

---

## *A case study on stakeholder dialogue and participatory planning in the water sector of Jenin Governorate*

Sameera Rifai<sup>1</sup>, Buthayna Mizyed<sup>2</sup>, Falasteen Abo Baker<sup>3</sup>, Sayel Wishahi<sup>4</sup>

<sup>1</sup> EMPOWERS Country Coordinator, CARE International /West Bank & Gaza

<sup>2</sup> EMPOWERS Process Documentation Officer, CARE/West Bank & Gaza

<sup>3</sup> EMPOWERS Field Coordinator, Union of Agricultural Work Committees (UAWC)

<sup>4</sup> EMPOWERS Field Coordinator, Palestinian Hydrology Group(PHG)

### **Abstract**

EMPOWERS stands for "Euro – Mediterranean Participatory Water Resources Scenarios". It is a four year project funded by the European Commission and Care International and implemented by national and regional partners in three MEDA zone countries: Egypt, West Bank & Gaza and Jordan. It aims to improve rights and long-term access to water by underprivileged populations through participatory water governance within each country

This paper will describe methodologies developed over the last two years, and the initial results achieved by their application, in order to come to long-term visions, strategies and plans for improved water resource management and water service delivery in the Governorate of Jenin and three selected communities within it. The paper will focus particularly on the Municipality of Jalboon. Jalboon is one of the poorest communities in the Governorate, without own water sources and, with no drinking water infrastructure. It also suffers greatly from proximity to the Wall built by Israel that runs along its eastern boundary.

### **Key terms and definitions<sup>54</sup>:**

**Stakeholder:** is anyone who is affected by, or can influence, the decision or action in the project.

**Stakeholder analysis:** is a technique you can use to identify and assess the importance of key people, groups of people, or institutions that may significantly influence the success of your activity or project. You can use this technique alone or with your team members.

**Vision :** is a concise description of a desired future state. Visions provide a picture of *how* we would like the world (or our water resources and services) to be at some future time. Consensus on this vision is required before a strategy is developed.

**A scenario :** is a consistent description of a future situation as determined by those factors that are *both most important* and *most uncertain* ;they are stories about the way the world might turn out tomorrow. Developing a set of narrative scenarios helps identify possible pathways (strategies) towards a shared vision of the future, based on current trends and knowledge of sources of greatest uncertainty. Narrative scenarios can and should be a mix of qualitative and quantitative information.

**A strategy :** is a medium to long-term planning framework within which concrete activities are developed and funded. Over time an effective strategy should lead to achievement of the above mentioned vision under the assumption of one selected scenario. For each scenario different strategies can be developed. Strategies should be regularly updated in the light of new information. Strategies tend to be highly political and reflect the policies of a governing body or an organization

**A plan :** is a coherent set of decisions about the use of resources, translated in activities that taken together have the potential to achieve a vision. A plan includes an explicit statement of the methods to be used, costs, responsibilities, schedule of activities and agreed targets

---

<sup>54</sup> Working Papers developed by EMPOWERS

EMPOWERS Local Committee: is a committee which consists of all stakeholders within Jalboun village and consists of working institutions, and social sectors. Thus, representatives of the village council, charity association, women center, youth club, farmers union, farmers, and inhabitants are included within the stakeholder committee

## Background

EMPOWERS is a regional project implemented simultaneously in three countries: Egypt, Jordan and West Bank/Gaza. While these countries reflect a range of very different water issues in the Mediterranean region, they also share common features: the lack of involvement of all stakeholders, the centralized nature of management, and fragmentation of responsibilities among many players. EMPOWERS will encourage local water users and institutions to address issues of integrated water resource management (IWRM) to take better care of their scarce water resources, through enabling a dialogue between all stakeholders at community, district and governorate levels. The national level is also involved to ensure the relevance of local water activities to national policy formulation processes.

West Bank/Gaza is one of the countries with the world's lowest per-capita availability of water. Water scarcity is further compounded by Israel's control over access to water.

Current water management practices in Palestine are faced with many political, technical and economical constraints. Some of the management practices can still be characterized as follows:

- Top down implementation of instructions
- Little or no role of end-users in planning, managing and developing the water resources.
- Specific needs of poor (and women) not properly addressed under water management plans

Such management practices get even more complicated, especially in an area like Palestine, where political constraints play a major role. For this reason, an integrated management approach that brings all local actors together in one platform will substantially help in improving the water management issues in Palestine. The EMPOWERS Partnership intends to encourage a more integrated approach to Water Resource Management by:

- Enhancing stakeholder integration and involvement
- Improving access to and use of quality information

This will lead to the overall goal of the project: improving access to water for vulnerable populations through integrated water resource management at the local level.

At the beginning of the project there was little communication between agencies and departments that handle water in the governorate for drinking water, irrigation, agriculture, sewage water and sanitation, health, environment, and local administration in addition to the different end users. Therefore, as a first step, the project team surveyed each agency and department individually to specify their duties and responsibilities, the flow of information, and how their work is affected by other agencies and departments. After that a steering committee on the governorate/national level was established made up of the different parties involved and the results of the survey were discussed among them. All the project activities are shared between the project team and representatives of all stakeholders through working groups and workshops. On the basis of problem analysis at different levels and subsequent water resource assessments and analysis the stakeholder platforms have developed visions, scenarios and strategies, so as to prioritize concrete interventions. Methodologies and tools are documented in working papers and training materials, while results of the information gathering and planning are summarized in Water Fact Sheets for each community and the Governorate.

It can be concluded that currently the project sharing and learning processes are widely accepted by all stakeholders both at the government and community levels. This paper presents and discusses these project processes focusing on both the drinking water, sanitation and irrigation water sector. The EMPOWERS project in Palestine is thus considered as a successful example for learning and working in a stakeholder platform to make planning and management in the water sector more effective

## Stakeholder Dialogue and Concerted Action in the EMPOWERS planning cycle

The overall EMPOWERS team includes key stakeholders (representatives of MOA, PWA, MoLG, EA (Environmental Authority), and the Governorate) at the governorate level, in addition to village stakeholders. They participate in all steps of the EMPOWERS planning cycle.

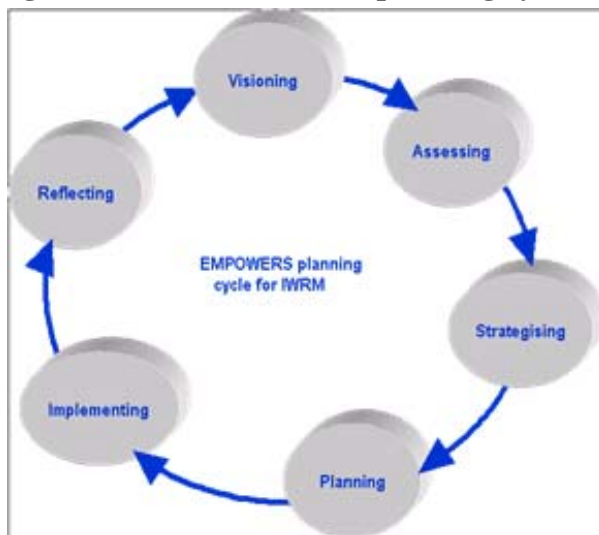
In order to have a balanced representation and to increase influence of different actors in the EMPOWERS partnership, including the end-users, a clear methodology was followed to analyze the stakeholders and to define the most relevant ones in the domain of EMPOWERS. Those who's relation to the water related issues dealt with by EMPOWERS were called key stakeholders, and include: Palestinian Water Authority (PWA), Ministry of Agriculture (MOA), Ministry of Local Government (MLG), Environment Quality Affairs (EQA) end users in the communities as well as a representative of the Governorate.

The project has developed a planning cycle for the identification of water related problems, collection of relevant information, identification of potential solutions, weighing of different approaches, and selection and implementation of preferred solutions. This EMPOWERS planning cycle (illustrated in Figure 1) is described in more detail below.

### The EMPOWRS planning cycle

One of the core assumptions of the EMPOWERS programme (CARE UK/EC, 2002) is that stakeholder involvement - particularly at the intermediate and local levels - leads to improved use and management of water resources. Improved management implies taking better account of users needs and engenders collective responsibility for interventions in the water sector.

**Figure 1: the EMPOWERS planning cycle**



To this end, the project is developing a participatory planning cycle for Integrated Water Resource Management (IWRM). This cycle builds on the identification of water-related problems and the development of area specific long-term visions and strategies for water resource development. This strategising process is supported by the collection and analysis of relevant information on water resources, infrastructure, actors, demand and access and the validation of this information in semi-quantitative Bayesian Networks (computer software).

The aim of this planning cycle is to support stakeholders at local and intermediate levels in making the technical and political decisions to develop and manage their water resources. It is this larger process of participatory analysis, visioning, scenario building and strategic planning that is the real heart of EMPOWERS. The result will be the development of practical tools and gaining experience in planning for integrated water resource management (IWRM) at the local level.<sup>55</sup>

In the EMPOWERS project it was agreed that the cycle would be implemented in two phases: an initial learning phase, during which the methodology would be developed in collaboration with stakeholders in the governorate and pilot villages, and a 'consolidation' phase in which gaps in the original implementation would be filled and the methodology would be formalized into guidelines and training materials.

The main objectives of this learning phase were:

- To build capacities of the whole team in WRA techniques.
- To have more confidence, ownership and buy –in of key stake holders.
- To develop and pilot process methodologies and procedures

In general, it was agreed that the initial learning phase would focus on two key areas:

- Is the demand for water for domestic and productive purposes being met in the selected villages and municipality? And if not, what are the possible strategies to improve the situation?
- How are decisions related to planning for water resource management and water service delivery currently being made and on the basis of what information?

## Jalboun Case Study

In order to select three community centers among the 96 communities within the governorate, a meeting was held, including all the key stakeholders and the project team. Participants adopted together several selection criteria such as: presence of municipality staff, agricultural practices, population, water source, etc, to select the three communities. Following this selection process the villages (and town) of Jalboun, Meithaloun and Qabatya were chosen, all in Jenin Governorate. For this paper Jalboun is taken as a case study



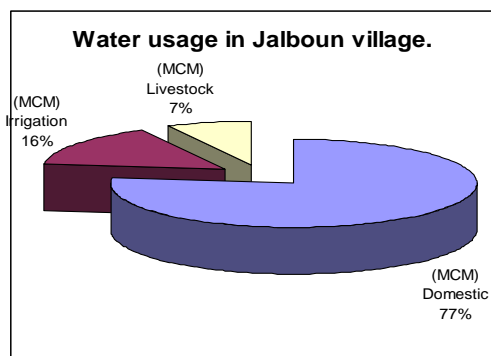
Stakeholders within Jalboun village were selected to represent all working institutions, and social sectors. Thus, representatives of the village council, charity association, women center, youth club, farmers union, farmers, and inhabitants are included within the stakeholder committee , That was nominated as EMPOWERS Local Committee.

## Background

Jalboun village is located 12 kilometers east of Jenin city. The village is bound eastward by the 1967 ceasefire line. Before 1948 war, the Jalboun village area was about 33,000 dunums (one dunum is equivalent to roughly 0.42 hectares). Thousands of dunums were confiscated in the 1948 war, and recently more than 2,800 dunums have been lost due to the construction of the apartheid wall by the Israeli Authorities. These days, the area of the village is estimated to be 5,000 dunums (excluding the 2,800 dunums confiscated), of which about 92% of the village area is agricultural land.

Topographically, Jalboun village is situated in a hilly area with an elevation of 300 to 350 meters above sea level, with average rainfall of 396 mm (*based on available rainfall data of the adjacent Beit Qad station to the west*).

<sup>55</sup> EMPOWERS Working paper no. 1, version 2, by Peter Laban, Patrick Moriarty



### Water-related time line

Residents of Jalboun village before 1948 were dependent on their water needs on that water transported from Mujada's spring that located at that time in the village area, and on that water stored in cisterns. After the Israeli occupation, the lack of groundwater wells or springs in the village, enforced inhabitants to meet their water needs by collecting and storing water during the rainy months in individual cisterns used by one family or public ones used by several families. At present, the water situation remains the same,

with the main source being individual cisterns. In dry months and after the stored rainwater has been used up, water is purchased by tankers from private agricultural wells in the adjacent villages.

### Institutions

Village Council forms the main institution in Jalboun. Due to the lack of municipal water resource and water network, the village council has a limited role in the water sector; it is limited to providing water via the municipal tanker. While, other village-level institutions include women center, charitable society, and farmers union have a limited function in water related activities.

### Main sources of income

Economic Activity	(Percentage)
Agriculture and livestock	20
Mining and Quarrying	1
Manufacturing, Construction	25
Wholesale and retail trade	1
Employee	10
Unemployed	43
Not stated	5
<b>Total</b>	<b>100</b>

Manufacturing and construction sector form the main economic activity in Jalboun community. Due to the current political situation, unemployment rate has risen among the inhabitants of the Palestinian communities.

### General livelihood information<sup>56</sup>

The poorest groups in Jalboun are those unemployed and with a low income. According to the Social Affairs Department, poorest people form about 15.5% of the village inhabitants.

### Developing an overview of water resources and water use

Jalboun village is considered to have one of the worst water situations found in Jenin governorate, lacking both water resources and a distribution network. Cisterns (fed from rainwater or water-tankers) and agricultural wells in the adjacent areas are the main water resources in Jalboun village.

The village's domestic water supply includes household, public, industrial, and commercial activities. In Jalboun, and due to the absence of municipal water resources, water sources are cisterns during rainy months, and water purchased from private agricultural wells in the adjacent villages (Deir Abu

<sup>56</sup> Palestinian Central Bureau of Statistics

Deif, and Deir Ghazallah) during the summer. Losses are estimated to be 5% of the supplied quantity (41,098 m<sup>3</sup>), while the actual quantity consumed was suggested to be 39,043 m<sup>3</sup>.

The tables below summarize the sources of supply, the population, and per capita supply in Jalboun.

### Demand and Access

Sector		Year 2005	Year 2010
<b>Domestic</b>	Population	2355	3116
	Average per-capita supply (lcd)	48	-----
	Range of per-capita actual water use (lcd)	28-83	-----
	Actual water use (m <sup>3</sup> /yr)	39043	-----
	Total water supply (m <sup>3</sup> /yr)	41098	-----
	Average demand (lcd)*	70	100
	Demand, total (m <sup>3</sup> /yr)	60211	113811
	% households on network	0	100
	% households unserved	100	0
Acceptability	Difficult	Good	
<b>Agricultural</b>	Total cultivated area (donum)	4413	-----
	Gross irrigated area (donum)	?	-----
	Net irrigated area (donum)	7	200*
	Potential water requirements(m <sup>3</sup> /yr)	8400 <sup>g</sup>	125000
	Supplied water for irrigation (m <sup>3</sup> /yr)	8400	-----
	Supplied water for Livestock(m <sup>3</sup> /yr)	4006	4926
	Total supplied water (m <sup>3</sup> /yr)	12406	-----
	Actual water use (m <sup>3</sup> /yr)	9924	
	Demand, total (m <sup>3</sup> /yr)	12406	129926
<b>Industrial</b>	Actual use total (m <sup>3</sup> /yr)	**	-----
	Demand total (m <sup>3</sup> /yr)	**	**
<b>Total supply</b>	<b>(m<sup>3</sup>/yr)</b>	<b>53504</b>	<b>-----</b>
<b>Total actual use</b>	<b>(m<sup>3</sup>/yr)</b>	<b>48967</b>	<b>-----</b>
<b>Total demand</b>	<b>(m<sup>3</sup>/yr)</b>	<b>72617</b>	<b>243737</b>

### Infrastructure

<b>Domestic</b>	Design supply capacity (lcd)	?	
	Design supply capacity (m <sup>3</sup> /yr)	?	
	Estimated Av. % losses	5	15
<b>Sanitation</b>	Type	Cesspits	
	% access or coverage	100	
<b>Agricultural</b>	Design supply capacity (m <sup>3</sup> /yr)	?	
	Estimated Av. % losses	20	
<b>Industrial</b>	Design supply capacity (m <sup>3</sup> /yr)	*	
	Estimated Av. % losses	*	
<b>Other</b>	Design supply capacity (m <sup>3</sup> /yr)	?	
	Estimated Av. % losses	?	
<b>Storage</b>	Volume of municipal reservoirs storage (m <sup>3</sup> )	0	
<b>Total (actual)</b>	<b>(m<sup>3</sup>/yr)</b>	<b>-----</b>	<b>-----</b>
<b>Total (design)</b>	<b>(m<sup>3</sup>/yr)</b>	<b>-----</b>	<b>-----</b>

### Available resources

Rainfall		Av. Annual rainfall (mm)	396			
		Domestic	Agriculture	Industrial	Others (Un used)	
Springs	Av. Annual yield (m <sup>3</sup> /yr)	0	0	0	0	
	% acceptable water quality	0	0	0	0	
Groundwater wells	Av. Annual sustainable yield (m <sup>3</sup> /yr)	22304	8400	0	0	
	% acceptable water quality	95	100	0	0	
Water harvesting	Av. Annual availability (m <sup>3</sup> /yr)	18794	4006	0	0	
	% acceptable water quality	90	100	0	0	
Wastewater	Av. Annual availability (m <sup>3</sup> /yr)	0	0	0	27330	
	% acceptable water quality	0	0	0	0	
Flood water	Av. Annual availability (m <sup>3</sup> /yr)	0	0	0	?	
	% acceptable water quality	0	0	0	0	
Total	Annual availability all sources (m <sup>3</sup> /yr)	41098	12406	0	27330	
	Annual availability - acceptable quality-	38102	12406	0	0	
Total	Annual availability all sources (m <sup>3</sup> /yr)	80834				
	Acceptable quality all sources (m <sup>3</sup> /yr)	50508				

Water use for agricultural purposes includes both irrigation and livestock needs. Sources for water for agricultural purposes are limited to private agricultural wells, and cisterns. In Jalboun, and due to the critical water shortage, cultivated crops are mainly rainfed, and water for irrigation practices is limited to supplying 7 dunums of green houses. The total supply for agricultural use is 8,400 m<sup>3</sup>/yr, while water used for livestock drinking was estimated at 4,006 m<sup>3</sup> in Jalboun village. The water decision making process, at the community level, is restricted to the municipality or village councils, who sometimes coordinate with the Palestinian Water Authority. Unfortunately, the end users of the various groups and institutions do not currently have a role in the decision making process.

### Societal Water problems

Typology of main social groups	Domestic Water	Agricultural water use
1. Poor with high levels of unemployment and low irregular income.	Water use in 28-40 (lcd) range. Main water resource is cisterns. Purchasing water in summer months to meet their needs by small tankers, this in turn increases the difficulties in the financial situation. Water quantity and quality problems in summer months.	Not applicable

2. Employee with moderate regular income.	Water use in 40-60 (lcd) range. Large cisterns and purchasing water from large tankers. No water supply problem, but have a water quality problem due to the lack of monitoring.	Problems of the available water quantity for livestock drinking.
4. Relatively richer, and diversified sources of income	Water use in 60-83 (lcd) range. No water supply problem, but with quality problems.	Shortages in agricultural water sources.

## EMPOWERS Interventions

Due to this situation repeated meetings and workshops were required to strengthen communication between all participants, particularly between end users and representatives of governmental and non-governmental departments. These were used to ensure the participation of all stakeholder in the strategizing and planning then implementing of the pilot project that selected by the stakeholder committee. As All the community based organization participate with other stakeholder in all project stages

## Problem and data collection

A two days problem tree workshop was conducted in Jalboon (January 2004) with partners, key stakeholders at national and governorate levels and stakeholders of Jalboon. The main outputs of this workshop were to identify the main water resources problem at Jalboon level, using Problem Tree Analysis Method.

In the same meeting and based on the problem tree, a RIDA(Resources, Infrastructure Demand and Access) analysis framework was used to identify needed secondary and primary data, which also became basic for any further information gathering.

According to RIDA data need analysis, secondary data collection started in January at governorate level. A second workshop in the presence of the key stakeholders and the partners was conducted in the office of Jalboon Village Council to study and review the water resources situation and problems of Jalboon. The results are in the above tables.

For further collection of primary data collection the Participatory Rural Assessment (PRA) was used, based on the problems identified in the problem trees.

## Visioning, scenario building and strategy development

Visioning, scenario building and strategy development for Jalboun were undertaken during a workshop that took place over five days in September 2004 and which brought together stakeholders from Jalboun, Jenin governorate, and the EMPOWERS project. In the coming paragraphs the results of this workshop for Jalboun Village.

### Vision

*By 2010, access to domestic water of 100 l/c/d for each individual in the village instead of the 48 l/c/d nowadays, an efficient wastewater discharge solution to all houses is available: being connected to a waste water network, or a solid concrete holes that is connected to a treatment plant whether it is at house level or at the village level, and increase the irrigated land by 90%.*

### Scenarios

Based on an exercise in which factors affecting the vision were identified, stakeholders in Jalboon collectively agreed on the two factors which were most important and most uncertain, and which were key for realizing their vision.



**Table 2: Internal and external factors identified during the factor analysis exercise**

<p><b>More Important &amp; Less Uncertain</b> No factors were identified under this category</p>	<p><b>More Important &amp; More Uncertain</b> Funding Licensing</p>
<p><b>Less Important &amp; Less Uncertain</b> open communication channels between Public and Staff Follow up on Pilot implementation Public Awareness Programs</p>	<p><b>Less Important &amp; More Uncertain</b> Availability of qualified staff in Village Council</p>

Based on the above factors, stakeholders in Jalboun developed four scenarios to how the future may unfold:

**Scenario 1: Funding and licenses are available.**

This scenario is considered as the best scenario, as it allows the most scope for quickly and easily achieving the vision. The scenario represents the solution of the current political problems, and it is assumed that if these are solved funding problems are also likely to become less. However, this scenario while considered the idea, is also considered to be relatively unlikely – at least in the short to medium term.

**The strategy:** providing the needed quantities and qualities of water for different use by finding new sources or by rehabilitating and maintaining the existing sources on one hand, and increasing the consumer’s and the supplier’s awareness on water issues and training of the team on the other hand.

**Activities:**

- Digging artesian wells.
- Making water network available.
- Making wastewater network available.
- Training and qualifying the village council team.
- Provide awareness and guidance.
- Broadening water harvesting activities.
- Reclamation of agricultural land.
- Executing projects that deal with pollution and contamination as a result of settlements.
- Build a wastewater treatment unit.

**Scenario 2: Funding is unavailable, but licenses are available.**

This scenario is considered as a second best scenario with respect to finding a better solution for the situation. This is because having the fund is so much easier than having the licensing from the Israeli side; the first can be considered as an internal factor to some degree, and the other is an exterior factor.

**The strategy:** Increase the consumer’s and the supplier’s awareness on the rationalization of water uses and increases the water resources with the participation of the community.

**Activities:**

- Defining abilities and searching for fund raising sources.
- Providing awareness and guidance.

### **Scenario 3: Funding is available, but licenses are unavailable.**

This is considered as the third scenario but an important scenario as it reflects an improvement on the current situation, where to get licenses is a complicated and process but with little likelihood of success and which is unlikely to improve in the future but where funding which is currently difficult to get due to the limitations of the economic situation as a result of the Intefada, if improved would lead to large-scale improvement. This scenario is thought to be the most likely.

**The strategy:** Reclaim and rehabilitate the existing water resources and improve the domestic and the agricultural use of water by using new equipment and improving awareness on all levels.

#### **Activities:**

- Awareness and guidance.
- Water harvesting
- Land reclamation, and Pavement of agricultural roads.
- Build a wastewater treatment unit.
- Availability of a wastewater tank

### **Scenario 4: Neither funding, nor licenses are available.**

This scenario is considered as the worst scenario but it is an important scenario to discuss as it reflects both the current reality on the ground.

**The strategy:** Increase the awareness on all levels for better use of existing water resources and training of teams.

#### **Activities:**

- Conducting awareness campaigns.
- Building cisterns in limited quantities.
- Constructing a modern pricing system

## **Pilot Project Description**

After a brief discussion between the participants in the workshop and the others from the village council, and additional inhabitants pilot project was identified, it was decided to have a water harvesting cistern.

The reason for this project that at Jalboun, the cisterns are the only source for water, and it was found that 85% of the households have cisterns with about 18794 m<sup>3</sup> each year which are less than the 22304 m<sup>3</sup> which are purchased from the agricultural wells, and the access for each person is only 48 l/c/d. in addition to that 85% of the houses have cisterns, and not 85% of the families have since most houses have at least two families in each house.

After determining the pilot project the stakeholder committee participate in the implementation of the pilot project through the determining of the criteria for selection of households for this activity and to decide whether to construct the cistern at either a communal or individual basis, with a decision on an individual basis being taken.

Repeated meetings and workshops over the last two years of project implementation have greatly strengthened communication and understanding between all participants, particularly between end-users and representatives of governmental and non-governmental departments

EMPOWERS Local Committee, and together with the key stockholders they have set the main criteria for the beneficiary selection of the household cisterns , including:

- Beneficiaries from proposal project – cistern for domestic use must have family and dependent house without water sources
- They didn't benefit from previous funded projects of cistern in the village

Regarding the economical situation the priority will be given to :

- Irregular low income
- Low regular income
- Family size : the priority will given to large families
- Priority also given to multi-use and multi-users

According to Ali Fokha, one of the EMPOWERES committee members who participate in the committee meeting for determination of the criteria of beneficiary selection told us that “ it is the first time the community based organization and other community members have a main role in the project determining and in the criteria of selection for beneficiaries , not similar the previous projects which as he told us that these projects came to him as ready cooked food and they have to eat it as it is with out any participation in preparing it , also with out looking if this project considered as priority to the community or not.

## Lessons learned

- The local committee will be more satisfied with the project implemented with them more than if they didn't share in determining this project or in the criteria for selection of the beneficiaries.
- Women's participation: Before the EMPOWERS project women participated in the implementation of many projects but their role was limited to attendance without any real decision making role, . Requirement for women involvement in projects was met by the village council selecting women from amongst their relatives, who in turn simply attended meetings with the funder or implementer of the project without active participation. Following the EMPOWERS process, women have two members on the EMPOWERS Jalboon Committee in the village who attend and participate and discuss their needs in the meeting of this committee.
- Working with the presence of the stakeholders at all levels clarifies the gap between the community and the stakeholders from all institutions, but as a result of bringing them together, the gap is decreasing, albeit with limited degree.

## References

- Abed, A., and Wishahi, S, (1999), Geology of Palestine, Palestinian Hydrology Group & Association of Palestinian Geologists
- Applied Research Institute-Jerusalem, (1996), Environmental Profile for the West Bank- Jenin District.
- Palestinian Central Bureau of Statistics, (1996), The demographic Survey in the West Bank and Gaza Strip, Jenin District.
- Palestinian Central Bureau of Statistics, (2000), Land Use Statistics in the Palestinian Territory.
- Palestinian Central Bureau of Statistics, (2000), Population, Housing and Establishment Census-1997, Final results- Jenin City.
- Palestinian Central Bureau of Statistics, (2000), Population, Housing and Establishment Census-1997, Final results- Housing Report-Jenin Governorate.
- Palestinian Central Bureau of Statistics, (2000), Water Statistics in the Palestinian Territory.
- Palestinian Water Authority (1999), Wells in the West Bank Governorate- Jenin Governorate.
- Palestinian Water Authority, (2002), Water Supply for West Bank.
- Rofe and Raffety, (1965), West Bank Hydrology: Analysis 1963-1965, Geological and Hydrological Report, Jordan, Central Water Authority.
- Sana' Abu Azizeh, (2002), Palestinian Participatory Poverty Assessment Project, Jenin Governorate, Ministry of Planning and International Cooperation.

Wishahi, S., (2000), Agricultural wells and irrigation schemes in West Bank, Palestinian Hydrology Group.

Khaled, A., Aliwie, A., Wishahi, S., and Rabi, A., (1997), Hydrogeology of Eocene Aquifer-Northeastern Groundwater Basin, Palestinian Hydrology Group, and New castle University.

Working Papers developed by EMPOWERS