

The participation of Jordanian women in food security and food production

Shatanawi M., Naber S., Al Smadi H., Al Shneikat G.

in

Sagardoy J.A. (ed.), Lamaddalena N. (ed.), Quagliariello R. (ed.), Chimonidou D. (ed.),
Guelloubi R. (ed.), Pinca V. (ed.).
Mainstreaming gender dimensions in water management for food security and food safety

Bari : CIHEAM

Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 77

2007

pages 83-96

Article available on line / Article disponible en ligne à l'adresse :

<http://om.ciheam.org/article.php?IDPDF=800483>

To cite this article / Pour citer cet article

Shatanawi M., Naber S., Al Smadi H., Al Shneikat G. **The participation of Jordanian women in food security and food production.** In : Sagardoy J.A. (ed.), Lamaddalena N. (ed.), Quagliariello R. (ed.), Chimonidou D. (ed.), Guelloubi R. (ed.), Pinca V. (ed.). *Mainstreaming gender dimensions in water management for food security and food safety.* Bari : CIHEAM, 2007. p. 83-96 (Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 77)



<http://www.ciheam.org/>
<http://om.ciheam.org/>

THE PARTICIPATION OF JORDANIAN WOMEN IN FOOD SECURITY AND FOOD PRODUCTION

M. Shatanawi*, S. Naber, H. Al-Smadi*** and G. Al-Shneikat******

* Professor, University of Jordan, Amman, Jordan

Email: shatanaw@ju.edu.jo

** Researcher, Faculty of Agricultural, University of Jordan, Jordan

Email: al-naber@ju.edu.jo

*** M.Sc. student, Mediterranean Agronomic institute of Bari, Italy

**** Researcher, Faculty of Agricultural, University of Jordan

Abstract - The total land area of Jordan is about 89,342 km² with a population of about 5.473 million as of 2005 (DOS, 2005), with a growth rate of about 2.3%. Jordan is a semi arid country with limited water resources and inadequate supplies of other natural resources. Debt, poverty, and unemployment are fundamental problems. Still, it is considered as food insecure, due to its very limited resources and high dependency on imported food and agricultural products.

In Jordan, women play an important role in almost all agriculture and livestock activities of the household and in many cases their participation exceeds that of men. They shoulder a major share of the responsibilities for household food security. They are more likely than men to spend a given income on food for the family. That is the reason why income generating activities are options and alternatives to overexploitation or heavy pressure on limited natural resources.

The well-being of Jordanian women has improved significantly over the past two decades, as reflected by their increased (though low) participation in the labor force, higher life expectancy, improved educational attainment, and decline in the fertility rate.

The national Jordanian strategies call for increasing the role of women's participation in the socio-economic development through training programs. Various NGOs such as the Noor Al-Hussein Foundation, Queen Alia Fund for Social Development, the General Federation of Jordanian Women, the Business and Professional Women's Club as well as the National Assistance Fund and the National Employment Fund provide training programs for women as well as income generating projects and loans to enhance their economic independence and participation.

The role of women in the management of water resources is very important in countries of extreme water scarcity like Jordan. Women as decision makers, extension engineers and researchers can play important roles in improving water management. In Jordan, women in the public sector (Ministry of Water and Irrigation and Ministry of Agriculture) have demonstrated a high level of performance in the management of irrigation projects and extension services. The involvement of women in managing small scale irrigation projects has improved the efficiency of water use.

Although women participate in the socio-economic development, and in income generating and household activities, there are some constraints to their participation in natural resources management and food production such as the cultural context, the lack of technical support and of women's organizations in rural areas, and the lack of implementation of the participatory approach.

INTRODUCTION

Jordan is one of the Middle East countries that is located about 80 km to the east of the Mediterranean Sea. It is bordered by Syria to the north, Iraq to the east, Saudi Arabia to the east and south, and Palestine and Israel to the west. The Gulf of Aqaba, on the Red Sea, is Jordan's only seaport and direct access to the open sea. Jordan lies between latitudes 29° 11' N and 33° 22' N and longitudes 34° 19' E to 39° 18' E. Its total land area is about 89,342 km² with variable topographic features. Steep mountainous areas or the steppe arid region of Badia comprise 80% of the total land area of the country.

Jordan can be divided into three distinct regions from west to east: the Jordan Rift Valley (JRV), the Plateau, and the semi-desert or the Badia Region. Being a part of the Great Rift Valley, JRV runs from lake Taberia in the North to the Gulf of Aqaba to the south. Officially the area bounded by elevations of 400 m below sea level and 300 m above sea level is called the JRV, which comprises

the Jordan Valley north of the Dead Sea (DS), the DS area, the southern Ghors south of the DS and Wadi Araba (running from the upper point of the southern Ghors to the Gulf of Aqaba). The Jordan Valley and the southern Ghors are the major irrigated areas of about 33,000 ha with a potential of 43,000 ha. The plateau is situated immediately to the east of JRV where its elevation varies from 300 m to about 1200 m. The plateau comprises a narrow strip running north to south and varying in width from 25 to 40 km. The remaining part of Jordan (about 90% of the country) is a low rainfall and semi-desert area which is locally called "the Badia Region". Rainfall in the Badia Region is sparse and erratic ranging from less than 50 mm to 200 mm and it is sufficient to form a thin and sporadic vegetation cover useful for short periods of grazing.

Rainfed agriculture is practiced on the arable lands in the plateau where the average annual precipitation volume is more than 300 mm. Irrigated agriculture can be found in limited areas where irrigation water is supplied from the base flow of the side wadis, springs or local wells. State and private forests can be found on the mountains and steep rocky land but they comprise only 1% of the total area of the country. The area of range land, where the annual rainfall volume is between 200 and 300 mm, accounts for about 5% of the total area of Jordan.

In general, only 4% of the total area of Jordan can be cultivated through rainfed agriculture in the years of sufficient rainfall. The actual cropped area was 306,000 ha in 2000 compared to 380,000 ha in 1970. Areas developed for irrigated agriculture amount to approximately 76,000 ha. Of this total, 33,000 ha are in the Jordan Valley and the southern Ghors which are primary developed by the Government. The rest of the irrigated area of about 43,000 ha has been developed by the private sector in the plateau and the Badia regions depending mainly on groundwater. (Shatanawi, 2006).

The population of Jordan has reached 5.473 million by the end of 2005 (DOS, 2005). This is over ten times the population in 1952. Table 1 illustrates the population in Jordan according to the gender-disaggregated censuses of 1952, 1961, 1979, 1994, and 2005.

Table 1. Population of Jordan for selected years (in million)

Population	1952	1961	1979	1994	2004	2005
Total	0.586	0.900	2.133	4.140	5.350	5.473
Male	0.302	0.469	1.116	2.161	2.758	2.821
Female	0.284	0.431	1.017	1.979	2.592	2.652

GENDER ISSUES

Gender issues refer to any aspect governing the lives of women and men as well as the relations between them. In the second half of the eighties, after several development programs, it was realized that the lack of participation of women in planning, maintenance and management had resulted in negative impacts on the quality of the services and on the overall position of women and their participation in development. As a result, many projects began to take special measures to involve women in decision-making and management of services. Gender issues must be integrated into all national policies to achieve equitable development for women and men. In developing countries, gender issues mean more involvement of women in development and other economic activities. The Arab States region has witnessed social changes for the last three decades with respect to women. These changes are driven by social and economical reforms as well as by an evolution of education. The status of women in the region is improving in many aspects such as education, participation in planning, execution, and evaluation of different development projects. Female professional engineers, medical doctors, service providers as well as decision makers in different governmental and non-governmental organizations are also increasing. (World Bank, 2005).

The Jordanian's Constitution guarantees equality among its population regardless of their race, religion, sex or origin. Men and women have equal opportunities in education, health, employment, elections and other aspects. Jordan has witnessed through the last three decades an evolution in women's participatory role in the public sector. Over 30 years ago, the role of women was restricted to household activities, teaching in schools and working in the nursing sector. Since 1975 the status of women has improved as reflected by a higher life expectancy (72.4 years), the increased participation

in the labor force, their improved educational level and the decline in the fertility rate. The total illiteracy rate in Jordan is 11% (5.6% for males and 16.2% for females), while the overall enrollment rate in primary schools reaches 91%. Enrollment rates are slightly higher for females (91.8%) than for males (90.7%) in urban areas, while it is higher for males in rural areas (88.8% for females and 91.7% for males). At the university level, there was no significant distinction between male enrollment (49.4%) and female one (50.6 %) in 2005. However, if we consider the enrollment in Agriculture Colleges, females represent the majority (62%). In community colleges, females constitute 66% of the students, against 60% in Agriculture Colleges, and 50.7 % of university graduates in 2005 were females.

The presence of women in high public posts is still low but improving. 10.9% of them are in the council of senators, 5.5% in the house of Parliament, 4.3% in the cabinet of ministers, 28% in the public sector as directors, 7.4 % in diplomatic corps, 11% in municipal councils, 3.9% out of the total number of Judges and public attorneys and 18.3% in Jordanian universities as part of the academic staff. The presence of women in the membership of associations and unions ranges from 14.5% in Jordanian Engineers Association, to 33.8% in the Agricultural Engineers Association, to 52% in the Pharmacists Association. They form the majority (66.5 %) in the Jordanian Nurses & Midwives Council. Table 2 shows the total number of the registered members in different associations for the years 2002 and 2005.

Table 2. Total number of registered members and their distribution according to sex, in the different associations for the years 2002 and 2005

Association	2002			2005		
	Male	Female	Female %	Male	Female	Female %
Engineers	45,059	5,775	11.4	56,095	9,551	14.5
Doctors	9,511	1,624	14.6	16,000	2,500	13.5
Agricultural Engineers	6,359	2,721	30.0	7,668	3,916	33.8
Dentists	3,178	1,357	29.9	3,872	1,779	31.5
Nurses	3,045	5,192	63.0	4,890	9,710	66.5
Pharmacists	4,224	3,455	45	4,550	4,932	52
Lawyers	4,443	886	16.6	5,432	1,276	19
Total	75819	21010	21.6	98507	33664	25.5

Nevertheless, important gaps remain, particularly in women's low participation in the labor force and in political life. Women represented just 15.1% of the labor force in 2005 and were employed mainly as community personnel, and in social services, including activities such as teaching, nursing, and financial activities. In 2005, the unemployment rate among women in Jordan has reached 25.9%. (DOS, 2005). Low levels of formal economic participation may imply greater participation in the informal sector, although few data are available to substantiate this hypothesis. Still, it is an issue that deserves investigation.

The well-being of Jordanian women has improved significantly. This is reflected in the key indicators such as the drop in the total fertility rate and the increase in women's labor force and life expectancy as shown in Table 3.

Table 3. Jordan key gender indicator, 2004, 2005*

Indicator	2004	2005
Total fertility rate	3.7	3.7
Female labour force participation rate	13.7	15.1
Primary school GER (%)	96.2	97.3
Maternal mortality (per 100,000 live births)	29	29
Infant mortality (per 100,000 live births)	24	24
Illiteracy (%)	15.1	13
Life expectancy (average years)	71.5	72.6

* Department of Statistics (2004,2005)

The women's movement in Jordan is at an important crossroads that provides opportunities for the strategic support of women and development. In the national program for Women, Jordan has outlined an agenda for advancing the status of women. There is an organizational structure consisting of the Jordanian National Committee for Women (JNCW) and the Jordan National Forum for Women (JNFW) under the leadership of Her Royal Highness Princess Basma. It is designed to provide leadership and coordination of a development program for women including the work of NGO's. The structure and program provide a broad framework for undertaking future activities.

HIGHER EDUCATION FOR WOMEN

The main focus of the case study on women and higher agricultural education in Jordan was the Faculty of Agriculture at the University of Jordan, the oldest institution offering degrees in agriculture in the country. In addition to the University of Jordan, three public community colleges and one private and three public universities offer agricultural diplomas or degrees.

Founded in 1962, the University of Jordan established its Faculty of Agriculture in 1972. In the academic year 2005/2006, the percentage of women in the total enrolment in the university was higher than that of men at the undergraduate level (61.8%).

The percentage of female enrolment in the Faculty of Agriculture was 68.1% at the BSc level, 58.3% at the MSc level and 39% at the Ph.D level in the academic year 2006/2007. The reasons for the decline of women students at the higher levels are reported to be the following: marriage, moving to another city or country with the husband, pregnancy, and lack of interest in continuing. (Personal contact).

The number of student enrollment at the Faculty of Agriculture for the year 2005/2006 is shown in Table 4. More women specialized in Nutrition and Food Technology, Plant Production, Agricultural Economics, and in the departments of Land, Water and Environment, than in Animal Production and Horticulture and Crop Science. The choice of specialization appears to be strongly influenced by the opportunities women have to benefit from their agricultural education through employment. Most women graduates in Nutrition and Food Technology work in related public sectors, hospitals, schools and bakeries, while graduates in Plant Production work in flower shops, plant nurseries and shops dealing with agricultural inputs.

Table 4. Total number of B.Sc. students accepted at the faculty of agriculture for the year 2005/2006

Department	Male	Female	Female %
Department of Horticulture and Crop Science	18	26	59
Department of Animal Production	42	14	25
Department of Land, Water and Environment	20	41	67
Department of Plant Production	20	27	57.5
Department of Agricultural Economics and Agribusiness	15	33	68.7
Department of Nutrition and Food Technology	13	92	87.6
Total	128	233	64.5

A significant finding, however, revealed that most of the working women were working morning shifts and not in field work. The reasons for this are the social restrictions on women which do not permit them to work outside their home in the evening, to have contact with male farmers or to ride in vehicles driven by men.

Although the University is an equal opportunity employer, in 2005 women make up only 21.3% of the staff of the Faculty of Agriculture, and only 4.6% of the PhD holders on the staff are women. The low percentage of PhD holders on the staff is due to the very low number of women agricultural graduates with PhDs (Personal contact).

There is a need to restructure the Faculty of Agriculture by creating disciplines that will not only better meet the needs of the country's development and local job markets, but will also be more

suitable for preparing women for jobs in the public and private sectors. The job market for women with higher agricultural education is expected to improve, especially in the fields of hospital nutritionists and university teaching. Women are also applying their education through work with cooperatives and NGOs.

WOMAN AND ENVIRONMENT

Jordan has recognized the fundamental role of women in environmental protection and natural resources management, in particular conservation of water resources and combating land degradation. Therefore, many governmental agencies have committed themselves to promoting awareness and facilitating the participation of women in decision-making, especially those dealing with natural resources management. In order to advance the role of women and to promote gender equity, women are always involved in project identification, planning and implementation. Women's participation into environmental activities and natural resources management is not limited to the public sector. They are heavily involved in non-governmental activities as well. Many of them play an active role in the country's environmental societies and social charities like JES (Jordan Environment Society), Friend of Environment, Water Conservation Society, etc.

Women in both public and private sectors have been incorporated into the gender perspective in the national environmental policies, strategies and action plans. Their involvement has taken several approaches, for example:

- Promoting the mainstreaming of gender perspective in the sustainable management of natural resources.
- Incorporating the gender perspective in the planning, formulation and implementation of the National Strategy and Action Plan to combat Desertification (NAP).
- Inclusion of women in environment decision-making processes at all levels, as managers, designers, and implementers of environmental projects.

On the other hand, there is always a need to strength women's capabilities to participate in environmental decision-making by increasing their access to information and education. In the last few years, this process has taken different forms including:

- Organizing workshops on women's participation in environmental protection in order to increase the number of women working to preserve natural resources.
- Train rural women on the control of desertification through the reestablishment of pastures and improvement of irrigation techniques.
- Train women on methods for reducing the use of pesticides, herbicides and other chemical products in their households and in agriculture.
- Train rural women on the best practices in livestock breeding, including avoiding the use of hormones and growth proteins and raising animals in an environmentally sound, sustainable and healthy manner.
- Train women on techniques for conserving water and energy, which they can use to educate their children.
- Develop environmental conservation activities such as cleaning the environment, recycling and reuse of products.

FOOD SECURITY IN JORDAN

Food security is an important political issue as all governments work hard to maintain control of sufficient food supplies for their people. Food security exists when all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. (FAO, 2003).

In 1974, the World Food Summit defined food security as *"the availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices"*.

Jordan is a middle income country with a per capita GDP of \$2329 per year and GNP of \$2895 (DOS, 2006). Unemployment is endemic, some 15% of the workforce is out of work. The proportion of

the population falling below the poverty line varies between 15% and 20%. The Human Development Index (HDI) ranked Jordan at 86 in 2004 with a score of 0.760 and life expectancy stands at 71.6 years (UNDP, 2006).

Jordan is a small country with inadequate supplies of water and other natural resources. Debt, poverty, and unemployment are fundamental problems. Still, it is considered as food insecure, due to its very limited resources and high dependency on imported food and agricultural products.

Risks to food security:

- Lack of job opportunities and low income.
- Decline in economic indicators.
- Low and erratic annual precipitation.
- Agricultural land degradation.
- Self insufficiency in food products, especially cereals.
- Water scarcity, with Jordan ranking among the 10 most water-deficit countries.

In Jordan, there isn't an explicit and specific food security policy; it is included within the general economic and agricultural policy framework. A policy promoting the exports of high-value products and the imports of relatively low-value products would result in sustainability, higher gross and net return. The policy to lease land and groundwater in the southern part of the country (Disi a quire) in order to ensure food security is what has proven to be a failure approach. Despite the subsidies for buying the produced wheat in that region, farmers have shifted to vegetable and fruit tree production regardless of their high water requirements since they are grown in semi arid and dry conditions in the South Eastern desert of Jordan. Fruit trees in this part of the country are grown under full irrigation whereas fruit trees in the upland receive some supplementary irrigation.

Imposing cropping pattern as a policy measure to promote food security and regulate water use did not find stakeholder acceptance. Such measure will allow the government to regulate the production and gear agriculture towards the production of crops that support food security.

The government of Jordan has put the increasing food self-sufficiency and food security on the top of its development and economic agenda in order to formulate agriculture and food supply policies. This is aimed at implementing certain development and security measures such as:

- Considering wheat as a strategic community good of which the government keeps up supplies for a minimum of eight months. Strong facilities of about 470,000 tons are available in different locations in the country, and the stored reserves of other food products are about 27,000 tons.
- Keeping barley and maize reserves is sufficient for a two-month supply and one-month contract.
- Importing high yielding cow breeds to increase self-sufficiency of milk and dairy products.
- Securing food supplies at reasonable prices for poor families.
- Targeting the poor rural areas.
- Generating projects at the farming level in order to incorporate women in development.
- Introducing high-yield and agricultural technologies and inputs to increase the production per unit area and per unit volume of water.

WOMEN AND FOOD SECURITY

In general men are the decision makers for crop production but responsibilities are shared between men and women. Traditionally, men are responsible for land preparation, while women are responsible for weeding, harvesting, crop processing and livestock. All family members participate in harvesting but women assume a major role in some post-harvest activities, especially food processing. They play a very important role in the management of fruit trees plantation particularly for pruning, treating, watering and harvesting. Women are engaged in the production of most vegetables in home gardens close to their house, while men are in most cases engaged in marketing.

The female participation in livestock raising depends on the number of animals. If holdings are small, women do most of the work in feeding, watering and otherwise managing stock. Women daily water and feed the animals and may also graze and milk them. However, when flocks and herds need to be taken to pasture, the young men or children are likely involved. Women are always responsible for poultry and processing of products from livestock, especially dairy products.

Income Generating Activities (IGAs)

The majority of female workers come from very poor households, in which the living conditions are very bad and the female income is essential to satisfy the basic needs. A few of them, rarely, have developed small income generating activities to improve the living standards of the family and the household security. Whenever women receive an income, that represents a resource for food security. Thus, women shoulder a major share of the responsibilities for household food security. They are more likely than men to spend a given income on food for the family. That is the reason why income generating activities are options and alternatives to overexploitation or heavy pressure on limited natural resources, as a result of their full participation in the economic and well being of the household. According to the fact that in rural areas the household is dependent on the use of natural resources, it could be concluded that women play a key role in that field.

The main thrust of women's development activities would be to assist women in the sustainable establishment of income generating activities to be undertaken in or near their home. In some pilot villages IGAs tend to give women a higher status within the family and studies generally indicate that the greater the amount of income under women's control the greater the amount devoted to their children's education, health and nutrition. As previously mentioned, generally the incomes of women are used to increase the well being of the whole family. However, it is essential to guarantee that women will have the control and the free disposal of the funds (saving funds, loans, etc..) in order to implement IGAs.

In rural areas, the main activities are fruit tree planting (olive trees are dominating although various species are also found like almonds, figs, apricots, apples, peaches, vines), annual crops and livestock. The major component of the farming system is characterized by cultivation of olive trees associated to cereals. Rural women have expertise in small-scale cultivation and agricultural and animal production, processing and preservation.

Food Drying, Processing and Preservation

In many rural households women are seasonally involved in these activities. They preserve surplus production for household consumption and for marketing when the family needs more cash. However, the regular production of a standardized product for the market is still rare and a wide range of local products which could be produced is lacking. The most notable of these are the following:

- Dried fruit, vegetables and herbs: in Jordan the solar drying of fruit and vegetables is restricted to a few minor crops such as chilies, okra, jew's mallow, usually for household consumption. However vegetables such as tomatoes and eggplants can be dried, as well as many fruit, such as figs, grapes, apricots and peaches. The market for these is as yet poorly developed but the world market is expanding every year. There is also a large market for edible and medicinal herbs which remains poorly supplied from local sources.
- Processed fruit and vegetables: production of jams, pickles, vegetable pastes, fruit juices could all increase farm income and in particular women's income since this would generally make use of existing skills and technology. Packaging is probably important in attracting consumers for local products when they must compete against imports. Producers need advice about moving dried and processed products from rural areas to larger outlets in towns. These activities could be implemented in some areas, especially those where fruit-tree plantations are widespread. The Federation of Jordanian Women carries out a project concerning herbs drying and packaging run at community level in Irbid district, with good results. It seems to be interesting that the FAO Project gets in touch with the Federation which envisages to set up a similar project in Ajloun district (FAO, 1996).

Preparation and Marketing of Dairy Products

Small-scale milk processing enterprises could be established in villages where there is a surplus of milk. Some NGOs, as Queen Alia Fund, have already developed small credit projects in support of this area in Jordan. Milk processing is one area of traditional female responsibility and production of local cheese is done by women. The knowledge of production techniques is already widespread in several families. In Jordan sheep milk products are generally preferred but locally goat products may

be more popular. One of the main items that store well and is widely sold is Jameed (kind of dried yoghurt).

As with agricultural food processing, the main needs are to mobilize women to produce hygienic products of consistent quality and to match their output to local markets. A range of various products can be made: butter, cream, cheese, yoghurt, etc. There may be some possibility of reprocessing locally made cheese and packaging and marketing it through urban food stores where traditional local cheeses are not now sold. This activity could be developed in livestock raising in the villages close to the rural region's range land.

Agricultural Production

Some agricultural production activities can be carried out in order to provide income such as: vegetables, aromatic and medicinal plants, flowers, indoor plants and fruit tree nurseries. The market for aromatic and medicinal plants seems to be important in Jordan. Vegetables and medicinal plants should be linked with processing and packaging activities. Different groups of women could implement these activities according to their own interests and skills, one specialized in production, the other in processing and packaging.

Flowers and indoor plants production could interest villages located close to towns where there is a market for this kind of production. Fruit-tree nurseries could be established by women in Jordan, but the constraint is the necessity to obtain a license. There is a market for high-quality fruit-tree seedlings and a few women have competencies in this area.

Biological produce (fruit and market garden produce) could be an interesting alternative in Jordan where a market seems to exist in Amman.

Establishment and Improvement of Livestock and Poultry Raising

The first priority of many women, especially older women, is to establish or improve their animal production by buying cows or small ruminants or improved poultry (particularly laying hen). In Jordan several NGOs support this activity in providing credit facilities and technical assistance, especially for sheep and Shami goats. These projects are encouraged by IFAD (International Fund for Agricultural Development) which provides credit loans for livestock and poultry upgrading.

Of course this activity should be the object of caution especially for goat raising and considered according to the fodder and grazing land availability. However, we emphasize that it is one of the most fitted to a category of women. Many of them want to buy only one cow or a few small ruminants, especially in remote villages. The implementation of livestock raising should be linked with improved forage production for efficient production of milk and meat. Furthermore, it can allow at the same time fodder shrubs plantation in rangelands, what consequently should imply more involvement of women in natural resources management. One of the main constraints is the possible animal health problem. Improved animals like Shami goats are generally more fragile and need more care. In that case, poultry, which needs less investment, is less risky (FAO, 1996).

INSTITUTIONS INVOLVED IN WOMEN'S DEVELOPMENT

There is a political will to increase the role of rural women in the participation to the economic development, as it is indicated by successive Jordanian Development Plans. These Plan outlines economic and social objectives aiming at improving the economic performance of the country and focusing on the problems of unemployment and poverty. With regards to women, the plan calls for mainstreaming women into the economy encouraging self-employment, making available to them wider facilities for loans and providing them with the necessary education and training. Various program objectives are to increase women's participation in the socio-economic development through training programs. Various NGOs such as the Noor Al-Hussein Foundation, Queen Alia Fund for Social Development, the General Federation of Jordanian Women, the Business and Professional Women's Club as well as the National Assistance Fund, the National Employment Fund provide training programs for women as well as income generating projects and loans to enhance their economic independence and participation. These various institutions' projects include productive

family projects, revolving loan projects, self-employment loan projects, and concern agricultural production and the quality of life projects in rural areas. Through these projects rural women can have access to loans and are the main beneficiaries of income generating projects. But generally all these projects have been recently implemented and are at an experimental stage. Only a few actions seem to implement a participatory approach which effectively highlights the necessity of integrating women in the process of development at all levels, as decision-makers within their communities, as well as economically active participants (www.ifad.org).

Some national and international NGOs have got a valuable experience in productive projects with women. At governmental level and public agencies, various consultancy reports on the status of rural women were commissioned but till now these have not allow implementation of effective and significant activity. Most of the activities are concentrated on health and nutrition areas. (FAO, 1996).

Government and National Non Governmental Organizations

The main counterpart of NGOs (national and international) is the Ministry of Social Development. The Ministry of Agriculture is operating through directorates at central and district levels. Although about 25 % of field officers are female there is no gender approach. Extension and Information Directorate is represented at governorate and district level and there are no extension units in the villages.

The Agricultural Credit Corporation (ACC), a fully owned government organization does not have a gender approach to loan disbursement and only about 57% of their clients are women, most of them heads of poor family. ACC has recently started a Rural Families Credit Program targeting rural women heads of households with an annual income of 1200 JD. If the woman does not have land or fixed assets to take the loan it will be given with the signature of two guarantees financially responsible for her. ACC is also collaborating with IFAD in the income Diversification Project (IDP) which operates in the higher rainfalls areas through the Ministry of Agriculture and the Jordanian Cooperatives Organization. The Income Diversification Project targets low income families and provides short and medium term credits to upgrade the production of small flocks of sheep and goats, to plant trees, to produce vegetables, to implement water harvesting, food processing, etc. Some of these activities (like livestock raising, milk processing and marketing) foresee that priority will be given to women. The Project is just beginning.

The Ministry of Social Development (MSD) established in 1981 the General Federation of Jordanian Women (which has now the status of NGO) with a nation-wide of 25 multi-purpose centres. Training projects are set up to help women in developing leadership in their own communities and raise their awareness about civil and legal rights. The Federation sponsors some small-scale income generating projects sometimes in cooperation with other NGOs. It has been heard that a new project could be soon initiated in Ajloun district and which would be similar to the one already existing in Irbid. It could be interesting for the FAO Project to get in touch with the Federation and to visit the Irbid Project which seems to have good results and concerns medicinal herbs, drying and packaging run at community level.

Noor Al Hussein Foundation (NHF) has developed a community approach for the low category of rural women and one of their objectives is to promote women's participation in decision-making. NHF provides instruction in family planning, basic health issues, child care and promotes income generating activities for women. The one in Jerash concerns traditional handicrafts.

Queen Alia Fund for Social development (QAF) has played a leading role in revitalizing urban and rural community for many years (the Foundation was created in 1977). It has a network of over 40 Community Development Centers which provide local points for a range of services, training programs and projects, and involve the local organizations in running the projects. Many of the community centers are run by local women known as rural leaders. To encourage women to participate and take up leadership roles in their communities, QAF introduced the pioneering concept of women's comities at village and governorate level. Educational workshops and seminars cover a wide range of topics and issues, as literacy classes, health, environment, agricultural and animal production, domestic economics. etc.

QAF has recently set up Business Advisory Units to help women to start a business, offering training and assistance from the generation of ideas to market research. Women who attended a business ideas generation course are currently setting up a variety of business like jam production, dairy processing, sewing, opening grocery stores, goat and sheep raising to sell milk and cheese, etc. In 1992, QAF introduced a Revolving Loan Fund Project which offers loans on easy terms for men or women wishing to set up or expand their business.

In the rural areas, people are encouraged to improve their living standards through agricultural projects, such as home gardens development (vegetables, medicinal herbs, flowers), sheep and goat raising, food-processing and other productive projects like handicrafts. QAF gives an assistance to the research of markets (as the introducing of rural markets).

The General Union of Voluntary Societies in Jordan (GUVS) is registered in the MSD as the overall organizer of voluntary societies (approximately 65,000 volunteers).

The GUVS does not have a gender approach but supports the voluntary societies as a whole. One of the main areas of assistance is vocational training. Training for females entails primarily knitting, sewing and weaving courses. The activity concerning income generating activities is recent and concerns only 3% of the projects. It is addressed to the less-fortunate and low income families and individuals through its Productive Family Program. This is carried out in cooperation with the Development and Employment Fund. Sewing and knitting machines are given on a basis of easy-term loans, with the aim of increasing their income. GUVS has implemented a Credit Fund Program which has proven to be successful. This project started in 1992 through the Near East Foundation as a pilot project. The program aims at establishing credit funds in the qualified and capable societies. These funds are used to give loans to poor families and individuals to help financing their productive projects. The loans are repaid from the project returns. Each fund has 7,000 JD and the settled revolving loans guarantee the continuity of the project. About 100 projects exist at the present time.

The Business and Professional Women's Club was founded in 1976 in Amman. It provides assistance to women by informing them of their legal rights and responsibilities and by promoting the establishment of women entrepreneurs.

International NGOs

Save the Children supports projects for rural women and provide them with additional income generating activities. Care International implements projects for community development and some of them aim specifically at women. Since 1993, Care Community Projects have been assisting local grassroots organizations to strengthen their capacities and provide the local communities with income-generating options through a number of productive projects (main elements concern loans for small ruminants and food processing). The Savings-Credit Project is a new and original approach in Jordan that allows small groups of women to turn their small savings into loans for themselves. Training and support are provided.

Care is also committed to sharing experiences with other agencies concerned with the local community development. It participates to the implementation of the Watershed Management Project (Wadi Ibn Hammad) thanks to GTZ financial contribution.

Near East Foundation is one of the oldest NGOs in Jordan. Its main goal is community development and it runs small-scale rural credit programs in various southern governorates.

International Agencies

UNIFEM, the branch of the United Nations for the promotion of women's development, has a small business program established on a regional basis in the Near East. The UNIFEM Project - Strengthening Institutions for Enterprise Development of Women- is being developed with the assistance of local NGOs, especially the Business and Professional Women Club. The Development Fund assumes the role of umbrella organization for the finance and credit area. The project objective is small-scale enterprise development with the support of training, transfer of technology and credit. Meetings are organized directly with women to identify activities and to form groups for training.

UNIFEM is developing models for income generating activities with adequate loan windows and financial support; training in using improved technology is incorporated in the model as an additional value. Expected economic and social benefits are among others the creation of revolving funds and additional income for women as well as the development of leadership and management capabilities. UNIFEM has streamlined its work into the Program "Economic Empowerment for Women in Jordan".

CONSTRAINTS ON WOMEN'S PARTICIPATORY NATURAL RESOURCES MANAGEMENT

Cultural Context

Although the majority of women participate in household activities, especially agriculture and livestock raising, decision-making is in most cases the privilege of male heads of households within the patriarchal structure of the family. Most women are especially interested and sometimes involved in the production of traditional handicraft such as sewing, knitting, embroidery, carpet making, because they don't have any other alternatives. Most of them don't even earn any income and in case they receive a small salary this contributes to the family well-being. That is why only a household approach is appropriate regarding any kind of gender project. A common constraint in households is the refusal to accept wives' participation in independent economic spheres because it implies a certain level of mobility. Popular attitudes and mentalities generally don't want women to work outside their house. In conservative areas, men consider it shameful if their wives work to earn additional income. Usually, it is difficult for rural women to participate in activities outside the home although nowadays a rapid social change is occurring. Education is seen as the key to improve income and increase the social status. In spite of the progress made in the field of education, the rate of illiterate rural women is about 25% in Jordan. But despite some gaps between males and females the clear trend is a steady increase in female schooling at all educational levels including at university level.

Farmers are highly individualistic with little history of participating in group-based activities. This individualism is still more important at the female level according to the cultural context, the withdrawal into the family, the lack of external contact and technical support. Generally, there is no or poor collective cooperation between the villagers neither in producing nor in marketing products. Despite the obvious contributions of women to farming and product processing activities, they don't have the same contacts as men have with agricultural extensionists since most of them are males.

The lack of access to the land remains one of the main obstacles to the full participation of women in rural development. The land and even the joint property is registered in the husband's name. Even in case the husband dies, the property will generally go to the husband's male children or to his brother.

Lack of Technical Support

According to the above mentioned considerations there is a crucial lack of technical support at women level.

In Jordan, agricultural extension services are almost entirely established taking into consideration only male household heads. No specific programs within the MOA are conceived for women, despite their extensive involvement in the agricultural sector. NGOs have only recently begun to consider agricultural components. There are no extension services at village level and female extensionists are at district level: they are not in charge of any specific programs for women since they can't move around freely and generally they stay in the village because of the lack of transportation facilities.

Women cope with considerable difficulties in trying to fulfill the requirements in order to gain access to credit due to the lack of a guarantee (generally the possession of lands). In addition, also their level of difficulty in undergoing the loan application process should be taken into consideration.

Women have no experience in dealing with formal institutions such as banks, and are reluctant to approach them. Most credit is opened by male households. In Jordan, major sources of credit include government organizations, such as the Agricultural Credit Cooperation, and different NGOs, but in general guarantees are needed (land possession or state workers in the family).

Lack of Women's Organizations in Rural Areas

National Jordanian Women Federation in Jordan is the only existing women's association. Since Beijing Conference some of them have been trying to become more active, but this phenomenon occurs especially in urban or semi-urban areas. The women we met during our mission seem poorly or not represented in the FAO Project villages. In most cases in remote areas there is no Women's Union membership but even in those existing women don't play a specific role in organizing and supporting women at village level.

Lack of Implementation of the Participatory Approach

Participatory approach, which means participation of populations in the definition, planning and implementation of projects, is not familiar in Jordan, including at male level. However, this approach is implemented in some NGOs projects.

WOMEN AND WATER RESOURCES MANAGEMENT

Women, who make up half of the world's population, need to participate more in defining policies and programs for sustainable development. The rapid socioeconomic and political changes that are taking place at the global level are producing many challenges and problems. It is very important to ensure that the gender perspective is well integrated into policy relating to all economic and social sectors.

The role of women in the management of water resources is very important in countries of extreme water scarcity like Jordan. Women as decision makers, extension engineers and researchers can play important roles in improving water management. In Jordan, women in the public sector (Ministry of Water and Irrigation and Ministry of Agriculture) have demonstrated a high level of performance in the management of irrigation projects and extension services. The involvement of women in managing small-scale irrigation projects has improved the efficiency of water use. They are most often the collectors, users and managers of water in the household, as well as farmers of irrigated and rainfed crops. Thanks to these roles, women have considerable knowledge about water resources, including quality and reliability, restrictions and acceptable storage methods and are the key to the success of water resources development and irrigation policies and programs.

In many cases, water resource policies and programs have proven detrimental to women's water rights and, therefore, to their sustainable management and use. Interventions such as traditional irrigation fail to take into consideration the existing imbalance between men and women's ownership rights, division of labor and incomes. By raising the value of the land, irrigation brings about social change which usually favors men.

Women's agricultural practices must usually be adapted to soil moisture conditions that depend on climate variations and soil conditions. When women's survival strategies lead to erosion, their farming practices can be major sources of watershed instability (www.FAO.org/focus/e/women).

Women and children provide nearly all the water for the household in rural areas. Domestic water is used for processing and preparing food, for drinking, bathing and washing, for irrigating home gardens and watering livestock. Women know the location, reliability and quality of local water resources. They collect water, store it and control its use and sanitation. They recycle water, using gray water for irrigation, and runoff water for livestock.

Women make multiple and maximum use of water sources, and attempt to assure that these sources do not become polluted. Given their multiple and often competing needs, such as water for livestock and for human consumption, as well as time and resource constraints, women often cannot avoid contaminating water supplies (www.FAO.org/focus/e/women).

It is now recognized that the exclusion of women from the planning of water supply and sanitation schemes is a major cause of their high rate of failure. International initiatives, such as the International Drinking Water Supply and Sanitation Decade and the United Nations Conference on Environment and Development (UNCED), have been instrumental in promoting the role of women in

water management. Yet, the incorporation of gender issues in the planning, design and implementation of irrigation programs has been far more limited despite the number of studies documenting the failure of irrigation schemes due to mistaken assumptions regarding the intra-household division of labor and organization of production.

Gender analysis can help irrigation planners and policy-makers to improve the performance of irrigation schemes. There are three broad areas in irrigated agricultural production systems that require particular attention, and a more thorough gender-based analysis of local situations will help to create more effective, equitable and sustainable irrigation policies and programs. It is also fundamental to ensure women's use and control of land, and irrigation water. Studies have shown a direct correlation between independent land and irrigation rights for women and a higher productivity of land and labor. Thus, lands under irrigation schemes should be allocated to individual farmers rather than to households.

In regard to Water Users' Associations, all farmers who own or rent irrigated plots as well as all adult family members who work on irrigated plots, including women and young adults and children of plot holders, should be members. Women should also be guaranteed leadership positions based on the proportion of women as members or as participants in the scheme.

Water delivery schedules should be devised in such a way as to meet both men's and women's needs with respect to quantity, timing and quality of water. Moreover, training in water control and management, cropping calendars, and system maintenance should be extended to women as well as men.

Given that women's incomes are considerably lower than men's and that the capital requirements to invest in irrigated crops can be quite high, access to credit systems should be made available to women irrigators. Access to credit will also facilitate women irrigators' access to technology.

CONCLUSION

Jordan is classified as a chronically water-scarce country with limited natural resources. Less than 5% of the land is arable. For farmers, little or no rainfall means severely reduced cultivation and production. Not only do poor farmers have fewer products to sell, but they also have less to eat, since food insecurity is a constant threat. Efficient management of natural resources, food production and food security would be the responsibility of everyone in Jordan, including women. Women are very good managers especially in issues that involve the well beings and the health of the family members and the society at large. They are considered good audience for public awareness campaigns who take matters seriously when it comes to issues of survival.

Women play an important role in almost all agriculture and household activities and in many cases their participation exceeds that of men. A few of them have developed small income generating activities to improve the living standards of the family and the household security. Whenever women receive an income, that represents a resource for food security.

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 the public sector as decision makers and extension agents is now increased,. Many of the University graduates in Agriculture are working in the private sector as design engineers or sale persons.

In spite of the significant improvement of the women's movement in Jordan and their high potential in social development, men's role is still dominant. As a result, women's activities are directed to work as NGOs or private associations.

In the light of the above discussion and conclusion the following recommendations can be considered:

1. Improve women's skills in income generating programs.
2. Recognize and value women's role in poverty elimination.
3. Modify the legislation and institutional set-up to allow women to effectively participate in food security.

4. Involve women in participating in policy and decision-making.
5. Review extension services to increase women's role in training activities and as extension workers.
6. Women should be provided with all the necessary capabilities and rights in order to ensure their full participation in the political, economic and social life.

REFERENCES

- Al Naber, G., and Shatanawi, M., (2004), Activities of Women Societies in Agriculture Development in Jordan, Presented at the workshop of GEWAMED project, " Integration of Gender Dimension in Water Management in the Mediterranean Region", Cairo, Egypt, 4th -8th October, 2004.
- DOS. (2002). Department of Statistics. General results of the agricultural census 2002. Amman-Jordan.
- DOS. (2004). Department of Statistics. General results of the population census 2004. Amman-Jordan.
- DOS. (2005). Department of Statistics. General results of the population census 2005. Amman-Jordan.
- FAO. (1996). Mission report: development of activities for women communities in Jordan and Syria: Simone Payeur. Forestry and Food Security in Mediterranean and Near East Region. Rome. Italy.
- FAO. (1996). Comparison of five studies on enrolment of women in higher agricultural education: Côte D'Ivoire, Jordan. Nigeria. The Philippines and the University of the West Indies
<http://www.fao.org/focus/e/women/water-e.htm>
<http://www.ifad.org>
<http://en.wikipedia.org/wiki/Jordan>
- Shatanawi, M., Duqqa, M. and Naber, S. (2006), Agriculture and Irrigation Water Policies toward Improved Water Conservation in Jordan. Presented at the 4th workshop of WASAMED project, Malta, 2nd -7th May, 2006.
- UNDP, 2006, Human Development Report, Human Development Indicators, Country Fact Sheets: Jordan.
- UNIFEM (2003), Status of Jordanian Women Report UNIFEM Regional Office for Arab Countries, Amman, Jordan (www.unifem.org.jo).
- WORLD BANK. (2005). The Hashemite Kingdom of Jordan; The economic advancement of woman in Jordan: A Country Gender Assessment.
- Yearly statistical report for higher education in Jordan. (2005). Higher Educational Council, Amman-Jordan.