PASSPORT TO MAINSTREAMING GENDER IN WATER PROGRAMMES

Key questions for interventions in the agricultural sector

GEWAMED

GWA GENDER AND WATER ALLIANCE

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Chief, Publishing Policy and Support Branch
Office of Knowledge Exchange, Research and Extension
FAO
Viale delle Terme di Caracalla
00153 Rome, Italy

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This document was prepared by Esther de Jong, Deputy Director of Gender and Water Alliance, Juan Antonio Sagardoy, International Water Management and Gender Consultant and GEWAMED Project Manager, and Ilaria Sisto, FAO Gender and Development Officer (Training and Capacity Enhancement Officer).

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1.1 Setting the scene

As stated in **The State of Food and Agriculture** (SOFA) 2010-2011, the agriculture sector is underperforming in many developing countries, partly because women do not have equal access to the resources and opportunities they need to be more productive. Women have less access to agricultural assets, inputs and services and to rural employment opportunities. They operate smaller farms, have fewer livestock and a greater overall workload that includes a heavy burden of low-productivity activities such as fetching water and fuelwood. Women also have less access to education, agricultural information and extension services, technology, credit and other financial services.

Women make essential contributions to the rural economy of all developing countries as farmers, labourers and entrepreneurs. On average, they comprise 43 percent of the agricultural labour force in developing countries. This ranges from 20 percent in Latin America to 50 percent in parts of Africa and Asia, but it exceeds 60 percent in only a few countries. Estimates of the time contribution of women to agricultural activities ranges from about 30 percent in The Gambia to 60-80 percent in Cameroon, while in Asia it varies from 32 percent in India to over 50 percent in China, and in Latin America it is lower, but it exceeds 30 percent in Peru.

Even when rural women are in wage employment, they are more likely to be in part-time, seasonal and/or low-paying jobs. Apart from working as agricultural labourers women also produce the bulk of the food for home consumption, which is not counted in the official production statistics but is a significant contribution to food security.

Female time-use in agriculture varies widely depending on the crop and the phase of the production cycle, the age and the ethnic group, the type of activity and a number of other factors.

Evidence shows that female farmers are largely excluded from modern contract-farming arrangements because they lack secure control over land, family labour and other resources required to guarantee delivery of a reliable flow of produce.

The **gender gap** imposes significant costs on society, in terms of lost agricultural output, food security and economic growth. Promoting **gender equality** is not only good for women but also for sustainable agricultural development. SOFA estimates that, by giving women equal access to productive resources and rural employment as men, they could increase yields on their farms by 20-30 percent. Production gains of this magnitude could reduce the number of hungry people in the world by 12-17 percent, which means 100-150 million people.

Most of the world's 1.2 billion poor people, two-thirds of whom are women, live in water-scarce countries and do not have access to safe and reliable supplies of water. At least 70 per cent of the world's very poor people are rural (IFAD, 2011) and the bulk of these people depend on agriculture for their livelihoods.

There is also a growing competition for water from different users and sectors, including industry, agriculture, power generation, domestic use and the environment, which makes it difficult for poor people, especially women, to access this scarce resource.

Securing water is critical in achieving food security and improved rural livelihoods in most parts of the world, particularly in arid and semi-arid areas. Despite the key role women play in food security through their knowledge of crop production, local biodiversity, soils and local water resources, they are often excluded from decision-making processes in new agricultural water management systems and other projects and initiatives on natural resources allocation. They have no choice in the kind or location of services they receive. Women's secure access to water and land is central to achieving the Millennium Development Goal 1 (Reducing by half the proportion of people living in extreme poverty and hunger by 2015) and Goal 3 (Promoting gender equality and empowering women).

1.2 Gender in water management

Water management in agriculture has been very effective in raising food production worldwide. Water professionals have been successful in developing and promoting different techniques in the field of irrigation, rainwater harvesting, flood control, watershed management, etc. By doing so, they have managed to improve agricultural production significantly.

Until recently the focus of many agricultural water management projects and programmes has been on technical issues. When it became clear that projects are more successful when the potential users are involved, many adopted a participatory approach trying to involve the water users in the planning and the design of their projects.

However, contrary to the actual situation in many areas, planners, engineers, extension staff and decision-makers still do not perceive women to be farmers. This situation is enhanced by the fact that these professionals are often male and they do not adequately recognize the agricultural work of women. They are less familiar with the specific needs and priorities of women, and might encounter difficulties in targeting them because of specific sociocultural norms. The most common gender stereotype that has guided and shaped many irrigation policies and the planning and design of irrigation systems is that women are primarily housewives and mothers, while men are farmers and irrigators. As a consequence, policies and programmes frequently overlook the knowledge, tasks, needs and requirements of women in agriculture water management.

The International Decade for Action, "Water for Life" (2005-2015) and the UN-Millennium Development Goals both call for women's and men's participation and involvement in water-related development efforts. Access to safe water is considered a basic human right (UN General Assembly Resolution, July 2010) yet today 1.3 billion people are without an adequate water supply and more than double than that lack basic sanitation. It is essential to ensure that both men and women have access to safe and adequate water.

Experience has shown that where irrigation design fails to recognize that women are water users and farmers in their

own right, risks are high that women lose existing access to land or the products of their own labour. Studies carried out in Cameroon, Laos, Nepal and The Gambia have shown that projects designed and implemented with the full participation of women are more sustainable and effective.

Gender mainstreaming means taking into account the different implications for women, men, boys and girls of any project, programme or policy. During planning and execution it is important to assess who will benefit and who will lose from the planned intervention, taking into account the different knowledge, needs and requirements of men, women and children of different ages, class and social-economic status so that each one can equally benefit from the specific development intervention and ensure that existing inequalities are not reinforced. The ultimate goal is to achieve gender equality.

It is essential to determine what men and women need, what they can and will contribute to, and how they will participate actively in decision-making on the types and levels of service, location of facilities and operation and maintenance. Gathering the experiences and knowledge of both men and women will lead to a better understanding of existing practices and challenges. It will help identify the problems that need to be dealt with first to lead to better investment decisions. It will also assist in identifying possible conflicts among different socio-economic and ethnic groups and ways to prevent or solve them. Better solutions will be found to problems encountered in planning, design, operation and maintenance of water projects. Involving both women and men in decision-making with respect to agriculture water management will create a stronger feeling of ownership and improve their access to, and control over, water services through improved legislation. A more equal and efficient water distribution will also be possible, leading to higher yields, improved food security and the reduction of poverty.

Incorporating gender issues will enable water professionals to make informed choices during planning, design, and construction and operation of water management projects and programmes, which will make water management in agriculture more effective, efficient, equitable and sustainable.

2.1 Purpose

This booklet is developed for field staff involved in the design, implementation, operation and maintenance of water management projects for agricultural production; technicians and agents in local irrigation and extension services, NGOs and local government employees who work at field level, carry out the assessment of the local situation and have contact and negotiate with stakeholders using available water sources. For this reason the guide was given a pocket format, so professionals, practitioners and other field staff can easily carry it with them to the field.

The purpose of the passport is to support them in mainstreaming a gender perspective during planning, implementation and management of agricultural water management projects and programmes. This implies assessing the implications of any intervention on women and men, girls and boys, through a participatory approach, while designing gender-sensitive interventions. The expected outcome is improved performance of water management projects and systems, while strengthening the position of rural women or other disadvantaged groups.

The passport is designed to be a rapid appraisal tool to identify the main gender-related problems and gaps that require attention during the design, implementation and monitoring of a project or programme. If the project is at the planning and design stages it will help to integrate the concerns and needs of men and women in the future services that will be provided to users.

Similarly, the passport can be used in operational projects to identify the gender aspects of existing problems, and provide inputs for an improvement plan with tangible solutions that address the needs and priorities of the water users and the local stakeholders. Six key issues related to water projects or programmes for agriculture are outlined and some questions are formulated for each one of them. Not all questions will be relevant to every project or programme and we therefore advise the user to focus on those questions that are pertinent to the local context and the type and phase of the project. Together

with the target group of the project, the user can propose solutions or corrective actions to the identified problems within the local sociocultural context and available human and financial resources.

This Passport to Mainstreaming Gender in Water Programmes was jointly prepared by the Food and Agriculture Organization of the United Nations (FAO), the Project: "Mainstreaming Gender Dimensions into Water Resources Development and Management in the Mediterranean Region" (known as GEWAMED) and the Gender and Water Alliance (GWA). The FAO Gender, Equity and Rural Employment Division of the Economic and Social Development Department coordinated the preparation of this document, which was developed under the FAO Socio-economic and Gender Analysis Programme.

2.2 The SEAGA approach

The Socio-economic and Gender Analysis (SEAGA) offers an approach to development and emergency contexts based on an analysis of the socio-economic patterns and the participatory identification of men's and women's priorities. It provides an approach and some participatory learning tools that help to better understand community dynamics, including the linkages between social, economic and environmental patterns. The three guiding principles of SEAGA are:

- Gender roles and relations are of key importance for understanding and improving the livelihoods of rural people.

- Disadvantaged and marginalized people are a priority in development and humanitarian initiatives. The differential distribution of wealth affects the poorest and most disadvantaged people in terms of their ability to access and control resources.

- Participation is essential for sustainable development, and all activities must address the needs, priorities and capacities of communities, households and individual household members, men and women.

This passport can be complemented by the SEAGA Irrigation Sector Guide (FAO 2001) that provides participatory tools to integrate the socio-economic and gender issues in the irrigation subsector, to be used in each phase of the project cycle. The guide was written for people who are involved in the planning, design and implementation of irrigation programmes. It provides detailed information on how to apply SEAGA to the four main stages in the project cycle (identification and preparation, design, implementation, monitoring and evaluation), including a toolkit that can be used for participatory and gender-sensitive irrigation planning, and a short training guide. The SEAGA guide presents a few key questions for analysis and summary for each phase of the project cycle, while the checklist of the passport focuses on six specific elements of gender mainstreaming in agriculture water management.

Other handbooks for use at field, intermediate and macrolevels were developed under the SEAGA programme and these materials can be accessed on the web site:
www.fao.org/gender/seaga

These and other available materials can be utilized to further support the user of this passport in addressing gender inequalities and design gender-equitable water programmes, collecting and analysing gender-disaggregated data, assessing and targeting the specific needs of men and women of different age and socio-economic groups, to close the existing gender gaps in agriculture and food security.

2.3 How to use this passport

In each chapter a series of questions is presented to address the gender aspects of the key issue the chapter deals with. For some questions we have included several subquestions, to draw attention to some specific aspects to be considered and to identify the underlying causes of the issue.

Not all questions will be of relevance in every programme and project and therefore the user of the guide is encouraged to first assess the sociocultural context or stage of a project or programme, what is the level of literacy of the target group, what kind of agricultural technology is used, etc. This will help to select the most relevant questions and to understand the specific issues in the context of the project or programme to better focus the assessment with a gender perspective.

The questions in the passport can be used in several ways. When there is not enough time for in-depth surveys, reviews, interviews and collecting data, it can be used as a kind of checklist. By answering the questions, it will trigger the user to think of certain aspects he/she might otherwise not have taken into account. It will also help to identify the areas where additional efforts are necessary to make the project more gender sensitive and to focus the interventions on the priority areas.

If more time is available, detailed information can be gathered from the questions posed. The user of the passport is encouraged to answer the questions referring to different sources of information that could include: review of existing data, focus groups discussions, interviews with leaders and a significant number of members of the households (both men and women) to obtain representative results.

This booklet may also be a guide in the preparation of questionnaires by further developing some questions to obtain a more complete analysis of the local context.

The checklist is by no means intended to gather all the required information for water resources planning and management, as a statistically representative sample, but rather to raise awareness on some gender considerations. It is developed

to have a better understanding of the different implications of the planning and monitoring process on men and women from different socio-economic groups and ages.

In obtaining answers to the questions, it is essential to get the information from the different major social groups of the project/programme area, to ensure that the diversity of views and needs of different groups are adequately addressed, for instance, get information from large, medium, small farmers, tenants and (seasonal) workers. if there are different ethnic groups or religions ensure that they are also in the sample; if farmers use water from different sources (ground water and surface) include all uses in your data gathering; if there are Water Users Associations get the views of the members and the non-members, etc. When doing this, it is important to check if you have got information from several people (women and men) from the identified different groups, (as not all people belonging to one group have the same opinion) and to assess the common factor.

It is also recommended to bring together men and women from the target community with outsiders and other affected stakeholders, so that they can analyse the situation together and identify the main constraints and possible solutions in a participatory manner. For this, it is important to build positive relationships using an attitude of respect for local people and a willingness to learn from those working in the field.

It is also suggested to crosscheck the information, by analysing the context and the specific issue from different perspectives in a process of triangulation. Triangulation is achieved by using different tools to gather information on the same issue (e.g. maps and trend lines to examine environmental changes) and by listening to men and women with different points of view on the same issue (e.g. men/women, old/young, wealthy/poor about water resources). It could be interesting to compare the views of men and women who belong to a group/ association versus those who do not. It is recommended to establish multidisciplinary teams with members with different backgrounds and skills for triangulation of perspectives, with

at least one social scientist with experience or training in social issues in the communities. Because many rural women are uncomfortable with male interviewers it is important to include some female team members. More information on the triangulation is available in the SEAGA Field handbook.

The main purpose of using this booklet is to identify situations from a gender perspective that may need corrective actions, even if they affect only a group of women or men of the irrigation systems. Therefore some suggestions are included at the end of each section. However, as the situation depends on the local context, it is not possible to be very specific.

As the passport is expected to promote corrective actions, the user, based on his/her local knowledge, is encouraged to determine, together with the target group, what may be possible within the local sociocultural context and available human and financial resources.

The answers to the questions can be used for different purposes:

- to identify support and constraints for the equitable management of water resources, through the analysis of the environmental, social and institutional patterns;

- to understand the livelihood strategies of different members of the community and their related needs and constraints, and

- to build consensus among different stakeholders about development priorities and corrective actions.

When data are collected, it is important to focus not only on the data but also on the process as a whole to understand whether local knowledge and capacities were enhanced. When data are analysed it is important to verify the information before drawing conclusions, to ensure that the analysis was accurately conducted and everyone agrees with the conclusions.

2.4 Guidelines for interpreting the results

This passport can be used for several purposes and by different kind of users. In the interpretation of the answers to the questions the user should focus on identifying actions required to rebalance the existing gender inequity. Therefore it is recommended to analyse the gathered information in three steps:

i Identify the central issues from a gender perspective, arising from the answers.
ii Decide which problems are to be addressed first.
iii Propose a set of actions to overcome the identified problems.

It is important to ensure that proposed corrective actions are discussed in depth with all the stakeholders concerned and implemented only with their full concurrence to guarantee ownership and commitment to their implementation.

Users of this guide should be aware of the fact that gender disparity is a sensitive issue and the implementation of actions that have limited support from the expected beneficiaries may not be sustainable. It is therefore advised to engage a social scientist or gender expert to take care of these processes.

Some guidance is provided below with regards to the interpretation of the results arising from the main areas of

Access to land and water

Does the land and water ownership situation require actions that can be addressed by the project? If ownership cannot be changed, alternative access to land (different forms of renting) and water (disconnect the right to use water from land titles) as well as to provide other resources (livestock, home orchards) to be managed by women can be identified.

Farming Context

Identify for each of the three main sections (farming practices, means of production and benefits of agricultural outputs) the major actions that the project could support that would provide a more egalitarian approach to the farming activities and increase access of women to productive resources, assets and services thus increasing their productivity.

Multiple water uses

It is recommended that the future project provide physical facilities for the main water uses particularly for the rural household; develop participatory processes with women and men for defining watering points and related facilities (sanitation).

If a project or irrigation area already exists it is important to reduce the burden and inequities related to the transport of water by women and children for household use. This may require physical developments (water distribution system) but also different social arrangements. This may be an important component of the future action and should be discussed as a priority by the community.

Management of irrigation systems

Under this section, the main issue is to identify if the management system in place (public, participatory or a mix of both) provides sufficient opportunities for women and men to participate in the decision-making processes.

In the case that user organizations are already in place, the purpose of the passport is to help identify if they operate in a manner that is equitable to women and men, not only from the point of view of the written rules but also from their practical application.

Finding ways to overcome the constraints emerging from the information obtained, may be the object of detailed discussions with the President of the Board so that space can be created for greater participation by under-represented groups in

the association.

The answer to the questions can also indicate if separate organizations are more efficient for managing different uses where women or men can play a more significant role.

As the answer is often negative, the main responsibility of the user will be to identify the institutional changes required to make such participation more possible and effective. This may require the establishment of new management organizations, like WUAs, even though this outcome is a major undertaking that will require political endorsement, substantial time allocation and capacity development.

Water distribution, irrigation practices and maintenance

Most of the problems identified in this section do not require important investments or major institutional efforts. They imply "different ways of doing things" and a dialogue with those responsible for managing the system should result in considerable improvements. The answers to the questions should provide sufficient guidance for improving the "modus operandi" by making it more equitable. The irrigation practices at the farm level are at the household level of responsibilities. The important point is that since women are important actors in farm irrigation they should have equal access to training and use of the irrigation equipment. If that is not the case, recommendations emerging out of the passport questions should propose clearly the type of corrective action needed.

Other environmental issues

This section deals with a substantial number of environmental topics, namely:

- water quantity;

- water quality;

- re-use of water;

- natural disasters, and

- attitudes towards climate change.

These topics are very wide. The passport focuses on ascertaining if these environmental issues are the source of major inequities regarding water use. First of all, the user is encouraged to identify the relevant topic in the concerned irrigation area. For instance, re-use of irrigation water is still not very widely practised. The over exploitation of aquifers may be applicable to some areas but not to others. The same applies to natural disasters that may, or may not, have taken place in the area of analysis. Climate change or more precisely, weather variability is now a global concern that should be taken under consideration in any case. By posing the questions found in this passport some understanding of the existing conditions and coping strategies can be immediately ascertained.

Once the topics for intervention are identified, the user should propose actions that would build on existing practices and knowledge as well as contribute towards correcting the inequities caused by the environmental situation or changes. Such actions may be highly variable. The user should engage in consultations with the stakeholders concerned to assess their practical applicability and viability according to the stakeholders.

In summary, with the information provided by the passport the user should be able to identify three main types of actions with regards to:

- Actions that can be implemented by the user of the guide, in designing, planning, construction, rehabilitation or management of an agricultural water project.

- Actions that have to be implemented by the users of the project (especially when we talk about water users organizations). This often refers to use and management practices in the project.

- Actions that have to be implemented by others (other organizations or (local) government), e.g. capacity building of vulnerable groups, participation in decision-making, adaption of legislation, etc.

The following six priority areas for agriculture water management were identified:

- access to land and water
- farming context
- multiple use of water
- management of irrigation systems
- water distribution, irrigation practices and maintenance
- environmental issues

For each area a short introduction and a list of questions on key issues of gender equity are provided, aimed at guiding the user to better understand the constraints, opportunities and priorities encountered by different water users (men, women, old, children, minorities, ethnic groups, different caste and socio-economic groups) in their water management activities.

3.1 Access to land and water

Land and water are two essential inputs for agricultural production. Without one of them it is impossible to farm. In most places the right to water is inseparably linked to land tenure.

As a consequence the decision-making power on water use and management is also linked to land ownership. This usually means that if people do not own land, they also have no or few rights to water and may be excluded from decision-making on water resources management. Across countries and different contexts female farmers own less land than their male counterparts. As shown in the FAO Gender and land rights database, which contains country level information on social, economic, political and cultural issues related to the gender inequalities embedded in those rights, sharp disparities in land holdings are apparent in all regions. Women represent less than 5 percent of all agricultural holders in the countries in north Africa and west Asia for which data are available. The sub-Saharan African average of 15 percent masks wide variations, from less than 5 percent in Mali to over 30 percent in Botswana, Cape Verde and Malawi. Latin America has the highest regional average share of female agricultural holders, which exceeds 25 percent in Chile, Ecuador and Panama.

However, there are many situations where the men or women actually farming the land do not own it (women farming the land owned by their husbands or in-laws, tenants, sharecroppers, communal farming, etc.), which influences their access to, and use of, water. It is therefore essential to find out how ownership and access to land are arranged and in which way water rights are connected to land.

The list of questions provided below is designed to help the user better understand if both men and women can own and access land and water, the existing types of land tenure in the area, how decision-making on the use of land and water between men and women takes place within the household, the communities and the project area. As a result, special actions can be proposed to overcome gender gaps and improve the equitable access to productive resources for the most vulnerable socio-economic groups, with special attention to women.

Key questions related to access to land and water

1. Who can use the water? Who can decide on the use and management of water resources? (Specify data by sex, age groups, ethnicity, caste, religion, minority groups, socio-economic status, etc.). Are water rights connected to land ownership?
2. How is water used by men and women outside agricultural production, e.g. for drinking water or sanitation?
3. How is water distributed among men and women outside the irrigation system or project area?
4. Is land ownership and inheritance regulated by existing laws and regulations or through customary traditions or by a combination of both? How are these applied? What are the differences between men and women? Please note that there are sometimes great differences between the legislation and its practical implementation that tends to follow local traditions. Related to this, it might also be interesting to find out which dispute resolution mechanisms are in place to handle land disputes.
5. What types of land tenure exist? Identify the main types of tenure exercised by men and women. What is the average size of farms[1] owned by men and women?
6. Who, within the household, farms the land? What is the percentage of farmers who do not own the land they farm? Is it different for men and women?
7. In case of irrigation systems: are "family plots" registered[2] in the name of both husband and wife? If not, what is the percentage of plots registered in the name of women? What happens if the registered plot holder is absent, gets divorced or dies? Is this different for men and women?

1 Sometimes people might not express the size of farms in hectares / acres or other measurements that we are familiar with. It is advisable to use the local measures but also to find out the equivalent to more common systems.

2 In some countries there is no official registration (ownership is based on local traditions). In such cases consider the local tradition of ownership but make the necessary clarifications in the text of what type of ownership refers to.

In the case of an irrigation system that is to be constructed

a) Questions related to the water source

1. Who presently uses the water source that will be utilized for the irrigation system? For what use (livestock, domestic use, fishing, etc.)? Will local men and women still be able to use the same source after construction of the irrigation system? If not, what will be the consequences for different people? Who will be the most affected? (Disaggregate data by sex, age groups, ethnicity, caste, religion, minority groups, socio-economic status, etc. depending on the context).

2. How will the irrigation system influence the farmers outside the area, for example those who live downstream? Will there be any difference between men and women (i.e. female-headed and vulnerable households)?

3. Who will have the right to irrigate in the irrigation system? Is it connected to plot registration?

b) Questions related to re-allocation of land

There are numerous irrigation projects where public land is re-distributed to new users. There are also cases where private land is expropriated (generally large units) and redistributed to new users, under different form of tenure.

The following questions apply to these situations:

1. Who farms the land where the system will be constructed? Who owns it? (Specify by sex, age groups, ethnicity, caste, religion, minority groups, etc.) Will land be (re) allocated when the irrigation system is constructed? Who will be eligible for a plot in the irrigation system? What special measures can be taken to support the original owners and farmers of the land?

2. In the case that the land is redistributed, what are the selection criteria for future farmers within the irrigation system? Who will benefit the most? Will any socio-economic group be discriminated? (Disaggregate data by sex, age, ethnicity, caste, etc.).

3. What are the requirements for being allocated a plot? Is it possible for both men and women to fulfil these requirements? What are the main constraints faced by men and women?

4. In the case of registration of plots to "families" or "heads of households", will single or divorced women and widows be eligible for a plot? Are "family plots" in irrigation systems registered in the name of both husband and wife? If not, what is the percentage of plots registered in the name of women? What happens if the registered plot holder is absent, gets divorced or dies? Is this different for men and women?

5 In the case that several sizes of plots are allocated, are the conditions for accessing them equal for men and women? Is there a difference between them? Are all sizes acceptable for both men and women? What are their specific constraints?

6 Is the plot allocated as a semi-permanent lease or will the farmers have ownership of the plot? Can the lease be transferred to another person in the case that the lease does not fulfil the established conditions? Can both men and women benefit from plot re-allocation?

In summary, by asking these questions, the interviewer will get a significant idea of how the access and management to water and land is arranged, the possible discriminatory practices against women and the underlying reasons for these practices.

Managers of the irrigations systems may contribute to improve the situation by introducing practices and regulations that facilitate the use of water for those actually farming the land instead of the land owners. In settlement projects they can ensure that gender equitable land and water distribution takes place.

Inequities arising from sociocultural norms behaviour, instead of inequitable rules and regulations, may need special actions in terms of extension work, gender sensitization and establishment of women groups to contribute to their empowerment.

3.2 Farming context

The farming context is a determinant for agriculture water management. The type of farming, the availability and accessibility of resources and the possibilities for marketing the outputs all have an impact on water management. From a gender perspective the following points should be taken into account:

- Men and women often have separate and different farming practices.

- Within one farming system, men and women may have different plots, tasks and responsibilities.

- Men and women have different access to, and availability of, means of production (land, water and other natural resources, finance, knowledge/training, labour, technology, inputs).

- The benefits of the output of agricultural production are different for men and women.

- Unequal decision-making on farming practices and the use of production means and benefits (including income) from agricultural production.

- In the case of commercial agriculture, it is important to ensure that men and women, often engaged as workers, are not treated in a discriminatory manner and labour laws are adequately applied.

Across countries and different contexts compared with their male counterparts, female farmers in all regions control less land and livestock, make far less use of improved seed varieties, purchased inputs, credit, extension services and have lower education levels. To address these inequalities it is very important to ensure that both men and women have equal access to information and extension so that they can better decide whether or not to adopt an innovation.

Modern information and communication technologies (ICTs) such as radio, mobile phones and internet services, can also help in transferring information. These technologies may be beneficial for rural women who have a restricted access to distant markets, limited education and financial and time constraints. Locations convenient for women to visit can facilitate their access to productive resources and decision-making.

Women usually contribute to food production for their families and are often involved in small-scale and rainfed subsistence farming. They might use drought resistant crops, whereas men are more involved in large-scale, irrigated cash crops. However, men and women have tasks and responsibilities in both forms of agriculture, helping each other with their crop production. They might have different knowledge of various crops, and sometimes conflicting interests when it comes to allocating resources to crop production. In modern agricultural value chains there is an increase in contract farming or out-grower systems for high-value produce through which large-scale agroprocessing firms seek to ensure a steady supply of quality produce.

Evidence shows that female farmers are largely excluded from modern contract-farming arrangements because they lack secure control over land, family labour and other resources required to guarantee delivery of a reliable flow of produce. This could also be caused by the fact of lacking women's participation in producers' organizations and Water Users Associations. While men control the contracts, women as family labourers perform much of the farm work done on contracted plots.

The questions below are organized in three subheadings: farming practices, means of production and benefits of agricultural outputs. All these factors influence agriculture water management and the different needs and expectations of men and women with respect to water and the way it is managed. The questions will assist the user in identifying gender gaps that might negatively influence the project outputs and in designing targeted actions to address specific gender issues.

Key questions related to farming practices

These questions will help to understand the specific tasks of men and women in agriculture, their different farming practices and the main source of livelihood for different socio-economic groups. They will give some insights into the different priorities men and women have in terms of water management

1. Which crops are grown by men and which by women? Which crops are grown as cash crops and which as food crops? Which crops are given priority? By whom? Which crops are irrigated? Which crops are rainfed? Who decides which crops will be grown and which will be irrigated?

2. What is the distribution of tasks of different agriculture practices (ploughing, sowing, weeding, irrigating, fertilizing, harvesting, storing, threshing, etc.) and the time allocated to these practices between men, women, boys and girls? As these can differ per crop, it is relevant to collect the above information for the main crops cultivated.

3. Which livestock is reared by men and which by women? What are the main differences between men and women? What is the division of tasks with respect to livestock (feeding, milking, drenching, etc.) between men, women, boys and girls? Who is most involved in water management and must be targeted?

4 What are the differences between ethnic groups, religious groups, castes and socio-economic groups when answering the previous questions? What are the differences between men and women who are members of a Producers' organization and/or Water Users Association versus those who do not belong to any of these groups?

5 What are the main factors (culture, traditions, knowledge, time availability, others) influencing the decision-making processes and distribution of tasks, mentioned in previous questions?

Key questions related to means of production

The following questions will help to better understand the main gender differences with respect to access to and control of assets, inputs and services, and the main factors which limit the production and productivity of men and women and how they are related to water management.

1 Are production inputs (seeds, fertilizers, chemicals, etc.) equally available to both men and women? In the case of limited availability of an input, who decides on its use?

2 Which technologies and tools are available to men and women for agricultural production (ploughs, draught animals, tractors, vaccinations, harvesting machines, water pumps, etc.)? Who are the users of these technologies? Who decides to purchase them and how to use them? Are there any differences between men and women in the use of more sophisticated tools/ technologies?

3 Are the used technologies appropriate for the targeted user in the sociocultural context (men, women, boys and girls)? Are they easy to use? What are the costs? Are spare parts easily obtainable? Who is trained in the use and maintenance of these technologies?

4 Is it possible for farmers to get loans or credit? For what type of investment or activity? What are the minimum requirements for receiving a loan? Does this impact men and women differently?

5 When is the peak labour requirement for men, women, boys and girls? Who decides on children's participation in crop production or household chores - women, men, the children themselves? Can external labour be hired in busy periods? For which tasks is external labour hired? Who decides on the hiring of labour for which tasks? Can both men and women be hired? Do they receive the same wage? Is there any difference between men and women on the types of labour contracts and work conditions?

6 What kind of knowledge is lacking for efficient production and water use? Is this different for men and women? Do men and women have the same access to knowledge (practical skills or expertise through training or information) and education?

7 In the case of extension services and training, who is targeted? Do men and women across different age groups have the same opportunity to participate in training? Do farmers have access to relevant information? Is this the same for men and women?

Key questions related to the benefits of agriculture outputs

It is very important to see how benefits are distributed between men and women, in terms of agricultural produce and generated income, to ensure an equal distribution of the outputs. The relevance of these questions lies in the relation with inputs. If women have to provide all the work, but cannot profit from the outputs or benefits, or cannot decide on how to use the gained income, their interest in providing these inputs might not be very high.

1. How is the agricultural produce used? For own consumption, for selling or for processing? Do both men and women take part in decision-making?
2. What is the family income from agriculture (disaggregated by family member)? Who decides on how to use the household income?
3. Who processes the agricultural produce? Which inputs are required? Who has to provide these? What are the main differences between men and women?
4. Who sells the marketable produce? Who will decide on the use of cash earned by the marketing of the produce?
5. Is there a Producers' organization which helps in the marketing of produce? If yes, do women and men have equal access to this service?
6. What is the distance to the nearest market? What are the time and transport cost implications? Are there sociocultural restrictions to selling produce on the market? What can be done to facilitate the access to markets for women?
7. If irrigation has been introduced and different crops are planted, and the work of women increases, do they also benefit from the profit?

3.3 Multiple use of water

Water is used for many purposes (drinking, cleaning, cooking, bathing, washing clothes, irrigation, drenching cattle, rearing fish, making bricks, processing foods, producing beer, industry, etc.). It is important to take all these uses into account when planning a project and see if it is possible to cater for more than one water use by promoting multiple use systems.

Multiple uses of water are effective in poverty alleviation and gender equity and have a tremendous potential for reducing child labour and improving school attendance, especially for girls, by reducing the time and energy necessary to collect water. By paying particular attention to the child labour issue, projects can maximize their positive impact on the community and avoid undermining development goals. However, it requires an even broader assessment of water use, not only limited to crop water use. The different users will need to be involved in the planning of the project, and the costs of providing the necessary infrastructure for the different uses will have to be calculated.

The questions below can help to better analyse the existing situation with regard to the different water uses and various water sources. They will also help to plan changes combining the different water uses while addressing the main constraints faced by men and women in their access to water, taking into account the quality and accessibility and decision-making pattern to achieve a more equitable water use.

Key questions with respect to the multiple uses of water

1 What are the different activities water is used for? What is the source of water for each activity? Is this the same source that the project (will) use(s)? Does the use of water by the project conflict with other water uses? Is it possible to combine the water use by the project with other water uses?

2 Whose task is it to provide water for each activity? Will the provision of water become easier or more difficult by the planned project? Is it the same for every type of water use? Are there any differences between water that men and women need to provide?

3 How will the different interests on the water use be balanced? Will all the different stakeholders be members of one Water Users Association, or will there be different associations for different uses? How will these associations negotiate the water requirements for different uses? Whose interests take precedence when trade-offs are unavoidable? Are both women and men members of these associations? If yes, do women and men have the same role within these Water Users Associations?

4 Who represents the different water users when negotiations for water use take place? How can the representation of the less powerful groups be ensured (the poor, minorities and marginalized groups, women, young/old people, ethnic groups, etc.)? Are their needs taken into account?

5 What priorities are set with respect to different water uses? Who benefits from the priorities that have been set? Whose needs were given low priority? (Specify by sex and age groups, ethnicity, caste, religion, minority groups, different occupations, etc.).

Key questions with respect to drinking water

In agriculture water management projects there is often a possibility to include provisions for improving the water supply for domestic use. In such cases the following questions could be formulated to understand how these services are provided and how they could be improved from a gender perspective. Locating sources of safe drinking water near the homestead or schools can help reduce the burden of water collection and improve nutrition security. When designing water systems, one aspect to be taken into account is the issue of hazardous work for children, as they are often involved in fetching water. For instance, it is accepted that children carry water as long as it is not hazardous (e.g. loads that are too heavy and harmful for children's musculoskeletal development) and as long as children are not missing classes as a result or are too tired to fully benefit from school.

It is important not only to ensure the access to, and control over, water resources for domestic use by men and women, but also to address the issues related to water quality for drinking purposes to avoid human and animal diseases and ensure food security. The answers to these questions can assist in better understanding the gender division of labour, the access to water fetching points and the decision-making patterns with a gender perspective.

1. Who (specify age group and sex) is responsible for collecting drinking water for the household? Is this the same person profiting from the irrigation infrastructure?

2. How much time is involved in collecting water and with what frequency? Will this change after the construction of the irrigation system? Is it possible to shorten the time for collecting drinking water by making small amendments to the irrigation system, e.g. by constructing extra water points, by building simple bridges, by locating water points close to schools to reduce girls absences from school attendance, etc.?

3 What is the number of households linked to a running water supply network compared to those having to fetch water from water points? How many households use one water point? Is it possible to increase this number by making small adjustments in the design of the irrigation system? Are the views of both men and women and children responsible for fetching water taken into account in the provision of water points?

4 How is the operation and maintenance of the drinking water facilities arranged? Who is responsible? Who decides on the use and maintenance of the facilities? Can these functions be combined with the management of the irrigation system? Who would profit the most?

5 Is the quality of drinking water and water used within the household safe? Do family members have an understanding of the problems that poor water quality can cause? Are they aware of the different options for water treatment? (filtering, boiling, etc.). Specify for different family members. Who is the target of awareness raising campaigns on household water quality?

Multiple use water systems and child labour

Some questions have already been made with regard to the use of child labour in multiple water systems. In addition these more general issues should be taken into account.

1. Are planners aware of the difference between "child labour" and acceptable work performed by children? What could be done to raise awareness?

2. Has the government or local community set acceptable weight limits for water carried by children? If not, how might these be established in a participatory way involving women, men, boys and girls?

3. Does the monitoring and evaluation of the water management programme measure the impact on child labour and school attendance (disaggregated by sex and age)? Do Community Child Labour Monitoring Committees or similar committees dealing with child protection issues already exist in the project area? Are there possibilities to collaborate?

3.4 Management of irrigation systems

The level of participation of water users in decision-making on the management of an irrigation system depends very much on the type of management structure in place. Large irrigation systems constructed by governments are often managed by public officers of a specific ministry and rarely involve the water users in decision-making. Also large private irrigation farms are generally managed in a "company" style providing little space to the workers to participate in decision-making. On the other hand, producers' and workers' organizations give more opportunities for decision-making on management of irrigation systems to water users. Most often a Water Users Association (WUA) is responsible for the water management, which can vary from very traditional to highly technical management.

To gain insight in decision-making processes and the involved gender aspects, it is important to understand how the Water Users Association is run and identify how men and women participate in it. In many WUAs membership is limited to landowners, often excluding those who farm the land but do not own it, often including women but also tenants or sharecroppers. Evidence shows that women are often inadequately represented in water users' groups and farmers' organizations and if they are represented their effective participation is very low.

By assessing who the actual water users are and by involving them in the decision-making in water management and maintenance a more efficient and equitable water distribution can be obtained. This applies both to operating and planned irrigation systems. The most important aspect of a gender sensitive approach in both the design and the management of an irrigation system is the involvement of all users in decision-making. The knowledge and experience of different people, and the specific needs and priorities of men and women for future and present use of the system should be taken into account. Participatory processes are not automatically gender-sensitive so it is important to pay special attention to making them so.

The questions in this section analyse if the management of the irrigation system provides equal opportunities to men and women in decision-making processes. They can support planners and decision-makers in assessing the specific needs of men and women, their sociocultural barriers and identify the actions to be taken to improve the performance of the irrigation systems and promote the social and political empowerment of the most vulnerable socio-economic groups.

Most questions provided below refer to the situation where a WUA is planned or already in place, but they can also be adapted to other types of organizations.

1. Which water management organizations are in place? Are they adequate for promoting farmers' participation in the decision-making processes? If not, how can they be changed? What are the constraints for changing the organization?

2. If the irrigation system is run by public officers, is there any kind of producers and workers group or informal/ formal association that can interact with the managers of the system? If yes, apply question 6 and onwards.

3. Are there any formal or informal groups that take care of the specific interests of women in decision-making?

4. If the irrigation system is to be constructed, are both present and future users involved in the decision of the site location of the irrigation system? How is this participation organized? Is the location acceptable to both men and women, including farmers, fisherfolk, livestock herders, nomads, etc.)? If not, for whom is it not acceptable and why? Can this be solved by changing the location? Think of men and women just outside the area and downstream: do they lose the access to water? Or does their water get polluted?

5 Are separated organizations available for each main water use (irrigation, domestic water supply) or are all uses integrated into a single one? In the case of separate organizations is there any coordination among them and how is the adequate representation of both men and women in each of these organizations ensured? Are they satisfied with having separate organizations?

6 Who can become a member of the WUA? Can more than one member be registered per plot? Under which name are members registered, as women can be registered under the name of their husband, but they are actually members themselves? Does it include all water users (tenants, sharecroppers, women working the land owned by their husbands, etc.)? If not, which groups are not represented in the membership of the WUA? Is this different for men and women?

7 Who can take part in the decision-making processes in the WUA? Registered members only, or all water users, or all involved stakeholders? Do meetings take place at a time convenient for both men and women? Can a replacement be sent to meetings where decision-making takes place? How does this influence the attendance of the meetings?

8 Do sociocultural barriers exist which prohibit people to voice their opinion and needs (think of women not being allowed to speak in public, but also of age, class and caste differences)? Can mechanisms be promoted to ensure that their opinions and needs are taken into account (such as organizing separate meetings for women to enable them to express themselves)?

9 What are the common procedures for decision-making? Who decides on technical issues? Which decisions are decided on by voting? If voting takes place on the basis of the vote of the majority, what happens in case of a draw? Does this affect men and women differently?

10 Who can be elected as a member of the Steering Committee (or Board) of the WUA? What are the requirements? Are there certain groups of users who cannot meet these requirements (e.g. illiterate people, size of land)? Are these groups trained to improve their skills to meet the requirements (e.g. literacy trainings)?

11 How many men and women are members of the Steering Committee of the WUA? Are men and women selected as the Chair, Secretary and Treasurer of the WUA? In the case that there is an imbalance between men and women compared to the ratio of those using water, why is that? Can the imbalance be adjusted?

12 How are the tasks within the WUA divided between men and women? Who makes the decisions? Who is doing the actual work (such as collecting fees or cleaning the water points)? If this division is biased, what can be done to improve the balance?

13 Are the rules and regulations set up for and by the WUAs applied as stated? If not, does this affect some (groups of) people positively or negatively? How can this be adjusted?

The above questions are designed to collect information on several important issues regarding decision-making and aim to make the management of the irrigation system more participatory and gender sensitive.

It is expected that the user will be able to take some affirmative actions to stimulate all stakeholders to participate actively in the activities of the organization.

3.5 Water distribution, irrigation practices and maintenance

The water distribution system of an irrigation system interacts strongly with the water use and the irrigation practices at the farm level. Inequities in the distribution of irrigation water generally affect the weaker groups (women, children, poorer farmer, tail-enders) more seriously, and have an impact at farm level. Irrigation practices are decided at the plot level and have different implications for the different members of the household. Even though women have proven to be efficient irrigators, they often face restrictions due to socio-economic and cultural reasons.

In surface irrigation systems farmers are often involved in maintenance tasks and especially most of the maintenance of the tertiary canals is done by labour provided by the adjacent farmers. From a gender perspective it is important to see who is involved, and how the different contributions to maintenance (financially and by provision of labour) are made by men and women, rich and poor, young and old, etc.

It is also very important to be aware of the division of tasks between men and women in maintenance and construction as work carried out by men is often paid, while women often do not receive remuneration as their work is considered as "community contribution". Furthermore, men tend to be trained in construction work, which is paid labour, while women are often not trained but provide unskilled labour in canal cleaning, which is often not paid. Therefore, it can be useful to hire the future users, with an adequate representation of women, as labourers, during the construction of irrigation systems and train them on the job on construction techniques and issues.

Apart from building their knowledge on the system making its future maintenance easier, it can be a good income generating activity and promote the provision of decent work. By involving women in the remunerated construction and maintenance work, it will make their contribution more visible, increase their participation in decision-making and enhance their livelihoods.

Key questions for the water distribution in irrigation systems

1. What kind of water distribution is practised? How is the distribution decided? Can irrigators ask for their specific needs to be taken into account (e.g. women and children might not be able or allowed to irrigate during the night)?

2. How the information on irrigation turns[3] is accessible to farmers? Is this information equally accessible to men and women? Are there groups that need to be informed through specific channels?

3. Is the irrigation delivery flow appropriate for all users? Is physical strength required to handle it (large flows may require more than one person for managing it)? If yes, can the technology be adapted for use by women and children?

4. Can all irrigators directly request water for irrigation or use it only when it is their turn? Who has to rely on intermediaries? Is this different for men and women? And for landowners and tenants?

5. In case of water shortages, how is the limited available water shared between users? Does this affect some (groups of) people more negatively than others?

6. How are the water fees charged? Who pays for water: owners or tenants? Is payment harder for some users than for others (e.g. women, elderly people, etc.)? How can these difficulties be overcome?

7. What happens if somebody breaks the rules and regulations of the irrigation system? Who determines the punishment and on what criteria? Is it likely that some (groups of) people will be in a position to break the rules more often than others? How can this be avoided?

3 An "irrigation turn" is the time (generally days) between two successive irrigations. It tends to change with climatic factors and seasons.

The above questions are designed to assess whether the regulations and technology for water distribution provide equal opportunities to men and women to access the delivered water and, if necessary, adopt special measures to accommodate the needs of both men and women.

Key questions for maintenance and construction activities of irrigation systems

1. How is the maintenance of the irrigation system organized? Is it contracted with an outside provider or done by the users of the irrigation system?

2. Do farmers pay a fee for the maintenance? Do they have to provide their own labour or both? Do certain groups of people have a preference for paying a fee or providing labour instead? How is the contribution in labour assessed? Who pays or provides the labour for maintenance: the owner or the tenants?

3. In the case of payment of a fee, is the payment harder for some users than for others? How can the specific difficulties of men and women be overcome?

4. In the case of provision of labour, who is required to do the work? Is it possible to pay instead of providing labour? Is the provision of labour harder for some groups than for others? If so, for which and why?

5. What happens if somebody does not contribute to the maintenance of the irrigation system? Is it likely that some (groups of) people will not be in a position to contribute to maintenance more often than others? How can this be avoided or compensated? (Disaggregate data by sex, age, etc.).

The above questions are designed to assess how men and women contribute to the maintenance work and identify possible inequities that may occur so that special actions can be taken to overcome gender inequities.

In the case of construction activities

1. Do (future) water users provide labour for the construction of the irrigation system? How is the user's participation in the construction work organized? How are farmers (men and women) encouraged to participate in these construction activities? Are women interested in participating in this work?

2. Which labour is paid for, and which one has to be provided without remuneration? Who does the paid work, and the unpaid work? Can both men and women do the paid work? Do they receive the same salary? Are child-care facilities available near the work site?

3. Are water users trained in construction techniques? Will both men and women receive training? Are water users and labour providers equally informed about relevant safety and health risks and measures?

As in the case of maintenance work the questions try to identify if men and women get the same opportunities in getting paid for their work during construction. It is important to note that from a legal point of view most countries protect the equal access of men and women to paid work but in practice this is often not the case. The user is encouraged to identify those inequalities and propose corrective actions to overcome them.

Key questions for irrigation practices at the farm level

1. What is the predominant irrigation method (borders, furrows, basins, sprinkler, drip and microsprinklers) in the area? Who is normally responsible for its use?
2. Who makes the decision of adopting a certain irrigation method?
3. Who decides which crops can be grown and how many crops per year can be irrigated? Does this have different implications for men and women?
4. How will the irrigation system change the demand for boy and girl child labour? Which tasks performed by children will no longer be necessary or will require less time or physical effort? What new tasks will be created that might increase the demand for children's work or child labour? Which measures are the project designers and the water use managers taking to avoid a possible increase in child labour?
5. In the case of modern irrigation systems (sprinklers, localized irrigation), how is the irrigation system financed? In the case of borrowing money from a lending institution is it the same if the owner is a man or a woman?
6. If women are legally entitled to irrigated land, is this socially accepted ? Do men and women have preferences in timing and/or duration of the irrigation? Why?
7. How much time do men and women respectively dedicate to irrigating the field? Is there any correlation between the time dedicated to irrigation and the type of irrigation (furrow irrigation may require much more time in the field than drip irrigation)?
8. Is a certain amount of physical strength required to use the irrigation technology? Does the technology used require a certain degree of knowledge?

9 Is the irrigator familiar with the principles of efficient irrigation in terms of quantity and timing? Is this equal for men and women? How can the knowledge be acquired?

10 Are all women, men, and youth involved in irrigation trained? How can they learn the use of this technique?

11 Who does the maintenance of the irrigation method work at farm level?

12 Is there any home garden/orchard providing agriculture produces to the household? Who takes care of it? How much time is required for its management?

The above questions try to establish who decides about irrigation practices at farm level, what knowledge, strength, time and funds are required for these practices and if men and women have equal access to these inputs.

A variety of actions can be identified to address differences between men and women, ranging from sensitization campaigns to improve the participation of women in decision-making to promoting appropriate and time-saving technologies.

In case of own well in the farm

1. Is the well the main source of irrigation or does it only complement the insufficient water from the distribution system?
2. Is the well used only for irrigation or also as a source for drinking water?
3. Who decides on the use of the well? Who starts and closes the system? Can women equally participate in decision-making and management?
4. Who is responsible for the maintenance of the pump set? Who participated in the training for the use of the pump set?

3.6 Other environmental issues

The environment in which agricultural production takes place defines the agricultural system and the water management techniques and practices. Different techniques can be used under different climatic conditions and various types of watersheds. Agricultural production also influences the environment, for example, by draining aquifers or polluting waters with pesticides and land degradation but it has also some positive effects such as the transformation of unproductive arid lands into productive agricultural areas.

The environment is not static as disasters take place and the global climate change poses new stressors to agricultural development and farmers' lives combined with other pressures such as the increasing population, the decline of soil fertility, the decrease in genetic diversity of popular varieties, the soaring of food prices and the economic crisis affecting many countries. In the agriculture sector, climate adaptation requires the use of good agricultural, forestry and fisheries practices to meet the changing and more difficult environmental conditions, i.e. water conservation practices and enhancement of anti-drought programmes. We need to see how women and men perceive and are responding to the impacts of climate change and how they adapt, analysing the changes in the farming techniques and in the implementation of work loads water resources are not infinite and belong to all. Everybody must take care of them for their communities but also for generations to come. For example, individual farmers using aquifers exclusively for their own use may come under scrutiny and attack by other farmers if they are perceived to be destroying or threatening the long-term use of a common resource such as aquifers.

New creative solutions and opportunities are necessary to let both men and women participate in decision-making processes and take new leadership roles. There is a need to invest in increasing production efficiency, through institutional and technical support such as farmers' educational programmes and advisory services to address men and women's roles and needs.

From a gender perspective it is important to collect and analyse all available knowledge on the effects of the environment on agriculture water management and vice versa. Different groups

of people will notice various effects of the actions on the environment, but will also have different solutions to adapt to those changes. A gender perspective also helps to assess which groups are most vulnerable to change in the environment or the agriculture water management.

Lastly, natural disasters have different implications for different people. Often those who are already in a vulnerable position are hit the hardest when disaster strikes. Also, after a disaster men and women have different tasks in the recovery of their livelihoods. Women tend to be in charge of securing food and water whereas men are often involved in rebuilding infrastructure.

This list of questions can be used to address the environmental concerns of both men and women and their tasks in natural resources management.

Key questions with respect to water quantity

This list of questions can be used to address the environmental concerns of both men and women and their tasks in natural resources management.

1. What are the sources of water used for agricultural production? Are any of these sources overexploited (overdrafted or depleted)? If yes, what are the consequences at present and in the future on the environment and for other users of that water source and rain water? Does this have a different impact on various groups of people (i.e. ethnic groups, caste, religion, minorities, the poor, etc.)? What can be done to reduce or stop the over-exploitation?

2. How are the available water resources shared taking into account all water uses, such as agriculture, drinking water, industry, fishing, forest, etc.? Which uses are given the highest priority? How are different socio-economic and ethnic groups affected? Does this affect men and women differently? Can a more equal distribution of water be obtained?

3. In the case of overexploitation of ground water aquifers, what is the perception of the causes by men and women regarding the overexploitation? Who is blamed for the overdrawn of the aquifers?[4] How is most of the water used, and who profits from it? Who will be mostly affected by this depletion (men, women, ethnic groups, different class or caste, etc.)? Who decides on when and how long to operate the pumps for pumping up the water?

4 Please note that the blame may not respond to the reality. Investigate further the matter.

Key questions with respect to water quality

1. Are irrigators aware of the quality of irrigation water? Do they know its limitations in terms of use? Are they familiar with appropriate irrigation practices to prevent or reduce the negative effects if its quality is poor? Do men and women have the same access to this knowledge?

2. What practices are causing the pollution of the irrigation water (i.e. washing of clothing and animals in irrigation canals, etc.)? Are these practices accepted by the organization responsible for the management of the canal? Who is responsible for these polluting activities? Are they aware of the contamination they are causing? Are they also affected by the contamination? Is there a possibility of reducing this type of pollution? What technical solutions can be adopted?

3. Are drainage or irrigation canals used for disposal of domestic waste? Who is responsible for discharging the waste? Are men and women aware of the effects? Is there a possibility to dispose of domestic waste in a less polluting way? Do both men and women have access to information and technology?

4. Is there any evidence that agricultural practices are polluting groundwater? If yes, what are the agricultural practices that are the main causes of contamination? Who is responsible for polluting the water?

5. Are there other sources of contamination e.g. sanitation from settlements, erosion processes, residues of agricultural industries? Are men and women aware of this contamination and its importance? If so, what measures are they using to reduce the contamination process? Who is mainly responsible for implementing these improved practices?

6 Are awareness campaigns promoted for reducing the contaminating practices? To whom are they addressed? Do women participate in them? Are they taking men and women's education and information level into account?

7 What are the consequences of water pollution on the environment and other uses of water? Does this impact differently on various groups of people (such as fisher people, men and women who fetch drinking water, do laundry, swimming, livestock owners, etc.)? What can be done to prevent water pollution?

The above questions are designed to provide a fair understanding of the most common polluting actions that take place within the irrigations system and who is involved and affected by these practices.

Corrective actions include awareness raising campaigns on the effects of the polluting actions. Women are important targets of such campaigns. Training is also important to disseminate non-polluting practices. Managers of irrigation systems play an important role in the implementation of technical measures, such as suitable locations for animal bathing and drinking, and vigilance to identify users not complying with the rules.

Key questions with respect to water re-use

1. Is untreated or partially treated wastewater used for agricultural production and particularly for horticulture? Who handles this water? Do both men and women have access to information and technology related to the use of this type of water?

2. Are the users of wastewater aware of the risks inherent to managing untreated water? Do they take any special precaution in handling the water? Is this different for men and women?

Key questions with respect to natural disasters

1. In the case of changes in the environment, for example in the aftermath of a natural disaster, (i.e. floods, landslides and droughts) which socio-economic groups will be most affected? Whose lands are most susceptible to droughts?
2. Are there possibilities to make their position less vulnerable?
3. Do men and women have equal access to water points, after a disaster? Do women and girls face specific risks of sexual violence when they go to the distribution points? What can be done to reduce sexual and gender-based violence?
4. Have gender roles and responsibilities changed after the natural disaster?
5. What are the specific tasks of men and women in the rehabilitation of local infrastructure?
6. Who is involved in decision-making and resources allocation after the natural disaster?
7. How are men and women organized after the disaster?
8. How can water and farmers' groups support male and female farmers in the rehabilitation and reconstruction phases?

Key questions with respect to climate change

1. How are men and women affected by the impacts of climate change? How do women respond vis-à-vis men to climate variability?

2. Do men and women choose different strategies in terms of their livelihood compared to the past? What choices do they make with regards to water use that are different as the climate changes?

3. What are the coping strategies of men and women in the face of climate variability (i.e. more/fewer droughts and crop loss)? What are the different choices women and men make in their coping strategies to ensure farm productivity?

4. How has the access to and control over water and land of men and women of different age and ethnic group been affected as a result of changing climatic conditions?

5. Who participates in the decisions to grow different crops or change cropping patterns as a result of climate variability? What types of decisions do men and women take to adapt to the changing conditions? Do men and women make different decisions? On the basis of what factors?

6. Do you recall your youth as being different 30 years ago than now due to changes in the weather? (This question will have to be asked to older people who will have to recall the past, so maybe it would be better to ask it of themselves rather of young people). What do you recall about the amount of rain, or sun, or cropping 30 years ago?
What is less? More?

7. Are men and women able to benefit equally from new institutions (i.e. village committees) established to support with climate change mitigation?
Is news, or information, equally distributed to (or equally accessed by) men and women?

Gender: 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.

Gender Mainstreaming: Mainstreaming gender issues means taking into account the different implications for men, women and children of any project or programme. During planning and execution it is important to assess who will benefit and who will lose from the planned intervention, taking into account the different knowledge, needs and requirements of men, women and children of different ages, class and social-economic status so that each one can equally benefit from the project and existing inequalities are not reinforced. The ultimate goal is to achieve gender equality.

Gender Equality: Gender equality means that men and women have equal conditions for realizing their full human rights and potential to contribute to national, political, economic, social and cultural development and to benefit from the results. In water management for agriculture this means that both men and women have equal conditions for using water for agricultural production, for contributing to its management and for benefiting from its use.

Gender Equity: Gender equity is the process of being fair to men and women. To ensure fairness, measures must often be available to compensate for historical and social disadvantages that prevent men and women from operating on a level playing field. Equity leads to equality. In the water sector gender equity often requires specific policies that focus on the technical capacity development of women and the hiring and promotion of women in water resources management to address their historical disadvantage in decision-making in these sectors (GWA, Resource Guide on Gender and IWRM 2006).

Empowerment: To achieve gender equality a process of empowerment should take place. Empowerment is about people – both men and women – 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 himself or herself to make choices or to speak out. However, institutions including international cooperation agencies, local government agencies, NGOs, CSOs, etc. can support processes that can nurture self-empowerment of individuals or groups (GWA, Resource Guide on Gender and IWRM, 2006).

Agriculture Water Management (AWM): In agriculture, water is managed for the production of crops for food, fibre, fuel, and oils and for fisheries and livestock husbandry. There is a palette of water management options between purely rainfed and purely irrigated agriculture. Agriculture water management systems rely on several sources including rainfall, groundwater, water withdrawals from surface water and recycled (Comprehensive Assessment of WMA,2007). The important dimensions of agricultural water management are:

- The scale and management of systems, and whether they are individually or communally managed.

- The institutional environment, including land and water rights, and policies towards infrastructure development, water allocation, and environmental protection.

- Payment for infrastructure, its operation and maintenance, and the water services provided, and whether these are from individual, private, community, or public funds.

In a developing context it should include the overarching question: How can water in agriculture be developed and managed to help end poverty and hunger, ensure environmentally sustainable practices, and find the right balance between food and environmental security?

Integrated Water Resource Management (IWRM): It is a systematic process for the sustainable development, allocation and monitoring of the use of water resources in the context of social, economic and environmental objectives. IWRM works from the principle that the many different uses of finite water resources are interdependent. For example, if a great deal of water is used by irrigation, less water will be available for drinking water (CAP-NET, 2006).

The **three pillars** of IWRM are:

1) an enabling environment of suitable policies, strategies and legislation for sustainable water resources development and management;

2) putting into place the institutional framework through which to put into practice the policies, strategies and legislation;

3) setting up the management instruments required by these institutions to do their job.

The IWRM key principles are:

- water should be treated as an economic, social and environmental good;

- water policies should focus on both the management of water (demand) and the provision of water (supply);

- government regulatory frameworks are critical in fostering the sustainable development of water resources,

- water resources should be managed at the lowest appropriate level (i.e., in communities and villages as opposed to in capitals).

Water Users Associations (WUA): It is a group of water users, such as irrigators, who pool their financial, technical, material, and human resources for the operation and maintenance of a water system. A WUA usually elects leaders, handles disputes internally, collects fees, implements maintenance and distributes the irrigation water. Other responsibilities may be added.

Decent Work: Decent work refers to work which is performed in freedom, dignity, security and equality and highlights that both quality and quantity of employment matters. In 1999, ILO developed the Decent Work Agenda, an integrated approach subsequently endorsed by the UN System, to promote standards and rights at work as well as decent and productive employment and income generation for both women and men, social protection for all, and social dialogue, with gender equality as a cross-cutting priority. Decent work is an integral part of the Millennium Development Goals (MDGs), and specifically the MDG 1 and its Target 1b.

Child Labour: Child labour is defined by the ILO Conventions No. 138 and No. 182 as work that harms children's well-being and hinders their education, development and future livelihoods. The determination of child labour is based on a child's age, hours and conditions of work, activities performed and the hazards involved. Worldwide, approximately 60 percent of child labourers aged 5-17 years work in agriculture. However, it should be borne in mind that not all work performed by children is child labour, and particularly in the context of family farming and other rural activities, it is important to recognize that some participation of children in non-hazardous activities can be positive as it contributes to the inter-generational transfer of skills.

Producers Organizations (POs): Organizations can be defined as "groups of individuals bound by some common purpose to achieve objectives" (North, 1990: 5). Organizations include Producers Organizations. Producers Organizations include producers (crop farmers, livestock herders, fishermen and forest holders).

Gender and Water Alliance (GWA) 2006. Making a difference in Water Management: A minimum agenda on gender mainstreaming for researchers, practitioners and gender experts. Both Ends, GWA, CA.
www.genderandwater.org/page/6184

Gender and Water Alliance 2006, Why Gender Matters: a tutorial for water managers. Delft, The Netherlands CAP-NET
www.genderandwater.org/page/5115

FAO 2010-11. The State of Food and Agriculture. Women in agriculture: Closing the gender gap for development.

FAO 2010. Agri-Gender Statistics Toolkit. Rome.
www.fao.org/gender/agrigender/agri-gender-toolkit/en/

FAO 2010. Gender and Land rights database.
www.fao.org/gender/landrights

FAO Rathgeber, E. 2003. Dry Taps...Gender and Poverty in Water Resource Management
www.fao.org/DOCREP/005/AC855E/AC855E00.HTM

FAO 2003. SEAGA Guide for Gender-Disaggregated Data for Agriculture and Rural Development. Rome.
www.fao.org/sd/seaga/dowloads/EN/DDEN.pdf

FAO 2001. SEAGA Irrigation Sector Guide
www.fao.org/sd/seaga/downloads/En/IrrigationEn.pdf

Gender and Water Alliance. 2003. Tapping into Sustainability: issues and trends in gender mainstreaming in water and sanitation.
www.genderandwater.org/page/399

Gender and Water Alliance 2006. Gender and IWRM Resource Guide. Dieren, The Netherlands.
www.genderandwater.org/page/2414

IFAD 2011. Rural Poverty report.

IFAD 2007. Gender and water: Securing water for improved rural livelihoods – The multiple-uses system approach.

IWMI & CGIAR. 2007. Comprehensive Assessment of Water Management in Agriculture.2007.
www.iwmi.cgiar.org/assessment

Merrey, D. (ed.); **Barviskar, S.** 1998. Gender analysis and reform of irrigation management : concepts, cases, and gaps in knowledge : proceedings of the workshop on gender and water, 15-19 September 1997, Habarana, Sri Lanka. Colombo, Sri Lanka, International Water Management Institute (IWMI).

Ministry of Water Resources of Ethiopia, **Women's Affairs Department** 2001. Gender Mainstreaming Guidelines and Checklists for the Water Sector.
www.genderandwater.org/page/7844

World Bank, FAO and IFAD 2009. Gender in agriculture sourcebook. Washington, DC, World Bank.
ftp://ftp.fao.org/docrep/fao/011/aj288e/aj288e.pdf

Food and Agriculture Organization of the United Nations (FAO)
Gender, Equity and Rural Employment Division
Economic and Social Development Department

Land and Water Division
Natural Resources and Environment Department
Viale delle Terme di Caracalla – 00153 Rome, Italy
Tel: +39 0657051

e-mail: gender@fao.org
FAO-water@fao.org

web site: www.fao.org/gender
www.fao.org/nr/water/

In the face of increasing water scarcity, and the dominance of agricultural water use, FAO is in the forefront to enhance global agricultural performance while promoting the sustainability of water use for food production. The Organization is engaged in a programmatic approach to agricultural water management addressing water use efficiency and productivity, and best practices for water use and conservation, throughout the continuum from water sources to final uses.

Specific targets are integrated water resources management, water harvesting, groundwater, use of non-conventional water, modernization of irrigation systems, on-farm water management, water quality management, agriculture-wetlands interactions, drought impact mitigation, institutional capacities, national water strategies and policies, river basin and transboundary water management. Special efforts are made, both by the FAO Land and Water Division and the Gender, Equity and Rural Employment Division, in recognizing the importance of social inclusion and adequately mainstream gender in water resources management.

Mainstreaming Gender Dimensions into Water Resources Development and Management in the Mediterranean Region Project (**GEWAMED**)
Mediterranean Agronomic Institute of Bari
Via Ceglie, 9 - 70010 Valenzano, Bari, Italy
Tel: + 39 0804606204

e-mail: sagardoy@iamb.it
quagliariello@iamb.it

web site: www.gewamed.net

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Gender and Water Alliance (GWA)
Hogestraat 20, 6953AT Dieren, The Netherlands
Tel: + 31 (0)313427230

e-mail: secretariat@gwalliance.org

web site: www.genderandwater.org

The Gender and Water Alliance is an international network of water professionals and gender experts committed to mainstreaming a gender perspective in water projects and policies worldwide. The network focuses on generating and disseminating knowledge on gender in the water sector, capacity building on gender for water professionals, mainstreaming gender into national and international water related policies and advocates for gender mainstreaming in the water sector.