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**Mainstreaming Gender Dimension into
Integrated Water Resource Development
and Management**

Samira Al Zoughbi

NAPC Researcher

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Introduction

The millennium development goals have stressed the importance of the gender equity and women empowerment. In 2006, the Human Development Report revealed that countries with the lowest gender-related development indices (Sierra Leone, Niger, Burkina Faso and Mali) had high poverty rates and little access to water, health and education. At the same time, countries with high poverty rates (Bolivia, Colombia, Guatemala, Honduras, Nicaragua and Paraguay) had also high rates of social, gender and ethnic inequality (UN, Human Development Report, 2006).

Water is essential to human beings and all forms of life. But pollution and lack of access to clean water is proliferating the cycle of poverty, water-borne diseases, and gender inequities (Khosla and Pearl, 2003). Water is an entry point for sustainable development, poverty eradication, reproductive and maternal health, combating diseases. And yet there are still 1.1 billion people without access to safe drinking water and 2.6 billion without access to adequate sanitation. This situation has an enormous negative impact on women and children (Khosla and Pearl, 2003).

Poverty is deepening worldwide, and the most vulnerable groups are women and children. Women experience poverty differently than men, as they are generally treated unequally. It is estimated that, of the 1.3 billion people living in poverty around the world, about 70% out of them are women. Women work two-thirds of the world's working hours, produce half of the world's food, and yet earn only 10% of the world's income and own less than 1% of the world's property (UN Millennium Campaign, 2005).

The Syrian government has recognized the necessity for enhancing investment in the social lives quality and integrating gender issues as fundamental indicators in the governmental projects and development programmes. Therefore, the process of involving women in the economic, social and political life has definitely accelerated in the past 5 to 10 years. Syria, as many countries, agreed on most of the international agreements and clearances related to women and the "Convention of Eliminating of All Forms of Discrimination against Women" (CEDAW) on March 23, 2003 as well as on other human rights (Syrian Commission for Family Affairs, 2006).

The 9th Fifth year-plan (2001-2005) shown achievement of many rights for Syrian women related to their access to the economic, social and political opportunities. Consequently, the mortality rate decreased from 71 per 100 thousands in 2000 to 58 per 100 thousands in 2005. Mortality rate among children under 5 years (per thousand) has declined as well from 29 to 19 and among infants from 24 to 17 per 1000 between 2000 and 2005.

Despite the progress achieved in the improvement of women development, huge differences still appear in the main development indicators, especially the socio-economic and political opportunities between males and females. The following examples are based on data from the Central Bureau of Statistics (CBS) examples follow (CBS, 2006):

- Female unemployment rate shared 18.5% but 7.3% among males in 2005.
- Illiteracy rate among females was 26%, while 12% among males of the total inhabitants above 15 years old were illiterate in 2005.
- Women contributed to 17.3% of the workforce in 2005, whereas reached 21% in 2002.
- Women participation (above 15 years) in the economic production declined to nearly 9% in 2005, while it was more than 14% in 2002.
- Share of women working in agriculture decreased to about 25.5% against the increased share in the service sector which had reached 56.3% in 2005.

- Women employment rate in the ministries and institutions dropped to about 50% percent of the total workers in 2005, and to 25% in the Ministry of Agriculture and 10% in the Ministry of Irrigation.
- Women employed in the ministries remained at a low rate (7%) in 2005.
- Women participation in the Parliament remained at only 12%.

Consequently, further reform, policies and programs, is still needed to be implemented, particularly in the remote rural areas of the country, where women still suffer from illiteracy, limited opportunities, bad environment circumstances, low wages, poor health conditions and insufficient quality and quantity of drinking water and sanitation. Moreover, gender issues still lack the application of systematic research and the access to information technologies.

This working paper focuses on government policies related to the role and contribution of gender to the Syrian economy and agriculture in particular, irrigation and water resource management. It focuses also on the framework of the cooperative activities with the international organizations, United Nation Development Program (UNDP) in the field of women empowerment in natural resource management. It enlightens the project of “Mainstreaming Gender Dimension into Integrated Water Resource Development and management in the Mediterranean Region (GEWAMED), which is newly introduced by the European Commission and the Mediterranean Agronomic Institute (Bari CIHEAM – IAMB). It gives a clear idea about the project on-going activities in the rural areas of the country under the supervision of the General Commission of Agricultural Scientific Research, Land and Natural Resource Management.

1. Gender, Water and Poverty

Why gender, water and poverty? The expression “Gender” is intended to define the socio-economic, cultural and institutional integrated functions and responsibilities of man and woman. Based on the human rights and on the 5th item of the 14th article of the Fourth World Women Conference (FWCO) held in Beijing in 1995, which calls for adopting gender equity, equality to participate and to enjoy prosperities of the rural development process. This means that the development process target both men and women, but gives more attention to women since in most of the countries they are more vulnerable to bias.

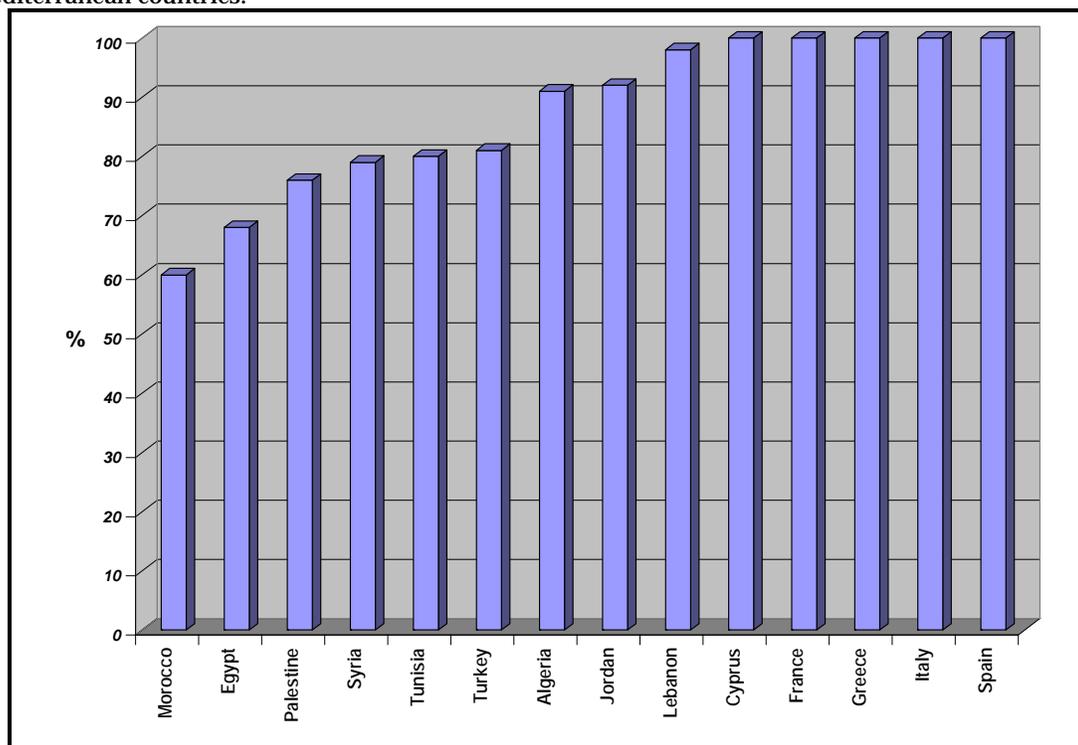
It is already known that poverty is multi-dimensional and location specific. Recent estimations demonstrate that the greatest differences are geographic. In Syria poverty is generally more prevalent in rural than in urban areas and Most Syrian’s poor (62% of the poor) live in rural areas and depend on agriculture for survival (UNDP, 2005). It also varies by age, gender (from women to men) and by other socio-economic aspects. Households headed by women are often more exposed to economic shocks due to the income irregularity or sustainability. Women are more vulnerable than men to chronic poverty due to gender inequality in various social, economic and political institutions. This can be found in the uneven distribution of income, control over property or income and access to productive inputs (such as credit). So, poverty is not only about material deprivation. It also means lack of voice or power, vulnerability to crises and other adverse situations and limited capacity to cope with such vulnerabilities. Moreover, women are always subject to bias in decision-making, resources and water resources, rights and entitlements that often favor men in opposite to women who are socially excluded of the labor markets (FAO, 2005).

While Millennium Development Goals have been set separately for poverty, gender and the environment (encompassing water and sanitation), yet they are in fact interrelated. Water is vital for life and clean water for domestic purposes is also essential for human health and survival and for other facets of sustainable development. If water resources are located far away from residence, women and girls have to walk further to bring water, thus reducing available time for more productive works. (UN Millennium Task Force on Water and Sanitation, 2005).

Availability of clean water combined with improved sanitation and hygiene will reduce morbidity and mortality especially among children. It is considered as the main element to achieve many fundamental goals, such as environmental protection, food security, empowerment of women, and education for girls and reduce productivity loss due to illnesses. Water is a catalytic element in the developing countries fighting against poverty and hunger, and for safeguarding human health, reducing children mortality and promoting gender equality and protection of natural resources. The HIV and AIDS pandemic (a cause and a consequence of the vulnerability that is characteristic of poverty) has driven some countries to adopt home-based care approaches as the health institutions fail to meet the demand for health services in some developing countries, especially the provision of sufficient water in quality and quantity (UN Millennium Task Force on Water and Sanitation, 2005).

According to the World Bank Report 2006, in many Mediterranean countries, not all people have access to the improved sanitation and hygiene. As shown in figure 1, approximately 80% in Syria, 60% in Morocco and in Egypt 67% of the total population do have. While in other developed countries like France, Spain and Greece all people have access to all these services (World Bank, 2006).

Figure 1: Share of population having access to improved sanitation and hygiene systems in the Mediterranean countries.



Source: World Bank, 2006.

Based on the above argument, the viscous circle of poverty would be completed by the material well-being dimension and linkages among gender, water and poverty follow as a three-way interaction:

- Access to water of sufficient quality and quantity will reduce the incidence of water-washed and water-borne diseases, improve health and productivity of women and children.

- When there is competition for water resources, women and the vulnerable often lose their entitlements.
- Women's development priorities for water resources to be near home so that they are able to balance their productive and reproductive roles.
- Improved livelihoods and food security for women and the disadvantaged are also depended on access to sufficient water resources.
- Participation in water management can also improve the dignity of women through giving them a voice and choice.

2. Syrian Women in the Socio-Economic Life

The 9th fifth plan (2001-2005) has recognized the necessity of integrating gender issues into the socio-economic life through involving women in decision making and work planning process. Consequently, women involvement has definitely improved household's and social standards and created new job opportunities, developed their education and skills by controlling the numbers of girls quitting school. Syria acceded many international agreements related to gender equity and to the "Convention of Eliminating of All Forms of Discrimination against Women" (CEDAW) and established the National Committee to follow up Beijing Conference recommendations (Syrian Commission for Family Affairs, 2006).

Women participation accelerated in the past 5 to 10 years at all levels of different public ministries and administrations according to the qualification and experience. Women contributed to 12% of the jurisdiction, 16% of the attorneys and 7% of the delegation representatives. Table 1 summarizes the legal amendments and privileges that Syrian women have gained since 2000.

Table 1: Indicators of women development between 2000 and 2005.

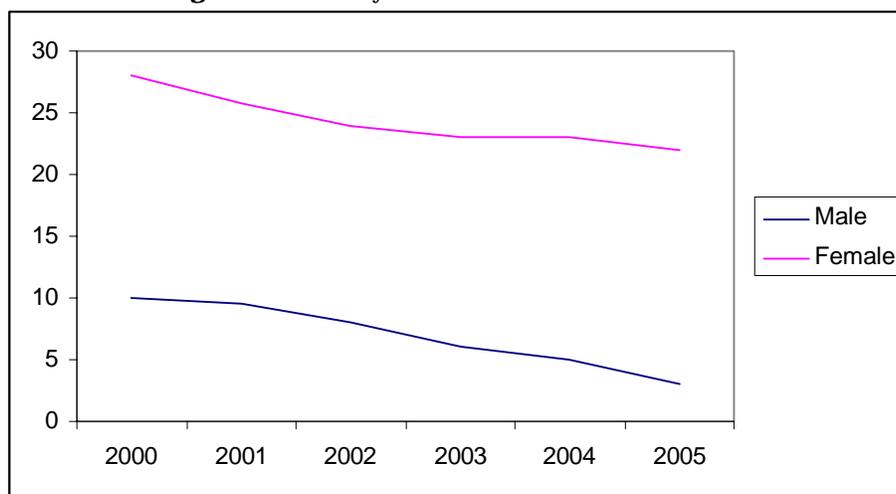
Indicator	2000	2005
Population growth rate.	2.69	2.45
Life expectancy	71.3	72.1
Fertility rate	3.7	3.5
Mortality rate among infants (per 1000).	24	17
Mortality rate among children under 5 years (per thousand).	26.00	19.3
Mortality rate among mothers (per 100000).	71	58
Illiteracy rate.	26.3	22.4
Unemployment rate.	22.00	12.3
Poor (males & females) of total population.	20.56	11.4
Participation in the economic activities.	12.7	9.2
Participation in the Parliament.	10.4	12.0
Participation in the ministries (%).	7	7

Source: Syrian Commission for Family affairs, 2006.

In April, 2003, the Syrian Commission for Family Affairs (SCFA) was established besides many other women new organizations NGOs for activating Syrian women role in the economic life, such as the Establishment of “FARDOUS” and “Mourid” in 2001 for women development, aiming at self dependence to enhance development in rural communities. These organizations promote the potential role of women in agricultural and rural development. The Government has sought FAO/TCP assistance in strengthening human resources development for this purpose. Therefore, new projects of “evolving Sandouqs”¹ have launched in 2004 for the purpose of women empowerment in the rural areas and eradicating poverty and encouraging the establishment of micro-projects for women (FAO, 2005). Furthermore, many projects and programs were implemented during the 9th fifth plan as a result of the Economic Committee recommendations No. 26, dated 26, 7, 2004 to allocate %0.25 of the government investment for the purpose of women empowerment.

Despite the critical role and rights that Syrian women have achieved so far, women economic activity is often neither accounted in the national income statistics nor in the working hours per day. This happens especially when it takes the form of informal work like housekeeping and the unpaid agricultural work on the family farm, where they produce crops for the family food. Although many micro-projects were implemented during the 9th fifth plan, development hasn't tackled women's livelihoods effectively even though women still share a high percentage of the agriculture labor. And there is still a big gap between male and females in many important development indicators; for instance, the illiteracy rate among males has declined much more than among females (figure 2).

Figure 2: Illiteracy decline between 2000 and 2005.



Source: Syrian Commission for Family affairs, 2006.

Women occupation of administration positions is still very little when comparing to men and do not hold large plots of land as much as men (table 2).

¹ “Evolving Sandouqs” are kinds of micro projects provided by government coordinating with the FAO & UNDP to supply rural women with the needed fund just to start their own businesses in their remote rural areas.

Table 2. Basic indicators showing gender inequality in 2005.

Indicator	Male	Female
Population (%)	51	49
Life expectancy	71	72
Illiteracy rate(above 15)	12	26
Participation in the ministries (%).	93	7
Participation in the Parliament.	88	12
Participation in administrative professions and public organizations (%).	82	18
Participation in art professions and handicrafts (%).	59	41
Trial lawyers (%).	88	12
Land holding (%)	95	5
Access to micro- credits from the Combating Unemployment Committee (%)	84	16

Source: Syrian Commission for Family affairs, 2006.

Then, where is the problem? Many are proposed and addressed by the upcoming 10th fifth plan (2006-2010):

1. Lack of research related to gender analysis and lack of its disaggregated data (male/female).
2. Lack of access to information and data resources.
3. Lack of training rural women and access to information technology.
4. Rural women face several constraints; the most important ones are: habits, traditions, and the heavy activities which are mostly unpaid and not restricted or reported in the national statistics.
5. Lack of infrastructure that facilitate their involvement in the economic activities; especially in the remote rural areas.

In brief, women rarely have sufficient access to necessary resources and advantages, and with regard to market access they are still bounded by traditional gender roles that lead to tangible gender gaps which affect the economy, education, health, and other services. These lead to bias in terms of land and water resource ownership and market access, which in turn lead to gender inequality.

3. Women Role in Agriculture and Water Resource Management

The roles that women do in agriculture vary from region to region and from local community to other. Where large-scale cash cropping has been introduced to men, especially when it is highly mechanized, but women are increasingly responsible for household food production and small-scale cash cropping with low levels of technology.

In Syria, rural women contribute to 40% of the agricultural practices though; they only own 5% of the agricultural land with an average holding area of 58 donum, according to the agricultural

census 1994, while the rest (95%) is owned by men with an average holding area of 83 donum. This is also applied on animal's ownership (cows, sheep, goats and poultry). Holding land is linked to the weak access to land property and thus to the weak access to credit, agricultural inputs and to other services. Given that traditions in rural communities suppose that agricultural land must be distributed only among the sons, this hinders improving land productivity as well as gender equality in the rural areas. Sometimes traditions and social values conquered the legal rules that certify women rights in land ownership. Moreover, applying technology in natural resource management requires the effective participation of gender (male and female). In fact, having access to land / or not is crucial to improve the agricultural productivity because farmers nether get the needed credit nor other agricultural inputs and services. In some cases, the prevailing traditions even overcome laws and regulations to eliminate women rights in land ownership in some areas. Therefore, all the stakeholders should be effectively involved in applying the new technologies to insure soil quality and land resource development.

Syrian rural women evidently contribute to the agricultural activities in rural areas. In particular, they work in four basic sectors of the agriculture production: crops, animal, agro-processing and to food processing for households. In 2006, the rural women formed 58.7% of the agricultural labor force, carrying out 70% of the main agricultural activities in the field (harvesting, picking, weeding, sorting and packaging) (CBS, 2006). In 2002, the Ministry of Agriculture, Directorate of Agricultural Research and the Food and Agriculture Organization of the United Nation (FAO) defined women contributions as follows: 43-67% of the harvesting and picking, 52-73% of the weeding, but to only 7% of the irrigation practices, and decreased to nil in marketing and financing. Whereas cow and dairy production were highly gender specific. (MAAR, Directorate of Agricultural Research, 2002).

Regarding dependency on women for the household living, statistics of the labor force surveys have shown that housewives working formally outside the house were 14% of the workers in 2001 and decreased to 11% in 2002 (CBS, 2004). Some other studies in 2005 reported that 56% of the females working business in the private sector were unpaid (Noun E Nuswa Magazine, March, 2005). They perform the essential chores (paid or unpaid) to ensure the household livelihood and food security such as baking, cooking, fetching water, cleaning and child rearing, etc. Women play an important role in the rational water use and in the achievement of household water security, especially in the rural areas this water is re-used for other purposes. As mothers are responsible for saving water and energy by effective and rational use, they also have an educational role to explain to their children the importance of re-using water in different ways.

Syrian Government has fully recognized water scarcity as the top priority. Especially in the agriculture sector which is considered as the largest consumer of water with nearly 90% of all utilized water for irrigation purposes. Given that water resources in Syria and all over the world are increasingly limited, it is evident that the importance of the efficient and rational use of water resources is strongly emerging as a fundamental issue in the irrigation sector as well as in other sectors such as, domestic sector, hydropower, industry, and environment. Accordingly, many regulations were issued by the Ministry of Agriculture to adopt modern irrigation technologies (drip & sprinkles) seeking for the rational water use in irrigation. Yet, women's involvement in water resource managements and the application of the modern irrigation technologies is still not enough due to their lack of skills and training on new agricultural techniques. Therefore, raising awareness towards water resource management should always start with women at household and farm levels. Therefore, many short and long training courses have been done by the extension units targeting female farmers at local levels, and trying to integrate the Integrated Water Resources Management (IWRM) approach into the culture of rural communities. The involvement of women in such courses has dramatically increased as they've become more aware of the new agricultural technologies. Many income generating micro projects have also been conducted by the government at local levels.

4. Cooperation with the International Organizations

The Syrian Government has been cooperating with the international organizations, such as the United Nation Development Program (UNDP) to enter the Integrated Water Resources Management (IWRM) approach into all policies and priorities. The UNDP's fund supports the process through training personnel, financing cooperative projects and workshops in the districts, and building capacity of the national partners to gain the practical and analytical skills to mainstream gender issues into the economic programs of the governmental and non governmental bodies. The national program for women empowerment, financed by the State Planning Commission has made a head start towards developing the mechanism of women empowerment. A budget of more than three hundred million Syrian Pound were allocated for the clinic villages' project to improve the infrastructure, clean water, sanitation, roads and socio-economic sustainable development in the rural communities.

In this context, the Syrian government works with the international organizations to develop the mechanism of women economic empowerment through mainstreaming gender dimensions into all aspects of developing the economic life. GEWAMED project is one of the cooperative projects between the Syrian government, General Commission for Agricultural Scientific Research, Natural Resource Department, the European Commission and The Mediterranean Agronomic Institute (Bari CIHEAM – IAMB): (Centre International de Hautes Etudes Agronomiques Mediterraneennes - Instituto Agronomico Mediterraneo Di Bari), acting as the regional center in the Mediterranean area.

4.1 GEWAMED Project

The project Title is: "Mainstreaming Gender Dimensions into the Integrated Water Resource Management in the Mediterranean Region". The name GEWAMED is composed of three syllables standing for Gender, Water and the Mediterranean (The original main document of GEWAMED, 2005).

4.1.1 Basic definitions

1. Gender: an idiom used to express the roles of men and women and their socio-economic and cultural relationships in any community (FAO, 2003). The roles and relationships between men and women is a product of the social and cultural formation based on equality, but not a biological term based on the sex difference.
2. Gender Mainstreaming is defined as a process of assessing the implications of any planned action, including legislation, policies or programs in all areas and at all levels. It is a strategy for putting women as well as men concerns and experiences as integral dimension of the design, implementation, monitoring and evaluation of policies and programs in all whole fields, so that women and men can get equal benefits in addition to the involvement of women and men in all related processes of water development and management (The original main document of GEWAMED, 2005).

4.1.2 Project funding

The project is financed by the International Program of Scientific Cooperation within the sixth program of the European Commission forwarded to the Mediterranean countries. Supervised by the Mediterranean Agronomic Institute - Bari CIHEAM – IAMB acting as the regional center. The project is implemented at the General Commission for Agricultural Scientific Research, Department of Land and Irrigation Research during four years started in August 2006 until the end of 2010.

4.1.3 Implementing partners

The project participants are 18 partners (9 general institutions, 7 private institutions and 2 international organizations) from 14 countries around the Mediterranean basin (Algeria, Cyprus, France, Greece, Egypt, Jordan, Italy, Lebanon, Palestine, Morocco, Spain, Syria, Tunisia and Turkey) (the original main document of GEWAMED, 2005).

4.1.4 Project objectives

The overall objective of GEWAMED project is to contribute to the mainstreaming of gender dimensions in the Integrated Water Resources Management (IWRM) in the Mediterranean Region by achieving the specific objectives in each of the countries involved, the project partners act as national coordinators working to establish a national network in the area of gender and water institutions, and promote the exchange and dissemination of information among: National governmental agencies, NGO's research institutions, International Organizations, Universities and Communication media involved in gender related issues and the water sector (the original main document of GEWAMED, 2005). The strategic objectives are the following:

1. Building a common knowledge base and establishing a regional and national information joint network about gender issues, policies, and procedures to share the information and to integrate gender dimensions into water resource management.
2. Promoting dialogues among the countries of the region as well as inside each country. This can only be done through setting a website on the internet to accelerate exchanging and disseminating information among the national governmental agencies, NGO's research institutions, international organizations, universities and communication media involved in gender related issues and the water sector.
3. Establishing coordination structures to promote the adoption of gender sensitive policies and regulations by involving the decision makers in mainstreaming the gender dimensions into the water resource integrated management.

4.1.5 Expected outputs

The expected outputs are tightly linked to the strategic objectives:

The 1st strategic objective: Building a common national and regional knowledge base

- The 1st Expected output: set a national website on the internet to cover at least the countries of the project; Algeria, Cyprus, France, Greece, Egypt, Jordan, Italy, Lebanon, Palestine, Morocco, Spain, Syria, Tunisia and Turkey.
- The 2nd Expected output: establish a national information network system (database) which includes developed sensitive gender indicators and can be accessed by all the potential users.
- The 3rd Expected output: develop a regional system serves as a network of gender related issues and the water sector among the involved countries.

The 2nd strategic objective: Promoting the dialogue at national and regional level.

- The 4th Expected output: improve the communication among partners and the external agents concerned through local and regional workshops and meetings.
- The 5th Expected output: improve the coordination and information dissemination at national level through assigning a national focal point in each country.
- The 6th Expected output: publish and disseminate the results of the project among the largest number of the concerned audience.

The 3rd strategic objective: Adoption of gender sensitive policies and regulations

- The 7th Expected output: Contribute to structure the framework of policies, agreements, regulations and incentives towards gender empowerment in planning, developing and water resource management.

4.1.6 *Role of the national focal point*

The national focal point is responsible for coordinating and communicating with all the formal and public bodies involved in gender related issues and the water sector:

- National governmental agencies.
- NGO's research institutions
- International organizations
- Universities
- Communication media

In the same framework of collaboration on mainstreaming gender dimensions into Water Resources Management, GEWAMED Committee in Syria is seeking to match its main objectives that concentrate on how to integrate gender dimensions into water resources integrated management and their efficient use, with the international organizations working in the same fields as following:

- Sharing data and information related to the same areas of research.
- Mutual Participation in the main events, especially field visits, seminars and workshops.

GEWAMED has coordinated with the Socio-Economic Team of the “Water Sector Program Barada Basin” Project which is sponsored by the German Construction Bank and the Syrian General Establishment for Drinking Water Sewerage in Rural Damascus. The main objective of their research is assessing the improvement of gender equality aspects of water supply project in the selected villages of the project area, particularly in the eastern part of Rural Damascus, where severe poverty and illiteracy prevail, especially among women. The socio-economic conditions are being compared before and after project water supplements in order to estimate the project impacts on the social and economic life of the local community. Debate focused on the mutual areas of work between GEWAMED and the project trying to match main objectives that concentrate on how to integrate gender dimensions into water resource management and their efficient use. Recently, participation in the main events and information are being exchanged.

In the same context of coordination and networking, the national focal point of GEWAMED, participated in the workshop that held by the Syrian Family Planning Association (SFPA) and the Italian Project of “Research & Cooperation” (RC) under the title “Introducing Consultation and Basics Aspects to Rural Women”. The workshop was held on 2nd, May, 2007 in Kherbet El Ward village, Rural Damascus. The Italian Project aims at providing social development, health, and food security in the rural areas in Syria, where it covers three Syrian governorates including the following six villages: Kherbet El Ward and Hosh El Shayer in Rural Damascus, Toqad and Hote in Rural Aleppo, Anat and Khasme in Rural Sweida. The workshop included health care and raising awareness lectures as well as discussion sessions on decision making process and problem solving practices were conducted by the female participants. SFPA and RC showed a real interest in the cooperation with the GEWAMED project which also participated in a training course held by SFPA and RC on 23rd, May, 2007 in Salkhad village, Rural Sweida for training few selected rural leaders who would be responsible for training other women in their local communities later on. During the concluding session they assigned areas of cooperation that would be implemented between GEWAMED, SFPA and RC to match their main objectives and reciprocal participation in the main events.

GEWAMED project has proposed a joint program of cooperation with the Syrian Office of the United Nation Population Fund (UNFP), as it is involved in gender issues, for the next year 2008. It aims at conducting some revetment activities that support the main activities which are going on by GEWAMED in Syria, such as setting up some drip irrigation schemes for small women farmer holdings (5-10 donum area), training both female and male farmers on the application and maintenance of the modern irrigation technologies and at holding workshops for raising awareness and distributing gender roles and responsibilities in water resources integrated management.

4.1.7 Activities of GEWAMED Project

So far, under the supervision of the General Commission for Agricultural Scientific Research in Syria, the project has been able to accomplish the following:

1. Nominating the project management committee: the steering committee was nominated with seven representatives from Ministries and governmental bodies: General Commission for Agricultural Scientific Research, Ministry of Agriculture, Ministry of Irrigation, Ministry of Environment, and Ministry of Information in addition to some public associations in the field of women and environment business.
2. Setting a national website on the internet: www.gewamed-syria.org.
3. Conducting a training course to use the website by the technical cadre of the project.
4. Participating in the fifth chapter of gender in the Third Regional Water Conference that held in Cairo from 9 to 11th December, 2006.
5. Preparing a group of bullets, posters and journalistic essays about GEWAMED.
6. Holding the first workshop of the GEWAMED at the General Commission for Agricultural Scientific Research in Syria on the 7th March, 2007.
7. Starting the survey of the study "Investigating Gender Roles in Water Resources Management" in the southern part (Rural Damascus, Daraa, Sweida, and Quneitra) at household level after preparing and testing the required questionnaire.

4.1.8 Recent Activities of GEWAMED Project

The "Investigating Gender Roles in Water Resources Management" study is currently being followed up in the southern part (Rural Damascus, Daraa, Sweida, and Quneitra) to collect the required data aiming at:

1. Investigate the status of gender equality in the southern area at household level and then measure the following areas of inequity:
 - Access and management of land and water resources
 - Access to paid employment
 - Educational attainment and
 - Institutional empowerment
2. Test the correlation between the rural women status in terms of the above mentioned areas and the gender roles in water resources management.

This can be achieved by applying the questionnaire in the selected villages in the southern area as it was tested by a pilot survey in three villages of rural Damascus (shifoneieh, bahdalia and hazrama). Then the questionnaire was adjusted accordingly to be used in the current survey.

5. How to empower gender in Water Management

Traditionally, water resources have been organized by sectors that correspond to the different users. In addition to the governmental bodies (ministries and institutions), other local bodies may be responsible for managing water resources at local levels, like the Water User Associations and the private sector, farms, firms, companies and households. This approach has shown serious restrictions especially when water becomes scarce. There is a greater need for integration and coordination among them. These constraints have led to the need for a new approach: the Integrated Water Resource Management (IWRM) as a result of the current research by many international organizations and national institutions that work in the sustainable development fields just to use the gender dimension as a focal point in water resource management.

regarding the multiplicity of institutions that are concerned with water, it will be difficult to have a complete picture of the role of all these institutions. So, it is possible to select the most representative institutions and to develop some simple indicators that may represent the whole institutional sector. In this sense, Ministry of Agriculture and Ministry of Irrigation could be selected in most of the countries, while in other countries, Ministry of Environment could be selected or more than one. The analysis can be undertaken for each ministry separately. The resulting figures can be aggregated of each indicator into a single one as an average figure for the ministries analyzed (Sagardoy, 2007).

5.1 Bari Institute initiatives in mainstreaming gender dimensions into water resources management

In the Mediterranean, while there are only a few gender inclusive policies in water, it is widely recognized that gender-sensitive policies are more effective way to mediate conflicts in water issues. The institutions and organizations which are working to place water-gender-poverty-sustainable development nexus into practice have built synergy for inclusion of gender as a cross-cutting issue in the integrated water resources management.

Bari Institute, which has been involved in water resources and irrigated agriculture management in the Mediterranean for more than 20 years, is now giving more emphasis to the gender issues in all its capacity building programs and in the running cooperative projects realized in several developing countries in the region. Indeed, the initiatives were faced with the increasing need to mainstream gender perspectives into water resources levels, on the other side, the difficulties in mainstreaming a gender perspective into the framework of commonly accepted international principles characterizing the Integrated Water Resources Management (IWRM). Accordingly, focus was given on identifying the process as well as the further steps to be included for gender mainstreaming in the IWRM. The process included four key steps to begin and to follow up the process (Hamdy et al., 2005):

- First step (information): Disaggregate all relevant data and information by men and women, firstly to identify the different needs of each of them, secondly to study the impacts of IWRM interventions on men and women. Gender analysis (examine the roles, resources, needs and priorities of women and men in relation to water) should play partial role in analyzing the situation, planning and evaluation. And gender analysis studies should aim at examining particular issues and address information gaps.
- Second step (consultation, advocacy and decision making): Involve men and women in planning and implementing IWRM interventions on the basis of their various skills and contribution rather than on the basis of what is considered as appropriate by gender. This means promoting the involvement of women as well as men in consultation and decision making beginning with the community level to the highest level of the organizational management. This requires further efforts to create opportunities for

women in planning and implementing processes and to facilitate their participation through capacity building, while the forthcoming steps are:

- Third step (actions to promote gender sensitivity in the beneficiary groups): based on the specific sex disaggregated data and gender analytical information and a clear understanding of women and men priorities. Actions need to be explicitly included in policy and project documents and frameworks, backed up with staff and budget to be monitored and reviewed through appropriate indicators of change.
- Fourth step (actions to promote gender sensitivity in organizing the work): this step is directed to develop the skills, knowledge and commitment of the staff involved in management and implantation as well as addressing and understanding issues of gender differences and inequality during the process of developing and organizing themselves. Appropriate capacity building activities have to be explicitly included in policy, project documents and programs framework.

5.2 Gender indicators proposed by Bari Institute

During the second regional workshop titled “Gender, Water and Food Security” which was held in Larnaka, Cyprus between 12th and 14th March, 2007, many indicators were proposed by the participants to measure inequality and gender empowerment in water resources management in all participant countries of GEWAMED project. The ten proposed indicators measure the following areas of inequity: The access and management of land and water resources, access to paid employment, educational attainment and Institutional empowerment. Listed below are the main ten indicators proposed to measure inequalities in the agriculture sector and concerned institutions (Sagardoy, 2007):

1. Percentage of farms run by females: Number of farms managed by females/ Total number of farms of the country.
2. Percentages of cultivated area run by females: cultivated area by females/ Total cultivated area
3. Holding size average farms run by females compared to those of males: Holding size average of female managed farms/ Holding size average of male managed farms.
4. Percentage of Irrigated farms run by females: Number of irrigated farms managed by females/ Total number of irrigated farms of the country.
5. Percentage of cultivated area run by females: Total irrigated area by females/ Total irrigated area.
6. Percentage of the holding size average of irrigated farms run by females compared to those of males: Holding size average of irrigated farms managed by females / Holding size average of irrigated farms managed by males.
7. Percentage of female labor contribution to agriculture: Total number of working days by females/ Total number of working days used in agriculture.
8. Average number of females/ males days used: Total number of days contributed by females/ number of farms managed by females.
9. Percentage of women employed in a given ministry: Total number of women employed in this ministry/ Total number of employees in the selected ministry.
10. Total number of female directors or above in the selected ministry: Total number of female employed at director level or above in the selected ministry:/Total number of directors and above in the selected ministry.

It is also possible to define similar indicators for the social organizations like the Water Users Associations but they are more relevant at local level. In this case, surveys should be carried out to collect the needed information (table 3) (Sagardoy, 2007).

Table 3. Main indicators for monitoring gender access/control to resources and benefits at the national social.

Resources		Indicators	Data source	Notes
Natural Resources	Land	No. 1 to 6	Primary selected data	Numbers of indicators refer to those presented above. In the Mediterranean land and water rights are often linked.
	Irrigation Water	No. 3 to 6,	Primary selected data	Numbers of indicators refer to those presented above.
	Water Supply and sanitation	Access to improved sanitation facilities Households covered by water supply	UN, WB,	These indicators are not really gender indicators as there is no sex differentiation
	Other water uses	Not available at national level.		Only some local information is sometimes available
Education and knowledge Attainment	Education Attainment	Ratio of illiteracy. Ratio of girls to boys in primary and secondary education	UN, WB	Indicators need to specify the level of education.
	Training	Gender Indicators exist for individual training, activities but cannot be consolidated in a single one.		Many types of training exist which are not comparable
Health and survival	Survival	Life expectancy Sex ratio Birth expectancy ratio	UN, WHO	Many aspects of health can be monitored. Indicators are specific for each aspect.

Economic Activity	Work	Employment levels for different sectors Level of salaries, Ind. No 7 and 8,	UN, FAO	
	Capital/credit	Few banks keep indicators of the access to credit by males and females.	WB	It is rare to find national indicators providing information on the access and control of this resource
	Transportation	There are some indicator about the use of transportation but rarely disaggregated by sex	WB, National level	
	Markets	Many types of markets exist and difficult to aggregate in one single indicator		Some information exists regarding the control of markets at local level.
	Economic	Income, GDI.	UN, WB	Income indicators are integrated in the HDI and GDI.
Benefits				
Social activities	Status/Decision making power	GEM Seats in parliament held by women	UN No. 9 and No.10	Numbers of indicators refer to those presented above the table.

Source: Sagardoy, 2007

1. WB: World Bank
2. UN: United Nations
3. WHO: World Health Organization
4. GDI: Global Development Index
5. HDI: Human Development Index
6. GEM: Gender Equality Measures

6. Challenges and constraints as proposed by FAO

Despite the different roles of gender in the economic activities, men and women often have complementary roles to ensure food security at household and local community levels. However, women's roles are more crucial in contribution to food security and food safety. In most cases, rural women are the mainstay of small-scale agricultural farm, producers and providers through diversifying food sources and reducing the loss in the process of food preparation. When contribute to trade, they spend their returns on improving the household nutritional level. Studies on the social role of women have shown that women contribution to food security is much more than men in the same households (FAO, 2002).

The International Organization for Food and Agriculture, in its action fifth plan (2002-2007) illustrated that the most important challenges facing women and gender equity in the rural areas are existed in the policies and procedures targeting men only not women (FAO, 2002). So, women empowerment is crucial to empower women in the process of policy and decision making at the community levels. This will require self-empowerment and accessing to all the resources that enable them to manage their own lives and future strategies. These main challenges can be grouped into five: (1) Globalization, (2) The increased pressure on natural resources uses and demand, (3) The agriculture subsidy system, (4) Information and communication technology, (5) Rural development planning polices.

6.1 Challenges related to globalization

- Governmental policies have turned towards the structural reform programs which serve the large-scale cash cropping and cash flows.
- Liberalization policies have transferred to large scale economics like agricultural trade and cash crops, but not to food production for the household livelihood.
- Structural adjustment programs and the trend towards liberalization of trade have led to diminishing many of the services which subsidize agriculture like extension, training, infrastructure, as a result of the reduction of the governmental expenditure.
- Large farmers are more likely to be better-off, while small farmers have been worse-off by these new policies.
- Women in rural areas were terribly affected due to the inequity and bias policies.
- Elimination of agricultural subsidies caused female farmers loose their access to production inputs.

6.2 The increased pressure on natural resource use

- Lack of land ownership restricts female farmer's access to credit as land ownership is often collateral to the access of other agricultural inputs.
- Lack of secure land tenure acts as a disincentive to environmentally agricultural practices which involve the efficient application of technologies in natural resource management, and at the same time, protection of soil quality. Many of the agricultural production systems increase the environmental degradation (Soil, water and air pollution) that is derived from inadequate or overuses of the agricultural inputs, and this in turn, cause severe health and environmental damage.

6.3 Agricultural subsidy Systems

- Providing agricultural support and services is essential to improve the agricultural productivity of both male and female farmers.

- Male farmers are always involved in the large-scale cash cropping which is highly mechanized, while female farmers are increasingly responsible for household food production and small-scale cash cropping with low levels of technology. This is generally indispensable for access to production inputs.
- The development programs ignore gender dimensions and they lack enough attention to the needs of female farmers in the research and technology development process. Women are always work-loaded and even do not find time to participate in such programs.

Access to the systems of agricultural subsidies (including credit, extension, training, education and other rural services and marketing) is necessary for improving agricultural productivity. Moreover, any efforts to reduce food insecurity worldwide must take into consideration the factors and constraints affecting women's ability to carry out their roles and contributions in the agricultural sector.

6.4 Information and communication technology

- The access of female farmers to agricultural inputs and technologies is still constrained by their lack of access to credit and membership in rural organizations, also by gender blind development programs and lack of attention to the needs of female farmers role in the research and technology development programs.

6.5 Rural development planning polices

Rural development polices and plans do not always reflect the need for equitable consideration about gender differences between men and women due to:

- Lack of the collection and dissemination of gender-disaggregated data leading to ignore their needs in the process of policy making and planning.
- Unequal distribution of wage and/or paid work among men and women, leads women to do the unpaid work in the small-scale crops, farm labor, and day-to-day family subsistence to produce food (FAO, 2002).

Therefore, the possibility of improving household food security can only be realized if female farmers, in addition to their male counterparts, have access to agricultural services. Also the need to overcome the constraints which prevent women from obtaining such services should be emphasized.

Many agricultural development policies and programs have yet to adequately address the needs of small farmers, particularly women. While initiatives have been made to include rural women in agricultural development activities, either through direct projects, or national women's organizations, a major impediment to incorporating gender issues into such activities has been the lack of disaggregated data on the nature and role of women's contributions to food and agricultural production.

In order to facilitate and to strengthen the contributions of women to the agricultural growth, new economic activities should be introduced to involve the low income female farmers in new agricultural and nonagricultural activities. And women access to credit should be facilitated to run new small income generating projects. They also need to be included in the training extension programs to gain the required skills, adopt the modern irrigation techniques, and apply new technologies in the natural resource management. In this context, women should be encouraged to enroll in high technical training agricultural institutes.

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