

***INVOLVEMENT AND INFLUENCE OF WOMEN IN INNOVATION PROCESSES  
WITHIN INTERGRATED WATER RESOURCES MANAGEMENT (IWRM) PROJECTS***

**By**

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## **1. Abstract**

In the Arab countries, great efforts are needed to bridge the gap between women and men and familiarize the differences in their innovation and creativity; Palestine is a special case of a developing country facing occupation where gender linkages are rarely seen within environmental projects. There is a need to distinguish gender aspects and connect gender principals to planning, implementing, and evaluating environmental projects for further benefits. There is a need to attract society's attention to the contribution and innovation of women within the scope of Integrated Water Resources Management (IWRM) to affect the water policy in the country. Women play a remarkable role in the success of water and environmental projects and determine the way natural resources are managed in communities. Women's involvement, influence, and innovative ways to consume, preserve, and maintain water were the major issues under investigation in this project on both environmental institutions and community levels.

The research question is: "How can we strengthen the involvement and influence of women in the innovation processes within Integrated Water Resources Management (IWRM)?" The research aimed at strengthening the influence and involvement of Palestinian women as innovators, decision makers, and executives within the water sector, clarifying the current status of gender and innovation within IWRM, promoting the gender-innovation concept to be considered in the society, and providing the decision makers and professionals with capacity building training programs on gender-innovation concepts. The methodology used in achieving the stated objectives included a literature review for identifying current gender-innovation status in Palestine, conducting a three levels comprehensive survey, offering capacity building programs for different levels of stakeholders, and promoting gender mainstreaming by offering a prize for the best innovative contributor to the IWRM in the study area.

The major findings of the project showed that women needs, priorities and capabilities are still not given sufficient attention by planners and decision makers especially in water projects. Women proved to be innovative and have considerable capabilities in dealing with the water issue and have high sense of responsibility towards water resources. They are concerned with water scarcity and reuse issues and worried about health considerations. Nevertheless their contributions in the water sector regarding domestic and productive uses of water are still not efficiently documented and their innovative ideas and practices in water/environmental institutions are not encouraged.

**Keywords:** Gender, IWRM, Innovation, Influence, Involvement.

## **2. The Research Problem**

Women in the Palestinian water and environmental sector are suffering from the social stereotypes of making water management a male task, their capabilities, needs and problems are still not effectively addressed in many of the conducted projects that are being implemented by water and environmental institutions. This setting requires cultivating women involvement and participation in the water sector. From this point, the question of this research is "How can we strengthen the involvement and influence of women in the innovation processes within Integrated Water Resources Management (IWRM)?"

The research problems for the study area (Palestine) are as follows:

- The current status of the gender-innovation issue is not clear in Palestine.
- Lack of knowledge and experience of employers and decision maker in dealing with gender aspects in the Palestinian organizations and community.
- Gender policies are not considered in management procedures within the IWRM at various Palestinian institutions.
- Gender innovation practices are not effectively promoted within IWRM projects.
- Key female community representatives including heads of women associations have influence on the community but not utilized effectively by policy makers.
- Despite the proof that women can add value in various management positions, their capabilities are still not utilized effectively and efficiently.

## **3. Research Objectives**

### **Main Objective**

The main objective of the project is to strengthen the involvement and influence of Palestinian women as innovators, decision makers and executives in the innovation processes within Integrated Water Resources Management (IWRM) in the study area (Palestine)

### **Specific objectives**

- To help in clarifying the current status of gender and innovation aspect within IWRM.
- To examine areas where females can add value as contributors to IWRM.
- To provide employers and decision makers in the water sector with capacity building training programs on gender concepts and innovation to strengthen their capabilities in considering the gender issue in organizational practices.
- To provide water professionals with capacity building programs on gender concepts and innovation to strengthen their capabilities in dealing with the gender issue.
- To help policy makers in activating the gender policies considering them seriously in management practices within IWRM.
- To promote the gender – innovation concept to be more seriously considered in the society.
- To strengthen the capabilities of female community representatives and their abilities to affect the community.

### **3.1 Fulfillment of the General Objective**

The sequence of activities conducted in this project was striving to achieve the main objective; its accomplishment is conquered by fulfilling expected results. The activities were able to enhance, strengthen, and add to the Palestinian woman in water and environmental field as possible. The project fulfilled the main and specific objectives and topped this by forming a partnership with the Palestinian Women's Research and Documentation Center (PWRDC) to conduct another research for assessing women roles and perceptions in environmental projects conducted by local authorities and nongovernmental organizations (NGOs) and to promote their capabilities in these projects.

### **3.2 Fulfillment of Specific Objectives**

#### *3.2.1 To help in clarifying the current status of gender and innovation aspect within IWRM*

##### **Fulfillment**

This sub objective was worked out through all stages of the project by taking the necessary measures, this included: literature review (Annex 1) that showed the importance of including gender considerations in water and environmental projects and conducting three surveys (Annex 2)

##### **Lessons Learned**

- The research clarified the current status of gender and innovation aspects within water and environmental institutions working at Palestine. More data, information, and statistical percentages are available now.
- Gender perspectives should be scientifically included in the strategies and operations of water and environmental institutions.
- Cooperative associations and counsels of the local community should increase their efforts in explaining the current situation to consider the crucial roles of women in this area.

#### *3.2.2 To examine areas where females can add value as contributors to IWRM*

##### **Fulfillment**

The observation of women contributions was through literature review that showed the areas of strength where women enrich the IWRM. Moreover, the three-level survey clarified the contribution of females in IWRM aspects and the differences between male and females in their innovative practices within IWRM.

##### **Lessons Learned**

- Women and men vary in their innovative practices. Water and environmental institutions Should focus on understanding this difference an exploiting it to their advantage, the survey results revealed that female innovation is oriented toward awareness in most cases, while male innovation is more directed toward technical solutions.
- Gender perspectives should be included in motivation of innovative employee.

*3.2.3 To provide employers and decision makers in the water sector with capacity building training programs on gender concepts and innovation to strengthen their capabilities in considering the gender issue in organizational practices.*

#### **Fulfillment**

The project contributed to strengthening the water and environmental decision makers in this area by presenting them the research results and recommendations through a leaflet distributed to the concerned parties to be considered in their future actions. This is the first project dealing with innovation aspect in the IWRM field. However, in order to reach a tangible level of improvement in this area, and in order to get a complete fulfillment of this objective, further efforts need to be done.

#### **Lessons learned**

- Key policy makers do not encourage increasing the number of qualified women in high decision making and management positions inside water and environmental organizations and this needs further efforts to change the mentality of decision makers.
- Decision makers should consider women innovation capabilities in technical areas and not only link their capabilities to awareness activities - which were shown to be a stereotype.
- New proposed projects should focus on reducing the social and cultural barriers that negatively affect the decision making capabilities of Palestinian females and that make decision making a male task inside the organizations and at the local community levels.

*3.2.4 To provide water professionals with capacity building programs on gender concepts and innovation to strengthen their capabilities in dealing with the gender issue.*

#### **Fulfillment**

Achieving this objective was challenging since it deals with changing the way of the projects' implementation to consider gender and innovation issues from the planning phase to the end. Fulfillment of this objective took the form of capacity building workshops targeting water and environmental professionals.

#### **Lessons Learned**

- In addition to contributing to employees appraisals, innovation practices should be directed to improve the quality of conducted projects at the community levels.
- Innovation practices - even the simplest techniques in water management- at the community level should be carefully studied by decision makers and water professionals for future projects in the aim of making positive use of these techniques.
- Dynamic activities such as prizes, competitions and rewards – should be considered in preparing project plans to encourage positive practices and innovation at the community level.

*3.2.5 To help policy makers in activating the gender policies considering them seriously in management practices within IWRM.*

#### **Fulfillment**

The attainment of this objective started with searching for activated gender policies on both local and international levels for water and environmental institutions by literature review. This was

followed by extensive interviews with decision makers, preparing a leaflet and a scientific paper –under progress- along with a special issue of Birzeit Water Drops Bulletin to draw decision making level attention to the area under discussion.

### **Lessons Learned**

- Lack of gender policies inside water and environmental institutions is a weakness that needs to be worked out. Gender approach (and gender perspectives) should be practically studied and reflected in institutional procedures and decisions in the form of rules. As an example; any facilitation granted to working females should be given as an institutional procedure and not to be considered as a favor by the manager. At the same time female professionals should use the facilitations given to them ethically and efficiently at the institutional level and stay away from misuse.
- Gender perspectives should be included in organizational capacity building planning programs.

*3.2.6 To promote the gender – innovation concept to be more seriously considered in the society.*

### **Fulfillment**

To promote the gender-innovation aspect in regard to water and environmental projects and based on the findings of the literature review (Annex 1); many activities took place. This included the training workshops for professionals and community members on this subject, participating in international conferences, presenting prizes for best adopters of gender /innovation practices, and a special issue of Birzeit Water Drops that will be published after we get the final comments from IDRC.

### **Lessons Learned**

- Innovation ideas should be encouraged at the workplace by promoting the idea inside and outside the institution in the aim of bringing new ways of conducting more effective and efficient water and environmental projects that address women capabilities and needs.
- Female and male professionals that consider innovative activities inside their organizations should be encouraged to bring new ways to conduct their work in a manner that adds value to both organizations and the local community (conducting goal meeting projects that creates win-win situation to decision making as well as community levels).
- Innovation practices should be encouraged by rewarding and promoting success stories and considering them in annual appraisals.

*3.2.7 To strengthen the capabilities of female community representatives and their abilities to affect the community*

### **Fulfillment**

Achieving this objective took a lot of efforts and still needs a lot to be done. The fulfillment of this objective took the form of a training workshop for water and environmental project recipients, a prize to an innovative female within environmental contest and in cooperation with another ongoing project with UNESCO was provided as a motivation aspect.

## **Lessons Learned**

- Awareness programs and implemented projects should be more directed to encouraging the technical innovation capabilities of local community females in water management.
- Professionals implementing future projects should use the maximum effort (innovative thinking) to reduce the impact of social and cultural barriers that affect the involvement of females in projects` activities.
- Professionals or implementers of water projects should transfer community priorities, needs and problems to be considered in future projects by decision makers in a more systematic way.
- Motivating women`s feeling of responsibility and innovation towards water management.
- Dynamic activities such as prizes, competitions and encourage positive practices and innovation at the community level

## **4. Methodology**

The following major steps were taken to implement the research project:

- Identifying Current Status: through forming an advisory group, conducting literature review and conducting three levels survey (Decision making level, Professional level and Community level)
- Capacity building at different levels: workshops for professional level and Community level and training motilities for team members)
- Activating Palestinian gender strategy and action plan
- Promotion of the Gender-Innovation concept

## **5. Project Activities**

### **5.1 Identifying Current Status**

#### **5.1.1 Forming an Advisory Group**

An advisory group was formed in November 2009 to direct the project`s activities, it consisted of:

- Dr. Islah Jad- Director/Women Studies` Institute
- Dr. Tahreer AlAraj- Gender Specialist/University of Illinois
- Eng Basema Bashir- Gender Researcher/ Nongovernmental Development Center NDC
- Eng Ayman Abu Thaher- Environmental Quality Authority
- Ms. Shereen Assaf- Gender Researcher/Palestinian Women`s Research and Documentation Center

The advisory group was consulted in advance of implementing major activities of the project and formed a guiding body for its plan.

#### **5.1.2 Conducting Literature Review**



In depth literature review was conducted by research team and was revised periodically with gender specialist. Literature review was prepared based on desk studies, scientific papers, books, periodicals and web links (Annex 1 presents the literature review).

### **5.1.3 Conducting Three Levels Survey**

Three levels questionnaires on gender status and innovations aspects were prepared and distributed in the case study area (see Annexes 3, 4 and 5). The Study area is located in the eastern part of the West Bank. It is within the Jordan River Rift Valley in Jericho and Tubas Governorates (Jericho city, Froush Beit Dajan, Jeftlik, Al A`uja, Al Nsaryya, Al aqrubania, Tubas, Ein AlBaida and Tammun). More details about the case study area and the survey can be found in Annex 2.

The following were the target groups:

- Decision making level which included decision and policy makers at different institutions working in the water and environmental fields. The surveyed institutions included governmental and nongovernmental organizations, municipalities, ministries, research centers and other water and environmental institutions - that conduct water projects in the West Bank of Palestine. Filling these questionnaires took the form of structured interviews and included 20 decision and policy makers (Annex 6 lists the interviewed decision makers).
- Water and environmental professionals level, that included employees directly involved in planning, implementing, and monitoring water and environmental projects (refer to Annex 3 for the questionnaire). The project research team interviewed and surveyed the staff of the same institutions mentioned above of which decision makers were also surveyed to get the full picture for better analyzed results. Filling these questionnaires took the form of structured interviews and included 50 water and environmental professionals (Annex 7 lists the interviewed professionals).
- Community level that included men/women households receiving and implementing water and environmental projects. 100 questionnaires were distributed and filled in different parts of the case study area.

Statistics specialist was consulted from the Palestinian Central Bureau of Statistics (PCBS) to revise the three levels questionnaire, train research assistants on filling questionnaires and analyze data findings.

### **5.2 Capacity Building at Different Levels**

Capacity building activities aimed at strengthening the target group capabilities to consider gender aspect in water and environmental projects.

### 5.2.1 Specialized Workshop Sessions

- **Workshop No. 1- Target group: Water and Environmental Professionals**

A workshop gathering 22 water and environmental professionals (interviewed previously) was conducted in June 2010 to demonstrate the research's major findings and to stress areas where they can make more effective link between their organizations and the local community in regard to water and environmental projects by being more aware of gender/innovation aspects within IWRM, see photos 1 and 2.



**Photo1-** During the training session



**Photo 2-**Trainees discussion after the session

- **Workshop No. 2- Representatives of the Local Community and Community members**

A workshop gathering local community representatives including heads of women associations, municipality members and opinion leaders in the local community was conducted in October 2010 to demonstrate the community needs in water and environmental fields, to demonstrate the research's major findings, and to stress ways where they can compose better benefit of these projects.

### 5.2.2 Training Mobility

Part of the capacity building activities:

Two members of the research team (Ziad Mimi and Nadine Sinokrot) participated in the Kick off workshop in New Delhi, India January 2010, where new communication channels were opened with different institutions in different parts of the world. The workshop added to the gender concept and contributed in drawing the project final work plan.

The project assistant (Shahd Tibi) participated in a conference entitled: "Integration of Gender Dimensions in Water Management" in Amman/Jordan in the period 21-26 March 2010 to demonstrate the research objectives, progress and results, see photos 3 and 4.

The research team participated in the evaluation workshop for assessing a study on “Women Status in the Water and Solid Waste Sectors in Palestine” that was conducted on 24 November 2010 in Ramallah – Palestine which included important input for the project.



**Photo 3-**Participants in Amman conference: “Integration of Gender Dimensions in Water Management, Jordan, March, 2010



**Photo 4-**Kick off workshop for gender/innovation projects organized by IDRC and Development Alternatives, New Delhi, January, 2010

### 5.3 Promotion of the Gender-Innovation Concept

To help in promotion of the gender innovation concept, a special copy of Birzeit Water Drops Bulletin that includes the research findings will be prepared and sent to key policy and decision makers representing core institutions working in the water and environmental sectors in Palestine. In addition a brief leaflet including the major recommendations of this research was prepared and distributed to decision makers. .

Moreover, a competition supervised by the project’s advisory group was organized to reward a key an innovation contribution in the field of IWRM. The competition gathered ideas from different organizations on institutional and individual contributions in the gender/IWRM area. The winner was the Palestinian Agriculture Relief Committee (PARC) since they provided facilitations for their female employees in the form of informal implemented policy, this includes granting females the permission to leave work one hour earlier for being responsible for domestic home and family duties, in addition to having permission to have 1 day off/month without being deducted from employee annual vacations. At the same time, employee females at PARC proved to be highly committed to their organization and away from misuse of these facilitations granted to them, they were motivated to work in what is called *male dominated areas*, they were able to work and supervise community females in land reclamation activities which was a challenge for both employees and community females. Women at both institutional and community levels held successfully their responsibility and proved their success in what is known as *male dominated areas*.

Project Activities were managed in a sequence that each activity depends on the findings of the previously implemented activities in a way that assures a successful scope of the process, Table-1 summarize the implemented project activities with their timeline.

Table 1 Activities Supported by the Project and their Timelines

Activity	Duration (weeks)	Start date	End date
1. Identifying current gender- innovation status	24	October 2009	March 2010
2. Capacity building	44	January 2010	November 2010
3. Promotion of the gender - innovation concept	44	April 2010	March 2011
4. Dissemination of research results	32	February 2011	September 2011

## 6. Project Outputs

The outputs of the project are of wide impact on society and of which dissemination represents a core part. Most of the dissemination activities were conducted throughout the project outputs include:

### Research:

- A scientific paper based on research results was published in a conference. The paper was one of dissemination activities for the gender/innovation concept.
- A Bulletin theme of “Birzeit Water Drops” published by IEWS will be prepared to include the project results. Hardcopies will be distributed to MSc students at Birzeit University, water and environmental decision makers and professionals in different organizations in Palestine and concerned parties in other countries. A soft copy will be available on the University website for making maximum use of project`s results.

### Capacity Building:

Workshop sessions and extensive interviews for target groups covering three levels were conducted. The workshops were not only a place to demonstrate objectives and findings, above all it directed the attention of various society levels to the importance of the gender issue and its impact on the success of water projects and therefore represented a useful dissemination tool. 20 decision makers were interviewed intensively (Annex 6), 22 professionals working in the field of water and environment were trained through a one-

day workshop (Annex 7 lists of the trainees), 45 community representative divided on three different workshop sessions had gone through Gender-Innovation within IWRM training course.

#### Policy:

A leaflet that includes a minimum agenda and action plan was prepared and distributed to the key decision makers in key stakeholder organizations in the water and environmental sector. The leaflet includes the findings and recommendations of the project to represent a supporting tool for future innovation and gender policies in Palestine (Annex 8).

### **7. Project Outcomes**

The project activities and outputs had considerable impact on different levels of the Palestinian society. Recently, the gender aspect is not being approached seriously at various organizations and many water and environmental projects. The research team took that into consideration and the project outcomes included the following:

*7.1 Uncover hidden gender aspects that were not considered by water and environmental decision makers, professionals and the local community.*

*7.1.1 Gender-innovation concepts are well demonstrated and clarified to decision makers, professionals, and community members in regard to water and environmental projects.*

The project aimed at empowering all levels dealing with water and environmental projects by clarifying the innovation practices in order to be considered in the future. The research results revealed that decision makers strongly encourage innovation practices in the workplace and innovation plays important role in the appraisal of employees. The stated definition of innovation from both decision makers as well as professionals clearly reflects a mature understanding of this concept. However, decision makers did not translate this sound understanding of innovation into practical steps in terms of capacity buildings (training, learning) for their employees. The perception of professionals supports this finding where they believe that women are least favorable in the workplace when it comes to the issue of training/development or recruitment/selection.

The findings also revealed that the innovation aspect is not approached by male and female decision makers in a manner that contributes to the improvement of water projects; it is mostly tied to internal appraisal inside organizations with less impact on the local community in the conducted projects.

Regarding innovative practices that were initiated by females, these practices are more focused on the awareness aspects than processes (ways of doing things) aspects as perceived by their managers. On the other hand, innovation practices that were initiated by males have direct impact on beneficiaries. This finding does not convey that females are less innovative, but rather

identifies lack of attention and lack of flow of relevant information from bottom (community level) to top (decision makers).

*7.1.2 Differences in female/male innovation practices in the community level in water and environmental field were found.*

Annex 2 presents communities' household's innovative practices which were found through the community survey findings.

Local community is now more aware of the women importance in the use, reuse, treatment and transport of water resources and the contribution of women and the areas where they have proven they can add to.

*7.2 The project managed to create a link among the key stakeholders in the water and environmental sectors in Palestine (decision makers, professionals and the local community) to meet the needs and the priorities to a more efficient and effective manner by promoting the gender-innovation concept.*

The findings showed many discrepancies in the process scope; gender specialists are rarely consulted in water/ environmental projects and building capacities through training on gender has a minimum contribution on changing behaviors towards gender issues and failed to materialize this change into organizational formal manner through the development of gender policies.

All surveyed decision makers believe that applying reflexive gender concepts will lead to more effective water projects. Theoretically, gender issues are well considered in water project proposals. However, the stated major reasons targeting donors and special interest groups rather than engagement of grassroots gender participation in water projects to cause a positive change on the ground. Consulting the target groups of any water project is estimated to be about once in every three water projects to identify priorities and needs through mainly meetings and needs assessment. The majority of consulted organizations belong to the non-governmental sector. Regarding participation of community households, the findings indicated sufficient consultation during the preparation and project proposal.

On the other hand, most professionals believe that gender needs in water projects is identified in the needs assessment of projects, they believe that gender needs are also considered in accessing project information and facilities and taken care of through the timing arrangements for training, activities, and training itself.

*7.3 The project worked on changing the perception of women capabilities and rights in decision making and participation in water and environmental projects by strengthening decision makers, professionals and project recipients' gender-innovation background.*

The current situation indicates that the perception of decision makers on constraints that intimidate women to exercise a leading role in work environment is almost split into two scenarios, half supports the argument that such constraints do exist while the other half believes



the opposite. The absence of common consensus on this issue identifies a key finding that necessitates great assessment of designated programs that aimed to advocate women roles as decision makers. The stated constraints are general and mostly attached to society and culture rather than to specific workplace related measures. Professionals on the other hand, believe that there are many constraints in this area of which availability of resources is the most important one.

The major barriers to household involvement in water projects are social, culture, and financial ones. The perception of decision makers regarding the decision making capabilities of community females emphasizes physiological (role of female's emotions in making decisions) as well as material aspects (lack of resources/ownership). Professionals believe that female households show interest to participate in water projects and prefer to deal with female field representatives. However, female households are less proactive in their participation and there is average participation of females who own farming land.

The practice of conducting activities to encourage innovative practices in relation to water saving and reuse in target project communities (Prizes, competitions, rewards) is weakly utilized in the local level.

*7.4 Moreover, gender policies were not considered effectively or even not found at most of the surveyed organizations, therefore, the project founded an opportunity to raise and propose an action plan to strengthen innovation gender concepts issue at various institutions.*

A leaflet that includes a minimum agenda and action plan was prepared and distributed to the key decision makers in key stakeholder organizations in the water and environmental sector. (Annex 8).

## **8. Overall Assessment and Recommendations**

Considering both its implementation and expected long term benefits, the project can be assessed as successful project.

### **8.1 Results vs. Project Objectives**

The main objective of the project was to support promoting and strengthening the integration of Palestinian women as innovators, decision makers, and executives within the water sector under the overall objective of sustainable development by providing strong input to decision makers when preparing strategies and policies. The obtained project results will allow a more efficient and effective monitoring of the sustainability of project's development, while it will enable decision makers to evaluate proposals and suggestions with a more considerate and rational criteria, based on solidly documented sustainability factors regarding the gender issue. In summary, the achieved objectives will help in strengthening the capabilities of the community and local institutions in understanding and dealing with the innovation gender issue, the elaboration of data availability, feasibility of assessment, the overview assessment of the

sustainability of water and environmental sector development in the selected case study area, and the recommendation for future actions will help in the implementation of future gender policy tools.

## **8.2 Effectiveness of Dissemination Activities**

The dissemination plan included several awareness raising and training events that helped the project stakeholders in:

- Becoming familiar with the concept of Gender Mainstreaming in the water and environmental fields.
- Understanding the nature and use of women roles and innovation.
- Evaluating and interpreting findings information for future actions and policies.

The training workshops, the use of a website to describe the project and its results, in addition to the other dissemination facilities including the leaflet (and the planned bulletin) were/ will be not only successful in informing stakeholders but also in achieving general consensus on the use of gender mainstreaming tools in environmental projects.

## **8.3 Contribution to Development**

The principal and immediate benefits expected from the integration of gender needs in the implementation of environmental projects consider this integration as a catalyst for the incorporation of transparent sustainability parameters into the water and environmental field. Indeed, the developed system of results and findings, the experience and awareness-raising derived from the project and the multitude of opportunities to consult with public and local institutions, have improved both the capacity and commitment of all stakeholders to include gender assessment indicators. During its development, the project was at a certain stage concerned with capacity building activities which did not expect immediate direct impacts on the environmental sector, however, significant long-term sustainability benefits are foreseen to be achieved through the ongoing application of the project's recommendations which are represented by the research section of the project and which with future efforts aim to provide a driving force towards environmental sustainability.

Its worth to mention that based on the activities of this project, Birzeit University gained new contacts for future cooperation and as a real output the university was granted a new project by UNESCO on women roles in environmental projects conducted by local Authorities and NGOs. In addition, the primary findings of the research formed a core input for one leading Water NGO in Palestine in forming a 5 years gender strategy in Palestine.



## 8.4 Recommendations

Based on the research findings and conclusions (presented in Annex 2), the followings can be recommended to answer the study questions:

- *In what ways can we strengthen the abilities of employers, decision makers and water professionals in dealing with the gender aspect within the area of IWRM inside water and environmental institutions?*

As an initial step, the gender approach of managing institutions should be practically studied and reflected in institutional procedures and decisions in the form of rules and procedures. I.e. any facilitation granted to working females should be given as an institutional procedure and not to be considered as a favor by the manager. At the same time female professionals should use the facilitations given to them ethically and efficiently at the institutional level and stay away from misuse

Gender perspectives should be included in organizational capacity building planning and this requires allocating staff and budgets.

There is a need for gender specialists for designing training programs and planning recruitment procedures.

Key policy makers shall encourage increasing the number of qualified women in high decision making and management positions inside water/environmental organizations.

There is a need to increase the women presentation in management boards- particularly in governmental institutions.

Training programs addressing decision making capabilities shall be provided for professionals working in institutions-in particular female professionals.

There is an urgent need for developing gender policies by concerned policy makers to be adapted by the different organizational sectors.

The Ministry of Women's Affairs, the government entity charged with empowering women, should take a more active role in ensuring that the principles of gender equality are reflected in all legislations. It should review proposed and existing laws, consult with regional and international experts, and advocate for its recommended changes in the public sphere, including the news media.

- ***In what ways can we strengthen the abilities of employers, decision makers and water professionals in dealing with the gender aspect in the area of IWRM in regard to water projects at the local community level?***

Proposed projects should focus on reducing the social and cultural barriers that negatively affect the decision making capabilities of Palestinian females and that make decision making a male task inside the organizations and in the local community.

In addition to contributing to employees appraisals, innovation practices should be directed to improve the quality of conducted projects at the community levels.

Innovation practices - even the simplest techniques in water management- at the community level should be carefully studied by decision makers for future projects in the aim of making positive use of these techniques.

Dynamic activities such as prizes, competitions and rewards – should be considered in preparing project plans to encourage positive practices and innovation at the community level.

Health considerations should be included in proposed projects due to the stated importance of the health issue within the area of Integrated Water Resources Management.

Efforts should be directed towards changing the social stereotype of having the water management issue as a male dominated issue which was revealed also in this study. Women shall

Since financial contributions by community (amounts to be paid by households to participate in projects) represent a barrier to female involvement in water projects, the materiality of these contributions by community should be studied carefully and reduced to the min in order to encourage the maximum number of beneficiaries from water projects.

Water and environmental institutions should conduct programs and activities to increase the impact of women associations or counsels on the local community. I.e., increase these counsels' involvement in water/environmental projects.

- ***How can we promote the gender-innovation aspect at water and environmental institutions?***

Professionals should consider innovative activities inside their organizations by bringing new ways of conducting their work in a manner that adds value to both organizations and the local community (conducting goal meeting projects that creates win- win situation to decision making as well as community levels).

Innovation ideas should be encouraged at the workplace in the aim of bringing new ways of conducting more effective and efficient water and environmental projects that address women capabilities and needs, suggestions include:

Involving professionals in project proposals should be from beginning and considering their experience with local community and their needs in forming projects` plans

Increasing the level of flexibility in implementing projects given to professionals in the aim of encouraging them to be more involved with the community and more able to address their practices and needs based on different roles played in the community.

Decision makers should consider the views and experiences of the implementers of projects in particular in regard to community female capabilities and needs since the later are more directly involved with local community keeping in mind that communities are not a collection of equal people. There are individuals who command different power, influence and ability to express their concerns and rights, communities contain competing, interests and different needs.

Unique innovative ideas in regard to water and environmental projects and that are initiated by employees inside their organization should be appreciated and documented by decision makers and contributors to innovation should be rewarded (I.e., employees who bring up an idea or activity that adds value should be motivated either financially, mortally or both).

- ***How can we promote the gender-innovation aspect in regard to water and environmental projects at the local community level?***

In addition to awareness programs, projects` activities should encourage the technical innovation capabilities of local community females in water management which can be reflected in daily life activities and in particular in agriculture and environmental projects. This includes stressing the following water conservation practices in irrigation which are already have been practiced by women in an innovation way mentioned earlier.

Professionals should use the maximum effort (innovative thinking) to reduce the impact of social and cultural barriers that affect the involvement of females in projects` activities.

Professionals or implementers of water projects should transfer community priorities, needs and problems to be considered in future projects by decision makers.

Implementers of projects should consider innovative ways of implementing projects related to water transport and reuse due to the importance of these issues in water management and the lack of attention given to them by local community.

Health aspects and water management should be given a priority as topic when conducting/ implementing water projects, community innovative ideas in dealing with health aspects should be investigated where positive practices should be encouraged by organizations and implementers of water projects.

Awareness efforts are needed to direct the local community use innovative ways for reducing water consumption in dry seasons.

Since there is high feeling of responsibility towards the water management issue by female community households, institutional efforts should be directed towards translating this feeling into innovative practices for reusing water in domestic and productive uses.

Dynamic activities such as prizes, competitions and rewards – should be conducted seriously and effectively by professionals to encourage positive practices and innovation at the community level and should consider community capabilities, priorities, problems and needs. These activities should focus on encouraging innovative practices by the community in regard water management in the various field with particular attention to use and reuse of water in agriculture and domestic use, personal hygiene, water transport and water and health.

# **Annex 1**

## **Literature Review**

### **1. Introduction**

One quarter of the world's population lacks clean water, one million people die annually from water-related diseases, climate change effects are threatening water availability, population growth escalates, and so will the demand for fresh water. Safe, adequate and sustainable water supply for all is one of the main social goals enunciated at both global and regional levels due to the unfavorable current conditions.

Water resources and environmental concerns have not been appropriately appreciated until the 1990s where International conferences have consistently highlighted the importance of increasing women's participation in water-related initiatives, and increasing women's involvement as managers and decision-makers. This has specifically started in 1992 where the first world summit on sustainable development (Rio de Janeiro) and the Dublin meeting (Dublin) took place. Before then, water was considered an infinite resource and environmental protection was not a priority. Changing international strategies and governmental agendas to involve the public to be responsible for the use and preservation of water has not been enhanced before 1996 at the first water forum (Marrakech), where a considerable act was taken to carry through the Dublin Principles, implement the Integrated Water Resource Management Policies (IWRM), and encourage people's participation in water/environmental projects (Poblete, 2004). One of the four principles of efficient and effective water provision incorporated into the Dublin Declaration claimed for the full involvement of women in the planning and implementation of all scheme and initiatives for drinking water and sanitation (Sever, 2005): "Women play a central role in the provision, management and safeguarding of water".

In order to clarify the current status of gender- innovation considerations within IWRM, many studies were reviewed. In general, women are still excluded from the design and planning of water supply and sanitation projects and other environmental and agricultural projects in developing countries which is a major obstacle to the improvement of their well-being. A considerable amount of researches discussed the results of considering gender issues in water and environmental projects especially in the last decade, while very few discussed gender-innovation in this field. The main argument of most published papers provide evidence showing that when women and men share the costs, burdens and benefits of water resource management, a deepened community involvement and optimum use of time, money and resources takes place (Agarwal 1997; Bridge 1999; O'Reilly 2004; 2006; Singh 2004). Global Water Partnership (GWP) (2006) stated that equity across gender and class is needed to encourage processes to ensure the coordinated development of water, land and related resources to optimize economic and social welfare to ensure sustainable water resources. Hamady et al. (2004) pointed out the opportunities offered by the gender-sensitive water projects to address inequalities between women and men in access to resources and services and in the promotion of women empowerment. The study went through building a process for gender mainstreaming in IWRM, and assured that a critical need for a gender approach in water and environmental field that aims at the fullest possible participation of both women and men in water and environmental management is a necessity. Striking a gender balance ensures that roles and responsibilities of women and men are mobilized to best effect. Creativity, energy and knowledge of both sexes contribute to making water schemes and eco-systems work better

### **2. Different Roles, needs and priorities of men and women**

Participation of men and women in water and environmental field is a crucial issue due to the difference of the actual role played by each of them. Needs and priorities may diverge because of their different tasks and concerns; whether positive or negative, and this has to be realized to create the perfect IWRM. The UNDP (2003) highlighted the dissimilarity and inequality among men and women through the following:

## **2.1 Women and men tend to do different work**

As one of the research objectives is to examine areas where women can add values in this field, the reviewed information showed that women roles in water and environmental field are crucial that one cannot neglect. They are most often the collectors, users and managers of water in households as well as the farmers in agricultural sector (Arafa et al. 2007; Al Naber and Shatanawi, 2003; Singh 2006, 2008). However, they remain among the most deprived populace. Women are the largest category of water users in the world; they have centuries of experience in managing community water resources and are a huge potential resource for the planning and implementation of water projects. The value they place on water is a vital resource in searching for the most cost-effective solutions.

In many cases women's tasks are not counted in economic analyses and considered an unpaid effort with no financial return. Moreover, biases in the educational system leads to illiteracy among women more than men. This could make it more difficult for women to participate in training activities or gain access to information (UNDP, 2003). Cultural restrictions are another dimension that restricts women's mobility and limits their participation.

## **2.2 Women have less access than men to formal decision-making, which is not efficient in presenting women's interests.**

Despite their higher levels of political participation at local rather than national levels. Contributions of men and women (labor, time, payments and contributions in kind) to the development and management of water resources are quite different. Decisions at various levels are majorly male dominant task, while benefits from projects and program resources, such as knowledge, jobs and training are not completely a male or a female dominant issue.

Considering that women are the main users of water, in rural as well as urban areas, simplifies their participation as water-scientists, engineers and policy makers. A complementary role of both men and women should be reflected on water management policies and practices since "gender" is often side-streamed rather than mainstreamed, due to lack of understanding and the will to change. Decision makers are the key players in this scope, they still ignore that this hidden chest of knowledge is one of the major keys to the success of water resources development and environmental projects (UNESCO, 2004). Involving both men and women guarantees the maximum benefit of both sides from the applied water and environmental improvements and increases their productivity and effectiveness in agriculture, water and environmental management which eventually contributes to the achievement of the overall objectives of any project. Gender strategies change the unequal relations of men and women to resources, decision-making and rights.

## **2.3 Women and men have different access to and control over land and water in general.**

There is always a question about who benefits from water resources development and has control over these benefits. There is a tendency for men to have more secure land and water rights than women. Land ownership and access to freshwater resources directly influences women's lives. Lack of access to water is a main reason for many other obstacles they face, it denies them their right to have access to formal education and show their innovation and creativity, and it restricts their considerable knowledge of water resources, including quality, reliability, and storage methods. Women in poor households and in the rural areas need water for raising small livestock and growing crops, especially in the dry season. Scope of use varies with households' locations relative to water, and with ownership of, and gender divisions in, labor and land use (UNDP, 2003). It has an immediate impact on the control of power management. This issue has many levels of concerns; lack of access to water resources directly affects children's and family health in general. According to the WHO



(World Health Organization) (2001) approximately 250 million individuals were diagnosed with a water-borne disease at the dawn of the twenty-first century. Of the 250 million, 75% of these individuals lived in tropical rural or slum-like areas. Although most of them were clearly women, and although it is now recognized that sex and gender are primary determinants of health, the health data both produced and disseminated still needs to be sex disaggregated and a gender analysis of it undertaken on a routine and systematic basis to address gender issues effectively and therefore to recognize the ethical dimension of water issues (WHO, 2001). Since water is the source of life and because safe water is a crucial component of health, this ethical issue is a matter of survival for humanity. Modern science and technology have widely contributed to alleviate a number of difficulties related to the great diversity characterizing the geographical distribution of freshwater resources throughout the world. Yet, ethical, normative values and legal tools to overcome the disparities in water access related to gender still need to be developed, especially in developing regions where women are particularly exposed to serious health risks (UNESCO, 2004; Harris, L. (2008).

#### **2.4 Women and men tend to have different domestic responsibilities.**

Women are responsible for food preparation, child care, and cleaning of the household with their responsibilities to earn incomes which are both time and mobility limiting agents. Feminization of agriculture is now spreading in many areas of the world where men are more directed to industry, leaving women do most of the work, and gain most knowledge, awareness, and day-to-day decisions. Therefore, the involvement of both of them result with a successful project and better decisions where all parties are well-informed and effective, well-organized, fair management of water resources is then satisfied. (Hamady et al., 2004).

### **3. Gender-innovation in the Arab region within IWRM aspects**

IWRM in the Arab region is not a consistent course of action, there is a clear disparity among the countries in dealing with gender issue within IWRM as gender relations in the Arab world interact with age, socio-economic status, religion, ethnicity and race. Very few adopt a participatory process and a gender perspective culture is still deficient in the area.

There is limited knowledge on the distinct role of women as water users in the region, but a better background exists on women's role in accessing water. Innovation practices by Arabic women are not expressed clearly in any existing literature; however, women's practices in agriculture have been expressed in several studies which can be used as indicators of innovation aspects. A successful implementation of any water and environmental project needs a general understanding of the current situation. Lack of conceptual understanding of gender and its relation to IWRM is a main factor leading to this holdup, lack of Gender policies and laws directing water/environmental institutions and projects with deficient consistency of disaggregated data on gender and water are also main factors affecting the current scheme.

In the Arab countries, especially in developing ones, great efforts are needed to bridge the gap between women and men in order to involve women into planning, implementation, and monitoring processes. Especially in the Arab world, women's work is unrecognized and unappreciated despite their major contributions to water and environmental management, they are the foremost victims of water crisis and agricultural projects that men benefit from, especially training and extension service, although women are performing the majority of work and their indigenous knowledge are not taken into consideration.

Although women's share of the total labour force in the Arab World increased in the last decade and was greater than any other region, the role of Arabic women in water management has been mostly neglected and limited information is available in this area. regardless of women roles in conveying knowledge, attitudes, and practices that promote efficiency, sustainability, conservation, and water pollution prevention, they face the same limitations women everywhere face; they suffer from unreachable decision making positions on both

local and national levels, their participation is not active and rather representative and rhetoric due to unsustainable donor-led gender units. Environmental projects and specially agriculture remains the largest employer of women. Arafa et al. (2007) indicated that women, as paid and unpaid labour in countries such as Egypt and Morocco, constitute over 50% of the total labour engaged in agriculture; while in Sudan, Tunisia, Syria, Lebanon and Iraq, they provide at least one third of the labour required to sustain agricultural production. The roles played by women and men are different; adult women are responsible largely for daily agricultural activities, while men are in charge of seasonal ones. But both cooperate in major activities such as harvesting. Under the dominant current status of water scarcity in the region; women are the first to be affected by water depletion by losing the competition between their need to secure water for domestic uses and men's desire to develop irrigation for cash crop production.

On both local and national levels in the Arab world; there are hardly any policies to address gender issues within IWRM. The integration of a gender perspective will make water policies more balanced in addressing the demand for water. Change itself is a long term process, and strategic long term capacity development is needed to build the capacity for gender and social analysis which is one of this project's objectives.

Balance can only be possible where government bodies responsible for water establish an effective policy and legal framework to allocate and manage water resources in ways responsive to national, social and economic needs and to the long-term sustainability of the available water resources (Ibrahim, 2004). There is a need for an intensive effort to include gender perspectives in water policies of which budgets for gender mainstreaming and significant advocacy must be part of the those policies activated by governments, international agencies and donors.

The Arab culture, as well as other cultures, provides women with less access to opportunities such as education, participation in the formal organizations, and administration of water management. In most cases women are not perceived as credible decision-makers, can not control other productive assets (e.g. land, pumps, livestock), and have limited or no access to extension services (mostly delivered by men and for men).

Many studies around the Arab world showed the current situation about gender integration within water and environmental projects, women in Morocco for example are generally employed at lower professional levels than their male counterparts in water management facilities, encouraging girls to study and continue their professional training is needed to earn their positions in this field rather than hiring them as water and environmental professionals only to increase their numbers against the numbers of employed male (Arafa et al, 2007). Egypt, Jordan and Tunisia differ from Morocco in this area; they have well recognized entities with comprehensible objectives in advancing the status of women in IWRM. Arafa et al. (2007) showed that yet, in most other countries, there is a clear marked gender division of labour in the concerned water institutions. Men are predominantly occupied in hardware jobs, and women are represented in the software, namely the secretarial, administrative and librarian jobs. Most senior positions, head of institutes and main departments of the ministries are headed by male employees and there is rare representation of women employees in decision-making posts of sub-departments and or policy-making meetings. As a result of the gender division of labour, it is mostly men who work as extension staff and go out to the field to meet with farmers and convey new knowledge and information to them. Lack of transportation and accommodation facilities in the field further hinder professional women from engaging in the field.

Jordan can be the best indicator for the local Palestinian situation due to the clear resilience in both cultures. The status of women in Jordan has improved significantly for the last two decades as reflected by the increase in their participation in the labor force, high life expectancy and improvement in their education attainment. Their involvement in IWRM now is much better as manager, decision makers and extension agents, women involvement in water resources management and conservation has been recognized lately as a vital factor for



conserving the precious water resources of Jordan. They need encouragement and support to continue contribution effectively to water and natural resources conservation efforts (Al Naber and Shatanawi, 2003). Jordanian women play an important role in managing water in the county. The country suffers from water scarcity, and conceivably this is the largest area women showed their creativity in their high capacity of coping with drought and sustain their home gardens by simple and innovative practice, such as focusing on hand irrigating short season vegetable crops in winter, and using different methods for mulching, such as plastic sheets, weed residues, wood chops and fabrics to maintain soil moisture. Preventing and minimizing water evaporation by planting seeds deeper in the soil, where moisture is better, and reusing greywater from the kitchen to irrigate their gardens. When planting seeds, women learned to reduce the distance between seedlings to protect the bare soil from direct sun exposure and conserve moisture.

Al Naber and Shatanawi (2003) studied 100 families in Jordan and explored different aspects related to women situation and role in agriculture and natural resources projects. The study showed:

- Women have almost no access to economic resources. Only 3% of women are landholders and men own the majority of animals.
- Women who have access to credit are either salaried government or private organizations employees relying on their salaries as collateral, or they rely on a male to guarantee the loans.
- Women form 20% of the agricultural labor force and 34% of all rural women (The majority are expected working in agriculture) are unpaid family workers.
- The majority of women (75%) working in agricultural organizations (public and private) are at the lower end of the salaries scale earning less than 100 JD per month versus 41% of working males.
- Males benefit from the majority of agricultural projects especially training and extension services.
- Females are performing the majority of works in agriculture like weeding, fruits collection and others. Women are the principal caretakers of animals and marketing is usually carried by males.
- Women suffer in agriculture from deprivation or lack of access to socioeconomic resources. Illiteracy rate of women in agriculture reaches 70% (farm labors).
- The rate of female headed-households is 19% in agricultural areas covered by the field survey and the rural female unemployed rate is 21%.
- Women also suffer from a great lack of access to decision-making posts either on the local or national level.

Some ministries, governmental organizations and NGOs in Jordan have established gender units within their organizational structures, which contributed to better management of water resources by facilitating greater participation of women and other local community groups. Water policies must reflect women's needs, priorities and rights in relation to all possible water-use options. A gender strategy should aim at balancing different water issues through an IWRM approach. National water policies need to identify the relevant indicators for monitoring progress in achieving gender-related goals.

Egypt has a leading role in promoting projects and activities related to gender issues such as participation in irrigation and drainage management and building capacities of the Ministry of Water Resources and Irrigation (MWRI) staff and farmers in gender mainstreaming. Egyptian key actors significantly established a Policy and Coordination Unit for Women in Agriculture (PCUWA) within the Ministry of Agriculture to respond women's concerns and needs in agricultural policy and practice (Arafa et al., 2007). Ibrahim (2004) indicated that in June 2004 Egypt developed its National Water Resources Plan (NWRP) "Water for the Future", which uses a multi-stakeholder approach. The Stakeholders include all water-related Ministries, users, NGOs, academics and the private sector. The plan includes a section on Gender issues under the enhancement of stakeholder involvement. It included the following:

- Equal opportunities for men and women with regard to involvement in discussion and decision-making on water use and resources issues, dissemination of information and communication, active participation in decision making bodies dealing with water resources and irrigation management.
- Equal benefits for men and women deriving from effective and efficient water resources management.

Yemen was another country examined in this area. Yemen is putting into practice the newly established Water Law, ratified in July 2002 that acknowledges the value of traditional water rights. Nevertheless, the law never explicitly tackles the issue of gender in water management, although some women group representatives were involved in the preparation process (Ibrahim, 2004, Pelat, 2006). The absence of women participation in this law was primarily responsible for the legislative gaps addressing women. The Water Law, supposedly not affecting women directly, leaves institutions and future projects free to deal with the “gender issue” when and if needed. The Yemeni National Water Resources Authority (NWRA) and the Ministry of Water and Environment (MWE) have neither gender units nor technical women in their staff employees. Yet, The Ministry of Agriculture and Irrigation (MAI) has a General Directorate of Rural Women (GDRW), created in 2000, and is present in each governorate through its local branches to deal with different issues in IWRM and female professionals and provide capacity building of its staff in the different regions on gender analysis, especially that authorities are aware of the fact that women in Yemen are the ones that daily organize water allocation for the various needs of the house and the family and evaluate both quantity and quality and prioritize water for drinking. Arafa et al. (2007) showed the innovative aspects performed by Yemeni women in the area of water preservation on one hand through keeping water for hygiene, and using the remaining quantities for washing food, cleaning the house and watering animals, and reusing the remaining amounts of water to irrigate home grown plants, and the area of water quality on the other hand through boiling or filtering water for drinking, and their high sense of awareness regarding water-related diseases. Yemeni women devote most of their daily activities in rain-fed agriculture practices and livestock rearing that lead many of them to develop knowledge in water and soil management.

Palestine is a special case of a developing country facing occupation. The system in Palestine needs to develop strategies in order to attract society’s attention for the contribution of women in economic liberation within water sectors that affect the overall water policy in the country.

For Palestinian women, the political situation since the first Intifada in 1987 has created a new way of thinking regarding women role in the various sectors including the environmental sector. Due to having killed husbands and/or imprisoned sons, fathers and brothers, the Palestinian women became capable of taking family decisions and leaving home for gaining living. In agriculture for example, she plays large roles in almost all activities including farming, planting, irrigation, livestock feeding and medication. However, despite these trends, and the existence of women in almost all society sectors, there are still various constraints on her progress in society; her work is still not documented in the labor force statistics in many sectors, her achievements are still hidden in the shadow at various communities and above all she still faces different challenges when talking about her needs and priorities in water/environmental field as it is conceived as her duty to pay efforts toward this area without getting in return.

According to a study conducted by the Palestinian Women`s Research and Documentation Center PWDRC, reasons behind low women involvement in the Palestinian labor market lie in four categories, these include: Economical environment in Palestine, legal frameworks, working conditions and social and cultural factors (PWDRC, 2009). Due to these factors and the stated challenges, women capabilities are still ignored within the pyramid of science, innovation and Technology.

In Palestine, women are seen active in all societal sectors, they are forming charitable associations, participating in the nationalist struggle, and working for the welfare of their community. In the water/

environmental sector they are innovative and proving considerable capabilities in dealing with the water issue and have high sense of responsibility towards water resources. They are concerned with water reuse issues and worried about health considerations. Nevertheless their contributions in the water sector regarding domestic and productive uses of water are still not efficiently documented and their innovative ideas and practices in water management are not encouraged. Having women on project teams does not necessarily mean that gender issues will be applied consistently and sufficiently, but does facilitate the implementation of the approach.

A lot is still needed to investigate the gender aspect and innovation capabilities at decision making level inside environmental institutions, at implementers of environmental projects and finally investigate and promote the gender aspect and innovation capabilities at community level as the major beneficiary from the environmental projects that are being conducted by planners and decision makers.

Palestine in specific, and Arab countries in general have witnessed social changes for the last three decades with respect to women. These changes are driven by social and economical. The status of women in the region is improving in certain fields such as education, role in planning, contribution in execution and implementation levels, and evaluation of different development projects. Women employees on both institutional and community levels are also increasing in numbers as professional engineers, service providers, farmers, implementers of water/environmental projects as well as decision makers in different governmental and non-governmental organizations. Although their presence in the ministers, parliament, advisory political councils, administrative local councils is still very low, nevertheless they managed to increase their acceptance in the region. Women's power in controlling the family decisions should not be neglected although men in the region may not admit this role.

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## Annex 2

### Survey Results and Conclusions

### Gender-Innovation-Water: Plugging the Hole

#### Background

Development cannot be effective unless it includes the other half of the population (i.e. women). When social, political and economic factors contribute to the decline of the development process and when resources are scarce, well invested human resources are the most vital resources. Each culture has its own way of shaping female and male roles in the society. To pursue a harmonious development of national and regional agenda, gender perspectives in water sector must ensure the interests and needs of women as well as men.

Women's considerable knowledge of water resources, including quality, reliability, and storage methods is too often not taken into account by decision makers who still ignore that this hidden chest of knowledge is one of the major keys to the success of water resources development and irrigation projects (UNESCO 2004). It is now recognized that the exclusion of women from the design, planning and decision-making of water supply and sanitation projects in developing countries is a major obstacle to the improvement of their well-being. There is an urgent need for promoting the role of women and their innovation in the protection of natural resources as well as in water management.

For Palestinian women, the political situation since the first Intifada in 1987 has created a new way of thinking regarding women role in the various sectors including the environmental sector. Due to having killed husbands and/or imprisoned sons, fathers and brothers, the Palestinian women became capable of taking family decisions and leaving home for gaining living. In agriculture for example, they play large roles in almost all activities including farming, planting, irrigation, livestock feeding and medication. However, despite these trends, and the existence of women in almost all society sectors, there are still various constraints on her progress in society; her work is still not documented in the labor force statistics in many sectors, her job as seen as a need not necessity, her achievements are still hidden in the shadow at various communities and above all she still faces different challenges when talking about her needs and priorities in the society. These needs and priorities are still not sufficiently addressed in many aspects including water and environmental projects.

Despite having five female Ministers in the current government of the Palestinian Authority nowadays (Tourism, Social Affairs, Women Affairs, Education and Culture), the Palestinian woman is still facing various challenges related to the workplace as employed females and to the local community as female households. These challenges



are often related to social, cultural, economical and stereotype aspects that govern the way people believe and behave and that lead to neglecting women needs, priorities and opportunities in the various sectors including the water and environmental sector.

According to a study conducted by the Palestinian Women's Research and Documentation Center (PWDRC), reasons behind low women involvement in the Palestinian labor market lie in four categories, these include: economical environment in Palestine, legal frameworks, working conditions and social and cultural factors. Due to these factors and the stated challenges, women capabilities are still ignored within the pyramid of science, innovation and Technology (PWDRC, 2009).

As reaction to donors' requirement, the "gender" word is seen in almost all types of environmental projects in Palestine. Some of these projects focus on gender equality, others on gender and poverty, and others on gender and water safe use and sanitations ...etc. However, despite the existence of gender considerations in these projects, it is still neglected that focusing on the gender issue including innovation in one area will eventually have impacts on other areas and is also impacted by other societal dimensions such as culture, politics, and personal dimensions. Gender linkages with societal updates are rarely seen altogether in environmental projects.

In Palestine, there is a Lack of conceptual understanding of gender and its relation to water and IWRM. Gender is not included in water laws and policies and projects, Lack of consistent, relevant and verifiable (disaggregated) data on gender and water. The role and rates of women in environmental sector in Palestine has been so far mostly neglected and limited information is available to fully understand the role women play in achieving (as an example) water use efficiency and sustainability in spite of the fact that women convey knowledge, attitudes, and practices that promote conservation, pollution prevention, and sustainable consumption of water.

This research paper will focus on involvement and influence of women in innovation processes within Integrated Water Resources Management (IWRM) in Palestine. It aimed to clarify the current status of the gender aspect at organizational and community levels, to direct the attention of planners and decision makers to the importance of considering gender perspectives inside environmental institutions and at community levels, in addition to promoting the women innovative capabilities in regard to water/environmental projects.

Moreover the paper investigated the gender aspect and innovation capabilities at decision making level inside environmental institutions, then, moved to the implementation level where it addressed gender aspects and innovation capabilities among implementers of environmental projects and finally investigated and promoted the gender aspect and innovation capabilities at community level as the major beneficiary from the environmental projects that are being conducted by planners and decision makers.

## Study area

The study area for the community level included was 10 villages located in the eastern part of the West Bank of the Jordan River Rift Valley in Jericho and Tubas Governorates (Figure 1) (Jericho city, Froush Beit Dajan, Jeftlik, Al A'uja, Al Nsaryya, Al aqrubania, Tubas, Ein AlBaida, Tammun), and has a population of about 65,000 at present. The climate in the study area is categorized as arid to semi-arid zone; with annual average rainfall ranging from less than 100 mm to 400 mm. Water in the area is presently sourced from spring water and ground water.

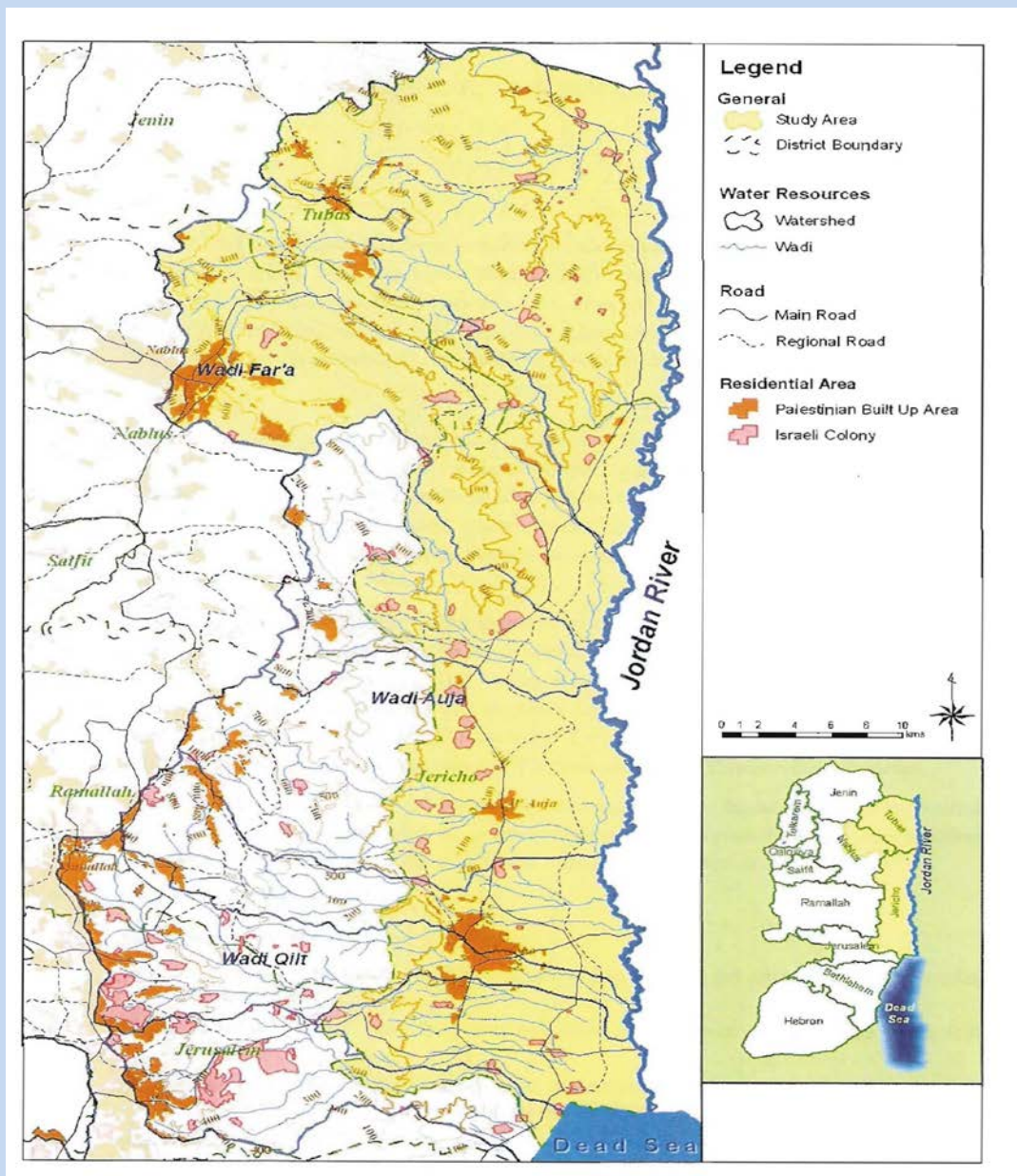


Figure 1. Location map for the study area

The northern Jordan Valley is rich in agricultural land. A large number of small communities reside in this area, many of them Bedouin or fellaheen (farmers) dependent on herding livestock and agriculture for their livelihoods. A high incident of poverty is observed in the agricultural sector of the Study Area. The deep poverty rate and the poverty rate of the agricultural sector are 29.7 % and 50.4 %, respectively (JICA 2008). With regard to economic activity, women have limited job opportunities in the study area which is mainly in agricultural sector, while men have access to other kinds jobs (JICA 2008). Table 1 presents full or partial participation in activities by sex

**Table 1 Full or Partial Participation in Activities by Sex (Jordan River Rift Valley Area):**

	House work (Cooking, Cleaning, etc.)	Management of Family Expenditure	Agriculture Activities	Small Scale Business (Self-employee)	Work at Office (Employee)	Work at Office (Private Sector/ NGO)	Handicraft Making for Selling
Male	17.4%	95.2%	96.2%	6.3%	7.8%	62.8%	3.4%
Female	90.9%	81.2%	77.3%	1.0%	1.9%	0.0%	8.6%

Source: JICA (2008)

Palestinian farmers face challenges to mitigate decreased water availability predicted to be a result of climate change. Agricultural livelihoods, particularly within rural rainfed farming communities, are always directly affected by rainfall and drought incidence. However, their climate vulnerability is also attributable to: Israeli restrictions on movement and access to land, resources, and markets; a weak institutional framework; and an increase in farming production costs (including water supply) along with decreasing profits. The construction of the separation barrier/security fence, the expanding presence of settlements and settlers roads, and the imposition of restrictions on movement and access have jeopardised the watering and seasonal migration of herds, reduced grazing land and in many cases prevented access to closer filling points. This has forced herders to purchase water from more distant (but accessible) filling points, incurring higher transportation costs.

## Methodology

Three structured questionnaire were prepared and administered to the sampled respondents, by face to face interviews within the case study area. The following were the target group:

- Decision making level which included decision and policy makers at different institutions working in the water and environmental fields. The questionnaire is shown in Annex 2. The institutions which were survey included governmental, nongovernmental organizations, municipalities, ministries, research centers and other water and



environmental institutions - that conduct water projects in the West Bank of Palestine. Filling these questionnaires took the form of structured interviews and included 20 decision and policy makers.

- Water and environmental professionals level, that included professionals directly involved in implementing water and environmental projects. The questionnaire is shown in Annex 3. The project research team interviewed and surveyed the staff of the same institutions mentioned above of which decision makers were also surveyed to get the full picture for better analysis of results. Filling these questionnaires took the form of structured interviews and included 50 water and environmental professionals.
- Community level that included men/women households that are benefiting and implementing water and environmental projects. The questionnaire is shown in Annex 4. Statistics specialist was consulted from Palestinian Central Bureau of Statistics to revise the three levels questionnaire, train research assistants on filling questionnaires and analyze data findings. 100 questionnaires were distributed and filled in different parts of the case study area.

## **Data analysis and presentation**

### **Background characteristics & main indicators by gender:**

#### **A. Decision maker's level**

**Gender distribution:** One third of the 20 interviewed decision makers were females while two thirds were males indicating a low number of females in decision making positions. This was mostly obvious in governmental institutions that do not consider females in high management positions.

**Educational level and work experience:** All interviewed decision makers are holding bachelor or above. Moreover, the majority of them had 10 years and over of experience in their work.

**Females in management positions:** At water and environmental institutions two thirds of the organizations have less than 50% female employees, while one third only have 50% and above of female employees. 25% have females in key management positions.

**Gender Understanding:** No significant difference between both sexes regarding understanding of the gender concept in the workplace. There is a percentage of 17% of the male decision makers who still do not feel that workplace requires gender understanding.

**Gender Policy:** 25% of those who had positive understanding applied gender policies but are still not formal in their organizations, this result indicated a big gap between gender understanding and adopting gender policies.

**Female participation in management boards:** All females decision makers stated that their institutions apply reflexive gender considerations and consider the gender issue in forming project boards; 60% of the institutions represented by 15-20% females of the board members, while 40% of the organizations indicated that the share of the females in their boards in 50% and above of the total board members indicating a low females participation in management boards.

**Training on Gender issues:** Half of the males' decision makers had received gender training compared with all females. In term of whether this training help in changing gender issues in the workplace, 50% of the trained males believe that training helped them while all females indicated that this training had helped them. These results lead to a conclusion that focusing of gender training on females and their needs and ignorance of males' needs which reflect a misunderstanding of the gender concept and its demonstration only from females' perspectives which shows a weakness in the gender approach. In addition there is an indication that females are more serious in considering training outcomes than males do.

**Presenting gender strategy in annual plans:** All respondents in the organizations (males and females) believed that applying gender concepts will lead to more effective water project. However, only about half of them had presented the results of gender strategy monitoring and evaluation in their annual plans. This indicated the gap between believes and the practices.

**Gender reflexive procedures:** Half of the organizations consider gender reflexive procedures in the training & development and promotion opportunities for each as the males' decision makers had stated, while about 58% of their organizations consider the family-friendly policies and about 42% of them consider flexible working. For the female decision makers; half of their organizations consider gender reflexive procedures in the training & development, about 17% of them consider the promotion opportunities, 67% of them consider gender reflexive procedures in the family-friendly policies and 33% of them stated that their organizations consider gender reflexive procedures in the flexible working.

**Perception of female related aspects:** For the negative perception that decision makers may perceive towards some female related aspects in the workplace, it was obvious that male decision makers are much more affected by the statements shown in Table 1 and thus this negatively affects their perception of females' performance capabilities:

Table 1

Statement	Gender	Percent			Total
		Always	Sometimes	Seldom	
A female employee is pregnant and you think need of a replacement for the maternity period	Male	36.4	36.4	27.2	100.0
	Female	0.0	83.3	16.7	100.0
A female employee has an urgent 2 days vacation to stay with her sick baby	Male	41.7	33.3	25.0	100.0
	Female	16.7	50.0	33.3	100.0
A female employee is no longer able to work extra work hours because of her new home duties after getting married	Male	66.7	8.3	25.0	100.0
	Female	33.3	33.3	33.3	100.0

All decision makers support the idea that females are able to make decisions and capable for that, however, about 58% of female decision makers agree that community females' decisions are more based on emotions. Female decision makers believe that lack of ownership over resources also decreases community females' chances of taking decisions in the water management area.

### B. Professionals level

**Gender Distribution:** The majority of professionals were females who consist about three quarters of them (72%), while the males were about 28% of them indicating larger number of females at the professional level.

**Educational level:** The educational level for both sexes was not less than Bachelor, this indicate the high level of those who had been interviewed, while the majority (63%) of the males educational level was masters, the majority (60%) of females having bachelor. Moreover, the absolute numbers revealed the favor for females.

### C. Community households level

**Gender Distribution:** More than two third of community households were females and this may explained by meeting the females in their households who most of them are not working, the males consist about one third of the respondents although all of them are workers. Here, it should be noted that non-working females who filled the agricultural/irrigation related questions are practicing agricultural activities on a non systematic work basis.

**Working/non-working participants:** The results showed that the female participation rate in labor force including the agricultural sector is still low in comparison with males. While all of the males are working, only 22% of the females are working which means more than 3 quarters of them are not working. It is not clear what reasons lay beyond their being jobless, either they are not looking for job or they are in the labor market but they didn't succeed to find suitable job for them.

**Educational level by Gender:** It is noticeable that the education level for the reviewed females in the households is higher than the males, the results showed than no male has more than high school education, while more than one third of the females have bachelor and above. This may lead to conclude that educational level is not the main

factor in being active in the labor market or in the process of decision making although we haven't enough information to analyze the actual status for such situation.

### **Major dimensions of the study**

This section investigates the intersection points among the stated three levels as key stakeholders in water and environmental projects in regard to the following dimensions:

- 1- Awareness
- 2- Behavior
- 3- Needs
- 4- Perception

#### **Dimension 1: Awareness**

##### **Institutional Level**

About 89% of decision makers compared to 86% of professionals stated that they have considerable understanding of "gender" in relation to workplace. However, this understanding did not level up to the developing gender policy where the majority of surveyed organizations that have understanding of gender issues (about 75%) do not have gender policy in the workspace. Decision makers' personal definition of gender considerations in the workspace reflects discrepancies and fragmented gender concepts and this is due to lack of gender formal statements (i.e. policy) and gender representation in project boards (i.e. women representation constitutes about 36% in project boards). From the professionals' perspective, gender consideration is more matured and specifically identified as opportunities, accessibility to resources including reaching decision makers and understanding women needs.

Decision makers strongly encourage innovation practices in the workplace and innovation plays important role in the appraisal of employees. The stated definition of innovation from both decision makers as well as professionals clearly reflects a mature understanding of this concept. However, decision makers did not translate this sound understanding of innovation into practical steps in terms of capacity buildings (training, learning) for their employees (less than 44% provided training on innovation to their employees). The perception of professionals supports this finding where they believe that women are least favorable in the workplace when it comes to the issue of training/development or recruitment/selection.

The innovation aspect is not approached by male/female decision makers in a manner that contributes to the improvement of water projects; it is mostly tied to internal appraisal inside organizations with less impact on the local community in the conducted projects.

Regarding innovative practices that were initiated by females, these practices are more focused on the awareness aspects than processes (ways of doing things) aspects as

perceived by their managers. On the other hand, innovation practices that were initiated by males have direct impact on beneficiaries. This finding does not convey that females are less innovative, but rather identifies lack of attention and lack of flow of relevant information from bottom (community level) to top (decision makers). The majority of professionals (90%) are interested in using innovative techniques in doing their job. In addition, about 76% of professionals often consider innovative techniques inside their organizations compared to about 83% often consider innovation in dealing with stakeholders.

As stated by decision maker respondents, common female professional's innovative initiatives included the followings:

- An engineer noticed a problem in one of the pumps in the wastewater treatment plant and warned the workers there about it in the right timing to solve it which resulted in avoiding an environmental disaster.
- An environmental engineer has developed new environmental awareness material for the students in schools.
- A water professional has initiated the idea of land reclamation to be done by women and to make it a non male dominated area.
- A water professional came up with idea of home gardening along with the food production to be done at the same time (two ideas in one time).
- There is no innovation in governmental sector! but if I must answer I would say females are more innovative in labs.

However, common male professionals' innovative initiatives included the followings:

- Using of metallic reservoirs for water harvesting instead of building concrete ones for each farmer.
- Initiating a complete study of the sanitation network, census of manholes and damaged networks to determine priorities.
- Strengthening the idea of fish farming ponds in Jericho to be included in certain projects as income generation projects

## **Dimension 2: Behavior**

### **Community Level**

High sense of responsibility community females show towards water resources and water saving; (75 % females feel they are responsible or water resources and management).

The majority of households (about 94%) consider the available water as of good quality, purity, and color. However, most households consider the availability of water as seasonal. Women are responsible for the water management in the house and have a larger role in water conservation.

Regarding procedures to strengthen female's decision making capabilities in water projects, greater emphasis is given to training programs and awareness, but less emphasis on policies and identification of priorities, demands and needs. Regarding innovative practices, greater attention is given to water saving and hygiene practices (Wells sterilization and saving water for agriculture) by community with less innovative thinking in regard to water transport (despite its importance and its burdens especially on community females) and water reuse .

Concerning the factors that influence the attitude of female household, it is obvious that females influence the attitude of each other in the first place, i.e females listen more to their neighbors and other females, however, in this area women associations didn't play a significant role in affecting or changing attitudes of community females. Future studies should investigate this question in greater details to identify what comes under "other".

Regarding the use of water in agriculture, about one third of surveyed households give more priority to water usage in agriculture than to domestic one. The majority use modern irrigation techniques (about 96%); however, women rely significantly far less on modern irrigation techniques than men. Although women are given less opportunities, they are not considered as less productive in agriculture than men. Water management is largely men's job in agriculture (78%).

Households rely on different measures to prepare themselves for water interruption, mainly feeding the collecting wells (if any) from the water network (40%) in addition to avoiding activities that consume water and storing quantities of water in gallons (17% for each). However, households rely less on reducing water consumption in dry seasons (10%).

In the case of water interruption - for domestic work, households exercise other measures that include agricultural ponds (56%) and buying water (25%). However, households marginally postpone the actions and activities that consume water in case of water interruption (6%), or re-utilize water from car wash (6%).

Women spend more water than men for health facilities such as shower and cleaning (about 98%) however this percentage does not reflect female consumption only since it includes male consumption in certain areas (cleaning clothes and house). The majority of households feel that water projects consider gender aspects (about 96%). However, two out of every three women feel underestimated or abused due to their gender in water projects revealing a weakness in approaching the gender perspective in water projects.

All surveyed women do not mind participating in or attending any activity for water project that involve the opposite sex which contradicts with the shyness concept attached to women which is revealed in literature. This can be due to the special political situation that is shaping Palestinian women's lives and that make them freely communicate and deal with the opposite sex.

Three out of every four women feel of responsibility towards water sector mainly in water conservation and regular maintenance of equipments to prevent water loss. Other tools include using kitchen and shower water for other uses such as home gardening and home cleaning, collecting rain water and early wake up in the morning for filling tanks. As innovative trials, community household's innovative practices are shown in Table 2

Table 2 Community household's innovative practices

Case	Women	Men
Preventing Measures in case of pollution	Sterilize water from the well or disinfecting the well	Boil water before drinking
In the case of technical malfunction related to water at home	Deal with technical malfunction by closing the main source, or by hiring a professional to work it out (regular maintenance of equipment)	Deal with technical malfunction by trying to fix the malfunction by themselves
Recurrence of showers compared to water availability	The shower frequency of women is not affected by water availability	Men are directly affected by water availability, men are willing to reduce their showers per week to preserve water
Water management	Try to use water for cleaning in certain days of the week due to water irruption.  Use kitchen water for washing the car or cleaning the floors  Use grey water for irrigating home gardens	Use water conserving techniques (e.g. pieces fastened at the water taps to reduce water flow).
Agricultural Aspects	Use grey water for irrigating house gardens.  Focus on planting seasonal crops instead of long-lasting crops to reserve water.	Use fertilizers to maintain humidity more than women.  Reduce the distance between the seedlings to provide the soil with sufficient shadows to maintain humidity.  Plant the seeds to great depths inside the soil to provide maximum humidity.



		Store water in agricultural ponds.
	Men and women cover the crops with plastic sheets, weeds, cloths, woods, and rocks	
	Men and women irrigate the plants early in the morning to avoid evaporation	
	Men and women reduce the planting of water consuming crops in the summer and increase them in winter	
Preparations for the case of water interruption	Store quantities of water in gallons as a reserve to be used in the water interruption period	Feed the collecting wells (if any) from the water network to compensate for the shortages created when water cuts off during the week

Moreover, within the stated areas of sense of responsibility, female community households practices for water responsibility in agriculture include common innovation practices that are being utilized in other countries with similar climate characteristics- such as Jordan which includes:

- Planting short season vegetables instead of long season crops that requires larger amount of water.
- Using different materials for mulch, such as plastic sheets, weed residues, wood chops, fabrics, stones...etc.
- Planting seeds deeper in the soil, where moisture is better, and the seeds will be away from the sun.
- Irrigating the trees through a burying a bottle with hole around close to the roots. The bottle will rinse the water to roots without losing any quantity.
- Reducing the distance between seedlings. This will form a shade and will protect the bare soil from the sun and will conserve moisture when planting seeds.
- Putting the seeds in the soil and surrounding it with a bed of dry weeds or straw which will keep moisture for the seeds and the new plants for longer time.

However, despite being practiced by female farmers, the study reveals that these practices are considered male dominated practices where women roles are not usually documented.

As stated by decision maker respondents, common female professional's innovative initiatives are indicated in Table 3

Table 3 Common female professional innovation practices

An engineer noticed a problem in one of the pumps in the wastewater treatment plant and warned the workers there about it in the right timing to solve it which resulted in avoiding an environmental disaster.
An environmental engineer has developed new environmental awareness



material for the students in schools.
A water professional has initiated the idea of land reclamation to be done by women and to make it a non male dominated area.
A water professional encouraged the idea of man/women meetings with no restrictions.
A water professional came up with idea of home gardening along with the food production to be done at the same time (two ideas in one time).

### **Dimension 3: Needs**

Training on gender issues has contributed moderately to change of behaviors towards gender issues (about 70%) but failed to materialize this change into organizational formal manner through the development of gender policies. Only about 35% of surveyed professionals received training on gender issues where about half of them do not think that the training had impacted their behavior towards gender issues in the workplace. The vast majority of professionals (83%) do not deal with gender specialists in water projects and the reason behind such lack of interest is the negative perception of professionals on the role of these specialists (only about 15% think that the role of gender specialists is important).

All surveyed decision makers believe that applying reflexive gender concepts will lead to more effective water project. Theoretically, gender issues are well considered in water project proposals. However, the stated major reasons for considering gender approaches in water projects uncover lack of common understanding to core reasons behind such direction. The stated reasons are targeted towards donors and special interest groups rather than engagement of grassroots gender participation in water projects to cause a positive change on the ground.

About one in every three water projects, the targeted population including males and females are consulted to identify priorities and needs through mainly meetings and needs assessment. However, less than 30% of projects had involved organizations with interest in gender issues. The majority of consulted organizations belong to the non-governmental sector. Regarding participation of community households, the findings indicate sufficient consultation (about 82%) during the preparation and project proposal.

On the other hand, about 66% of professionals believe that gender needs in water projects is identified in the needs assessment of projects, 76% believe that gender needs are also considered in accessing project information and facilities. In addition, according to professionals gender needs are also taken care of regarding the timing arrangements for training, activities, and training itself.

### **Dimension 4: Perception**

The approaches of organizations in the application of gender reflexive procedures, emphasizes such alleviated direction where these procedures are being applied in modest way. This argument is supported by the ordinary favorable support to mixed gender teams (about 66%) and the negative perception towards female employees and their needs in the workplace (i.e. maternity leave, urgent vacation, balance between home duties and work). Regarding professionals' work preferences, there is no clearly defined direction towards their favorable way of doing the job in terms of teamwork or alone. However, professionals support the argument that working in heterogeneous teams, are more productive (63%).

The perception of decision makers on constraints that hamper women to exercise a leading role in work environment is almost split where 44% in support of the argument that such constraints do exist while 56% believe that there are no constraints. The absence of common consensus on this issue identifies a key finding that necessitates great assessment of designated programs that aimed to advocate women roles as decision makers. The stated constraints are general and mostly attached to society and culture rather than to specific workplace related measures. On the other hand, about two third of professionals believe that there are constraints but the majority of these constraints stems from lack of empowerment mainly accessibility, reach ability to decision makers, and availability of resources.

The major barriers to household involvement in water projects are social, culture, and financial ones. The perception of decision makers regarding the decision making capabilities of community females emphasizes physiological (role of female's emotions in making decisions) as well as material aspects (lack of resources/ownership).

According to professionals, female households show interest to participate in water projects and prefer to deal with female field representative. However, female households are less proactive in their participation and there is average participation of females who own farming land.

More than 70% of professionals believe those female households are effective in managing water resources. Also, professionals believe that men have negative attitude in working with opposite sex (44%) compared to (24%) for women.

The practice of conducting activities to encourage innovative practices in relation to water saving and reuse in target project communities (Prizes, competitions, rewards) is weakly utilized (only about 40%).

The majority of women (92%) expressed their willingness to participate in a water project. However, the main obstacle that prevents women from active participation is the lack of experience (82%). On the other hand, factors that encourage women to participate in water projects include the needs for such participation, family support, and the cost associated with such participation.

About three quarters of surveyed women have not participated in water projects. For those females who participated in water projects, all of them believe that they benefited and it was a source of experience. Water conservation is exercised in traditional ways only mainly cleaning of the house. The type of help received from third parties is mainly in technical (55%), financial (36%) and managerial (9%). The water health consciousness is exercised mainly in the practice of sterilization of wells. In the same context, three out of four believe that they are in need for water projects that focus on health perspectives.

## **Conclusions**

Based on the conducted literature review, the findings of the three stated surveys (decision making, water/environmental professionals and community levels), and the programmed interviews with key decision makers in Palestine, the followings can be concluded in relation to the previously discussed four dimensions (current situation):

### **Dimension 1: Awareness**

Despite the stated understanding of gender concepts at both decision making and professionals levels, the issue of “different needs and priorities among women and men, because of their different tasks, roles and concerns”- was not considered by the majority of decision makers and professionals revealing a need for more serious gender awareness for this level.

There are no formal gender policies at the water and environmental organizations, drafts for policies do exist but formal policies are not announced at any of the surveyed institutions in particular governmental institutions.

Daily interaction of professionals with gender issues either at peer level or in the community has contributed significantly to relevant gender considerations at the community level.

The recruitment and selection of women in management positions is an entrance barrier due to the perceived physiological female aspects that could affect her performance later; while training and development is a work environment barrier (ability to compete, get promoted...etc). These two barriers require intervention of decision makers and institutional policies. However, the role of professionals in the elimination of these barriers is crucial because of their reachability to decision makers and their role in the development of project proposals where gender consideration should be highlighted.

Innovative practices initiated by females at the professionals level are more related to awareness rather than ways of doing things having different impact on project's beneficiaries than male initiatives.

Despite the lack of technical innovation initiatives by female professionals, innovation actions that are related to water projects that professionals exercise in general, cover wide areas that have substantial impact at planning projects for the community level.

## **Dimension 2: Behavior**

Regarding innovation, greater attention is given to water saving and hygiene practices; but less attention is given to water transport, treatment or re-use. Certainly females influence the attitude of each other, but future studies should investigate this question in greater details to identify what are major sides that influence the community attitudes and behaviors, in particular community females.

Women feel high responsibility towards water which is mainly translated in water conservation and regular maintenance of equipments to prevent water loss and many innovative ideas.

Regarding procedures to strengthen female's decision making capabilities in water projects, greater emphasis is given to training programs and awareness, but less emphasis on policies and identification of priorities, demands and needs.

Women associations didn't play a significant role in affecting or changing attitudes of community females. Future studies should investigate this question in greater details to identify what comes under "other".

Women rely significantly far less on modern irrigation techniques than men.

All surveyed women do not mind participating in or attending any activity for water project that involve the opposite sex which contradicts with the shyness concept attached to women which is revealed in literature.

## **Dimension 3: Needs**

Training on gender issues has contributed moderately to change of behaviors towards gender issues but failed to materialize this change into organizational formal manner through the development of gender policies.

There is lack of women in decision making positions; however the majority of female professionals lie within the technical, administrative levels.

Theoretically, gender issues are well considered in water project proposals. However, the stated major reasons for considering gender approaches in water projects uncover lack of common understanding to core reasons behind such direction. The stated reasons are targeted towards donors and special interest groups rather than engagement of grassroots gender participation in water projects to cause a positive change on the ground.

Despite the stated involvement of the community in preparing proposals, there is lack of gender specialists at most of the surveyed organizations as well as lack in consultations of external gender in organizations. This can create biases in considering gender needs because gender-sensitive water projects that offer opportunities to address inequalities between women and men in access to resources, services and influence, and to promote the empowerment of women - usually require the involvement of gender specialists at various project stages.

#### **Dimension 4: Perception**

There is an obvious negative perception of managers and decision makers towards female related aspects and women needs in the workplace (i.e. maternity leave, urgent vacation, balance between home duties and work). The absence of gender specialists inside and outside the organization can increase this negative perception. In addition social stereotypes regarding female capabilities and roles and psychological emotional sensitivity play a role in strengthening this perception although the significance of female- emotional sensitivity correlation is not proved yet regarding women roles in the workplace.

Financial requirements (amounts to be paid by households as contributions to participate in some projects) and lack of ownership of resources (such as income, land ...etc) represent major barriers to female involvement in water projects, and therefore limit their being as beneficiaries from these projects.

The linkage of females' decisions and high emotional sensitivity sometimes form an obstacle to the decision making capabilities of community female households as perceived by implementers of water projects. This was also noted by some decision makers in the surveyed governmental institutions as an obstacle to female decision making inside the organization, they link this perception to female psychological constitution.

Although decision makers and professionals believe social and cultural factors act as constraints, professionals are more specific in constraints identification, which are also more consistent with their perception of gender consideration in the workplace. This finding signals lack of information flow from bottom-up (professionals to decision makers) to reach common understanding of gender perspectives and major constraints facing women to take leading roles in relevant projects.

The practice of conducting activities to encourage innovative practices in relation to water saving and reuse in target project communities (Prizes, competitions, rewards) is weakly utilized.

More emphasis is required on loans and awareness to encourage gender-innovation within water projects.

**References:**

JICA (2008) "The feasibility Study on Water Resources Development and Management in the Jordan Rift Valley", (Draft Final Report).



## Annex 3

### Questionnaire for Decision Makers

This survey is prepared within the activities of a project entitled: "Involvement & influence of women in Innovative processes within Integrated Water Resources Management, (IWRM)", which is being implemented by Institute of Environmental and Water Studies (IEWS) at Birzeit University (BZU).

The main aim of the survey is to assess the current status of the "Gender" issue in water institutions and its relationship with innovative practices in the field of IWRM which will help in recommending action plans to strengthen the reflection of gender issue in water institutions and therefore in the conducted water projects in Palestine. Your support in filling the survey is highly appreciated noting that your information will be kept confidential and will be used only for scientific purposes.

**Note:** INOVATION concept in this survey is related to innovation in water institutions and/or water projects.

#### **Part 1 - Decision makers & awareness on gender concept:**

1- Do you feel you have considerable understanding of "Gender" in relation to your workplace?

☐ Yes ☐ No

2- If your answer is yes, how do you define gender considerations in the workplace.

-----

3- Does your organization have a gender policy?

☐ Yes ☐ No

4- If your answer to question 3 is yes, who has developed the gender policy?

☐ External consulting agency

☐ Human resource department

☐ Governmental agency

☐ Other (state) -----

5- If your answer to question 3 is yes, is this policy activated?

☐ Yes ☐ No

6- Do you consider the gender issue in forming organization boards?

☐ Yes ☐ No

7- If your answer to question 6 is yes, what's the estimated percentage of women participation in these boards?

-----

8- Have you ever received any gender training?

☐ Yes ☐ No

9- In case you had received training, did it help you in changing behavior towards gender issues in your workplace?

☐ Yes ☐ No

10- If your answer to question 8 is yes, how do you perceive the role of gender specialists (trainers)?

☐ Important ☐ not important ☐ no opinion

11- Do you believe that applying reflexive gender concepts will lead to more effective water project?

☐ Yes ☐ No

12- In cases of gender considerations in water projects, what is the **major** reason for considering gender approaches in your water projects?

-----

13- In preparing water projects proposals, please answer the followings:

Statement	Yes	No
The project proposal provided details of the gender strategies and are details included in log frames, risk matrix and where appropriate.		
Gender strategies were proposed in a way that enhances participation of both of men and women in all project's activities.		
Gender sensitive indicators have been established for monitoring the impact of gender strategies.		
We have gender experts to monitor, evaluate and review the project gender's strategies		

The results of gender strategy monitoring and evaluation are presented in our annual plans

**Part 2 - Decision makers & innovative institutional gender perspectives:**

1- Does your organization consider gender reflexive procedures in the following?

Training & Development ☐ Yes ☐ No If yes how ?-----

-----

Promotion Opportunities ☐ Yes ☐ No If yes how? -----

-----

Family-Friendly Policies ☐ Yes ☐ No If yes how? -----

-----

Flexible Working ☐ Yes ☐ No If yes how? -----

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2- How do you evaluate the effectiveness of mixed gender teams (includes males & females)?

☐ more effective in meeting goal

☐ less effective in meeting goal

☐ No difference than homogeneous

3- How often do the following cases negatively affect your perception of employee performance?

Case	Always	Sometime	Seldom
A female employee is pregnant and you think need of a replacement maternity period.			
A female employee has an urgent 2 days vacation to stay with her sick baby.			
A female employee is no longer able to work extra work hours because of her new home duties after getting married.			

4- Do you believe that there are constraints on women role in decision making in relation to work environment?

☐ Yes      ☐ No

5- If your answer to the previous question is yes, what is the major constraint?

-----

6- How do you define innovation in the workplace?

-----

7- Do you encourage innovative practices in your organization? (new technologies and approaches for conducting work activities ex. use a new software, a computerized schedules, electronic job aids, ...etc.

☐ Yes      ☐ No

8- Do the way employees deal with innovative aspects affect their appraisal?

☐ Yes      ☐ No

9- if your answer to the previous question is yes, how?

-----

10- Do you provide employees with training on innovative techniques?

☐ Yes      ☐ No

11- Do you ask employees to learn innovative practices in times outside their work hours?

☐ Yes      ☐ No

11- Please give example of innovation practice that was initiated by female practitioners in regard to water projects.

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12- Please give example of innovation practice that was initiated by male practitioners in regard to water projects.

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**Part 3 - Gender, community & water projects:**

1- In conducting water projects, have steps been taken to consult with both men and women in the target population (Ex. communities, agencies or governmental institutions) in order to understand their priorities, demands and needs?

☐ Yes ☐ No

2- If yes, please what steps?

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3- Have organizations with interest in gender issues been consulted?

☐ Yes ☐ No

4- If yes, what kind of organizations had been consulted?

☐ Educational ☐ Governmental ☐ Non- governmental ☐ Research  
☐ Public sector ☐ Private

5- Has sex disaggregated data been collected on current practices with regard to water practices and personal hygiene?

☐ Yes ☐ No

6- Based on your experience, in what phase of the project the community households involvement is most important?

☐ project proposal preparations  
☐ project implementation  
☐ project dissemination

7- What is the major barrier to household involvement in water projects?

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8- Based on your communication with different community representatives, please comment on the following statements affecting the decision making capabilities of community females.

Statement	Agree	Disagree	No opinion

Decision making is a male capability that cannot be done by females			
Female decisions are based on emotions rather than being practical			
Female cannot make right decisions because they don't know how			
Community females do not own resources and therefore they do not have the right to make decisions			

9- Please give example of community household innovation action within the water issue.

-----

**Part 4 - General Information:**

1. Gender:

☐ Male      ☐ Female

2. Position: -----

3. Marital status:

☐ Single      ☐ Married      ☐ Divorced      ☐ Widow

4. Number of children:

☐ No children   ☐ 1-2   ☐ 3-4   ☐ More than 4

5. Educational level:

☐ Diploma      ☐ Bachelor      ☐ Masters      ☐ PhD

6. Organizational sector:

☐ Educational      ☐ Governmental      ☐ Non- governmental      ☐ Research

☐ Public sector      ☐ Municipality      ☐ Private



7. Years of experience:

☐ Below 5 years      ☐ 5- 10 years      ☐ More than 10 years

8. Percentage of female employees in your organization. -----

9. Percentage of females in management positions -----

10. Projects with gender titles:

-----

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Thank you

# Annex 3

## Questionnaire for Professionals

This survey is prepared within the activities of a project entitled: "Involvement & influence of women in Innovative processes within Integrated Water Resources Management, (IWRM)", which is being implemented by Institute of Environmental and Water Studies (IEWS) at Birzeit University (BZU).

The main aim of the survey is to assess the current status of the "Gender" issue in water institutions and its relationship with innovative practices in the field of IWRM which will help in recommending action plans to strengthen the reflection of the gender issue in water institutions and therefore in the conducted water projects in Palestine. Your support in filling the survey is highly appreciated noting that your information will be kept confidential and will be used only for scientific purposes.

### Notes:

**INOVATION** concept: in this survey is related to innovation in water institutions and/or water projects.

**Professionals:** refer to female/ male implementers of water/environmental projects.

### Part-one –Professionals - Reflexive gender in the workplace:

1- Do you feel you have considerable understanding of "Gender" in relation to your workplace?

☐ Yes ☐ No

2- If your answer is yes, how do you define gender considerations in the workplace?

---

3- Have you ever received any gender training?

☐ Yes ☐ No

4- In case you had received training, did it help you in changing behavior towards gender issues in your workplace?

☐ Yes ☐ No

5- Do you usually deal with gender specialists in your water projects?

☐ Yes ☐ No

6- If your answer to the previous question is yes, how do you perceive the role of gender specialists?

☐ Important ☐ not important ☐ no opinion

7- Do you believe that there are constraints on women role in decision making in relation to work environment?

☐ Yes ☐ No

8- If your answer to the previous question is yes, what is the major constraint?

-----

9- Based on your experience, do you feel men/ women at your organization are treated equally in the following areas? Please tick as appropriate:

	Men & Women treated equally	Men treated less favorably	Women treated less favorably
Recruitment & Selection			
Appraisal/Performance Management			
Training & Development			
Promotion Opportunities			
Family-Friendly Policies			
Flexible Working			

**Part 2- Professionals & innovation aspects:**

1- How do you define innovation in the workplace?

---

---

2- You feel you can be more innovative when you work:

☐ Alone ☐ in a team

3- You feel you are more productive in:

☐ homogeneous teams ☐ heterogeneous teams

4- Are you interested in using innovative techniques to conduct your job duties (new technologies and approaches for conducting work activities ex. use a new software, a computerized schedules, electronic job aids, ...etc)?

- ☐ Yes, all the time
- ☐ No, I'm satisfied with my current system
- ☐ No, I have no time to learn new skills

5- How often do you consider innovative ways in dealing inside your institution?

- ☐ Always
- ☐ Sometimes
- ☐ Never

6- How often do you consider innovative ways in dealing with stakeholders outside your institution?

- ☐ Always
- ☐ Sometimes
- ☐ Never

7- If available, give example of innovation action that you exercised at work related to water projects.

-----

8- what's a major factor that encourages you to use innovative techniques in communicating within your organization when:

- a. These innovative techniques are considered in my appraisal.
- b. when I'm offered training for these techniques.
- c. when learning these techniques do not require more time from me out side work hours.

9- Do you believe that encouraging innovative gender practices inside the institution will be reflected on conducting projects outside the institution? (Innovative practices will also be used in dealing with community)?

- ☐ Yes
- ☐ No

10- If your answer to the previous question is yes, how?

-----

### **Part 3- Professionals and community projects:**

1- Based on your experience with community households in conducting water project please respond to the following statements:

- a. female households show interest to participate in water projects. ☐ Yes ☐ No
- b. female households are more encouraged to participate when they

deal with female field representatives.

☐ Yes ☐ No

c- Female make effective decisions related to water projects when they are asked to.

☐ Yes ☐ No

d- Female households usually ask for training programs that suit their schedules & literacy levels.

☐ Yes ☐ No

e- Female households who own farming lands are more active in water projects.

☐ Yes ☐ No

2- Based on your experience, please rank the following procedures to strengthen the decision making capabilities of female households in regard to water management projects, (1 – 4) 1 most important, 4 least important.

☐ conducting awareness programs to strengthen female decision making capabilities (posters, brochures.

☐ conducting training programs to strengthen female decision making capabilities.

☐ drafting a water policy to consider gender priorities and demands in water projects.

☐ conducting projects that consider the different priorities, demands and needs of men and women.

3- Based on your experience with female community households, these households tend to have innovative ways in dealing with water issue. Please rank from 1- 4 according to importance 1 most innovative, 4 least innovative.

☐ water treatment and reuse

☐ water and hygiene practices

☐ water saving

☐ water transport

4- Based on your experience, please rank the following according to their influence in affecting the attitude of female households (1 most impact, 4 least impact):

☐ Women associations' practices

☐ Funded projects activities

☐ neighboring other female households

☐ Family members

☐ Other, please state -----

5- In conducting water projects, do you consider gender needs in the followings?

- Need assessment of the project ☐ Yes ☐ No

- Access to project information and facilities ☐ Yes ☐ No

- Timing of activities arrangements ☐ Yes ☐ No

6-In conducting training activities, do you consider gender issues related to timing and mobility in the training?

☐ Yes ☐ No

7- How often can female households effectively manage water resources?

☐ Always ☐ Sometimes ☐ Seldom

8- Do you believe that men and women have negative attitudes towards attending meetings with opposite sex?

☐ Men have

☐ Women have

☐ No, no negative attitude

9- Have you ever conducted activities to encourage innovative practices in relation to water saving and reuse in target project communities? (Prizes, competitions, rewards?), if yes give example.

☐ Yes ☐ No ☐ if yes give example-----  
-----

10- Please state example on community innovative practice initiated by a female community household (important).

-----.

11- Please state your recommendation to encourage gender-innovation within IWRM in local communities.

-----  
-----

#### **Part 4:-General Information:**

1. Gender:

☐ Male ☐ Female

2. Marital status:

☐ Single ☐ Married ☐ Divorced ☐ Widow

3. Number of children:

☐ No children ☐ 1-2 ☐ 3-4 ☐ More than 4

4. Educational level:



☐ Diploma      ☐ Bachelor      ☐ Masters      ☐ PhD

5. Organizational sector:

☐ Educational      ☐ Governmental      ☐ Non governmental      ☐ Research

☐ Public sector      ☐ Municipality      ☐ Private

6. What category of staff are you? Please tick as appropriate.

☐ Academic      ☐ Administrative      ☐ Technical      ☐ Consultant

7. Years of experience:

☐ below 5 years      ☐ 5- 10 years      ☐ More than 10 years

---

Thank you

# Annex 5

## Questionnaire for Community

This survey is prepared within the activities of a project entitled: "Involvement & influence of women in Innovative processes within Integrated Water Resources Management, (IWRM)", which is being implemented by Institute of Environmental and Water Studies (IEWS) at Birzeit University (BZU).

The main aim of the survey is to assess the current status of the "Gender" issue in water institutions and its relationship with innovative practices in the field of IWRM which will help in recommending action plans to strengthen the reflection of the gender issue in water institutions and therefore in the conducted water projects in Palestine. Your support in filling the survey is highly appreciated, your information will be kept confidential and will be used only for scientific purposes.

### First: General Information

Gender	Age	Educational level	Profession	Marital condition	Population area (urban, rural)

### Second: Economical Status

Person in charge for income management	Number of females in the labor force	Number of males in the labor force

### Third: Water Sector

1. What is the family's main water source?

☐

Public Well or Spring

☐

Private Well

☐

Water Venders

☐

Mikorot(Israeli company)

☐

Water Network/ Authority

☐

else

2. Please answer with yes or no

	Yes	No
Water is considered an available source for the family		
The quality, purity, and color of available water is good		
Available quantities of water is directly affected by the season		
Women are responsible of water management in the house		
Women have a larger role in water conservation		
The individual's consumption of water is affected by his level of income		

3. Please answer the following if you work in agriculture:

	Yes	No
Priority of water use is for agricultural use rather than domestic use		
Modern irrigation techniques are used for agriculture (drip, sprinkles ,....)		
Women are responsible for water management in agriculture		
If yes, does she get the same opportunities as men?		
Women's productivity in agriculture is less than men's		
Woman tend to use modern irrigation methods and techniques more than men		

4. Preparations for water interruption:

- ☐ Reduce water consumption in dry seasons
- ☐ Feeding the collecting wells (if any) from the water network to compensate for the shortages created when water cuts off during the week
- ☐ Avoiding the work that consumes water
- ☐ Storing quantities of water in gallons as a reserve to be used in the water interruption period
- ☐ Something else, specify-----

5. Are there any other measures taken in the case of water interruption - for domestic work?

-----

6. Is your house provided with any of the following:

☐ Sewage Networks      ☐ Septic Tanks      ☐ else

7. Do women spend more water than men for health facilities (shower, cleaning,...)

☐ Yes      ☐ No

**Fourth: Women Participation in Water projects**

1. Please answer the following with yes or no

	Yes	No
Do you feel that water projects apply gender policy	<input type="checkbox"/>	<input type="checkbox"/>
Do you feel underestimated or abused due to your gender in those projects	<input type="checkbox"/>	<input type="checkbox"/>
Are there any obstacles in reaching information about a new water project or any activity related to it	<input type="checkbox"/>	<input type="checkbox"/>
Do you mind participating in, or attending any activity for a water project that includes the opposite sex members?	<input type="checkbox"/>	<input type="checkbox"/>

2. do you feel that you have a responsibility toward water sector?

☐ Yes      ☐ No

3. If you do, how do you express your sense of responsibility?

---

**Fifth: Women's Willing to Participate in Water Projects**

1. Do you have the willingness to participate in a water project?

☐ Yes      ☐ No

2. Please, refer o the following with one of the two options

	May encourage you to participate in water projects	May prevent you from participating in a water project
Experience in water sector and water management	<input type="checkbox"/>	<input type="checkbox"/>
Family support	<input type="checkbox"/>	<input type="checkbox"/>

Cost required for implementation		
Work hours		
Difficulties in dealing with the opposite sex		
The need of the project		
Ability to run and manage the project		
Customs and traditions		

3. Are there other reasons that encourage your participation in such projects? Specify your answer
  
4. Are there other reasons that prevent you from participating in such projects? Specify your answer

**Sixth: Innovation Aspects in Water projects**

1. Have you ever participated in a water project?  
☐ Yes                      ☐ No
  
2. Did you feel that the project gave you the interest and expertise that you were able to use in another area in your life?  
☐ Yes                      ☐ NO

Do you use an innovative idea in dealing with water inside your house in any of the following?

☐ Water reuse, how?  
 -----

☐ Wastewater treatment, how?  
 -----

☐ Water conservation, how?

-----

3. If there was a third-party that helped you to be creative in the above, what is this party?

-----

4. Was the help provided:

☐ Technical   ☐ Financial   ☐ Managerial   ☐ else....

5. Was that part:

☐ Governmental,   ☐ Non Governmental Organization (NGO),

6. Are there any health issues related to water scarcity or its cleanliness?

☐ Yes   ☐ No

7. If the answer was yes, what are the procedures carried out to prevent those diseases from happening?

\_\_\_\_\_

8. In the case of a technical malfunction related to water at home, how do you deal with it?

-----

9. Please explain how you put the following into practice:

	Always	Rarely	Never
Doing the house work of dishwashing, laundry, or cleaning the floor in certain days of the week due to water irruption during the rest of the week			
Taking showers in certain days according to water availability in those days			
Using kitchen water or grey water in house gardening			
Using grey water washing the car or cleaning the floor			
To what extent do you use grey water treatment methods in your house?			
How often do you use filters on water taps			
To what extent do you use water conserving techniques, like the			

pieces fastened to the water taps to reduce water flow			
Replacing the pots and dishes that need cleaning with disposable ones to conserve water			
Choosing type cooking according to its water consumption			

10. If you are involved in Agricultural field, do you do the following:

	Always	Rarely	Never
I plant the seeds to great depths inside the soil to provide them with maximum humidity and keep them away from the sun heat			
I cover the seeds with weed to provide hem maximum humidity and keep them away from sun heat			
I reduce the distance between the seedlings to provide the soil with sufficient shadows to protect them from sun heat, prevent evaporation, and maintain humidity			
I put a piece of cloth on great depth in the soil to keep humidity within			
I put sufficient quantities of organic fertilizers inside the soil to maintain humidity			
I cover the crops with plastic sheets, weeds, cloth, woods, rocks,.....			
I use water bottles for irrigation to preserve water and prevent water wastage			
I irrigate the plants first thing in the morning to avoid evaporation of water due to the heat of the sun rays			
I use grey water in irrigating my house garden			
I focus on planting seasonal crops instead on long-lasting crops to reserve water			
I decrease the planting of water consuming crops in the summer and increase it in the winter			



11. If you are dealing with agriculture, did you come up with any other creative idea about water use in agriculture other than what was mentioned above?-----  
-----

**Seventh: Needs of the Society**

1. Do you think local community needs water projects  
☐ Yes ☐ No
2. Your need for water projects is related to what field?  
-----
3. Do you believe that training courses, workshops, and conferences are always oriented to:  
☐ Men, Only ☐ Women, Only ☐ Men, Mostly  
☐ Women, Mostly ☐ Men and Women, Equally

Thank you!

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## Annex 6

### List of Interviewed Decision Makers

Institution	Name	Position
Nongovernmental Organizations Development Center (NDC)	Jameela Sahliyye	Program Manager
Union of Agricultural Work Committees (UAWC)	Omar Tabakhna	Public Relation Director
Heinrich Boell Organization	Heba tibi,	Regional Program Coordinator
Heinrich Boell Organization	Yuakhem Paul	General Manager
Palestinian Hydrology Group PHG	Abdulrahman Al- Tamimi	General Director
Food and Agriculture Organization FAO	Nasser Samara	Deputy project manager
Palestinian Agricultural Relief Committee PARC	Khalil Sheaha	General Manager
Ministry of Agriculture MoA	Kasim Abdo	Director General of Soil and Irrigation
Palestinian Water Authority PWA	Hazim Kittani	General Manager for Technical Affairs
Ramallah M.	Jannet Khoury	Mayor of Ramallah Municipality
Al-Bireh Municipality	Jamal Al-Taweel	Mayor of Al-Bireh Municipality
UNICEF	Ghassan Mudiah	Water and Environmental Sanitation Officer
House of Water and Environment HWE	Amjad Eleiwi	Director General
PWA(2)	Omar Zayed	General Manager
PWA(3)	Rana Abu Su'ood	Public Awareness

		Manager
Miftah	Lily Faidy	General Secretary
Ministry of Local Governance MLG	Hanan Mseah	General manager of the gender unit
Environmental Quality Authority EQA	Jameel Mtoor	Vice-Chairman of the Environmental Quality Authority
Birzeit Municipality	Yousef Nasser	Mayor of Birzeit Municipality
PWRDC	Zaheera Kamal	Former Minister of Women's Affairs and Director of PWRDC

# Annex 7

## List of Trained Professionals

Institution	Name	e-mail
Ministry of Agriculture	Randa Sbaitan	Ran_mog@yahoo.com
Palestinian hydrological Group	Shereen Zaidan	shereenali@phg.org
Environmental Quality Authority	Ayman Abu thaher	aymanth@hotmail.com
Environmental Quality Authority	Sa'eda Shuaibat	S_oo2005@yahoo.com
Ministry of Agriculture	Ibtisam Abu Haija	Ibtisam.abuhaija@moa.pna.ps
Ministry of Agriculture	Nisreen Mansour	nesreenmansour@yahoo.com
Al Bireh Municipality	Lamya Hamayel	Lamia.hamayelgmail.com
Palestinian Water Authority	Muhammed najmi	Najmidaoud@yahoo.com
Palestinian Women Research and Documentation Center-UNESCO	Shereen Assaf	s.assaf@unesco.org
Rural woman association	Rasha Shareef	<a href="mailto:Rasha.shareef@aird.ps">Rasha.shareef@aird.ps</a>
Ta'awoun Organization	Summar husary	<a href="mailto:husarys@jwelfare.org">husarys@jwelfare.org</a>
Palestinian Water Authority	Hanady Bader	hanadibader@yahoo.com
Palestinian Water Authority	Khaleda Umran	<a href="mailto:khalidaomran@yahoo.com">khalidaomran@yahoo.com</a>
Heinrich Boell Stiftung	Hiba Tibi	H_taibi@boell_amee.com
UNECEF	Ghassan Mudyah	<a href="mailto:gmadieh@unicef.org">gmadieh@unicef.org</a>
Red Crescent	Ghadeed Jubeh	<a href="mailto:jubehghadeer@yahoo.com">jubehghadeer@yahoo.com</a>
MIFTAH	Lamees Ramaa	<a href="mailto:Lamis@miflah.org">Lamis@miflah.org</a>
Birzeit University	Shereen Abed	sabed@birzeit.edu
House of Water and Environment	Muhammad Najjar	Najjar.m@hwe.org
First option co.	Ula aboudi	ulaaboudi@gmail.com

Ministry of Agriculture	Samya Sehweil	ssehweil@hotmail.com
Birzeit Municipality	Musa Shawki	M.shawky@yahoo.com

# GENDER INNOVATION and WATER:

Minimum Agenda for Plugging the Hole

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“Gendered institutions conduct gendered projects and produce gendered outcomes”

## GENDER INNOVATION and WATER: Minimum Agenda for Plugging the Hole

### Why Minimum Agenda?

There is a need to address both the practical and strategic needs of women at both institutional and community levels. Currently there is inequity in the participation of men and women in major decision making aspects and in occupying top management positions. In the water and environmental sector, gender perspectives are not seriously included in water laws, policies and projects, Women's work and innovative capabilities are invisible and unrecognized and their innovative practices are not given the needed attention by planners. Issues ranging from inequitable distribution of resources, to division of labor that has been informed by gender stereotypes and many others are still widespread in the workplace. The minimum agenda is prepared based on depth literature and extensive research and aims to help decision makers and environmental professionals adopt an effective gender approach in managing institutions- particularly water and environmental institutions and to promote women innovative capabilities at both institutional and community levels.

The minimum agenda represents a major outcome of a project entitled: “Involvement and Influence of Women in Innovation Processes within Integrated Water Resources Management (IWRM) Projects”, conducted by the Institute of Environmental and Water Studies (IEWS) at Birzeit University (BZU) and funded by Canada's International Development Research Centre (IDRC) in the period October 2009 – March 2011.



The Art of Saving The Earth's Water



### Do you know?

**Gender** refers to the specific roles and responsibilities adopted by women and men in any society. It is related to how we are perceived and expected to think and act, as women and men, because of the way society is organized, not because of our biological differences.

**Gender Approach** implies that attitudes, roles and responsibilities of men and women are taken into account, that it is recognized that both sexes do not necessarily have the same access to, or control over, resources, and that work, benefits and impacts may be different for both groups. The gender approach requires an open mindedness and aims at the fullest possible participation of both women and men.

**Gender Mainstreaming** is the process of assessing the implications for women and men of any planned action, including legislation policies or programs, in all areas at all levels. It is a strategy for making women's, as well as men's concerns and experiences an integral dimension of the design, implementation.

**Gender Perspective** means generating strategies for changing the unequal relations of men and women to resources, decision-making and rights. It is not sufficient to have just a single gender person focusing on these issues. Gender is often side-streamed rather than mainstreamed, due to lack of understanding and the will to change.

**Innovation** is the improving of existing product, service, system or process and the introduction of something better in general. In the IWRM field, the major meaning of innovation relates to renewal or improvement in the ways institutions are managed and projects are conducted, with novelty being a consequence of this improvement. Simple improvements even the unrecognized ones are included in the innovation definitions, however, for an improvement to take place it is necessary for people to change the way they make decisions, or make choices outside of their norm.





## Facts from Palestine !!.

- There are no formal gender policies at Palestinian institutions; however, different initiatives are under progress.
- Donor-led gender units may not be sustainable.
- There is lack of conceptual understanding of gender and its relation to IWRM.
- Women participation in management and top management positions is not sufficient.
- Current training programs do not have sufficient impact on beneficiaries from those programs.
- Women suffer from a great lack of access to decision making posts on both local and national levels.
- Innovation practices are not strategically analyzed at institutions and innovative practices are not used to maximize benefit at different levels.
- Women's status is changing with modernization, irrigation and economic progress.
- Women's roles in agriculture and environmental projects are unique in Palestine due to the occupation aspects that force women to perform a variety of tasks including what is known to be male tasks.
- Women's work is invisible, unrecognized and their innovative practices are not given attention by planners.
- Women are the major contributors to water management, while at the same time they are the first victims of water crisis and agricultural mutation.
- Men benefit from the majority of agricultural projects especially training and extension service, although women are performing the majority of work.
- There is lack of consistent, relevant and verifiable (disaggregated) data on gender and water.

## Making a Difference in Integrated Water Resources Management: Minimum Agenda for Effective Gender/Innovation Approach for Decision Makers and Professionals

To help decision makers and environmental professionals in adopting an effective gender/innovation approach in managing their institutions, the followings demonstrate that decision makers and professionals should at a minimum:

- Practically study the gender approach (and gender perspectives) and reflect them in institutional procedures and decisions in the form of rules.
- Include gender perspectives in organizational capacity building planning programs.
- Include gender mainstreaming essentials in staff job descriptions.
- Recruit gender specialists as part of the institution's strategy and not only as reaction to donor's requirement.
- Scientifically include gender perspectives in the strategies and operations of water and environmental institutions.
- Encourage increasing the number of qualified women in high decision making and management positions inside water and environmental organizations and work to change current stereotypes regarding women capabilities.
- Focus on understanding the difference between men and women in their innovative initiatives and exploit this to their advantage.
- Consider gender perspectives in motivation of the innovative employee.
- Consider women innovation capabilities in technical areas and not only link their capabilities to awareness activities.
- Encourage innovation practices by rewarding and promoting success stories and considering them in annual appraisals.
- Direct innovation practices to improve the quality of conducted projects at the community level, in addition to contributing to employees appraisals.
- Carefully study innovation practices - even the simplest techniques in water management- at the community level and consider them in future projects in the aim of making positive use of these practices.

## Institutional Capacity for Effective Gender/Innovation Approach

Milestone	Tasks
Understanding and commitment to the gender/innovation issue	<ul style="list-style-type: none"> <li>• Including gender concepts in institutional policies and forms.</li> <li>• Providing staff with resources to include gender perspectives in their operations.</li> <li>• Increasing awareness on the importance of including gender/innovation perspectives in institutional strategies.</li> </ul>
Structures and mechanisms	<ul style="list-style-type: none"> <li>• Identifying fixed number or percentage of women representation in management boards and top management positions.</li> </ul>
Analytical planning and management skills	<ul style="list-style-type: none"> <li>• Recruiting and /or consulting specific gender expertise.</li> <li>• Monitoring of the gender approach at institutions.</li> <li>• Analyzing innovation capabilities for both men and women.</li> <li>• Planning institutional and projects activities while including gender perspectives.</li> </ul>
Information, data and research	<ul style="list-style-type: none"> <li>• Collecting sex-disaggregated data and documentation of case studies.</li> <li>• Keeping information on how and why gender differences and inequalities are relevant in specific areas of work (land tenure issues, control over resources, division of labour in agricultural activities, differential use of water resources, different innovation practices in IWRM, unequal participation in decision-making positions throughout government structures, etc..).</li> </ul>
Participatory mechanisms	<ul style="list-style-type: none"> <li>• Creating Linkages outside the organization including women's organizations with similar interests or international networks that bring a gender/innovation perspective to the institution's mandate.</li> <li>• Ensuring that these mechanisms are well understood by other partners.</li> </ul>

## Action Points for Effective Gender-Innovation Approach within Water and Environmental Projects Cycle

In addition to the minimum agenda, the following action points are recommended to help decision makers and professionals in conducting gendered/innovative community projects:

- Cooperative associations and counsels of the local community should increase their efforts in explaining the current situation regarding women and women roles to consider the crucial roles of women in this area.
- New proposed projects should focus on reducing the social and cultural barriers that negatively affect the decision making capabilities of Palestinian females and that make decision making a male task inside the organizations and at the local community levels.
- Dynamic activities such as prizes, competitions and rewards — should be considered in preparing project plans to encourage positive practices and innovation at the community level.
- Awareness programs and implemented projects should be more directed to encouraging the technical innovation capabilities of local community females in water management.
- Maximum effort in innovative thinking should be used to reduce the impact of social and cultural barriers that affect the involvement of females in projects' activities.
- Community priorities, needs and problems should be considered in future projects by decision makers in a systematic way not only as reaction to donor requirement.
- Environmental projects should encourage increasing women's feeling of responsibility and innovation towards water management.
- Place and timing of projects should be chosen in a manner that suits the culture and which facilitate the participation of women. Sometimes (depending on culture) separate meetings with only women may be desirable.
- Information or announcements for meetings should be put at convenient places where women regularly come.
- Project means including skills, materials and/or credit should be accessible to both men and women.
- Projects' experiences and success stories for women should be archived for consistent future projects.
- When forming water or environmental boards, the criteria for eligibility as member of, or to have water rights or voting rights, should be established in such a manner that men and women have a chance to participate.



## Institutional Capacity for Effective Gender-Innovation Approach within Water and Environmental Projects Cycle

Project Stage	Specific Element	Needed Action
Project Identification	<ul style="list-style-type: none"> <li>Women and men have different literacy levels, experience and different innovation capabilities.</li> </ul>	<ul style="list-style-type: none"> <li>Designing for data collection while considering gender differences and needs.</li> </ul>
Project Design	<ul style="list-style-type: none"> <li>Women and men have different responsibilities and workloads.</li> <li>Women have less time to devote to new activities.</li> <li>Attending specific meetings may raise problems for attending some activities.</li> <li>Women and men may make different calculations about the costs and benefits of their involvement in participatory processes.</li> </ul>	<ul style="list-style-type: none"> <li>Using institutional tools to find out about workloads before project implementation and the implication of the project on the workloads of the different gender groups. (These tools include: including gender experts in the designing stage, increasing the participation of men and women by structuring project rules and procedures).</li> </ul>
Project Implementation	<ul style="list-style-type: none"> <li>Women have less access to information and to decision making areas..</li> </ul>	<ul style="list-style-type: none"> <li>Conducted projects should focus on providing women with needed information on their rights and on IWRM projects (raising awareness).</li> <li>Conducted projects should benefit from innovation practices- even the simplest ones adopted by men and women.</li> </ul>

