessed 29 June 2013.

LACK OF ACCESS TO SAFE DRINKING WATER

The lack of access to daily and safe water has economic, social and political impacts, all of which are deeply intertwined:

- ▶ Women's, men's, and children's lives are directly and negatively affected by lack of or limited domestic water supply. However, women are most directly affected by inadequate water supply since it is usually their responsibility to obtain it for family use.
- ▶ Women are generally more vulnerable and have fewer opportunities to escape poverty. Lack of access to safe water tends to perpetuate the cycle of poverty, partly because time and resources must be spent in acquiring this basic human necessity.
- ▶ In many societies, formal administration and decision-making are seen as men's work even though in practice women often manage water. In these situations, women's interests and concerns are overlooked and their work within the water system goes unrecognized
- ▶ In developing countries, women and girls spend an estimated 40 billion hours every year hauling water. They spend as much as eight hours a day

carrying up to 40 kg of water on their heads or hips, sometimes suffering adverse health effects. (Maharaj, Athukorala, Garcia Vargas, & Richardson, Mainstreaming Gender in Water Resources



Women are most directly affected by inadequate water supply since it is usually their responsibility to obtain it for family use, however difficult the access may be to the water source.

Rainwater harvesting in Brazil

The north-east of Brazil is a semi-arid region, characterized by severe lack of water and droughts that contribute to underdevelopment of the region. The “One Million Rainwater Harvesting Programme” (P1MC) was launched by civil society groups in the region, targeting rural families without a secure drinking water source close to their home. The RWH system reduces women’s daily work in fetching water, even though sometimes there is not enough rain to fill the tank. However, during these periods the tanks can be filled with water from water trucks. By May 2013, more than 2.000 million people had been mobilized and 450,000 RWH systems constructed under the programme (Nogueira, Brazil: Rainwater harvesting in semi-arid region helps women, 2008).



Management - Why and How. Background paper for the World Vision Process, 1999). This puts a strain on the public health systems and at a national level, leads to loss of productivity. During times of economic crisis, the increased stress produced by job loss, cuts in public spending, and the need for workers to become more competitive in the informal sector, women often have less time to seek water. This can force them to reduce the quality and quantity of clean drinking water for their families.

- ▶ In some rural areas, people (women) may be obliged to walk up to 15 kilometres a day in search of water. Some women, for example Samburu women in Kenya, spend their whole lives fetching water. When water points are far from homesteads, women and girls can face greater exposure to danger (e.g. risk of sexual or other violence).
- ▶ In urban areas, the lack of public water points can lead to long waiting lines and sometimes conflict. Over the past years, young men have taken up jobs as water vendors in many places, pushing women to the back of the queues during the times that water is available from public taps.

Good water quality is essential for general health and especially for women. According to the World Health Organization, about five million people die

each year from poor drinking water or inadequate sanitation, often linked with water shortages (Statistics: Graphs and Maps. Drinking Water Sanitation and Hygiene).

- ▶ Climate change also has profound impacts on the water quality. Saltwater from rising sea level and storm surges threaten water supplies in coastal areas and on small islands. Increasing water temperatures can cause algal blooms and potentially increase bacteria in water bodies. These impacts may require communities to begin treating their water in order to provide safe drinking water, increasing the cost of water.
- ▶ Water scarcity and insufficient water supply greatly affect the schooling of children and ultimately, the education of women. Time spent to collect water could be better used for education and production.
- ▶ Economic crises can deepen intra-household inequalities, by making women more dependent on the income of male family members. This can negatively impact their particular concerns and needs including decision-making power regarding access to and management of domestic and drinking water. This undermines their economic and political empowerment.

Gender mainstreaming in water management in Kenya

In Kenya, women are still underrepresented in water governance structures at all levels, yet they are the most negatively affected by unavailability of water. To substantially boost gender integration in the country's water sector, a team of professionals from the World Bank, the Water and Sanitation Programme (WSP), and the Ministry of Water and Irrigation (MoWI) pooled their resources and energies. This lesson illustrates how forging nurturing partnerships with a wide variety of development partners can result in effective strategies for gender mainstreaming allowing us to do far more together than any one of us could do alone (Torkelsson, Rop, & Wasike, 2011). For more information: <https://openknowledge.worldbank.org/handle/10986/10436>. Accessed 26 June 2013.

- ▶ Failure to consult all categories of potential users (including women) in the development of new water supply schemes often results in poor technology choices and location, and inappropriate payment and maintenance systems that lead to rapid breakdown.

INEFFICIENT WATER MANAGEMENT

Water utilities and other water supply systems often fail to recognise the complexity that is involved in governance of water schemes, especially at the village level. It takes time, extensive social networking and continued support to build a community water management system.

- ▶ Many administrative failures at the community level occur when women's commitment and interests are not recognised. Male-centred systems may fail due to inexperience, lack of interest, or other work commitments outside the village. Capacity-building is critical for both men and women.

2.2 Benefits of Gender Approach

Targeting women as well as men in developing water supply solutions can lead to direct and indirect benefits:

IMPROVED EFFICIENCY OF WATER USE

- ▶ **Reduced water loss and improved maintenance:** When both women and men participate in technology choice and maintenance

arrangements, water use can be reduced, breakdowns reduced and maintenance done more consistently and cost effectively.

- ▶ **Female representation in decision-making committees:** When women's interests and concerns, such as the location of water points and public latrines, are taken into account and their expertise recognized, water management becomes more effective.
- ▶ **Improved adaptability during periods of water shortage:** Water managers should take into account women's knowledge of alternative water sources and target methods to reduce the water demands of men, women, boys and girls, in accordance with their specific water use behaviour.
- ▶ **Increased access to water supply:** Higher participation of women in the location of water facilities and in management and financing



Adaptability during periods of water shortage can be improved through participatory management of water sources.

systems is significantly associated with improved water supply to more households.

IMPROVED SUSTAINABILITY OF WATER SUPPLY SYSTEMS

- ▶ **Broader service coverage:** Increased participation of women in the location of water facilities and in choices concerning local management and financing is significantly associated with the inclusion of more households with improved water supply.
- ▶ **Acceptable and effective design of water supply systems:** This results from considering the different interests and experiences of both women and men. Gender sensitive analysis, focussed group discussions and stakeholder participation help in the choice of appropriate technologies and the design of effective management and financial systems, which vary in different contexts.
- ▶ **Substantially reduced costs in the construction of the water supply systems:** Both men and women should be involved in different activities during construction, such as contributions in work, in resources or in monitoring. For example, women who are at home during the day may be available to supervise ongoing construction and after a simple training they can

ensure quality control. Additionally, targeting capacity development at this stage will improve future operation and maintenance.

- ▶ **Sustained operation of the water supply system:** When both women and men participate in decision-making about the type of water service to be installed, the service tends to perform better, finances are better managed and overall local management is stronger. Women who have been trained to maintain the facilities are more committed to repair broken pipes and pumps immediately.
- ▶ **Reduction of conflicts:** Giving attention to and respecting the views of both men and women provides critical information about what can and cannot work and builds people's social acceptance and respect.

IMPROVED PROTECTION OF WATER RESOURCES

- ▶ **Protection of water supply sources:** Women's and men's active participation in water supply projects can improve attempts to identify and resolve pollution and land use problems in the catchment.
- ▶ **Improved health conditions:** Gender analysis can help identify gender specific reasons for exposure to water-borne diseases and inform the development of targeted responses.

Thirsting for Justice campaign

Israel controls all fresh water sources in the Westbank, and its policies and practices limit the access to water of Palestinian citizens. As a result, Palestinians in the West Bank are forced to purchase over half of their water from Israel.

The Gaza inhabitants depend on the Coastal Aquifer for their drinking water, but it is contaminated due to over extraction and sewage contamination, making it unfit for human consumption. Desalination of seawater is too costly and unsustainable and Israel also limits the import of construction material for repair and rehabilitation of infrastructure that would improve water management.

The "Thirsting for Justice" campaign kicked off on World Water Day 2011, calling on European governments to put pressure on Israel to respect international law and Palestinian basic rights to water and sanitation. This campaign is an initiative of the Emergency Water Sanitation and Hygiene group (EWASH), a coalition of 30 leading humanitarian organizations (Emergency Water Sanitation and Hygiene group, 2010). For more information: <http://www.thirstingforjustice.org>. Accessed 4 August 2013.



Cultural beliefs and values attached to water sources can help to protect them from contamination.

IMPROVED SOCIAL AND ECONOMIC DEVELOPMENT

Drinking water and sanitation projects contribute to the reduction of water-related chores and provide women and girls with the opportunity to engage in other educational and income-generating activities, while creating the conditions for a healthy environment.

- ▶ **Education benefits:** Improved access to education and training and a higher rate of school attendance.
- ▶ **Health benefits:** Reduction in water-related diseases morbidity/mortality has a positive impact in public health sector.
- ▶ **Social benefit:** There is a notable reduction in acts of violence and aggression against women who fetch water from long distances;
- ▶ **Positive economic benefits:** Improved economic status because of a reduction in health expenses relating to water-borne diseases and the possibility of greater participation in income-generating activities.

2.3 How to Get the Benefits

Water managers must take into account the different and specific needs of men, women and children in the design of water programmes and projects. This will ensure that all drinking water and sanitation programmes incorporate a gender dimension, from the preparation stage through to completion.

India: Gender and economic benefits from domestic water supply in semi-arid areas

To test the assumption that in semi-arid areas domestic water projects are not only important for welfare and family but also have economic benefits, applied research using a case study approach was carried out in 27 villages in Santalpur and Radhanpur blocks in Banaskantha district, Gujarat, India. The overall aim was to see if and how domestic water supply projects in (semi) arid areas need to be adjusted to maximise the economic benefits of the productive use of water and time.

The study found that the quality of the water service had significant economic consequences. Breakdowns of the water supply caused women enterprise members a loss at an average of Rs.50 per person per month in earnings. An improvement of the water supply to the extent that women spend one hour, instead of 3 hours, per day on collecting water would result in an improvement of their annual income with upper boundaries of between Rs.750 and Rs.5520 depending on type of enterprise and local conditions. Alternatively, each woman might gain between 45 and 152 eight-hour days annually for domestic, social, and management activities (GWA, 2006).

For the complete study go to: <http://genderandwater.org/en/gwa-products/knowledge-on-gender-and-water/case-studies/all-case-studies-of-the-resouce-guide-gender-and-iwrm/case-study-india/Ench33SEWA.pdf/view>. Accessed 10 August 2013.



Women's knowledge of alternate ways to access water for domestic use should be taken into account when designing water projects and services.

In order to maximize the potential benefits of the gender approach, gender considerations should be incorporated into all levels of sustainable water supply system development: the enabling environment of policy and law; the institutional environment; and the operational level.

ENABLING ENVIRONMENT

A review of existing laws and policies would be required in order to identify ways in which to make existing water laws and policies more inclusive and gender sensitive:

► Analysis

- A gender analysis is useful to make a baseline determination of the existing position and status of women and men in relation to water laws and policies.
- Gender analysis helps determine the potential gender impacts of changes in water law and policies and serves as an assessment tool for determining whether budget allocations

are balancing gender inequities in the water sector.

- Gender and Poverty Audits of post-economic crisis budget cuts by national governments and international organizations (World Bank, International Monetary Fund, etc.), and of the financial incentive packages developed to alleviate the impact of the economic crisis could help to develop strategies to reduce negative impacts on poor men and women
- Pro-poor, gender sensitive, participatory impact studies can provide hard evidence (numbers and case-studies) of the influence the economic crisis has on women and men of the poorest and most vulnerable categories, and how this affects their access to safe domestic and drinking water.

► Equitable rights

- Encourage gender awareness in the water sector through capacity development and training.
- Seek guarantees for equal entitlement to and protection of women's water rights. Advocate for an explicit recognition of women as users and managers in water laws and policies.
- Advocate for legal mechanisms to allocate and protect access to basic water supply.
- Advocate for social protection policies and



Increased social infrastructure investment can provide better access to safe water and reduce the use of unprotected sources of water for domestic use

A water and sanitation project with a gender focus: The case of the women of Villa Satellite, Tiquipaya, Bolivia

While planning for a sewer system and a water treatment plant for 400 inhabitants in Villa Satellite a peri-urban town in Bolivia, Yaku, an Italian NGO managed to ensure the involvement of all men and women of the village in the decision making. They first managed to convince the engineers as well as the local women, that taking their opinions into account was very important. Furthermore they organized separate meetings for women as well as joint meetings for the whole village to discuss the construction, maintenance, operation and management of the sewer system and the water treatment plant. Because of this the wish of women to have the toilets constructed inside the house for physical safety reasons, was realized, where possible.

For more information: Enseñanzas y aprendizajes de la Transversalización de Género en el Sector Hídrico, (GWA, 2013). (In Spanish)

mechanisms that increase social infrastructure investment in domestic and drinking water. Such policies and instruments are especially important during economic crises, as they contribute to easing women's care burden, freeing up their time to participate in paid work, and invest in their social networks.

► Participation

- Promote recognition of stakeholder participation as a principle of water law. Make explicit the right and urgency of women's involvement in structures and mechanisms for citizen participation.
- Include water users and their organisations as stakeholders.
- Identify those people who are likely to lose out, as result of interventions.
- Seek equitable participation. Remember that better-off women and men usually have a different stakes and better access to participation than the poorest women and men.

INSTITUTIONAL ARRANGEMENTS

Many water management institutions are being reformed for improved efficiency and sustainability. Opportunities can be found for incorporating greater attention to gender as part of the reform process:

► Analysis

- An institutional gender analysis is useful to assess the internal institutional situation in terms of gender relations and to evaluate gender impacts on the effectiveness of the day-to-day work of the institution.
- A gender audit could reveal if the institutional system is creating space for solving gender issues.

► Capacity development in gender issues

- Technical and managerial personnel should be trained in analysing gender relations and participatory processes. There should be a focus on practical issues such as where and why taking gender issues into account contributes to better system performance and fairness. Capacity should also be built in the participation skills necessary for working with the local water users.
- If financial and human resources are few, the use of empowerment (four elements that interlink) is an easy way for technical water managers to understand gender relations in a specific situation, and also think of ways to improve them.

► Monitoring and evaluation

- Develop a framework for monitoring and evaluating sector/institutional performance

Short film: Gender mainstreaming in water and sanitation in African cities

In the “Water for African Cities Programme” GWA has assisted UN-Habitat with Rapid Gender Assessments of 17 large cities, based on which a gender mainstreaming strategy in these African cities that participated in this programme could be developed and implemented. This film shows the importance of gender mainstreaming in water and sanitation and how it was done to have scope for actual change on the ground for many poor women, children and men (UN-Habitat; GWA, 2010). <http://www.youtube.com/watch?v=crDPHDLIMAI&list=PL1280AF6A44B9926A&index=15>. Accessed 8 July 2013.

on gender issues, as this can reveal hidden problems and potential solutions.

- Develop gender-disaggregated and gender analytical indicators.
- Establish independent fiscal oversight bodies, during economic crises, with a quota requiring equal representation of women. This could help monitor expenditures and provide policy advice to ensure that financial incentive packages have gender equitable effects and reduce the possibility of political bias.

► Gender sensitive budgeting

- Gender analysis, gender sensitive participation and gender specific actions require resources
- Ensure budget allocation for balancing gender in water sector programmes.

► Development of an equal opportunity policy in staffing

- Appoint women personnel to technical and managerial roles, not only to secretarial or support positions.
- Promote equal salary and equal access to opportunities.
- Develop measurable, gender-disaggregated targets to monitor progress in staffing.

OPERATIONAL ASPECTS FOR WATER SUPPLY MANAGEMENT

The multiple practices and procedures embedded in the various elements of water supply management

and operations may become more effective and efficient if gender is taken into account.

► Water resources assessment

Gender assessment tools can help to identify:

- Differences in the interests and motivating factors of women and men;
- Differences in women's and men's perceptions of problems of water supply;
- Differences in control of and access to vital resources that enable/disable women and men to access improved water supply systems.

► Planning

- Allow a gender-balanced expression of ideas, targeting women's opinions about household water use, accessible options, technology and administration.



Gender sensitive budgeting in water sector programmes can create better access to water for local communities.



It is important to take into account gender differences in willingness and ability to pay for domestic water

- Seek gender-balanced participation at all levels.
- Consider the diverse impacts of water supply projects and programmes on women's and men's lives.
- Design and collect data on gender-sensitive indicators.
- Create a local gendered agenda.

► Economic instruments

- Consider gender differences in willingness and ability to pay; in particular, consider who pays for domestic water.
- Pay considerable attention to the gender implications of any economic instrument designed to assure cost-recovery in water supply projects.

► Gender sensitive information management and exchange

- Consider the cultural context and seek communication channels that reach men and women with information that enables them to participate in decision-making.
- Collect and use sex-disaggregated data.

Finally, pro-poor, gender sensitive, participatory impact studies can provide valuable lessons from countries that have learned from these challenges. It is especially important to learn how they managed to put social protection measures in place even when social costs were rising in face of economic crisis.

Tools

1. **African Development Bank; African Development Fund, 2009. Checklist for gender mainstreaming in the water and sanitation sector.. s.l.:Africa Development Bank.**

The Checklist is a tool for effective gender mainstreaming within Drinking Water Supply and Sanitation (DWSS) programmes and projects, with a view to guiding project managers and implementation teams in identifying, preparing, appraising, implementing, monitoring and evaluating gender-sensitive DWSS programmes and projects.

<http://www.afdb.org/fileadmin/uploads/afdb/Documents/Policy-Documents/Checklist%20for%20Gender%20Mainstreaming%20in%20the%20Water%20and%20Sanitation%20Sector%20EN.pdf>

2. **Asian Development Bank, 2006. Gender checklist: water supply and sanitation. s.l.:ADB.**

The checklist guides users through all stages of the project/programme cycle in determining access to resources, roles and responsibilities, constraints, and priorities according to gender in the water supply and sanitation (WSS) sector and in designing appropriate gender-sensitive strategies, components, and indicators to respond to gender issues.

http://www.adb.org/sites/default/files/pub/2006/gender_checklist_water.pdf

3. **GWA, 2011. Gender Scan Methodology for water utilities. s.l.:GWA.**

The Gender and Water Alliance (GWA) has designed this Gender Scan Methodology to assist water and sanitation utilities

in identifying how effectively they are mainstreaming gender in their policies, practices, and procedures, and to assist them in identifying areas where they can further strengthen gender mainstreaming.

http://genderandwater.org/en/gwa-products/capacity-building/gender-scan-methodology-for-water-utilities/at_download/file

4. **Khosla, P., 2003. Water, Equity and Money. The need for gender-responsive budgeting in water and sanitation. s.l.:The Netherlands Council of Women.**

This paper is about Gender-Responsive Budget Analysis (GRBA) as practical tools for implementation. The document recommends the introduction of Gender-Responsive Budget Initiatives to be applied to the framework of Poverty Reduction Strategy Papers (PRSPs) for the water sector.

http://www.womenforwater.org/docs/WWF_3_Water,_Equity_and_Money.pdf

5. **UN Water; United Nations University, 2008. Expert Group Meeting. Gender-disaggregated Data on Water and Sanitation, Bonn: UNU.**

Summarizes the discussion regarding disaggregated data indicators on Water and Sanitation, including data collection needs, indicators and methodologies proposed.

<http://www.unwater.unu.edu/file/get/140>

6. **Water and Sanitation Programme, 2010. Gender in Water and Sanitation. Mainstreaming Gender in Water and Sanitation.. s.l.:WSP.**

This document highlights in brief form, approaches to redressing gender inequality

in the water and sanitation sector. The review is intended for easy reference by sector ministries, donors, citizens, development banks, NGOs and water and sanitation service providers committed to mainstreaming gender in the sector.

<http://www.wsp.org/sites/wsp.org/files/publications/WSP-gender-water-sanitation.pdf>

7. Water Integrity Network; IRC, 2011. Annotated water integrity scans. s.l.:WIN.

The Annotated Water Integrity Scan (AWIS) is a diagnostic tool that 1) gives an overview of the integrity of the water sector; 2) highlights areas vulnerable to corruption; 3) identifies priority actions to enhance water integrity; and 4) stimulates improvements that are gender sensitive and pro-poor.

Relevant Websites

SOURCE	TITLE	LINK TO ORIGINAL
GWA	Gender and Water Alliance – Domestic and Drinking Water	http://genderandwater.org/en/water-sectors/domestic-and-drinking-water
UN-Habitat	UN-Habitat Gender in Water and Sanitation	http://unhabitat.org/urban-themes/water-and-sanitation-2/
UN-Habitat	Water and Sanitation Trust Fund Impact Study Series	http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3153
UN-Habitat	UN-Habitat channel	http://www.youtube.com/playlist?list=PL1280AF6A44B9926A&feature=plcp
UN-Habitat	UN-Habitat channel 2	http://www.youtube.com/user/epitunhabitat?feature=watch
UNICEF	UNICEF Water, Sanitation and hygiene website	http://www.unicef.org/wash/index_3951.html
WaterAid	WaterAid–Women website	http://www.wateraid.org/uk/what-we-do/the-crisis/women
WaterAid	WaterAid channel	http://www.youtube.com/user/WaterAid
WB	Sanitation, Hygiene and Wastewater Resource Guide – Promotion – Gender and Sanitation	http://water.worldbank.org/shw-resource-guide/promotion/gender-hygiene-and-sanitation
WHO	Water Sanitation Health. Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) Website	http://www.who.int/water_sanitation_health/glaas/en/
WHO/UNICEF	WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation	http://www.wssinfo.org/
WSP	Water and Sanitation programme	http://www.wsp.org/
WSSCC	Water supply and sanitation Collaborative council – Gender	http://www.wsscc.org/topics/crosscutting-themes/gender-and-wash
WSSCC	Water supply and sanitation Collaborative council channel	http://www.youtube.com/user/sanitationforall?feature=watch

Further Reading

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Chapter 3

Sanitation



KEY MESSAGE: TOILETS FOR ALL! INVOLVE WOMEN AND GIRLS IN TOILET DESIGN

3.1 Problems

INADEQUATE SANITATION

According to the 2013 UNICEF and WHO update on MDGs, 64 percent of the world population uses improved sanitation, an increase of only 1.9 billion people since 1990. At the current rate of progress, the world should reach 67 percent coverage in 2015, far from the 75 percent Millennium Development Goal set in 2000. Unless the pace of change in the sanitation sector is accelerated, the MDG target will not be reached until 2026 (WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, 2013).

► **Mainly the poor:**

- Worldwide, 2.5 billion people, concentrated in Asia (80 percent) and Africa (13 percent), lack access to improved sanitation. Seventy-one percent of them live in rural areas. Women and girls are particularly adversely affected by the lack of access to sanitation and good hygiene, mainly due to their tasks in home making and care giving. Making a difference in the lives of women and girls can have a multiplier effect across whole households and communities. Access to safe, clean water, improved sanitation and good hygiene enables women and girls to take control of their lives (Mengistu, 2012).
- At a global level, credit freezes have led to sharp declines in lending for investment and consumption. Many micro-finance institutions – which mainly lend to women entrepreneurs and consumers, face serious liquidity problems. This has led to a negative impact on women's access to credit for building toilet facilities in



Access to safe, clean water, improved sanitation and good hygiene enables women and girls to take control of their lives.

their homesteads, forcing them to go without safe and appropriate sanitation.

- Intra-household gender inequalities may deepen in times of economic crisis, due to increased stress by job loss and falls in income. Research has suggested that women become more dependent on male household members, face increasing physical and sexual violence, and have less time to invest in their social networks due to increasing hours of work in the informal sector. This severely reduces women's decision making power within the household, especially regarding their personal needs and priorities, for example, in appropriate and secure sanitation facilities. Post-crisis budget cuts in government social spending, less foreign aid, and shrinking tax revenues, have led to fewer subsidized sanitation schemes for the urban and rural poor, and a sharp decline in the quality and quantity of school sanitation facilities in low- and middle-income countries

- **Open defecation:** While open defecation, done mostly in rural areas, is decreasing in Asia and Latin America, in Africa it is increasing (WHO/UNICEF

Gender impacts of alternative sanitation system on the lives of women in South Africa: A case of Soshanguve Aqua Privy sanitary facility

The Aqua Privy sanitary facility was introduced in areas where there was no access to individual water connections. Although it was meant to provide access to toilets for local people, it has caused a number of unforeseen, gender-related, problems. Most importantly, it requires water to be poured into the toilet bowl after use. In addition, the sludge needs to be emptied periodically. The consequences of this are that:

- ◆ water must be fetched before the toilet is used – an obvious and humiliating sign that women want to use the toilet;
- ◆ toilets face the street, causing embarrassment and sometimes leaving women open to harassment;
- ◆ sanitary pads cannot be flushed into the bowl, leading to further embarrassment;
- ◆ the toilets are too small for pregnant women and women with children to use comfortably;
- ◆ a toilet is full when black worms come out of the seat, at which point it is a woman's task to empty it. Those women who perform this task can be seen as unmarriageable.

(Mjoli-Mncube, 1998). For full detailed case-study: <http://www.globenet.org/preceup/pages/ang/chapitre/capitali/cas/southaf.htm>

Joint Monitoring Programme for Water Supply and Sanitation, 2013). Most people forced to practice open defecation are poor and women are over-represented among them.

► Health impacts:

- When women do not have access to sanitation, they often restrict themselves by reducing and controlling their diets, leading to nutritional and health impacts. Restricted toilet opportunities increase the chance of urinary tract infections and chronic constipation, as well as psychological stress. Annually, 3.4 million people, mostly children, die from water-related diseases. Ninety-nine percent of these deaths, occur in the developing world (Prüss-Üstün, Bos, Gore, & Bartram, 2008).
- In many societies, the task of cleaning toilets falls to women or children, thereby increasing their exposure to disease.

- **Cultural limitations for women:** Women and girls have restricted mobility in many cultures, which limits their access to toilet facilities or open defecation areas distant from home. Women and

children face higher risks of sexual assault when they are looking for privacy to defecate. This risk is also increased in the absence of sex-separated facilities, particularly in schools.

► Poor menstrual hygiene management

- Menstruation poses additional sanitation requirements for women, which are seldom considered in the policies and design of sanitation systems. In total, women spend from six to seven years of their lives menstruating. Approximately four to five times per day during four to seven days each month, women require a private space to change sanitary items, as well as water for cleaning.
- Facilities are frequently poorly maintained and do not contain the supplies (e.g. water, soap or pads), or privacy girls need. Girls often go home to manage their menstruation, or they do not feel comfortable participating in class – especially if it involves standing or going to the blackboard.
- Currently, 50 million of the 72 million school age children not enrolled in primary school are



Easy access to simple and clean toilet facilities and washrooms is crucial for adolescent girls to stay in school

girls, and two thirds of the nearly 800 million adults who lack basic literacy skills are women (Education for All Global Monitoring Report Team, 2008).

- A girl absent from school for four days in a month loses six weeks of learning in every school year. Within the four years of high school, this same girl loses the equivalent to almost six months of learning - around two thirds of a school year. This has contributed to girls falling behind in their studies and led some to drop out of school

altogether (Kenya- Sanitary Towel Revolution, 2012).

- In poor communities, old torn clothes are used to absorb menstrual flow. Most girls reuse moist and damp clothes as they cannot dry them in open air where they may be seen by men and boys. This can lead to health problems such as fungal diseases.
- In many societies discussion of menstruation is considered taboo or a topic to be discussed only among women. As such, many girls lack accurate information regarding menstruation.
- Some societies consider women to be ritually impure during menstruation. It is often mothers who enforce restrictions that prohibit their menstruating daughters from contact with others (Mahon & Fernandes, 2009).

POLLUTION OF WATER RESOURCES AND THE ENVIRONMENT

- Disposal of untreated waste, particularly sewage, is harmful to livelihoods as it causes pollution of soil, surface water, and groundwater.
- Many water-related diseases such as typhoid, diarrhoeal, hepatitis, gastroenteritis, cholera

That time of the month

Ethiopia – Welcome to Que'en Grade 1-7 Community School – home to 15-year-old Komaes. She is a Grade 7 student and an outspoken advocate amongst her peers for banishing the awkwardness around the topic of menstruation. The latrine at Que'en has revolutionized the way girls manage their menstrual periods as it offers them a safe, private place to change their homemade sanitary napkins. Before the latrine, girls would hike up into the mountains to hide behind a tree, change their pad, and bury the used one under a rock. Now, they can walk 100m from their classroom to the latrine, do their business, dispose of the dirty materials in the garbage can, wash their hands and return to class! (Imagine1day, 2010). For more information: <http://www.flickr.com/photos/imagine1day/5307682508/>



and dysentery, as well as parasitic infections, are transmitted through waterborne contamination.

- ▶ Women and children are most susceptible to waterborne diseases due to their tasks in water collection, clothes washing and other domestic activities. Women are also responsible for the care of sick family members. About four billion cases of diarrhoea occur annually, of which 88 percent are attributable to unsafe water, and inadequate sanitation and hygiene (Prüss-Üstün, Bos, Gore, & Bartram, 2008).
- ▶ Disposal of untreated sewage can be disastrous to aquatic life which is a source of livelihood to many rural families. It may cause fish and other nutritious creatures such as crabs to die. The high nutrient content of sewage leads to eutrophication which then chokes other aquatic plants such as reeds, mostly used by women to make baskets and mats.
- ▶ The improper emptying of pits and septic tanks often results in disposal of waste where it contaminates water resources.
- ▶ Disposal of sanitary items has seldom been considered as a sanitation issue. However, billions of objects such as condoms, plastic bags, sanitary towels and children's nappies are disposed of in sanitation systems annually. These items are a frequent cause of clogging, contribute to solid waste pollution of water resources, and are becoming a significant problem in coastal areas.

TECHNICAL FAILURES

- ▶ Despite huge investments, a considerable proportion of sanitation systems falls out of use soon after their construction. It can be due to lack of participation of the users and/or poor design, technical choice or methods of implementation. Ownership and maintenance responsibilities are often not taken care of.
- ▶ In many cultures women wear traditional dress which is inappropriate for working on toilet construction crews. Overalls and work-suits are considered inappropriate for women and they are designed for men and not for women so that they cannot be comfortably worn by women.
- ▶ Lack of consultation with both men and women often results in technical options that do not take into account cultural taboos or traditional practices regarding excreta disposal. In some cultures it is considered inappropriate for men and women, even in the same family, to share sanitation facilities. In other cases, children's excreta are considered clean and are to be handled with care by caretakers.
- ▶ Even in areas without access to tap water, many systems still rely on water to flush, adding an additional water-fetching burden for women and children. On the other hand, dry sanitation technologies ignore the need for water for hygiene, which does affect women more than men.

Technical design matters

Technical options for sanitation need to be identified and selected through a process of consultation with users, both male and female, of different age groups so that specific needs can be taken into account.

A survey in Zimbabwe noted that the children preferred the latrine toilets, mainly because they were worried about the dirty state of Blair toilets when there is no water and are not cleaned. "Apart from additional burden of fetching water from afar, the toilets become smelly and hazardous to use, posing risk of contracting diseases because we walk barefooted most of the time" said the school girls (Tauya, 2010).



Reduced capacity of water resources to absorb and dilute pollution can create health hazards for women.

CLIMATE CHANGE

- ▶ Floods and droughts, which are a consequence of climate change, have serious public health consequences as water quality deteriorates, water quantity becomes less certain and sanitation systems contaminate the surrounding environment. Climate change also affects the capacity of the environment to absorb or reduce the adverse effects of waste. Therefore, climate change increases all above mentioned problems and the related gender inequalities.
- ▶ In densely populated areas where people are heavily dependent on waterborne sanitation systems, floods can destroy and damage the sanitation infrastructure and lead to water pollution and contaminated water supplies. If sewerage is treated on an off-site location, it becomes harder to safeguard the sanitation system (including the transportation system to the site) against floods and infrastructure damage caused by flood or heavy rainfall. Rain-generated floods and landslides deteriorate water and sanitation infrastructure, and it may be more difficult for women to reach water sources and sanitation facilities during floods, heavy rainfall, or cyclones. In some cases, these facilities have been completely destroyed.
- ▶ Prolonged droughts can cause operational difficulties or systems to become blocked when there is too little water. Further problems may arise

from reduced capacity of water resources to absorb and dilute pollution, which will put greater strain on sewage system infrastructure, increase costs and potentially the carbon footprint of wastewater treatment. Unconventional or modified sewerage may offer greater resilience mainly due to the lower water requirements. For example, pit latrines tend to be resilient, because different designs allow adaptation to changing climate. Individual facilities may however, not be resilient. The rise in ground water level can overtop the pit latrines and lead to severe water pollution. Poor families, dependent on pit latrines, can be severely affected and women and girls, who lack other sanitation options are often particularly impacted.

- ▶ The impacts of climate change does not only affect established water and sanitation services, but it also puts future gains in access to water-sanitation, hygiene and quality of services in water-sanitation regime at higher risk. Also indirect effects, like energy interruptions impact on sanitation and water supply, increasing the unreliability of piped water and sewerage services.

3.2 Benefits of a Gender Approach

IMPROVED ACCESS TO ACCEPTABLE SANITATION

- ▶ **More appropriate and acceptable sanitation solutions:** Gender sensitive participation and gender-targeted information will improve infrastructure selection and community commitment to sustainable solutions that include hygiene-related behaviour.
- ▶ **More successful projects:** Sanitation is a household decision in which men and women have different motivations and interests. Practice has demonstrated that sanitation coverage only improves when there is sufficient understanding of the benefits, and local knowledge about construction and maintenance. Additionally, many projects show that women are better at

Access to sanitation facilities and services for the Sabon Zongo community in Ghana

Designs to improve existing toilets, construct waste water and flood water drains and improve garbage collection were delivered through cooperation between UN-Habitat and WaterAid. The designs were reviewed by a development committee, opinion leaders, and disadvantaged groups in the community. As a result of these reviews, the designs were amended to incorporate the concerns expressed by the committee and members of the community.

A 20-seater toilet was constructed to ease pressure on the public toilets in the area. About 25 percent of the population is benefitting a toll booth operated by women, which enables them to earn some income. The neat, well ventilated building is divided into sections for women and for men, each with six sitting toilets, three traditional squatting toilets, and a wider one with a wheelchair ramp and handles for disabled people. There is even a sentry post at the entrance - no one gets past the attendant without using soap.

In addition to the 20 seater toilet a total of 1100 school children from local primary schools are benefitting from two 8-seater toilets. This saves them from accessing facilities in town and gives them more time for studies. Sanitation improvements in schools are said to have decreased the incidence of school drop out among young girls (UN-Habitat, 2009), (UN-Habitat, 2011). For detailed case-study: <http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3154>

KEY MESSAGES:

PROVIDING SAFE WATER, SEPARATE GIRLS' TOILETS AND HYGIENE CLOSER TO SCHOOLS AND HOMES IS INTEGRAL TO GIRLS' EDUCATION.

QUALITY EDUCATION FOR GIRLS MEANS A STRONG POPULATION FOR THE COUNTRY IN THE FUTURE

convincing others to build a new sanitation facility.

- ▶ **Easier maintenance and cleaning:** Since women are responsible for cleaning, they are usually the first to detect and solve problems. As a result, women acquire considerable knowledge about maintenance and the advantages and disadvantages of different technologies.
- ▶ **Empowerment:** The change, particularly for women, from dealing with open defecation to having access to a clean toilet close by, gives women a sense of dignity. Women feel empowered socially, as well as in the physical element of empowerment, if they play a role in decision making related to O&M also in the political element. As a result of improved hygiene, women will have more time to

spend productively, which could mean economic empowerment, particularly if they have control over the extra income.

SOCIAL BENEFITS OF SANITATION

- ▶ **Increased sanitation coverage:** a gender sensitive approach helps to mobilize demand for improved sanitation and addresses cultural barriers and taboos. Biological differences, especially related to reproduction, make women and men susceptible to, as well as the conveyors of different diseases. Social marketing and capacity development is more effective when targeted to either sex, depending on the vulnerabilities.
- ▶ **Improved school attendance:** Easy access to simple and clean toilet facilities and washrooms



Sexual violence against women can be reduced drastically when gender sensitive decisions are made about location, privacy and other features of sanitation facilities.

is crucial for adolescent girls to stay in school and achieve their learning potential. Menstruating girls are often not comfortable to participate in class especially to go to the board to illustrate something, for they fear they may have spilled. Preventing girls from dropping out of schools is important for the whole country: they are the educators of the next generation.

- **Health:** Provision of good sanitation facilities will lead to reduced diseases associated with poor menstrual hygiene; and reduced maternal and child mortality.

- **Reduced violence against women:** Sexual violence against women can be reduced drastically when gender sensitive decisions are made about location, privacy and other features of sanitation facilities. This adds to women's physical empowerment.

IMPROVED PROTECTION OF WATER RESOURCES

- **Improved hygiene practices:** A gender approach helps to identify who the real decision makers are with regard to waste disposal and which factors influence women's and men's sanitation-related decisions. Evidence shows that women rather than men, decide what will be thrown away and where, making it more important to inform women when changing sanitation and hygiene practices to manage waste properly, thereby reducing pollution of water resources.
- **Ecological sanitation solutions:** Environmentally friendly sanitation solutions require a gender approach and commitment from both women and men. This can help identify ecologically sound technical options that fulfil women's and men's interests and have financial, technical and health feasibility.

Enabling girls to lead

Hope Asekenye, 12, lives in Mpigi district, Uganda. She is in primary six at Equator Primary School, is chairperson of the School Health Club and leader of the Girls' Hygiene Initiative. She is happy that support from WaterAid has enabled the girls in her school to use separate toilet blocks and washrooms to manage menstruation. The blocks have restored their privacy and dignity, making them less likely to drop out before they have completed their education. Hope says, "We have two toilet blocks; one block of six stances is shared by teachers and adolescent girls. The teachers use three stances and the girls use the other three, and then another block is used by girls in lower classes. When we got the new toilets, the old toilet blocks were left for the boys." "Girls in adolescence also have their washrooms where they wash and hang their pads during menstrual periods." Since the water and sanitation project started, adolescent girls at Hope's school have been excited to attend school, knowing that they no longer have to miss classes during menstruation. Simple things like a shower room and access to water improves girls' academic performance, allowing them to gain a full education (Mengistu, 2012). For more information: <http://www.wateraid.org/~media/Publications/empowering-women-girls-water-sanitation-hygiene-gender-equality.ashx>

3.3 How to Get the Benefits

Maximizing the potential benefits of a gender approach to sanitation requires action at three levels: a) the legal framework and policies; b) institutional arrangements; and, c) management instruments.

SANITATION LEGAL FRAMEWORK AND POLICIES

► Policy

Water managers as decision makers can influence the design of separate policies, and strategies for sanitation which are separate from those for water supply and specific to sanitation. This will ensure that sanitation is given the attention it deserves and issues are fully analysed.

- **Water managers** should support the new targets that are part of the Sustainable Development Goals SDGs- post 2015. In 2012 WHO and UNICEF proposed to include:

- **Target 1:** By 2025, no one practices open defecation and inequalities in the practice of open defecation have been progressively eliminated.

- **Target 2:** By 2030, everyone uses basic drinking-water supply and hand washing facilities when at home, all schools and health centres provide all users with basic drinking-water supply and adequate sanitation, hand-washing facilities and menstrual hygiene facilities, and inequalities in access to each of these services have been progressively eliminated (WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, 2012).

- **Make explicit** the urgency of women's involvement in structures and mechanisms for decision-making on sanitation services.
- **Stricter accountability and enforcement of gender sensitivity in sanitation interventions:** There should be a binding policy and legal framework to halt projects/

Sanitation, the MDGs and integrity

Governments have tried hard to reach the MDG-goal for sanitation: "To halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation". However this has led to a focus on counting the number of toilets constructed, not if they were actually used.

In Cape Town, South Africa a local group "Social Justice Coalition" performed an audit of toilets provided by a supplier contracted by the City of Cape Town.

They concluded:

- ◆ The contractor has received at least R126 million over approximately the past three years to service and maintain temporary chemical toilets. Only 256 toilets were found and inspected in the four areas audited. According to the contract, there should be 346 toilets in the four areas. This implies that 90 toilets are missing.
- ◆ Only 68% of toilets inspected during the audit had been serviced in the previous week.
- ◆ 54% of toilets inspected were unusable and 66% were damaged and had not been maintained.
- ◆ Despite the contract requiring that all toilets be safely secured to the ground, none were secured, and residents complained that toilets were easily toppled over by weather or vandalism.
- ◆ The contract provides for community liaison officers but the audit could not find evidence of their existence. This makes it hard for residents to communicate problems to the contractor (Turner, 2013).

For the complete article go to: <http://groundup.org.za/content/activist-group-accuses-city-failing-monitor-toilet-contracts>



Engaging women's technical skills can improve maintenance of infrastructure

initiatives that do not recognize gender parity and the full participation of women. A responsibility and accountability mechanism for reporting on improved gender equity using gender disaggregated data could be embedded in senior manager job descriptions.

- **Recognizing that access to sanitation is a basic human right:** Integrating human rights in sanitation has proved useful in mobilising the requisite resources – both financial and non-financial- to inform national laws and policies that have a direct influence at municipal and local levels.
- **Advocate for social protection policies and mechanisms** that increase social infrastructure investment in safe and appropriate sanitation. Such policies and instruments are especially important during economic crises, as they

contribute to the health, well-being, and dignity, of women and girls – vital for their physical, economic, social, and political empowerment.

- **Change mindsets at policy level:** At the policy making level, there is need for political will and a change of mindset regarding gender issues in sanitation. Technical project staff must appreciate the importance of gender mainstreaming in the planning, implementation, monitoring, and evaluation in sanitation projects and recognize that this will contribute to making them equitable, responsive, efficient, effective, replicable and sustainable.

► **Enable alternative sanitation systems**

- Promote regulations that allow and facilitate alternative systems for sanitation. In particular, seek incentives for efficient use and reuse of water related to sanitation. Make explicit the key role of women in such systems and encourage use of local and affordable resources.

► **Gender information**

- Promote a gender sensitive analysis of the impact of laws and policies in the sanitation sector.
- Promote pro-poor, gender sensitive, participatory impact studies that can provide hard evidence (numbers and case-studies) of the gendered impact of the economic crisis on the poorest and most vulnerable groups, and how this affects their access to safe and appropriate sanitation.

Increasing women's participation in formal WATSAN activities

In Nepal, there is a rigid division of role in WATSAN activities. Women mostly are entirely responsible for all water related activities of a household, but are not involved in formal WATSAN activities facilitated or initiated by external agencies. Centre for Integrated Urban Development (CIUD), a civil society organization established in 2002 aimed to address this problem and increase women's participation in overall WATSAN management including leadership, decision making and technology. The intervention involved training fifteen women to address the issue of water, sanitation and menstrual hygiene. As a result of women influencing the decisions, the occurrence of diarrhoea and dysentery in the project area has drastically reduced (GWA, 2010). Detailed case study can be accessed at: <http://genderandwater.org/en/gwa-products/knowledge-on-gender-and-water/case-studies/case-studies-on-mainstreaming-gender-in-watsan-programs-in-nepal/view>. Accessed 4 August 2013.

- Promote a gender and poverty audit of post economic-crisis austerity measures of national governments and international institutions to check that these do not further dispossess the most vulnerable groups of their basic human right to safe sanitation.
- Promote and support that gender-disaggregated data collection should be done from micro- to macro- levels. Researchers should work together with technical WATSAN staff and Gender Experts to ensure that an effective gender analysis is done at every level (from project data level, to regional, country, and global statistic databases) as a basis for monitoring progress in gender and equity goals in WATSAN, and for sound policy formulation.

INSTITUTIONAL ARRANGEMENTS FOR SANITATION

► Capacity development

- Train technical and managerial personnel in gender and participation methods, especially aimed at achieving more effective water and sanitation services.
- Training for both women and men on the construction of different types of sanitary facilities.
- Training for women and men to undertake minor repairs: to train women for maintenance is more effective, because they have more interest in the functioning of the facilities.
- Training for women and men to take on roles as house to house hygiene promoters, teaching



Technical and managerial staff, who are trained in gender and participatory approaches can help achieve more effective water and sanitation services.

about the prevention of sanitation-related disease transmission within their communities.

- Make sure that training is given to those who are involved in that particular work.
 - Ensure that training is available to women at the time and place that allows them to combine it with their very busy schedule.
- ### ► Address gender balance in staffing and conditions of service
- Appoint women personnel to technical and managerial tasks, not only as assistant or in office positions.
 - Promote equal salary and equal access to work opportunities in the sanitation chain, including equitable division of labour and employment opportunities for community-based management between men and women. It is important that women do not wind up with even heavier workloads that offset the benefits of the improved water and sanitation facilities.
 - Give women and men equal opportunities to access education and training in both technical and managerial tasks.
 - Design of unisex work-suits appropriate and comfortable for women who want to participate in construction of water and sanitation facilities.
- ### ► Gender-sensitive budgeting
- Ensure that there are appropriate budget allocations to address gender in sanitation solutions. Commitment to gender mainstreaming in sanitation can only be realized with adequate budgetary allocations. Budgets are one of the most influential tools for organizations because without funds, qualified gender staff cannot be recruited, and gender-sensitive policies and programmes cannot be implemented.
- ### ► Monitoring and evaluation
- Develop a simple framework for monitoring and evaluating sector performance on gender issues.
 - Develop sex disaggregated and gender analytical indicators. Qualitative indicators that analyse water and sanitation gender dynamics such as who is responsible for excreta collection and

disposal, personal safety in access to sanitation facilities, and gendered intra-household differences in access, control, and use of facilities should be available.

- There is need to consider micro-level qualitative and quantitative sex disaggregated data in water and sanitation which gives detailed analysis of gender relations. It often provides the best information about problems that might then be followed up.
- There is need to include sanitation indicators such as:
 - Number (percentage) of women participating in income generating activities as caretakers of sanitation facilities e.g. as waste collectors
 - Number of women in decision-making positions in sanitation utilities
 - Proportion of women and men participating in municipal management and local governance in sanitation
 - Proportion of women and men trained in use and maintenance of facilities
 - Proportion of women and men sensitized to protecting surface and ground water
 - Additional income generated from improved access to water and sanitation, by woman or man
 - Size and number of poor households having connections and benefiting from subsidies
 - Number of cases of violence against women/ girls reported during water collection or use of sanitary facilities
 - Descriptions of such cases of violence, and what was done about it?
 - Proportions of men and women involved in disposing faecal wastes at household and public sector levels
 - Tasks of women and men in maintenance and cleaning of WATSAN facilities and time spent on these tasks
 - Number of primary and secondary schools with separate sanitation facilities for girls and for boys on or near the premises

Governments and multilateral donors should support further initiatives to improve, adapt, collate, and extend gender-disaggregated data collection and analysis in the WATSAN sector.

► Information and communication

- Consider women's perspectives and involve women in social marketing for sanitation. Target information, communication, and capacity development with an understanding of gender roles.
- Consider arranging workshops to facilitate discussion and have an open dialogue to allow girls and women to feel free to talk about issues such as menstruation and menstrual hygiene.

MANAGEMENT INSTRUMENTS FOR SANITATION

► Carry out social assessments for sanitation projects with attention to the following:

- Differences in needs, demands, practices and motives among women, men, boys and girls with respect to sanitation facilities, for example that facilities should have water so that girls can wash and reuse menstrual clothes at school.
- Differences in control of and access to vital resources that enable/disable people to access improved sanitation.
- Take different needs of physically challenged women and men into account.



Hygiene education becomes more meaningful when sanitation facilities are in place. Photo: SuSanA

► Planning

- Allow a gender-balanced expression of ideas, targeting women's opinions about current practices, accessible alternatives, technology, and administration.
- Seek equitable participation giving consideration not only to gender, but also to other variables such as wealth and education.
- Disaggregate data to reveal differences among

the benefits and impacts that women and men experience from sanitation-related actions.

- Involve women and youth in planning, implementation and maintenance of sanitary and hygiene facilities.

► Economic instruments

- Consider gender differences in willingness to pay and the ability to pay and in access to subsidies and extension support.

Suggestions for indicators

Issue/Theme	Checklist/Parameters	Indicator
Costs and benefits	Gendered economic benefits from improved access to water	<ul style="list-style-type: none"> ► Percentage increase in income for women and men from productive uses of water ► Number of poor households (HH) benefiting from subsidized connections ► Number of women heads of HH who pay their water regularly ► Level of savings of beneficiary women and youths
	Gendered dimensions of costs and benefits from privatization of WATSAN	<ul style="list-style-type: none"> ► Number of women who own privatized WATSAN facilities ► Number of women participating in income generating activities as caretakers of WATSAN facilities (toilets and water taps), water sellers managing water kiosks, and as waste collectors.
	Female/male-headed household expenditures on WATSAN	<ul style="list-style-type: none"> ► Percentage of income spent by women and men in accessing WATSAN services in different geographic zones in the country
Public and school based WATSAN	State of public sanitation provision Is there a national strategy for sanitation in schools, with emphasis on safe, separate, well-maintained facilities for girls and boys?	<ul style="list-style-type: none"> ► Public toilets with separate facilities for women and men ► Toilet ratios per girl and boy in primary schools.
	Extent of public/private provision for women's/ girls' menstrual needs	<ul style="list-style-type: none"> ► Existence and quality of sanitation facilities with specific needs of for girls –toilet designs
	Prevalence of open defecation on water land by male/female, girls/ boys	<ul style="list-style-type: none"> ► Ratio of men/women open defecation
Health and Sanitation	Prevalence of water borne diseases, e.g. cholera	<ul style="list-style-type: none"> ► Percentage of women, men, girls, and boys affected by outbreaks of water-borne diseases
Survey / Research Methodology	Sex of interviewers/ respondents in WATSAN surveys	<ul style="list-style-type: none"> ► Number of women interviewers ► Number of women as respondents during household surveys

Source: Adapted from UNDESA and UNW-DPC 2009 Gender-Disaggregated Data on Water and Sanitation Expert Group Meeting; and UN-HABITAT 2006 Framework for Gender Mainstreaming, Water and sanitation for Cities, and selected sources from the inventory list in this report. Source: (GWA, 2012)

Tools

1. **African Development Bank; African Development Fund, 2009. Checklist for gender mainstreaming in the water and sanitation sector.. s.l.:Africa Development Bank.**

The Checklist is a tool for effective gender mainstreaming within Drinking Water Supply and Sanitation (DWSS) programmes and projects, with a view to guiding project managers and implementation teams in identifying, preparing, appraising, implementing, monitoring and evaluating gender-sensitive DWSS programmes and projects.

<http://www.afdb.org/fileadmin/uploads/afdb/Documents/Policy-Documents/Checklist%20for%20Gender%20Mainstreaming%20in%20the%20Water%20and%20Sanitation%20Sector%20EN.pdf>

2. **Asian Development Bank, 2006. Gender checklist: water supply and sanitation. s.l.:ADB.**

The checklist guides users through all stages of the project/programme cycle in determining access to resources, roles and responsibilities, constraints, and priorities according to gender in the water supply and sanitation (WSS) sector and in designing appropriate gender-sensitive strategies, components, and indicators to respond to gender issues.

http://www.adb.org/sites/default/files/pub/2006/gender_checklist_water.pdf

3. **GWA, 2011. Gender Scan Methodology for water utilities. s.l.:GWA.**

The Gender and Water Alliance (GWA) has designed this Gender Scan Methodology to assist water and sanitation utilities

in identifying how effectively they are mainstreaming gender in their policies, practices, and procedures, and to assist them in identifying areas where they can further strengthen gender mainstreaming.

http://genderandwater.org/en/gwa-products/capacity-building/gender-scan-methodology-for-water-utilities/at_download/file

4. **Khosla, P., 2003. Water, Equity and Money. The need for gender-responsive budgeting in water and sanitation. s.l.:The Netherlands Council of Women.**

This paper is about Gender-Responsive Budget Analysis (GRBA) as practical tools for implementation. The document recommends the introduction of Gender-Responsive Budget Initiatives to be applied to the framework of Poverty Reduction Strategy Papers (PRSPs) for the water sector.

http://www.womenforwater.org/docs/WWF_3_Water_Equity_and_Money.pdf

5. **UN Water; United Nations University, 2008. Expert Group Meeting. Gender-disaggregated Data on Water and Sanitation, Bonn: UNU.**

Summarizes the discussion regarding disaggregated data indicators on Water and Sanitation, including data collection needs, indicators and methodologies proposed.

<http://www.unwater.unu.edu/file/get/140>

6. **Water and Sanitation Programme, 2010. Gender in Water and Sanitation. Mainstreaming Gender in Water and Sanitation. s.l.:WSP.**

This document highlights in brief form, approaches to redressing gender inequality

in the water and sanitation sector. The review is intended for easy reference by sector ministries, donors, citizens, development banks, NGOs and water and sanitation service providers committed to mainstreaming gender in the sector.

<http://www.wsp.org/sites/wsp.org/files/publications/WSP-gender-water-sanitation.pdf>

7. Water Integrity Network; IRC, 2011. Annotated water integrity scans. s.l.:WIN.

The Annotated Water Integrity Scan (AWIS) is a diagnostic tool that 1) gives an overview of the integrity of the water sector; 2) highlights areas vulnerable to corruption; 3) identifies priority actions to enhance water integrity; and 4) stimulates improvements that are gender sensitive and pro-poor.

Relevant Websites

ORGANIZATION	SUBJECT	WEBSITE
GWA	Gender and Water Alliance – Sanitation	http://genderandwater.org/en/water-sectors/sanitation
UN-Habitat	Water and Sanitation Trust Fund Impact Study Series	http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3153
UN-Habitat	UN-Habitat channel	http://www.youtube.com/playlist?list=PL1280AF6A44B9926A&feature=plcp
UN-Habitat	UN-Habitat channel 2	http://www.youtube.com/user/epitunhabitat?feature=watch
UN-Habitat	UN-Habitat Gender in Water and Sanitation	http://unhabitat.org/urban-themes/water-and-sanitation-2/
UNICEF	UNICEF Water, Sanitation and hygiene website	http://www.unicef.org/wash/index_3951.html
WaterAid	WaterAid–Women website	http://www.wateraid.org/uk/what-we-do/the-crisis/women
Water Aid	WaterAid channel	http://www.youtube.com/user/WaterAid
WB	Sanitation, Hygiene and Wastewater Resource Guide – Promotion – Gender and Sanitation	http://water.worldbank.org/shw-resource-guide/promotion/gender-hygiene-and-sanitation
WHO	Water Sanitation Health. Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) Website	http://www.who.int/water_sanitation_health/glaas/en/
WHO/UNICEF	WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation	http://www.wssinfo.org/
WSP	Water and Sanitation programme	http://www.wsp.org/
WSSCC	Water supply and sanitation Collaborative council – Gender	http://www.wsscc.org/topics/crosscutting-themes/gender-and-wash
WSSCC	Water supply and sanitation Collaborative council channel	http://www.youtube.com/user/sanitationforall?feature=watch

Further Reading

WHO; DFID, 2009. *Summary and policy implications Vision 2030: the resilience of water supply and sanitation in the face of climate change*. France: WHO.

Chapter 4

Agriculture



KEY MESSAGE: FARMERS ARE BOTH MEN AND WOMEN

4.1 Problems

Agriculture and agricultural systems which include the production of food, feed, fuel, fibre and aquaculture are major users of water resources. At the close of the 20th century, agriculture used a global average of 70% of all water withdrawals, and it is estimated that global abstractions for irrigation will grow by some 14% by 2030, and is likely to contribute to water scarcity and constraints in local food production. (<http://www.fao.org/worldfoodsummit/sideevents/papers/Y6899E.htm>. Last accessed 27 February 2014.)

According to recent FAO estimates, 925 million people are currently undernourished, out of which 62 percent live in Asia and the Pacific, the world's most populous region, followed by Sub-Saharan Africa, which is home to 26 percent of the world's undernourished population (FAO 2010). The rise in global undernourishment is a combined result of declining investments in agriculture, increased production costs and rising food prices, specially the continued increase in prices of staple cereals and oil crops.

Water is a crucial element in food production and food security is closely linked to water security. Water for agriculture includes not only irrigation and drainage, but also rainfed agriculture, recycled water, water and land conservation, green water (soil moisture) and watershed management. In areas where rainfall is scarce or erratic, irrigation systems play an important role in making water available for cultivation of

crops. FAO (2010) asserts that food production would have to increase by 70 percent to feed a population of 9 billion people by 2050. Of the 1.5 billion hectares (ha) of cropland worldwide, only 277 million ha (or 18 percent) is irrigated land; the remainder is rainfed land. In order to meet this demand for food, water productivity needs to be improved not only in irrigated but also in rainfed areas. Due to the high investment costs and the growing competition for water among agriculture, industry and cities for limited water supplies, the scope for further expansion in irrigation is limited in many countries.

Improved agricultural water use in irrigated and rainfed agriculture will play a key role in managing and coping with the growing water scarcity and in improving agricultural production. Water use efficiency in agriculture can be improved through managing demand rather than supply, by changing the focus from investments to increase water supply for agriculture to managing demand by introducing and promoting innovations in water saving technologies and farming practices that are user-focused and influence the way water is used in agriculture and agriculture systems. Agriculture is also a major polluter of water and is seldom held accountable for the pollution caused by excess nutrients, pesticides, and other pollutants.

Within the IWRM framework, agricultural water management needs to be viewed not only from the perspective of the national agriculture and water policies, but also within regional and global trends in agricultural production,

virtual water trade, and production of biofuels. Agricultural water management therefore needs to incorporate the four aspects of IWRM; environmental sustainability, economic efficiency, social equity and water governance.

Efforts to improve and sustain food and water security in the context of agricultural water management would need to address three main challenges:

- ▶ Increased efficiency in management of green water (the water moisture in the soil);
- ▶ Increase in water use efficiency in irrigation and rain fed crops;
- ▶ More equitable distribution of productive resources between men and women farmers.

These challenges cannot be addressed effectively without incorporating a gender approach, particularly if the four aspects of IWRM mentioned above are to be addressed as well.

GENDER-BASED DIFFERENCES IN AGRICULTURAL WORK AND OPPORTUNITIES

- ▶ **Women's agricultural work is vital to food security but is still largely unrecognized.**

According to FAO, women comprise an average of 43 percent of the agricultural labour force in developing countries (FAO 2011). In sub-Saharan Africa, 80 percent of basic food is produced by women (Garcia, et al, 2006) According to the World Development Report 2008 where women make up the majority of smallholder farmers, failure to release their full potential in agriculture, contributes to low growth and food insecurity. In spite of this, agriculture and water policies in many countries do not adequately recognize and provide for the needs of women farmers. As a result, the constraints faced by women farmers in agricultural production continue to persist. Women's agricultural productivity is less than that of men, mainly because they lack the resources necessary to increase agricultural productivity.



Small livestock usually managed by women provide food and income security to farming households

- ▶ **Men and women have differential access to productive resources.** Although women and men usually perform complementary roles in agricultural systems, they have different responsibilities in tasks related to cropping, have differential access to and control over resources (such as land, water, finance, technologies, markets, and skills), and control over harvested produce. Men are more likely to make the majority of decisions over acquisition of land, crop choice, timing of operational calendar, water conservation or irrigation methods, applying technologies, pesticides, fertilizers, hiring labour, marketing or consuming the harvest, and use of income gained. Consequently, they have widely different interests and attitudes with regard to water management decisions.

Although poor men and women generally have less access to productive resources, and agricultural innovations, extension agents and water managers often miss the poorest and most needy subsistence farmers, women farmers specifically face more gender-based constraints as compared to men, in accessing resources and improving agricultural production:

- Strong gender norms, prejudices and taboos that reduce women's scope to manage agriculture.

- Women are not allowed to interact with 'unknown' men for trade, or input and technology provision. In addition, in many societies, women have restricted mobility, which impedes market access for selling their produce.
 - Women often get the least preferred night turn in irrigation rotations, with threats of sexual violence that make it both difficult and dangerous to irrigate their fields. Women have no other alternative than hiring men for such tasks and incurring the associated costs.
 - Although women may be elected to committees and leadership positions, men may still dominate such positions (i.e. positions that require interactions with outside male-dominated institutions).
 - Men may also encounter taboos restricting them from certain activities. For example, men are forbidden to enter wetlands cultivated by women in West Africa, as this is believed to lead to flooding.
 - Compared with men, women have less access to information about efficient farming practices. Women may therefore find it difficult to improve land and water management and adopt suitable farming practices for improving production and economic gains.
- **Economic constraints affect women more than men.** Formal credit institutions generally discriminate against women entrepreneurs and women farmers, making them over-reliant on micro finance institutions (MFIs) for loans for productive inputs and activities. During the economic crises, access to even such credit has declined for borrowers as many MFIs do not collect local savings and are dependent on donor or bank finance for giving out loans (King & Sweetman, 2010). As a result the crisis is likely to force subsistence farmers and small agro-entrepreneurs (many of whom are women), to borrow from informal money lenders charging extremely high rates of interest, driving them into a downward spiral of indebtedness and poverty – with the resulting decline in food security of poor households as well as of countries as a whole.
- Lack of access to finance for developing more economically viable and water efficient agricultural enterprises limits poor men and women farmers' participation in agriculture to a subsistence level activity.
 - The global economic crisis has decreased access to resources, especially for poor farmers. For example, poor farmers cannot afford fuel to run irrigation pumps (Institute of Development Studies, 2009), increasing the chances for failure of crops and increased food insecurity. This, compounded by the big drop in remittances from family members working in high-income countries, has had a major impact on the livelihood of vulnerable groups. This is a major issue for women headed households in sub-Saharan Africa where women are mainly involved in subsistence agriculture with some off-farm work for wages, or work in the informal sector (Seguino, 2009)
- **Women have less capacity to adapt to effects of climate change.** Men and women farmers have different coping and adaptive capacities in face of climate change. Gender-based inequalities in access to assets and gendered social roles are mainly responsible for this difference in adaptive capacities to respond to the effects of climate change. In cases of crop failure due to harsh climatic conditions, culture often makes it easier for men to leave their farms in search of employment elsewhere, leaving women behind to struggle to feed their families and make ends meet. In many cases, women have diminished assets and resources to help them plan for and potentially avert the next crisis. Diverse gender-based barriers in accessing land, financial services, social capital and access to technology render women vulnerable to food insecurity.

Lessons from South Africa: Exploring the critical link between rural women and water resource management

"We believe that active participation and real decision making by women in water resource management depends on how women perceive themselves in relation to other women and, more importantly, men. We also know that issues of gender intersect with issues of race, language, education, (dis)ability etc. and that these issues are not limited to water only, but exist in society in general. So we addressed gender as a holistic change process, requiring a strong foundation of personal and interpersonal skills and a good knowledge and understanding of various aspects of gender".

In Limpopo, Kwazulu-Natal and Eastern Cape provinces, a consortium of organizations developed eight training modules for members of the water users associations. Throughout the training, linkages between participants as members of water user associations, the community at large, developmental organizations, local government (i.e. municipalities) etc. were actively encouraged as a means to create a wider development network that stretched beyond the boundaries of water resource management. The first modules focused on building the capacities of women to enable them to develop the self-esteem and confidence to speak up and participate with men in joint meetings and the decision making process. The technical aspects of water resources management were dealt with only after the women were confident enough to engage with the men in order to develop a common vision for the water users associations and design mini water projects (Ackerman, et al., 2009).

<http://genderandwater.org/en/gwa-products/knowledge-on-gender-and-water/articles-in-source-bulletin/lessons-from-south-africa-exploring-the-critical-link-between-rural-women-and-water-resource-management-1> (accessed 22 July 2013)

UNEQUAL ACCESS TO WATER MARGINALIZES POOR FARMERS

Competition between different sectors can create scarcity for local populations, with the result that the access and control over local water resources is divided inequitably, affecting the poor and poor women the most (Pangare, 2012).

There is already strong competition among farmers and between agriculture and other sectors for water, leading to over-exploitation and exacerbated by poor water management. Scarcity is being aggravated by poor land use, climatic variation, pollution, and the 'triple crisis' of rising food and fuel costs, in addition to the global economic crisis.

The recent trend of "land-grabbing" (lease or purchase of land) by foreign countries and

international companies often results in loss of access to land and water for local populations. The food produced is exported directly to their own countries. Such national land of developing countries is often communally owned land, tilled by small farmers, in many cases mostly women. Again, the poor and disadvantaged groups are affected most.

- ▶ Women rarely have equal access to water, often carry out small-scale production for which they need water and are the first to be affected in times of water shortage. Inadequate attention to water efficiency favours inefficient use by male dominated richer commercial farms, often producing non-food cash crops.
- ▶ Over-extraction by wealthy farmers reduces water flow in rivers and water levels in groundwater. This affects poorer farmers and household consumers (often women, subsistence farmers and the poor).



Ethiopian farmers where agriculture is the foundation of the country's economy and makes up a significant portion of the country's GDP. Photo: Umberto Labate, UNDP

- ▶ In most countries, water allocation for agriculture is linked with land ownership, yet in many places women have little or no rights to land. Even when the right is granted, guarantees may be unequally provided and reallocation may have overlooked gender imbalances.
- ▶ In the context of the economic crisis, national governments' short-term financial stimulus packages such as export promotion measures for job creation in physical infrastructure projects and devaluation of local currency (raising the price of food imports and crucial medicines) are gender blind (Seguino, 2009) This will only increase the

financial burden on poor women, and escalate the competition between industries for limited water resources – to the detriment of groups working in the informal sector and subsistence farming (majority of whom are women).

WATER POLLUTION FROM AGRICULTURE HAS NEGATIVE IMPACTS ON HEALTH AND ENVIRONMENT

Water pollution occurs when water abstracted for agriculture is returned to rivers or groundwater is polluted with salts, fertilizers and pesticides, livestock manure, soil sediments and other contaminants such as veterinary products. Poor land management can increase sediment loads from erosion. These pollutants cause harm to aquatic ecosystems, commercial and marine fisheries, and farms and industry. Climate change consequences are expected to exacerbate these impacts in different ways such as increased mobilisation of sediment loads and contaminants due to flooding and reduced dilution of pollution due to droughts.

- ▶ All downstream users are impacted by pollution and water wastage upstream. Upstream conditions affect access to clean water for domestic use by women and children, impair women's and men's

Making participatory irrigation development beneficial for women in the United Republic of Tanzania

In the IFAD-supported Participatory Irrigation Development Programme (1997–2007) in the United Republic of Tanzania, farmers were encouraged to take responsibility for irrigation development so that schemes reflected their needs and not those of planners. Water supply schemes were built for multiple uses besides irrigation so as to address women's concerns about water availability for domestic uses. Thus, shallow tube-well schemes were constructed to provide water for horticultural crops, rice seedling nurseries and domestic use. This particularly aimed at reducing workloads by reducing the time women spent fetching water for domestic use.

The proportion of women with plots and membership in WUAs was over 30 percent, and women were producing vegetables for both food and income. Women managed shallow wells and benefitted from the time saved in water collection. Some took leadership roles in WUAs and district councils and participated in savings groups and credit associations (Wahal, 2008, p. 14). http://www.ifad.org/gender/thematic/water/gender_water.pdf or <http://www.ifad.org/pub/thematic/index.htm#gender> (look for the publication Gender and water, 2008, accessed 15 July 2013).

Gender aspects of urban agriculture: Example from Mexico City

Despite the fact that women are the principal actors in urban farming in Mexico, their contribution has rarely been recognized. A positive exception was the Social Ecology Promotion Group, which tried to protect the environment and to improve the living conditions of its women members. Their projects focused on the collective production of vermin-compost and medicinal plants. It was not easy for the women members to participate in the process, assume control and take decisions with respect to the generation and distribution of resources and training. Women had been taught to conform and be obedient rather than to be creative and take initiative. It was therefore difficult for women to participate in group work and carry out household chores and have a paid job, all at the same time.

It became clear that any urban agricultural project would need to take a flexible and open approach to the work, striving to minimize the work input of women, accelerate training and group organization, and to generate resources for the project and its participants. Only when urban agricultural programmes are able to avoid tripling the workload of women will they become a realistic option for women and their families.

The experience of the Social Ecology Promotion Group demonstrated that a common objective and working opportunities promotes the organisation of women, which together with a process of education, generates a positive impact. The impact is not only limited to the functioning of the group, but can also transform other aspects of women's lives, such as those related to work and family (Torres Lima, et al., 2001). <http://www.ruaf.org/urban-agriculture-household-organisation-and-female-autonomy-case-study-southern-mexico-city> (accessed 8 August 2013).

access to quality water for subsistence farming and small gardens, and raise treatment costs for water supply of cities and towns by passing contamination costs through to downstream users.

- Women and children are most affected by water pollution due to: high contact levels during water collection, vulnerability during pregnancy, and children's susceptibility to pollutants such as nitrates.

4.2 Benefits of a Gender Approach

IMPROVED EFFICIENCY OF WATER USE

- **Targeted management support:** Gender sensitive analysis and stakeholder participation that identifies gender differences in use and management of water, and builds on equitable representation of the interests and experiences of both women and men, can improve the efficiency of water use in agriculture.

- **Managing demand rather than supply:**

Recognising the role of women in construction, operation and maintenance of formal and informal irrigation systems, can help reduce water losses and increase water productivity. Information and training for men and women regarding best practices in managing irrigation through water saving technologies can help to improve effective use of irrigation water.

- **Better land and water management:**

Incorporating women's traditional knowledge of water conservation can generate a valuable contribution to better land-water management. Women often have considerable knowledge of seeds and crops that are pest resistant, economically productive, as well as less water demanding.

IMPROVED PROTECTION OF WATER RESOURCES

- **Enhanced watershed protection:** Future agricultural expansion relies on the water retention



Although women and men perform complementary roles in agricultural systems, their tasks are often determined by their gendered roles.

capacity of soil, which depends on coverage and land use changes. Gender sensitive involvement of women and men can enhance restoration activities in the watershed by drawing on traditional knowledge and labour from both sexes.

- **Reduction of water pollution due to fertilizers and pesticides:** Avoiding excessive use and shifting to natural methods of pest-control requires active involvement and training of women and men, in accordance with gender division of tasks in the cultivation of particular crops.

IMPROVED SOCIAL AND ECONOMIC DEVELOPMENT

- **Recognition of disparities:** Improved agricultural productivity and a fairer distribution of benefits are significantly associated with access to resources. A gender sensitive analysis of farming systems can help reveal the gender disparities in competition for and allocation of water resources, land, credit, commercial linkages and agricultural knowledge.
- **Recognition of minor food crops grown by women:** Vegetables, fruits and roots are very important for the health of family members, as well as the poultry and small livestock, grown on a small scale by women mainly for use in their households. In cost/benefit analyses these should be included so that crops for home consumption which are important for the health of the family are not completely replaced by cash crops, planned for improvement of the economic position of small farmers.
- **Successful projects with shared benefits:** Consultation with both men and women in agricultural project design can improve technology, local management and financing choices, increase success and ensure that benefits accrue to both women and men.
- **Prevention of conflicts:** Involving women and men in upstream-downstream decisions about

Women in Chinartala Water Users Association, Xacmaz, Azerbaijan: A local good practice model

After the establishment of Chinartala Water Users Association (WUA) in 2006, Tamilla, took the initiative and asked for a job as a field agent in this WUA. She worked as a field agent for three years, and was successful in reducing conflicts and improving the timely and equitable delivery of irrigation water. Collection of dues also improved. Taking this into account, the chairman of Chinartala WUA proposed that Tamilla should be made the Executive Director of the WUA. When Tamilla became the Executive Director of Chinartala WUA, her daughter replaced her as field agent in the WUA. Critical to the involvement of women in this WUA's administrative staff had been the will of the women to participate and the openness of the male WUA staff, especially the chairman, to support them. Once working for the WUA, Tamilla could show her authority and gained the respect of the members of the WUA (Merkle, et al., 2012, p. 20). <https://openknowledge.worldbank.org/handle/10986/13235> (accessed 12 August 2013).

water management for agriculture increases the likelihood of preventing water conflicts, settling differences peacefully and enabling trust-building and social acceptance for minorities.

- ▶ **Promoting safe water reuse for improving urban food security:** Women play a very important role in urban and peri-urban agriculture for which waste-water from urban settlements is largely used for irrigation. Such agriculture not only contributes to urban food security, but also provides food and income to women farmers in and around urban areas.
- ▶ **More effective response to the economic crisis:** Pro-poor gender sensitive financial stimulus packages that direct funding to resources (water, inputs, credit) for women farmers to increase food production for families, and reduce dependency of food imports, thus addressing the balance of payment deficit.

4.3 How to Get the Benefits

Benefits of the gender approach can be realized by action at three levels: a) the legal framework and agricultural policies; b) the sector organization set-up or institutional arrangements; and c) the operational level.

LEGAL FRAMEWORK AND POLICIES

Laws and policies related to agriculture and water require changes that enable a more equitable distribution of agricultural benefits and wiser water use. In addition, other laws and policies that address gender issues may need to be examined.

▶ Analysis

- Conduct a gender analysis of farming systems to determine the existing distribution of position and status among women and men.
- Use gender policy analysis to assess the ways in which changes in water, land and agricultural laws and policies can affect or benefit women and men from diverse social groups.
- Pro-poor, gender sensitive, participatory impact studies can provide hard evidence (numbers and case-studies) of the gendered impact of the economic crisis on poorest and most vulnerable groups worldwide. This information can be used for more gender equitable post-crisis policy formulation and targeted use of financial incentive packages

▶ Equitable rights

- Advocate for an explicit recognition of women's right to land. Legal reform can address gender inequities in inheritance systems and assure

A detailed Gender Action Plan helped to achieve gender equality results in the Small-Scale Water Resources Development Sector Project II in Bangladesh

A detailed Gender Action Plan, formulated at an early stage, for the overall project and for each stage of subproject implementation (identification and feasibility, design and institutional establishment, construction and first-year O&M); training of staff of project and executing agency on the importance of women's involvement in the project; use of gender equality expertise for both strategy development and implementation; and attention to data collection for analysis, with a management information system (MIS) that collected sex-disaggregated data on institutional issues (WMCA membership, meeting attendance, farm households, etc.), on construction work (LCS groups, labourers, and person-days of employment); and other project elements (including O&M work and microcredit borrowers) contributed to achieving gender equality results (Asian Development Bank, 2012, pp. 37-44). <http://www.adb.org/publications/gender-equality-results-case-studies-bangladesh> (accessed 15 July 2013).



Crop insurance schemes for women farmers will help to protect and promote safeguards against the effects of financial crisis, climate change impacts and natural disasters on crop cultivation.

that mechanisms for land tenure enforcement are accessible to women. When women's land and property rights are made visible, both gender equity and the perception that women are able to participate fully in economic growth initiatives increase.

- Advocate for recognition of women's water rights, as well as mechanisms to grant equal entitlement and protection of those rights.

► Policies to reduce gender inequity in access to key resources

- Advocate for equitable access to credit. Special policies can enable women to access loans through mechanisms such as micro credit in combination with entrepreneurial training.
- Advocate for extension services and training to women. Women farmers still receive only 5 percent of all agricultural extension services.
- Make explicit the right and urgency of women's equal involvement in structures and mechanisms that allow citizen participation in water decisions.
- Design crop insurance schemes for women farmers and promote safe-guards against the effects of financial crisis, climate change impacts and natural disasters on crop cultivation.

INSTITUTIONAL ARRANGEMENTS

► Gender audit and scan

- Conduct an internal gender audit or scan of your own institution to assess the relevance of gender to day-to-day work and effectiveness.

Rural women learn modern irrigation technology in China

Kuaiqiao Village is located in Qingtongxia, one of the oldest irrigated districts in Ningxia. The area has a typical continental climate, and its irrigation depends on the Qingtongxia Reservoir, which gets its water supply from the Yellow River. Due to climate change, the water flow of the Yellow River has become uneven, which results in either floods or droughts. If the region faces water scarcity during irrigation seasons, the productivity of the crops is directly impacted. At the same time, many men in the district have left their villages to seek job opportunities in big cities, leaving behind their wives, children and elderly relatives. In addition to their traditional responsibilities women have therefore had to take on farming, and the climate-change related problems that now come with it. Yet because of deeply entrenched gender perceptions, they are typically excluded from decision-making on these issues, and many others.

In response to this problem, UN Women designed a project to enhance the role of these women in water management, keeping in mind that women are an important driving force in mitigating and adapting to climate change. The project is funded by AusAID and is aimed at empowering rural women and men in Qingtongxia by equipping them with advanced irrigation technology from Australia, and bringing in local experts, such as the professors from the China Agricultural University and China Irrigation and Drainage Development Centre (UN Women, 2012). <http://www.unwomen.org/en/news/stories/2012/3/rural-women-learn-modern-irrigation-technology-in-china> (accessed 15 July 2013).

► **Capacity development**

- Train technical and managerial personnel in gender and participation issues with a focus on practical issues that are relevant for agriculture in the local context.

► **Development of equal opportunity policy in staffing**

- Appoint women personnel in both technical and managerial roles.
- Appoint more women rural extension workers to facilitate communication with, provide training to, and foster new sources of income for women farmers.
- Promote equal salary and equal professional opportunities for women.

► **Monitoring and evaluation**

- Monitor and evaluate sector/institutional performance on gender and water issues. Link this information with land use information.
- Introduce gender-disaggregated data into the sector, including monitoring of participation (active and passive).

► **Gender-sensitive budgeting**

- Ensure budget allocation for all efforts that seek to improve gender imbalances in the agricultural sector. Give priority to measures that may improve water use efficiency and tackle poverty.

OPERATIONAL LEVEL

► **Provide gender-targeted programmes**

- Promote and facilitate vegetable gardens and food crops, which are often within the purview of women, to improve the nutritional status of the family and provide a seasonal income.
- Involve women as well as men in the various stages of development projects including water system infrastructure and operation and maintenance.
- Provide women with productive resources: FAO estimates that “if women had the same access to productive resources as men, they would increase yields on their farms by 20–30 percent”. This would raise agricultural output in developing countries by 2.5–4 percent, reducing the number of hungry people in the world by 12–17 percent (FAO 2011). The percentage increase would vary by region upon various factors such as the number of women engaged in agriculture, how much land they control and other social and cultural constraints faced by them.

Enhancing gender relations in the vegetable value chain in Svay Rieng, Cambodia

A thorough gender analysis prior to designing the intervention helped a farmers' association and support organisations to better mainstream gender while working to address the specific needs of their member farmers. SNV (Netherlands Development Organisation) through their partner organisations, provided support to the Cambodian Farmer Association Federation of Agricultural Producers (CFAP) for training and capacity development activities designed to address the complementary roles that men and women play, taking into account their respective strengths and contribute to sustainable impact at the household and community level. The practical challenges faced by women at the household level, as well as in leadership positions, were also taken into consideration in order to provide enough support to foster women's involvement and develop their leadership skills (Sereyrieth, 2012). <http://www.snvworld.org/en/sectors/agriculture/publications?filter=cambodia> (accessed 15 July 2013).

Tools

1. **ADB, 2006. Gender checklist: agriculture. s.l.:ADB.**

This checklist is designed to assist staff and consultants in implementing ADB's policy and strategic objectives on gender and development. It will guide users through all stages of the project/programme cycle in identifying the main gender issues in the agriculture sector and in designing appropriate gender-sensitive strategies, components, and indicators to respond to gender issues.

<http://www.adb.org/publications/gender-checklist-agriculture>

2. **FAO; CGIAR, 2012. Training guide: Gender and climate change research in agriculture and food security for rural development. Rome: FAO.**

The Training Guide aims the formulation of appropriate gender-sensitive policies and programmes for rural development. To reach that goal, it first defines concepts related to gender and climate-smart agriculture; then describes participatory methods for conducting gender-sensitive research on the impacts of climate change; and finally offers guidance on different ways of reporting findings for proper analysis.

<http://www.fao.org/docrep/015/md280e/md280e.pdf>

3. **GWA; FAO; GEWAMED, 2012. Passport to Mainstreaming gender in Water Programmes. Key questions for interventions in the agricultural sector. Rome: FAO.**

A tool developed for field staff involved in the design, implementation, operation and maintenance of water projects for agricultural

production, technicians and agents in local irrigation and extension services, etc, to support them in mainstreaming a gender perspective during planning implementation and management of agricultural water management projects and programmes.

<http://www.fao.org/docrep/017/i3173e/i3173e.pdf>

4. **IFPRI; ILRI, 2012. Gender, Agriculture and Assets Project (GAAP) A toolkit on collecting gender and assets data in qualitative and quantitative programme evaluations. s.l.:IFPRI.**

This toolkit has been developed to assist researchers and practitioners who are either new or unfamiliar with using mixed methods for gender and assets data collection and analysis. In addition to establishing the need for gender and assets research, the toolkit defines key concepts and highlights methods for collection, analysis, and dissemination.

http://gaap.ifpri.info/files/2011/12/GAAP_Toolkit_Feb_141.pdf

5. **Socio-Economic and Gender Analysis Programme, 2001. Socio-Economic and Gender Analysis Programme, Irrigation Sector Guide. Rome: FAO.**

This tool is a guide to the integration of socio-economic and gender issues in the sub-sector irrigation. It is written for those involved in the planning design and implementation of irrigation programmes, like irrigation engineers, staff of rural development projects, government employees, engineering and consulting firms.

<http://www.fao.org/docrep/012/ak209e/ak209e00.pdf>

6. Socio-Economic and Gender Analysis Programme, 2003. Gender-Disaggregated Data for Agriculture and Rural Development. Rome: FAO.

Guide for facilitators for training on collection of gender disaggregated data in the agricultural sector

<http://www.fao.org/docrep/012/al210e/al210e00.pdf>

7. World Bank; IFAD; FAO, 2013. Genderinag.org. [Online] Available at: <http://www.genderinag.org/content/learning-tools> (accessed 15 August 2013).

The e-platform genderinag.org is an online forum which is designed to provide access to resources, tools and information which can help practitioners and other stakeholders mainstream gender into agricultural development

<http://www.genderinag.org/content/learning-tools>

8. World Bank, 2012. Gender Issues in Monitoring and Evaluation in Agriculture: A Toolkit. Washington: WB.

This toolkit has been developed by the World Bank to assist project task teams, borrowers, and partners to recognize and address gender concerns in designing rural development projects and to monitor and evaluate results, outcomes, and impact on achieving overall rural well-being

http://www-wds.worldbank.org/external/default/WDSCContentServer/WDSP/IB/2012/11/22/000356161_20121122050203/Rendered/PDF/NonAsciiFileName0.pdf

Relevant Websites

ORGANIZATION	SUBJECT	WEBSITE
IFAD	Gender website	http://www.ifad.org/gender/
FAO	FAO Gender Resources	http://www.fao.org/gender/gender-home/gender-resources/en/
FAO	FAO Gender Website	http://www.fao.org/gender/en/
FAO	FAO Socio-Economic and Gender Analysis Programme(SEAGA) Publications	http://www.fao.org/gender/seaga/publications/en/
FAO	FAO Mitigation of Climate Change in Agriculture (MICCA) Programme	http://www.fao.org/climatechange/micca/en/
FAO	FAO Videos website	http://www.fao.org/gender/gender-home/gender-resources/gender-videos/en/
GWA	Gender and Water – Agriculture	http://genderandwater.org/en/water-sectors

Further Reading

FAO, 2011. FAO AT WORK 2010–2011. Women – key to food security. Rome: FAO.

FAO, 2011. The State of Food and Agriculture: Women in Agriculture, Closing the Gender Gap for Development. Rome: FAO.

World Bank, 2009. Gender in Agriculture. Sourcebook. Washington: World Bank.

Chapter 5

Environment, Climate Change and Waste Management



KEY MESSAGES:

THE POOREST AND MOST VULNERABLE ARE MOST DEPENDANT ON THE ENVIRONMENT FOR SUSTAINING THEIR LIVELIHOODS

CLIMATE CHANGE DISPROPORTIONATELY AFFECTS WOMEN

5.1 Problems

Environmental sustainability means assuring the capacity of nature to support life. Within the context of IWRM this means a healthy water cycle, adequate water for nature, and minimal water pollution. A self-sustaining healthy environment helps to regulate water flow and quality in all ecosystems.

Climate change is a global process in which certain groups of people add to climate change by high consumption patterns whilst other groups suffer from their effects. Decision makers need to take this into account while formulating mitigation policies and technical solutions. This will ensure that the interests of vulnerable groups are also taken into consideration.

NATURE IS A CONSTANT LOSER IN THE COMPETITION FOR WATER

The water requirements for maintaining environmental quality and sustainable ecosystems often go unrecognised and consequently, unrecorded and unrewarded. Water allocation may be unregulated or even deliberately over-allocated to satisfy demand. Ecosystems suffer wide and often irreversible changes when water is in short supply or of poor quality, creating conditions which aggravate the problem by reducing the ecosystems' natural ability to efficiently purify, store and generate water.

- Poor rural families are especially dependent on the environment, to support and maintain diet, water,



Many ecosystems are endangered by human activity, reducing the capacity of the environment to support life.

shelter, farming and grazing resource requirements. To that end, more than 90 percent of the world's 1.1 billion poor rely on the environment for sustenance (WRI – World Resources Institute, 2005). Fruit and root gathering are commonly among the duties ascribed to women and children, while men do the hunting and trapping of mammals, reptiles, birds and fish.

- Poor rural women are most affected by environmental degradation, and the effects of climate change which are caused by a lack of or insufficient water resources. They are deprived of locally available, sustainable, renewable life sustenance. As natural resources deplete they are forced to travel longer distances to collect these necessities, and often face danger, and increased economic and social stress.

Wise efforts, established in integrated water resources management, are necessary to manage

water resources sustainably and ensure long-term water availability. These must include integrated actions to protect ecosystems and ensure environmental integrity. Poor management and over-exploitation of water resources will result in largely negative and often irreversible changes to the environment. Long-term water availability requires that ecosystems are able to continue to regulate water with quality and quantity.

MANY ECOSYSTEMS ARE ENDANGERED BY HUMAN ACTIVITY

Soil and water pollution, the over-extraction of water, alteration of vast tracts of land mass, all have contributed extensively to the depletion of water and other natural resources. Both men and women are involved in reducing the environment's sustainability, but their contributions differ in proportion to their power and influence, and their means to access and control natural resources.

Access to fresh water is vital for the economic prosperity of cities and the survival of citizens. In many developing countries, the development and improvement in basic urban service delivery has not kept pace with the high rate of urbanization. The result is inadequate access to safe drinking water and sanitation as well as the pollution of natural waterways.

Local forests, which protect watersheds, are lost due to urban sprawl, cut for firewood and housing materials whilst vegetation is cleared for home gardens and crops. Hence, the water supply and cleaning function of the forested areas are lost, further aggravating the urban water gap.

Economic crises deepen pre-existing gender inequalities, including the under-representation of women at all levels of economic decision making and their over-representation in informal, vulnerable, and casual employment. At global, national, and household levels processes set in place economic crisis, affect people's interactions



The livelihoods of poor men and women depend upon environments that are regenerative and support life.

with the environment, and exploitation of water for productive activities, domestic use, consumption, and sanitation.

- At a global level, the job losses in some sectors, and the rising costs of food and fuel has increased inequalities and lowered standards of living for the most vulnerable whose livelihoods are dependent on their natural environment, in particular women and children and especially in Africa. In consequence the poor are forced to adopt coping strategies that overexploit the environment (for e.g. overfishing in protected waters, unsustainable cropping practices that lead to soil erosion, cutting trees for fuel wood).
- At the national level, reduced foreign aid and falling tax revenues mean that governments and international institutions like World Bank and the International Monetary Fund curtail investments in sectors like public water supply, sustainable waste management, health, and education, whilst prioritizing industrial production. National governments' policies to deal with the crises are gender blind, and increase the competition between industries for limited water resources fiercer, contributing to water pollution and environmental degradation.
- At the Individual/household level a steep decline is evident in the amount of time women have each day for domestic waste (water) management, wetland protection, tending home-gardens and community reforestation – with negative implications for the environment.

ENVIRONMENTAL DEGRADATION

Poor and marginalized people tend to rely on the environment for the livelihoods of their families, so it is crucial that the environment remains life supporting, sustainable and regenerative. Despite their roles and knowledge, women's contribution is regularly undervalued and ignored. This makes them uniquely vulnerable to environmental degradation.

- ▶ Powerful groups, comprised primarily of men, cause most of the damage. Such groups have the greatest potential for generating devastation, with systematic and large-scale exploitation and industrial transformations of the environment. For example, logging reduces water retention, causes erosion and siltation, and can contribute to landslides.
- ▶ Poor people cause environmental degradation by over-exploitation. Factors such as improper land use, soil and water pollution caused by a lack of sanitation and irregular water supply, which is a result of poor living conditions and overcrowding, contribute greatly. All these human activities, affect the environment's natural productivity, affect river catchments and water quality.
- ▶ Richer people worldwide with their over-consumption may not realize it, but their pollution is far worse than that of poor people living in contaminated surroundings. The water foot print and the carbon footprint of what is produced and consumed needs to be calculated, and the information disseminated, to make people aware of the consequences of their choices regarding consumption. (www.waterfootprint.org)
- ▶ Poverty aggravates the impact of environmental degradation within communities. Small-scale and subsistence fishermen and women are deeply affected by water ecosystem damage. In many areas, marine fisheries are recording lower yields. In 2011 IUCN estimated 35 percent of the world's freshwater fish were threatened with facing extinction (Telegraph, 2013). Women, usually the food gatherers along coastal shores or in mangroves, are more vulnerable to coastal damage.

Women and young children remain disproportionately affected by environmental hazards, which are among the major causes of global death and disease, especially in less developed countries (UN, 2010).

Women as positive agents of change

The Niger Delta, one of the world's largest natural resource-rich areas, has suffered from environmental and human rights abuses including oil spills, gas flaring and destruction of ecosystems. Nigerian women mobilized themselves at the village level into a social movement to protest against transnational oil companies, as part of a world movement to stop the actions that involved ecological destruction and corporate irresponsibility. Most of the natural gas in the region was being used up through gas flaring due to efforts to cut maintenance costs. As a result, more gas was being burnt there than in any other part of the world, contributing to greenhouse gas emissions greater than in the entire sub-Saharan region. In 2006, these protests led to a ruling by the Nigerian courts that gas flaring violated citizens' constitutional rights to life and dignity, and a court order to end the practice (GGCA - Global Gender and Climate Change).

More information can be accessed at: <http://www.undp.org/content/dam/undp/library/gender/Gender%20and%20Environment/Gender%20and%20Climate%20Change%20Policy%20Brief%201%20Final.pdf>

SICK WATER

Continued population growth, urbanisation and rapid industrialisation, and intensifying food production, put pressure on water resources and increase the unregulated or illegal discharge of contaminated water within and beyond national borders. Wastewater more recently termed as 'sick water' results from a combination of one or more of: domestic effluent consisting of black water (excreta, urine and faecal sludge) and grey water (kitchen and bathing wastewater); water from commercial establishments and institutions, including hospitals; industrial effluent, storm water and other urban run-off; agricultural, horticultural and aquaculture effluent, either dissolved or as suspended matter (Rashid-Sally & Jayakody, 2008). Sick water is a global threat to human health and wellbeing, it affects immediate and long term efforts to reduce poverty, as well as the sustainability and integrity of some of earth's most productive ecosystems.

Researchers of UNEP (UNEP, UNHABITAT, 2010) affirm that, globally 2 million tons of sewage, industrial and agricultural waste is discharged into the world's waterways. As a result of this water pollution, at least 1.8 million children under five years-old die every year from water related disease or one every 20 seconds. It further



Unplanned population growth, urbanisation, and industrialisation has increased the unregulated or illegal discharge of waste and pollutants into water bodies. Photo: Susana

estimates that 3.7 percent of all deaths are attributed to water-related diseases, translating into millions of deaths. More men and women die as a result of polluted water than are killed by all forms of violence including wars.

Sick water limits poor women's access to clean water for everyday life, sanitation-hygiene and productive work and forces them into more vulnerable circumstances. Women, as primary water collectors face the health effects of using sick water. This can limit their capacity to work, their overall productivity and their financial contribution to her family.

Effects of pollution on livelihoods of women

The illegal discharge and massive disposal of waste of the textile factories and of the tanneries in the river Buriganga near Dhaka City in Bangladesh, is causing serious water contamination. Women who have no other option but relying on that polluted water for household work, personal health and hygiene, get affected with serious health hazards, which in its turn again leads to impoverishment.

Another cause of serious pollution is the shipbreaking yards on the coast of Bangladesh. Women's close exposure to the wastewater virtually pushes them to seek alternative livelihood options which are not always secure, remunerative and rewarding. Artisanal fisher women living near such shipbreaking yards are gradually losing their traditional occupation and are now starting to work as daily labourers or even migrant labourers, adding to poverty. (HRW, 2012; Islam, 2011; Daily Star 2011; Reuters, 2009)

Gender dimension in solid waste management in urban and periurban areas

In Latin America and the Caribbean (LAC) an estimated 300 million city dwellers generate 225,000 tons of solid waste every day (Cruz, 2007). The number of people living off solid waste is growing rapidly. This action-research project increased understanding of how women are involved in solid waste management and how they differ from men in dealing with it. The research was carried out in four cities: Cochabamba (Bolivia), Sao Paulo (Brazil), Lima (Peru) and Montevideo (Uruguay). Researchers examined the gender dimension in solid waste management in terms of income, social inequities, environmental improvements, cultural factors and the nature of solid waste management involvement. They identified best gender equity practices, prepared guidelines for municipal policymakers and disseminated the project results through policy documents and peer-reviewed articles. The project is expected to demonstrate that increased gender equality will not only reduce poverty but also improve the local environment (Riofrío & Cabrera, 2012), see also: http://www.idrc.ca/EN/Programs/Agriculture_and_the_Environment/Climate_Change_and_Water/Pages/ProjectDetails.aspx?ProjectNumber=105183). For the final report see: <https://idl-bnc.idrc.ca/dspace/bitstream/10625/50077/1/IDL-50077.pdf> (in Spanish)

The impact of sick water on the wider environment is significant. An estimated 90 percent of all wastewater in developing countries is discharged untreated directly into rivers, lakes and into the oceans (UNEP, UNHABITAT, 2010). Due to this discharges de-oxygenated dead zones are growing rapidly in the seas and oceans.

Men and women relate differently with solid waste and wastewater, therefore challenges must be approached from a gender perspective. Ultimately, this will boost public health, secure the sustainability of natural resources and create employment in intelligent water management.

CLIMATE CHANGE

Climate change has emerged as a critical global issue during the last decade, and especially the effects are closely related to water. The Intergovernmental Panel on Climate Change has clearly stated that the global climate is changing more rapidly than earlier thought (IPCC, 2007). The effects of climate change are experienced differently by women and men, with poor women, (the majority of world's poor) most profoundly affected.

► Changing climate is intensifying the hydrologic cycle leading to more extreme weather events

- Variations in precipitation, sea level rise, temperature rises and the appearance of extreme weather events i.e., cyclones, hurricanes, and typhoons are intensifying the hydrologic cycle around the globe and further aggravating salinity ingress for both water and soil. This is leading to flash floods, water logging/inundation and limitations on freshwater resources, and it is in turn affecting the availability of water for



Flash floods, water logging/inundation and limitations on freshwater resources, due to extreme weather events affects the availability of water for domestic and productive tasks.

Global outlook of changing climate and water

Africa: Less rain in north and south region exerts a significant loss to the day-to-day economic development of Africa, particularly for the agricultural and water-resources sectors, at regional, local, and household levels.

Asia: change in precipitation pattern, extreme weather events and alarming rate of sea level rise has greatly pressurized crop production, life, settlements, and health.

Australian subcontinent: increased risk of drought in southern Australia and increased rainfall in South New Zealand has threatened wildlife, crop production and water supply.

Europe: Diminishing cold winters and rainfall intensification in Northern Europe and heat waves and dry spells in South Europe have led to a rise in catastrophic fires, submerging of islands, winter floods and droughts.

American subcontinent: more rain, more intense hurricanes, more heat waves in North America and regional shift in precipitation, glacier loss is causing more and more natural disasters, droughts, floods, and destruction of coastal areas.

Low-lying and small islands: facing threat of extinction due to sea-level rise, coastal erosion, flooding and increased natural disasters.

Adapted from IPCC, AR4

domestic and productive tasks. The poor, mostly women and vulnerable groups are affected disproportionately, because of their limited access, control and ownership over resources i.e., water, land, common property resources, unequal participation in decision and policy making process, lower incomes and levels of formal education, and extraordinarily high workloads, inducing water poverty.

- Women, particularly poor women in less developed countries are disproportionately vulnerable due to their dependence on water and bio-fuels, their responsibility for fetching water for household use, their role in securing food and fuel, their predominant presence in low technology rain-fed agriculture and greater exposure to the risks of climate hazards.
- **Climate change leads to an increase of desertification, droughts and floods**
 - The impacts of climate change on precipitation are projected to cause more extreme flooding and droughts, resulting in pollution of freshwater resources and increased water scarcity. Rising sea levels will intrude on coastal freshwater resources.
 - The consequences of desertification and increased frequency and severity of droughts and floods are not constrained by watershed or international boundaries and they can afflict large areas and many countries simultaneously. They can cause tremendous damage to economy and ecology and, in the worst case, bear enormous risks for peoples' lives, particularly for vulnerable groups, including poor women.
 - To adapt to the flood and post-flood situation, women tend to concentrate on securing drinking water and/or safe water for cooking, bathing and cleaning, and in doing so they have to travel far, saving the water for days or purifying water with local and/or indigenous techniques. Men tend to concentrate on how to dewater submerged land and restore cultivation at the earliest.
 - Where salinity intrusion is a reality as a consequence of sea level rise and/or low river flow,

Climate change, water and jeopardized livelihoods of women in Sonora, Mexico–USA border

This case study focuses on the sustainability of gendered income-generating activities in the two agricultural communities Terrenate and San Ignacio in Sonora, near the Mexico–USA border in the context of climate change where rainfall and temperature are highly variable due to strong El Niño/Southern Oscillation (ENSO)-related weather patterns. With a multidisciplinary approach this study analysed how and why social location such as gender, class, caste, ethnicity, and age; physical and political location, influence women and men's access to and management of natural resource i.e., water and land. This study affirms that women's livelihoods are jeopardised by changes in climate and associated depletion of water resources in the Sonora border area.

Women, who dominate fruit farming, fruits and vegetable canning and pickling, usually use their products as gifts to the neighbourhood to strengthen social ties that in turn can bring more familial labour support to their agricultural activities during crisis period. Climate change affects the fruit cultivation and hinders their production and therefore the social tie and makes women more vulnerable to the water scarcity crisis and associated impacts.

Women's economic autonomy also gets affected with the risks from climate change. The food-security status of women and their households becomes weaker without fruits and vegetables, which before they could retain for household food consumption, particularly in light of rising food prices. Women are in a more vulnerable position in the face of these changes and their gendered requisite needs to be incorporated into planning at the policy and programmatic levels.

The study suggested that to assist the vulnerable women in such communities to respond to the challenge of building sustainable livelihoods in the face of climate change, a combination of mitigation and water-scarcity adaptation strategies are needed (Buechler, 2009).

For more information please click on the following web link: <http://www.tandfonline.com/doi/full/10.1080/13552070802696912#.UjhXhH8rwuM>

women are forced to undertake drudgery work to collect non saline drinking water (Ahmed, 2008) and they consume a smaller quantity of water per day just to avoid repeated water collection trips. This adversely affects their health.

- Women in communities vulnerable to climate change are more likely than men to lose their lives during natural disasters, due to lack of basic skills like swimming or cultural factors that restrict the mobility of women.
- Women and children are more at risk during floods. UNDP (UNDP, 2011) has made an inventory of 140 disasters between 2005 and 2009 and found that four times more women died than men. Many women can't swim, stay at

home, and can't flee together with the children, have no means of transport for themselves, apart from cultural barriers of leaving the house.

- During periods of drought, women's work increases. They travel further to collect food, water and wood. These laborious and time consuming efforts negatively impact on women's health, safety and wellbeing, and income. Additionally, men may be compelled to seek opportunities for work further away from home, and their out-migration further increases the burden on women.

► Deltas and estuaries are threatened

- Deltas, low lying coasts and estuaries are projected to face the most severe threats of fresh

Climate related disasters affect women's livelihoods and safety nets

A report ("Women at the Frontline of Climate Change: Gender Risks and Hopes") released at the UN Climate Change Conference (COP17) in Durban, South Africa, - highlights how organized human trafficking, especially that of women, is emerging as a potentially serious risk associated with climate-related disasters; as floods or landslides disrupt social safety nets, leaving more women isolated and vulnerable.

In Nepal, estimates based on emerging data from anti-trafficking organizations, such as Maiti Nepal, suggest that trafficking may have increased from an estimated 3,000–5,000 people (mostly women, as well as children and youth of both sexes between the ages of 7 and 21) in the 1990s to current levels of 12,000–20,000 per year. Approximately 30 percent of the victims end up in forced labour and 70 percent are exploited in the sex industry (UNEP, 2011).

The data suggests that human trafficking increases by around 20 to 30 percent during disasters. The International Criminal Police Organization (INTERPOL) has also warned that climate disasters may increase the exposure of women to trafficking as families are disrupted and livelihoods are lost.

More information can be accessed at: <http://www.unep.org/newscentre/default.aspx?DocumentID=2661&ArticleID=8975>

Early warning information systems specifically need to target women

Following the colossal cyclone and flood of 1991 in Bangladesh, for example, the death rate was almost five times higher for women, compared with men (total death rate 145,000 people). Early warning information systems were transmitted by men to men in public spaces, but this information was rarely communicated to women and the rest of their families. Consequently women, who are not permitted to leave the house due to cultural dictates, perished while they waited for their relatives to return home, to move them to places of safety. Their chances of survival were significantly reduced by the fact that few knew how to swim and others were entangled by their traditional sari, a 12 foot long cloth, while trying to swim against the strong wind and severe storm surge.

water availability, saline water intrusion, siltation, land loss, deceleration of wetland renewal. Salinity distribution will affect the biodiversity of wetlands and mangroves and will reduce the productivity of those areas and produce more climate refugees among poor men and women. Women as water managers within the household face the immediate impact of the fresh water crisis and salinity ingress (GTZ, 2004). Moreover, the movement of rural and coastal communities into urban areas as their own lands become inhabitable leads to ever higher numbers of

people in informal settlements being exposed to multiple climate impacts, including flooding, heat waves and disease (RFA, 2013).

- Women invent various different ways to cope for example they often adopt the integrated farming or floating water farming in case of water and ground salinity.
- **Focus on climate change mitigation leads to lack of attention to adaptation and water-related issues**
 - Although the connections between gender and water and between water and climate have been

Climate change and gendered migration: Experience from Chiapas, a Mexican state

The southern part of the Mexican state of Chiapas is an area that is subjected to severe effect of climatic hazards such as increased hurricanes, tropical storms, changes in precipitation patterns, landslides, flooding and changes in the dry and rainy seasons. This case study investigates the different ways in which women and men are affected by the impacts from climate change, and possible differences in the resulting migration strategies.

The most significant reasons for migration processes are generally economic in nature and in this case migration is a reaction to the economic impacts from climate change, primarily in agriculture.

While migration is a strategy for adapting to climate change for both sexes, migration by women is less directly associated with its impacts. Most of the men in the case study whose migration is associated with climate change, have migrated due to the direct impacts from climate change on agriculture – because they lost their land plots and/or harvests. Meanwhile, most women migrate in response to indirect impacts on the overall economy. Because agriculture is considered to be a man's activity, and few women work in this area independently, women migrate primarily in response to the overall depressed economy, which provokes critical losses in their income, mostly in commercial activities. Low participation by women in agriculture is also the reason that, in general, direct impacts from climate change play a lesser role in decisions made by women to migrate than those made by men.

Source: Women who go, women who stay: reactions to climate change: A case study on migration and gender in Chiapas. November 2010. For more information: http://us.boell.org/sites/default/files/downloads/MIGRACION_Gender_Climate_Mexico_ingles.pdf

Changing climate magnifies existing inequalities and needs policy intervention: A case study from Botswana

Two villages namely Seronga and Chobokwane of rural Botswana with different environmental conditions, political landscape and socio-economic profiles were selected for a comparative analysis. The study showed empirically that the disadvantaged position of women means greater difficulty in coping with disasters, environmental change and climate variability. It also shows that gendered divisions of labour often result in more women in agricultural and informal sectors, which are more vulnerable to environmental variability and climate change. Women's vulnerability along with their domestic work and responsibilities are often amplified by environmental and climate change. The effect of a changing climate, therefore magnifies existing inequalities, reinforcing the disparity between women and men in their vulnerability to and capability to cope with climate change. This study concludes with the policy recommendation that Governments should mainstream gender differentiated perspectives around climate change into their national policies, action plans and other measures on sustainable development and climate change (Omari, 2010).

For more information please visit the following web link: http://www.boell.de/sites/default/files/assets/boell.de/images/download_de/ecology/BOT_exec_sum.pdf (executive summary); [http://www.boell.de/assets/boell.de/images/download_de/ecology/Botswana\(1\).pdf](http://www.boell.de/assets/boell.de/images/download_de/ecology/Botswana(1).pdf) (full report)

Climate change adaptation and gender-sensitive strategies: A case study from Jamaica

In rural Jamaica many people have to do without potable water, adequate sanitation and hygiene, which has implications for their health and well-being. The changing climate is aggravating this situation further. In the villages Somerset and Mile Gully both primary and secondary data were collected to find out more about the impact of climate change from real life experiences with a gender perspective.

The study explores the different jobs and tasks that men and women have, based on the gender division of labour and how climate change may alter this pattern and bring different risks and opportunities to them. Also the difference in men's and women's access to resources (for example water, land and social networks) and the different options and possibilities for coping with the effects of climate change have been studied.

The different knowledge and skills of men and women, based on their different tasks and responsibilities in society, impacts how men and women respond to climate change. It also shows the difference in men's and women's access to decision-making and how women can participate more effectively to have their ideas represented in decision-making about water and climate change.

The study concludes that development planners must take account of the reality that women may have: less access to resources, a double burden of reproductive and productive work and less access to power and decision-making. The culture of exclusion from areas such as construction skills which are needed after a disaster undermines women's life chances that requires adequate gendered attention. These should all be considered and integrated into climate change adaptation strategies linked to water and sanitation. (UNDP, 2009)

For more information: <http://crmi-undp.org/en/genderstudy/docs/crmi-gttfcstjamaica-bp-2009-en.pdf>

illustrated through research, the connection between gender, climate and water has received less attention from a scientific point of view, as well as in politics. Gender debates primarily focus on mitigation efforts i.e., reduction of carbon emissions, other greenhouse gases, the use of different energy sources, on governments actions and institutions to mitigate climate change.

- Insufficient attention has been paid to climate change adaptation strategies and actions taken by the poor to prepare for and protect themselves against climate change. Such actions have been taken to reduce the threat to food supplies, health and well-being, livelihoods and security. Women's roles are not adequately

recognized in climate change adaptation efforts, either in national and global climate change negotiation talks or in the context of climate change-influenced natural disasters.

- If women's potential to contribute to climate change adaptation, including their traditional knowledge, is not recognized, a gender-sensitive climate change adaptation cannot be ensured.
- Climate change impact exacerbates the inequalities between women and men's relationship to water. It intensifies existing inequalities, vulnerabilities, economic poverty and unequal power relations.
- "Gender-sensitive" adaptation requires more than a set of gender-disaggregated data showing that climate change has differential

impacts on women and men. Rather, it requires an understanding of existing gender inequalities and gaps between women and men, and of the ways in which climate change can exacerbate these inequalities. Conversely, it also requires an understanding of the adaptation patterns in which these inequalities can intensify the impacts of climate change for all individuals and communities.

- Several factors can make adaptation more difficult for some women, including lack of formal education, poverty, discrimination in food distribution, food insecurity, and limited access to resources, exclusion from policy-and decision-making institutions and processes and other forms of social marginalization.
- **Poor urban populations in low and middle-income nations are increasingly at risk from storms and floods**
 - A large and growing proportion of those most at risk from climate change live in urban areas, largely in low- and middle-income nations. There is a significant increase in the number of urban dwellers living in poverty, in poor or informal settlements without basic infrastructure and services that could protect them from environmental health hazards and disasters. Worldwide there has been a rapid growth in the number of people killed or seriously impacted by storms and floods in urban areas, particularly



Urban dwellers living in poverty, in poor or informal settlements without basic infrastructure and services are often at the greatest risk from flooding.

in coastal towns and cities, a large number of whom are women and children.

- Gender responsive local adaptation measures need to be put in place by local governments, such as improvements in housing and living conditions and in provision for infrastructure and services. Successful, well-governed cities could greatly reduce climate-related risks for low-income populations whereas unsuccessful, badly governed cities may greatly increase such risks.

5.2 Benefits of a Gender Approach

A gender approach can contribute to the protection and restoration of the environment, and prevent further damage to watersheds. In addition, a gender approach can help to reduce

Key integral factors of gender in climate change

- ◆ Climate change affects women and the poor disproportionately.
- ◆ Intertwined relations between climate threat and gendered impact is recognized but very limited gendered analysis of climate vulnerabilities and adaptation strategies has been undertaken.
- ◆ Recognising that countries that contribute to climate change by over-consumption are not the same as those who are vulnerable to its effects will enable more effective analysis of the impacts of climate change on those populations, especially women that most need support to adapt to climate change.
- ◆ Attention needs to shift from mitigation issues, to gender-sensitive adaptation practices and policies.

the negative impacts and improve people's coping mechanisms for drought and flood mitigation. Such impact can have a multiplying effect that is also beneficial to water supply, sanitation, agriculture and the socio-economic, cultural and political development of communities and society.

PROTECTION OF WATERSHEDS

- ▶ **Effective solutions:** Women and men view watershed protection differently. Hence, more appropriate and acceptable solutions can be devised if watershed management is gender inclusive, sensitive and responsive. A gender approach gives a better assessment of the watershed situation, the causes of the damage and its impact. Women and men are becoming aware that cooperation and sharing of skills and knowledge to restore forests, grasslands, wetlands and other natural features works best to protect them in the long term. Both women and men must actively contribute to better reforestation and watershed protection projects, with greater community ownership of the benefits.
- ▶ **Improved livelihoods:** Women and men mutually, can participate and benefit if knowledge and information regarding land and ecosystem management, is easily accessible and where programming for improved livelihoods targets both sexes equitably.
- ▶ **Women are often the managers of natural resources** such as water and common property resources with knowledge and skills that are critical for sustaining the environment.
- ▶ **Addressing wastewater or sick water challenges with a gender approach** can reduce the water and hazardous pollution that leads to water related illness/ diseases. Without clean water, there is no chance of breaking out of the cycle of poverty.
- ▶ **An efficient approach to dealing with wastewater** can provide opportunities for green employment for both men and women. It is important to ensure that women are included in such employment opportunities.



Innovative strategies need to be designed for special areas such as endangered coasts, mangrove ecosystems, and wetlands.

MORE RESILIENCE TO CLIMATE CHANGE

- ▶ Gender analysis helps to find ways to mitigate the possible risks of climate change, and reduce vulnerability, highlighting the opportunities to enhance positive outcomes for men and women.
- ▶ Women's empowerment is an integral feature in building climate resilience. In many places forced by urgency, women have managed to set an example of empowerment through leadership development within their villages and thus increasingly building resilience to flood.
- ▶ The different local knowledge of women and men can be an important factor in coping with floods, droughts, sea level rise, salinity, cyclones, etc. It will create local solutions for climate change adaptation.
- ▶ Women can play a leading part in sustainable water management as they have significant roles in agriculture, food security, household livelihoods and labour productivity. They have valuable knowledge, skills and initiatives in managing their water resources and are often at the front-line of adaptation to climate change, in the context of high rates of men's out-migration from water stressed areas.
- ▶ Investing in low carbon, resource efficient green technologies, water harvesting and fuel wood alternatives can strengthen climate change adaptation and at the same time improve women's livelihoods, if a gender approach is applied.
- ▶ Improved risk management: Vulnerability assessments related to floods, droughts and other climatic impacts stand to benefit from the views and

Climate variability impacts and women: A case study from South Africa

For this case-study participatory rural appraisal in the form of focus group discussions, role play, life histories and key informant interviews were used to know more about the impact of climate variability in rural areas Kwazulu-Natal province, the most populous and poverty stricken eastern coastal province of South Africa.

The results suggest that, women appear to bear the biggest burden of coping with climate change impact together with their labour-intensive household. Men were found not to do more work; instead they suffer more mentally as they find it hard to cope with unemployment.

This study shows that the impact of climate change coupled with other burning factors such as unemployment, HIV/AIDS and poverty basically forces women and men to come up with new divisions in their tasks and responsibilities, to adapt better. For example, women's income earning capacity creates a need for their equal participation in decision making process at household level.

The study affirms that women are proven to be knowledgeable and innovative with regards to coping with the impacts of the changing climate and they play a vital role in supporting households and communities to adapt with it. The study strongly recommends to address issues of gender in climate change management. Lessons from positive experiences can be used to guide the way forward in achieving gender equality simultaneously with solutions for adaptation. (Babugura, 2010)

For more information: <http://za.boell.org/2014/02/03/gender-and-climate-change-southern-africa-publications>

contributions of women and men. Recognising the fact that women and men are vulnerable in differing ways, and varying degrees, contributes to better project design, considered technical assistance and provision of services, effective risk management strategies and improved early warning systems.

- ▶ Long term negative impacts can be reduced if strategies for coping with extreme climate events are specific to cater for different population groups, and to provide for the particular needs of women, children and men.

IMPROVED SOCIAL AND ECONOMIC DEVELOPMENT

- ▶ Empowerment of women is an important aspect of building climate resilience that emphasizes the diversification of economic and other opportunities and empowering men and women based on their needs and interests.
- ▶ Women's groups organized around issues of adaptation can serve as a powerful springboard

for building resilience of their villages or neighbourhoods. Such women's groups will be supporting water managers in their interventions.

- ▶ Improving local ownership and responsibility for natural resources has the potential to allow the rural poor and women, as particularly affected groups, to contribute to good ecosystem management and gain benefits as a result. Watershed management actions can reduce gender disparities and bring social and economic benefits to people while improving nature's capacity to regulate and clean water resources.

5.3 How to Get the Benefits

In order to maximise potential benefits of a gender- inclusive approach, the following should be taken into account:

- ▶ The legal framework and policies that pertain to water, land, and the environment should be reviewed and amended to reflect gender considerations.

Women, the poorest: In the quest of meeting climate challenges

This short film illustrates how people in Bangladesh are meeting the challenges of climate change. It focuses on the changing weather pattern, salinity ingress and floods in the coastal zone of Bangladesh. Voices of poor affected women, local leaders and climate scientist can be heard in this brief video link (DFID).

For more information: Climate Change in Bangladesh. A documentary film that entails how poorest people are adapting with Climate challenges. The Water Channel. <http://www.thewaterchannel.tv/en/videos/categories/viewvideo/564/climate-change/climate-change-in-bangladesh>

- ▶ The organisational structures within the water and environmental sectors should sensitise, raise awareness and incorporate gender.
- ▶ The instruments and incentives for appropriate management of water, land and ecosystems should be consistently reviewed and updated, for increased impact of targeted beneficiaries.

LEGAL FRAMEWORKS AND POLICIES

▶ Analysis

- Analyses of rural development, land use, water and environmental laws and policies is necessary for assessing their benefits and impact on women and men's lives
- Gender and Poverty Audits should be done of post-economic crisis budget cuts of national governments and international organizations (World Bank, International Monetary Fund etc.), and of the financial incentive packages developed to alleviate the impact of the economic crisis, especially on the most vulnerable groups.

▶ Ensure the Implementation of existing commitments in the area of gender and environment

- With an emphasis on the empowerment, integration or involvement of women and poor men in environmental decision-making, through the active participation of both men and women in every sector, level, and task.

▶ Equitable rights

- Enable all people including women and marginalized groups, the right to access

environmental goods and services including water and land rights. Seek mechanisms to protect those rights and assure easy access to justice in case of dispute.

▶ Participation and decentralization

- Enable gender sensitive and meaningful stakeholder participation as a principle for watershed management.
- Advocate for responsible decentralization that gives local authorities not only the duties but also the means for environmental management. Seek explicit mechanisms to involve women in the process.
- Ensure women's active and equitable participation in policy and decision-making processes ranging from local to national and international customary and statutory institutions, so that their knowledge, contributions, and work are both utilized and valued and their capacities, confidence and voice are boosted and enhanced.
- Create pressure to bring in more gender-responsive programmes for ensuring gender equality and climate poverty eradication.
- Educate people with particular focus on women on gender-sensitive, socially-culturally appropriate waste-water management that is economically and environmentally viable for the future.

▶ Design and implement innovative strategies

- Innovative strategies need to be designed for special areas such as endangered coasts,



Women participating in UNFCCC-talks. Photo: UNFCCC

mangrove ecosystems, and wetlands along with culturally specific realities, needs and aspirations. Women's responsibilities in households, communities and as stewards of natural resources position them well to develop strategies for adapting to changing environmental realities.

INSTITUTIONAL ARRANGEMENTS

► Analysis

- Assess the institutional situation on gender as well as the relevance of gender issues in day-to-day work. Gender budgeting helps to reveal the true level of commitment to addressing gender in practice.
- Mainstream gender budgeting, auditing and financing: one of the key issues of gender-sensitive climate change adaptation and strategic participation of women is a systematic mainstreaming of gender relations in the budgeting and financing process at the planning and monitoring levels.
- Approaches to waste water financing should consider that there are important livelihoods opportunities and that both men and women should be given opportunities.
- The private sector can have an important role in improving waste water treatment processes, under appropriate public guidance. Investments in the rehabilitation and restoration of natural water purification systems such as wetlands and mangroves can offer a cost effective path.

► Capacity development in gender and environmental issues

- Train managerial and technical staff in gender and participatory methods. Pay particular attention to green water and the challenge of enabling a better distribution of benefits by gender.
- Strengthen inter-institutional capacity development: Undertake capacity development of grassroots women's organizations, NGOs, and networks, to assist women in developing and implementing their own climate related actions.
- It is important to build in-country institutional capacity within central and local government bodies, ministries and agencies, in order to better equip them to address the gender dimensions of climate change in their own analyses and response plans.
- Awareness raising on the gendered vulnerability and impact of climate change and the corresponding adaptation needs.

► Gender responsible staffing

- Actively seek and appoint qualified women into technical and managerial roles, promoting equality in salary and opportunities.
- Develop appropriate gender balanced staff structures at the local level to implement watershed management programmes with gender sensitive, participatory, pro-poor actions.

► Information and data

- Design and collect gender sensitive and environmentally sound indicators. Information



Healthy ecosystems support lives and livelihoods. Photo: G. Di Nola/D. Guio

about the beneficial impacts of gender sensitivity on the outcome of watershed management and other projects can demonstrate the value of gender approaches to authorities and society.

- Ensure that gender-disaggregated data are collected: such data illustrate differential impacts on women and men, and also differentiated contributions of women and men.
- Strengthen monitoring and evaluation systems: Monitoring implementation progress using gender – disaggregated indicators and data is essential to assess and analyze the effects of gender-sensitive progress in climate adaptation processes.
- ▶ **Ensure the implementation of existing commitments in the area of gender and environment**
 - Water managers of many programmes that have committed to integrate gender need assistance with doing so in a way that does not demand too much of their time. Gender experts and women's networks can support.
 - Education and training materials can be developed, the organization of workshops and gender balance in meetings can be taken care of.
 - In meetings at all levels it is important that women's voices are heard.
- ▶ **Alliances and participation**
 - A co-ordination mechanism needs to be at place for building alliances among like-minded organizations and institutions active in adaptation programmes. Women's voice needs to be heard at all spheres.
 - Widen the inter-institutional discussion and collaboration with effective gender participation to include the treatment and re-use of the human, household, agricultural and industrial wastewater runoff.
 - Participation of the real stakeholders is crucial, for example in the design of research and action focusing on women's demands, concerns, experiences, priorities and needs. It is evident that women involved in action-oriented research often possess a clear sense on what they need in

order to adapt to changing climatic conditions in their own environments, climate and livelihoods.

INSTRUMENTS

- ▶ **Information dissemination and early warning systems:** People-centric and needs-based local level information dissemination system/communication systems are essential adaptation measures for communities. Timely early warning systems for floods or droughts, storm surge, flash flood can lead to better prepared community and better ways to support on-ground initiatives. It is important to ensure that early warning systems do not exclude groups of people, e.g. women, differently abled, minorities or the poor, therefore several techniques must be developed to reach all groups.
- ▶ **Ensure gender-balanced participation in stakeholder discussions** on climate change adaptation processes and climate financing. This will help to ensure that both men's and women's views are taken into account and where necessary, financing instruments can be tailored to address men's and women's different experiences of climate change, and their different responsive capacities.
- ▶ **Ensure gender-sensitive and smart climate initiatives:** Women's rights, socio-economic status and voice can be strengthened through gender-sensitive and smart development initiatives (empowerment). This can enhance a shift away from a singular focus on women's and girls' vulnerability and their role as victims towards emphasizing their abilities and potential actions. This can also encourage a more nuanced, positive and forward-looking approach to gender and climate change.
- ▶ **Ensure gender-sensitive adaptation:** To combat with the climate induced vulnerabilities adaptation needs to be culturally appropriate, socially acceptable, responsive and practical for women's needs. Among the critical factors that can assist in gender sensitive adaptation are increased access and ownership of water, land, micro-credit directed to women, livestock, storage facilities, agricultural inputs, markets, education and green technology.

- ▶ **Emphasize the significance of women as change agents:** Women can be powerful agents of change. They are the active agents of adaptation in rapidly changing contexts who negotiate, strategize, contest and resist relations, discourses and policies that disadvantage them. They actively interpret, give meaning to and adapt to global changes in local contexts in ways that are appropriate, sustainable and culturally specific. There are countless examples where women are seen to exercise leadership within their communities in contributing to climate resilience ranging from disaster preparedness.
- ▶ **Ensure IWRM as a tool for adaptation:** Effective water management with active gendered participation has now being recognized as a key response to mitigate/combat and/or adapt to the adverse impact of climate variability such as droughts, floods. It can lead to improvement of water governance.
- ▶ **A collectively smarter, gender-sensitive, multi-sectoral, innovative and intelligent approach** to wastewater management is needed which will incorporate principles of ecosystem-based management from the watersheds into the sea, connecting sectors that will reap immediate benefits from better wastewater management.

Tools

1. **Aguilar, L. & Castaneda, I., 2000. About Fishermen, Fisherwomen, Oceans and Tides. San Jose Costa Rica: IUCN.**

This book seek to guide practitioners along the process of gender mainstreaming into community-led sustainable development initiatives that involve freshwater and marine resources

http://genderandenvironment.org/index.php/en/knowledge-center/doc_download/1111820-about-fishermen-fisherwomen-oceans-and-tides-a-gender-perspective-in-marine-coastal-zones

2. **CAP-NET, 2009. IWRM As a Tool for Adaptation to Climate Change: Training Manual and Facilitator's Guide, Pretoria: CAP-NET.**

Climate change is expected to impact countries around the world in different ways by bringing more intense storms, increases or decreases in the annual rainfall, and floods and droughts. training material was developed with the objective to increase people's understanding about climate change and to explore what people can do now.

<http://www.cap-net.org/training-material/iwrn-as-a-tool-for-adaptation-to-climate-change-english/>

3. **GenderCC – Women for Climate Justice, 2009. Gender into climate policy: Toolkit for climate experts and decision makers. Berlin: Gender CC – Women for Climate Justice.**

The differential climate change impact on women and men's lives remains a critical aspect into policy deliberation. This toolkit

was developed to provide an idea of how to focus on gender and bring gender dimension in the climate change policies.

<http://www.gendercc.net/fileadmin/inhalte/Dokumente/Tools/toolkit-gender-cc-web.pdf>

4. **GWA; WASTE, 2010. No Capacity to Waste. Training Module Gender and Waste. s.l.:GWA; WASTE.**

This training material addresses issues on gender and waste management by analyzing the different relations women and men have in their societies and on the relations towards waste management processes. It was developed to train trainers of practitioners.

http://www.waste.nl/sites/waste.nl/files/product/files/genderwastemodule_final100831.pdf

5. **Olawoye, J. E., Okoye, O. & Eleri, A., 2010. Gender and Climate Change Toolkit For Policymakers and Programme Developers., s.l.: International Centre for Energy, Environment & Development.**

The overall goal of this toolkit is to have a positive impact on the entire population in Climate Change adaptation, an impact that is both empowering and equitable. Efforts to sensitize policy and decision makers as well as development practitioners on key climate change and gender issues with appropriate approaches to meet the challenges in Climate Change remain as core to achieve this goal. One of the prime objectives of this study is to provide guidance in ensuring that gender issues are sufficiently integrated into climate change response and so do the monitoring indicators for this process are set in place that can create gender sensitivity.

http://nigeriacan.org/web/download/_1284374622.pdf

6. **Schipper, L., Liu, W., Krawanchid, D. & Chanthy, S., 2010. Review of climate change adaptation methods and tools. MRC Technical Paper No. 34, Vientiane: Mekong River Commission.**

Climate change as an unavoidable challenge that every society needs to handle with adequate measures. In so doing mostly developing countries in the recent world faces a daunting situation. Adaptation to the emerging and existing climatic challenges requires additional intervention and therefore clear-cut and concrete planning remains at the heart of combating with climate challenge. This report reviews many of the methods and tools with referred guidelines, toolkits, models and frameworks applicable for the planning of climate change adaptation.

<http://www.mrcmekong.org/assets/Publications/technical/Tech-No34-Review-of-climate-change.pdf>

7. **Siles, J. & Soares, D., 2003. The force of the current: watershed management from a gender equity perspective. San Jose Costa Rica: IUCN; HIVOS.**

This is a conceptual and methodological proposal that provides tools and recommendations for the development and management of watershed plans with gender equity

http://genderandenvironment.org/generoyambiente.org/index.php/en/knowledge-center/doc_download/1783-the-force-of-the-current-watershed-management-from-a-gender-equity-perspective

8. **UK AID; Livelihoods and Forestry Programme, 2012. Participatory Tools and Techniques for Assessing Climate Change Impacts and Exploring Adaptation Options: A Community Based Tool Kit for Practi. Katmandu: Livelihoods and Forestry Programme.**

This tool kit is designed to help communities and planners understand the likely local hazards and risks of climate change and look at the vulnerability of their environment and livelihoods. It helps them to analyse exiting methods of coping and adapting and then develop plans to increase resilience. Gender is considered as a key element in the analysis.

<http://www.forestrynepal.org/images/publications/Final%20CC-Tools.pdf>

9. **UNDP, 2010. Gender, Climate Change and Community-Based Adaptation Guidebook. New York: UNDP.**

This guidebook provides advice on how to design gender-sensitive, community-based adaptation projects and programmes

[http://www.undp.org/content/dam/aplaws/publication/en/publications/environment-energy/www-ee-library/climate-change/gender-climate-change-and-community-based-adaptation-guidebook-/Gender%20Climate%20Change%20and%20Community%20Based%20Adaptation%20\(2\).pdf](http://www.undp.org/content/dam/aplaws/publication/en/publications/environment-energy/www-ee-library/climate-change/gender-climate-change-and-community-based-adaptation-guidebook-/Gender%20Climate%20Change%20and%20Community%20Based%20Adaptation%20(2).pdf)

Relevant Websites

ORGANIZATION	TITLE	LINK TO ORIGINAL
Care International	Poverty, Environment and Climate Change Network. Climate Change Information Centre	http://www.careclimatechange.org/videos
ENDA	Environmental Development Action in the Third World	http://endatiersmonde.org/instit/index.php?lang=en
Gender CC	Gender CC – women for Climate Justice	http://www.gendercc.net/metanavigation/home.html
GGCA	Global Gender and Climate Alliance	http://www.gender-climate.org/
GWA	Gender and Water Alliance	http://genderandwater.org/en/water-sectors/environment
IIED	International Institute for Environment and Development. Gender	http://www.iied.org/gender
IUCN	IUCN Gender and environment	http://www.genderandenvironment.org/index.php/en/
UNDP	UNDP Gender and Climate Change website	http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/strategic_themes/climate_change/focus_areas/gender_and_climatechange/
UNFCC	UNFCC Video channel on Climate and Gender	http://climatechange-tv.rtcc.org/climate-and-gender/
UNFCCC	UN Framework Convention on Climate Change website on women	http://unfccc.int/gender_and_climate_change/items/7516.php
USGDRA	US Gender and Disaster Resilience Alliance – Videos	http://usgdra.org/resources/videos/
WEDO	Women's Environment and Development Organization	http://www.wedo.org/

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Glossary

Economic efficiency in water projects refers to financial sustainability to build, operate and maintain the diverse projects and facilities required to improve water access and assure water quality and quantity over the long-term through cost recovery and payment systems. It also refers to sectoral and cross-sectoral actions for cleaner production, water reuse and recycling, recognizing that freshwater is a limited resource, and investment in water projects must be viable.

Empowerment is about people – both women and men – taking control over their lives: setting their own agendas, gaining skills, building self-confidence, solving problems and developing self-reliance. No one can empower another: only the individual can empower herself or himself to make choices or to speak out. However, institutions including international cooperation agencies can support processes that can nurture self-empowerment of individuals or groups. Empowerment consists of the four integrally linked aspects of physical empowerment, economic empowerment, political empowerment and socio-cultural empowerment.

Environmental sustainability assures the capacity of nature to support life. Within the context of IWRM this means a healthy water cycle, adequate water for nature, and less water pollution. Long-term water availability requires that ecosystems are able to continue to regulate water quality and quantity.

Equality between women and men (gender equality) refers to the equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not mean that women and men will become the same but that women's and men's rights, responsibilities and opportunities

will not depend on whether they are born male or female. Equality recognizes the diversity between different groups of men and women. Equality between women and men is seen both as a human rights issue and as a precondition for, and indicator of, sustainable people-centered development. (<http://www.un.org/womenwatch/osagi/conceptsanddefinitions.htm>. Last accessed 27 February 2014).

Gender refers to the cultural and social characteristics that men and women are given in their society. Gender differences are historically, religiously, economically and culturally defined and perceived as static. Gender differences are not biologically determined and change with circumstances and over time. Gender deals with the division of work, the different responsibilities, tasks and skills and the different rights men and women have. It also deals with the access to and control over resources, the expected behaviour, taboos and privileges and the connected status of men and women. Gender interacts and reinforces power differences in age, ethnicity, socio-economic status, etc. Therefore gender refers to power relations between women and men and girls and boys, as well as the relations between women and those between men.

Gender analysis is the collection and analysis of sex-disaggregated information. Men and women both perform different roles. This leads to women and men having different experience, knowledge, talents and needs. Gender analysis explores these differences so policies, programmes and projects can identify and meet the different needs of men and women. Gender analysis also facilitates the strategic use of distinct knowledge and skills possessed by women and men. (<http://www.unesco.org/new/fileadmin/MULTIMEDIA/>

HQ/BSP/GENDER/PDF/1.%20Baseline%20Definitions%20of%20key%20gender-related%20concepts.pdf. Last accessed 27 February 2014).

Gender blindness means that the existing differences between men and women are not recognized or distinguished. Gender blindness can hinder gender mainstreaming.

Gender budget refers to a separate budget for gender mainstreaming activities, a separate budget line for undertaking specific activities related to gender mainstreaming.

Gender discrimination refers to the practice of granting or denying rights or privileges to a person based on their sex.

Gender equity is the process of being fair to men and women. To ensure fairness, measures must often be put in place to compensate for the historical and social disadvantages that prevent women and men from operating on a level playing field. Equity is a means. Equality is the result.

Gender mainstreaming is a process rather than a goal. It is a process to achieve gender equality and improve the relevance of development agendas. A gender mainstreaming approach shows that the cost of women's marginalization and gender inequalities are borne by all.

Gender neutral: Words or language that does not refer to either male or female sex is considered to be gender neutral. Gender neutral language is often used to indicate that gender is included but in fact gender neutral language does not serve to improve the understanding of gender issues but rather serves to "hide" gender issues. Gender neutral language cannot be used in gender analysis.

Gender responsive means taking actions to correct gender bias and discrimination and

creating an environment that promotes gender equality and gender equity.

Gender responsive budget ensures that men and women benefit equally from project activities and interventions. It is a budget that makes provisions for benefits to reach both men and women equally.

Gender sensitive: To be gender sensitive is to recognize the differences, inequalities and specific needs of women and men and act on this awareness.

Integrated Water Resources Management (IWRM) is a process which promotes the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment. (GWP, 2010)

Social equity in IWRM requires that a fair share of water benefits and responsibilities be transmitted to women and men, poor and rich, young and old. This means fair opportunities to access, use, and control water resources, as well as equitable acceptance of responsibility for the negative side effects produced so as to avoid placing higher burdens on the poor or disadvantaged members of society.

Water governance refers to the management of water and water systems. It is defined by the political, social, economic and administrative systems that are in place, and which directly or indirectly affect the use, development and management of water resources and the water service delivery at different levels of society.

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