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Mainstreaming gender dimensions in water management for food security and food safety

Bari : CIHEAM

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

2007

pages 135-145

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

<http://om.ciheam.org/article.php?IDPDF=800488>

To cite this article / Pour citer cet article

Maaroufi T. **Gender and water in Morocco: mainstreaming gender dimensions in integrated water resources management in Morocco**. 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. 135-145 (Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 77)



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GENDER AND WATER IN MOROCCO: MAINSTREAMING GENDER DIMENSIONS IN INTEGRATED WATER RESOURCES MANAGEMENT IN MOROCCO

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INTRODUCTION

This paper outlines AMSED evolution in implementing its Morocco action plan previously presented at the kick-off meeting held in Bari in February 2006.

The paper starts with an overview of Morocco: its geography, its socio-cultural composition, and the evolution of population, its economy (resources and performance) and the general political infrastructure (the political system, the political and administrative organization of the country...). Then, an overview of the state of human development of the country is given with some data on human development indicators.

The second part presents the natural resources of the country focusing on water and its different uses especially in agriculture (irrigation). It briefly presents the state of water in Morocco, women's access to water resources and their role in agriculture and irrigation. This part ends with the presentation of AMSED experience in the field of water resource preservation and development.

The third and last part of the paper gives the state of the art of AMSED actions within the GEWAMED project: the major activities carried out, as compared with those scheduled in the action plan 2006, and the actions proposed for the year 2007.

AN OVERVIEW OF HUMAN DEVELOPMENT IN MOROCCO

Monograph

The Country

The kingdom of Morocco is an Arab-Berber country situated in the north of Africa. Its religion is Islam and its official language is Arabic. Morocco recovered its independence from France in 1956. It is a member of the Arab Maghreb Union, of the Arab League, of the Organization of African Unit and of the Organization of the Islamic Conference. It has an area of about 711 000 km square; it is bordered by the Mediterranean Sea in the north, Algeria in the east, Mauritania in the south and the Atlantic Ocean in the west. It has 3 466 km of coastline.

Population

Resident population in Morocco is about 29.891.708 inhabitants (1), of which 29,840,273 Moroccan and 51,435 foreigners, with an increase of 14.6% with respect to 2004. Women represent slightly more than half the population (50.2%).

Table 1. Evolution of moroccan population (1960 - 2004)

Census year	Population			Growth rate
	Urban	Rural	Total	
1960	3,389,613	8,236,857	11,626,470	NA
1971	5,409,725	9,969,534	15,379,259	2.8%
1982	8,730,339	11,689,156	20,419,555	2.6%
1994	13,407,835	12,665,882	26,073,717	2.1%
2004	16,463,634	13,428,074	29,891,708	1.4%

The recent evolution of the key social indicators shows that Moroccan population is still growing (from 26 073 717 in 1994 to 29 891708 in 2004) despite the drop in fertility. This corresponds to a yearly population growth of about 1.4 against 2.1% between 1982 and 1994. The fertility rate decreased from 7 in 1994 to 3 children per family in 2004.

The structure by classes of age shows that population is young. The median age is 23.3 years with 37% of the population being under 15 years old, 48% under 20 years, 65.5% under 30 years and only 4.4% are 65 years old (2).

Urbanisation is accelerating due to the combined effect of population growth and rural exodus. The urbanisation rate was 55.07% in 2004 against 51.42% in 1994. Whereas the rurality rate has decreased from 48.57% to 44.92%.

Rural population amounts to 13,428 millions in 2004 against 12.6 million people in 1994. It has increased by 784,015 people only. So, the average annual population growth in the country is 0.6%, slightly less with respect to the rate observed between 1982 and 1994. This is the first revelation of this census: the image of the empty country because of rural exodus is misleading.

The percentage of female-headed households has increased from 11.2% in 1960 (2) to 17.8% in 2000 (3). Women heads of family of nuclear single-parent families are the prevailing ones (47.0%), which is strictly related to the phenomena of divorce or widowhood. Such a high number of women in this group of heads of families accounts for their low literacy rate (16,3%).

However, almost half of the population older than 15 is illiterate (can't read or write). This percentage is higher among rural women.

Economy

The major natural resources of the country are phosphates, iron, gold, manganese, lead, zinc, fish, and salt.

Morocco is the biggest exporter of raw and manufactured phosphates. The other main export products include textiles, cloths, shoes, fruits and vegetables, fresh and preserved fish. It imports cereals and oil products in particular.

Morocco is a developing country with low gross domestic product. It has the typical problems a developing country has: reducing government expenditure, reducing the constraints on private activity and foreign trade, and ensuring sustainable economic growth.

In the period from 1956 to 1998 the mean GDP growth rate was equal to 1.8%. This rate is mostly due to the economic situation of the agricultural sector that is the prevailing activity of the country and absorbs more than half the labour force. Major crops and activities are cereals, citrus, vine, vegetables, olive trees and animal husbandry.

The present challenges of Morocco are the preparation of economy to free trade with the European Union and the United States of America for which agreements have been recently signed, the improvement of the educational system, and attraction of foreign investments.

The indicators of women's participation in the GDP and the recognition of such participation in the wealth produced still show inequality against women. According to the United Nations Report on

Human Development of 2004, about 42% of fifteen-year-olds and older were economically active in 2002, which represents 53% of the male rate. Such a rate has increased by 7 points with respect to the year 1990.

Women are active in the sectors of services, industry and agriculture. The rate of active women in agriculture is greater than men, namely 107%.

However, most of active women do unpaid works: 54.3% at the national level and about 85% in rural environment (ENE 2001). This category of women is particularly vulnerable to monetary poverty.

The risk of vulnerability to poverty is high in rural environment, in urban female-headed households and those headed by a poorly educated head of family.

Though being still low, the visible woman activity rate continues to increase, more particularly in town where it has raised from 16% in 1987 to 22% in 1995: two active women out of three reside in urban environment.

Women wage-earners generally get a lower income than men. Most women workers do not use their income for personal purposes. Homework women get a wage that rarely exceeds half the SMIG (Minimum guaranteed wage) and have no social protection or statute.

At the national level, the unemployment rate is the same both for men and women (12.5%). This level is twice greater in urban than in rural environment. Urban unemployment rate is clearly higher for women than men according to ENE of 2001. Women and the young are the categories that mostly suffer from the tension in labour market.

According to the 1999-2003 National Plan for mainstreaming of women in development, the proportion of unemployed women is really worrying and translates a deep evolution in mentality, although this proportion is generally underestimated by statistics since a large number of women who have never worked but hope to find a job do not consider themselves to be unemployed.

General Political Infrastructure

Morocco has a constitutional, democratic and social Monarchy (Article 1 of the Constitution).

The King is the Supreme Representative of the Nation and the Protector of the rights and liberties of the citizens, social groups and organisations.

The Parliament has the legislative power. The Parliament is made up of two Houses, the House of Representatives and the House of Counsellors. Members of the Houses hold their mandate from the Nation. The Government has the executive power and it is composed of the Prime Minister and the ministers. The Government is answerable to the King and the Parliament and ensures the execution of laws. The King appoints the Prime Minister. Upon the Prime Minister's recommendation, the King appoints the other Cabinet members. The Prime Minister submits its working plan to the two Chambers of Parliament for Approval. The Judiciary is independent of the legislative and executive branches (Article 82 of the Constitution).

The administration of the kingdom of Morocco is divided into 16 regions, which are subdivided into 16 provinces and prefectures. Provinces and prefectures are subdivided into rural and urban communes.

Local Governments (rural and urban communes) elect councils for 6 years by direct universal suffrage. Local councils are responsible for the conduct of their affairs on the basis of democratic principles and in accordance with provisions defined by law.

The members of the commune councils and unions elect the provincial, prefectural and regional councils according to the proportional representation system.

Regional councils are made up of representatives of local communities, of the union and trade chambers as well as of Parliament members and presidents of the provincial and prefectural councils of the Region.

Human Development in Morocco

Since the 1990s, Morocco has been deeply involved in the promotion of human development. Under the increasing claims by the civil society and the pressure of a geopolitical context influenced by superpowers (United States and the European Union) quite attentive to the MENA region countries in terms of respect and promotion of human rights, Morocco has become aware of the huge economic (weak growth and inadequacy of the wealth distribution system), social (increased inequality between rich-poor and urban-rural in benefiting from basic social services, health, education, healthy environment, ...) and political (regression of the condition of human rights as shown in the repercussions of the "leaden" years after the independence; and the need of opening up the scope of individual and collective political action) deficit.

Since then, a lot of water has gone under the bridge. For instance, various reforms were introduced, like the reform of the code of public liberties and of association, the family law that recognizes more rights to women and men, and the law on political parties that regulates the activity of political formation. Other economic changes have occurred, like the new law on employment, the new law against money laundering, the various efforts in marketing and modernization of public administration to attract domestic and foreign investments.

At the social level, civil society has been further encouraged by its association to different national and local development programmes and initiatives like the *Initiative Nationale de Développement Humain durable* (INDH National Initiative of Sustainable Human Development), where associations have a central role, despite some inexperience. This initiative allocates a budget (subdivided between the State, local governments and international donors) of more than 10 billion dirhams, for large socio-economic development programmes addressed to more disadvantaged geographical areas, which covers all the socio-economic services, health, education, healthy environment and income-generating activities.

The dynamics created between the public sector, the private sector and civil society has allowed Morocco to evolve, slowly but effectively, and to increase its Human Development Index by "0.083" points between 1990 and 2003. The following table gives an idea of the evolution of the HDI from 1975 to 2003:

Table 2. Human Development Index in 28 years (World Report on Human Development, 2005)

Yea	1975	1980	1985	1990	1995	2000	2003
IDH	0.429	0.478	0.515	0.548	0.579	0.610	0.631

All these efforts have succeeded in supporting a socio-economic development which is by now the national priority. In this process, Moroccan women start having a preponderant role, at least since 2004, when Morocco has adopted the new family law, after a long-standing struggle for improving women conditions through women's movements and alike.

The Report on Human Development of Morocco as elaborated by the UNDP-Morocco highlighted that *"Despite its HDI, the world ranking of Morocco doesn't change significantly (it ranks approximately 124th) not only because of persisting social deficits, but also because of the progression of other backward countries at a pace comparable to that of Morocco. The gap between its GDP per inhabitant and that of developing countries has then moved from 250 \$ US PPA per year in 2001, to 355 \$ US PPA in 2003."*

This means that the country has still a long way to run towards human development and especially to improve the condition of vulnerable categories like women are.

A summary of indicators relative to the evolution of human development in Morocco is given in the following tables.

Table 3. Human Development Indicator of Morocco in 2003

Ranking based on the HDI	124
Value of the human development index (HDI) 2003	0.631
Life expectancy at birth (years) 2003	69.7
Adult literacy rate (% of aged 15 and older) 2003	50.7
Combined gross enrolment rate (from primary to high school) (%) 2002/03	58.4
GDP per inhabitant (in PPA) 2003	4004
Life expectancy index	0.75
Education attainment	0.53
GDP index	0.62
Difference in ranking according to the GDP per inhabitant (in PPA) and HDI*	- 16

A positive figure shows that the place of HDI is higher than the GDP per inhabitant (PPA), a negative figure shows the opposite.

Table 4. Population

Total population (million)	1975	17.3
	2003	30.6
	2015	36.2
Yearly population growth (%)	1975-2003	2.0
	2003-15	1.4
Urban population (as % of the total)	1975	37.8
	2003	57.4
	2015	64.8
Population under 15 years (as % of total)	2003	31.9
	2015	28.4
Population aged 65 and older (as % of the total)	2003	3.9
	2015	5.2
Statistical fertility index (per woman)	1970-75	6.9
	2000-05	2.8

Table 5. Gender-Specific Indicator of Human Development

Gender-specific indicator of human development (GSIHD)	
Ranking	97
Value	0.616
Life expectancy at birth (in years) 2003	
Female population	71.9
Male population	67.5
Adult literacy rate (% of aged 15 and older) 2003	
Female population	38.3
Male population	63.3
Combined gross enrolment rate (from primary to high school) (%) 2002/03	
Female population	54
Male population	62
Estimated earned income (PPA US\$) 2003	
Female population	2 299
Male population	5 699
Difference in ranking between HDI and GSHDI	
	- 1

Table 6. Indicator of women's participation rate

Ranking	..
Value	..
Female Parliament members (as % of the total)	6.4
Female shares of positions as legislators, senior officials and managers (as % of the total)	..
Female shares of professional and technical positions (as % of the total)	..
Estimated earned income of women over men ranking value	0.40

WATER AND FOOD SECURITY: THE ROLE OF RURAL WOMEN

Water in Morocco

Morocco has an available water potential of 20 billion M³, 4 billions of which are groundwater. Permanently irrigable areas are about 1,364,000 ha plus 300,000 ha under seasonal irrigation and spate irrigation: namely a total of 1,664,000 ha.

At present, Morocco has more than one hundred dams for a total storage capacity of about 16 billions M³ that allow regulating about 12 billion M³ of surface water per year. Development efforts of underground water resources supply a volume of 2.8 billion M³ per year.

Table 7. Equipped surface per type and mode of irrigation M²

Type of irrigation	Gravity	Sprinkling	Localised	Total
Large scale irrigation projects	554.057	128.543	-	682.600
Small and medium scale irrigation projects	327.230	6.900	-	334.130
Private irrigation	327.225	16.230	97.975	441.430
Total	1.208.512	151.673	97.975	1.458.160

The irrigation water management is done by:

- *Administration*: promotion and regulation in the implementation and management of hydro-agricultural management;
- *Offices Régionaux de Mise en valeur Agricole (ORMVA)* : these are organisms in charge of managing irrigation systems and promoting agriculture improvement;
- *Farmers* : the on-farm users of water. For this purpose, water users' associations were established in all regions of Morocco to manage irrigation waters federatively. Moreover, the Government has implemented the PAGER programme (*Programme d'Approvisionnement Groupé en Eau Potable des Populations Rurales*) in douars (villages) that aims at involving the population through a participatory approach in the whole process of implementation of drinking water conveyance works to villages.

Recently, the watershed Agencies are responsible for integrated management of water resources at the watershed scale.

The Role of Rural Women

Situation of Rural Women in Morocco

- Based on the general census, rural population in Morocco was estimated to be 7 million in 2004.
- Rural women represent 50.3% of the whole population.
- More than 87% of rural women are illiterate with 97.5% having no diploma and 2.1% having the primary school certificate.
- The proportion of rural female-headed households is 16%.
- Farms are predominantly managed by men: the rate of women managers doesn't exceed 20%
- Rural women heads of family belong to relatively advanced groups of age ; 70% are older than 45, they are widows and illiterate.

The Role of Women in Agricultural Production and Processing of Agricultural Products

The participation rate of rural women in different agricultural activities in Morocco varies from 0 to 33%. Women participate in harvesting (24%) and threshing, storage, sowing, fertilization and irrigation with a rate of 20%.

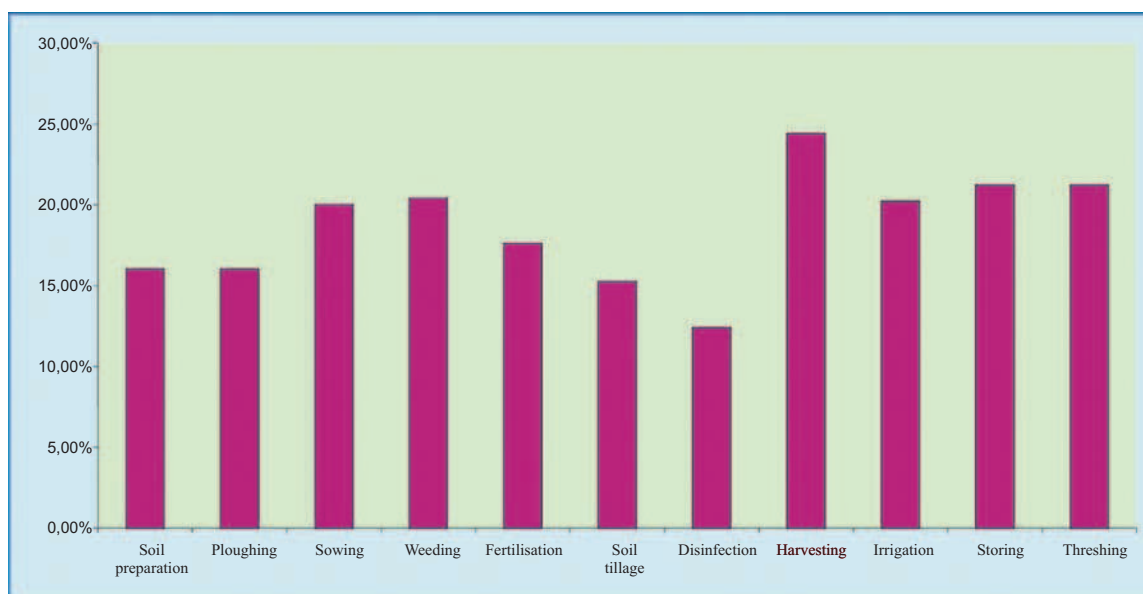


Fig. 1. Rural women participation in the agricultural activities

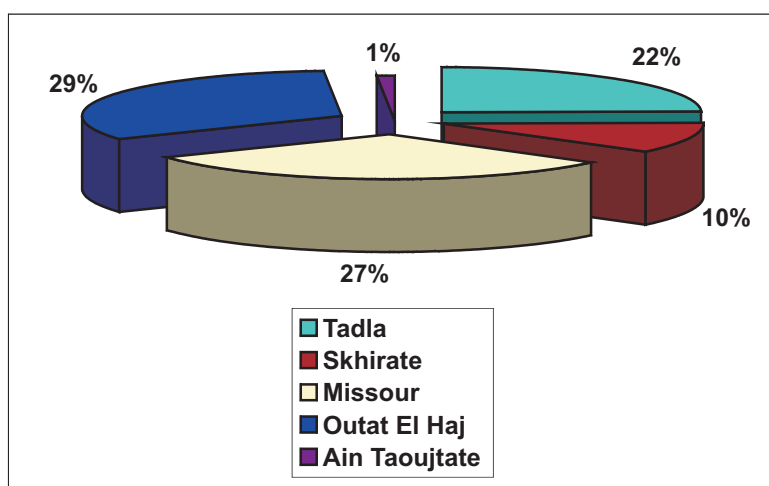


Fig. 2. Rural women participation in the agricultural activities depending on the regions

Women's Other Contributions to Food Security

In addition to their crucial roles in food production through the work they make in agriculture and water management, women contribute to food security in other significant ways, as described below:

- **As those who preserve biodiversity:** the preservation of biodiversity and plant genetic resources is now widely recognized as essential to food security. Because women are responsible for supplying their families with food and care, they often have special knowledge of the value and diverse use of plants for nutrition, health, and income. Consequently, they are frequently the preservers of traditional knowledge of indigenous plants. Moreover, women often experiment with and adapt indigenous species and thus become experts in plant genetic resources (Karl, 1996, Bunning and Hill, 1996).
- **As those who process and prepare food:** in Morocco, while women produce for more than 50 per cent of the food worldwide, they also perform the overwhelming majority of the work for food processing. Food processing contributes to food security through reducing food losses, contributing to diversity of diet and supplying important vitamins and minerals. In addition to the time-consuming tasks of grinding and pounding the staple grains, smoking fish and meats, women

process and preserve the fruit and vegetable produce from their home gardens and from the forests. Moreover, women are almost universally responsible for preparing food for their households and thus for the nutritional well-being of its members. Except in Morocco, where awareness-raising and support efforts the State has to provide to women are not enough, especially in rural environment, and this deprives rural women (most of them are illiterate) of the required information for the good management of the nutritional life of the families.

- **As those who care for the basic needs of the households:** women perform virtually all the tasks required for household food security and ensuring good nutrition and healthy lives. These tasks include gathering fuel and fetching water, cleaning, cooking, child rearing, and caring for the sick.
- **As wage-earners:** women are often responsible for providing food for their families, if not by production than by earning the income to purchase it. Both rural and urban women in waged labour dedicate a substantial portion of their income to the purchase of food for their families. Moreover, it is increasingly recognized that rural men and women often have different responsibilities for providing for the basic needs of their households, with women responsible for supplying food. Development planners have discovered that the increase of household income through the employment of men in cash crop production does not necessarily increase household income available for the purchase of food (Karl, 1996). On the other hand, when women have direct control over income, they tend to spend it on the well-being of the family, particularly on improving the nutritional security of the more vulnerable members.

Constraints to be Removed for Rural Women

Rural women in Morocco participate in irrigation, but their participation simply consists in performing unqualified tasks. In fact, women have the experience acquired through in-field experience, but they are not capable of mastering irrigation technically. Causes for that are manifold, some of them being:

- The lack of access to land ownership prevents them from being member of Water Users' Association (WUAs), which refuses to recognize their access to water and thus limits agricultural productivity.
- The women's lack of access to credit and financial services since they cannot give any guarantee to their land.
- The absence of specialised services of water and irrigation in the field of consultancy and guidance. Extension messages are mainly addressed to men.
- Difficulty in having access to the sources of information because of high illiteracy rate (80% of rural women) and men-oriented information.

Thus, to reduce or remove such constraints, great efforts by all players are needed to:

- **Implement Voluntary policies**, based on the huge mobilizing capacity of local associations, to make women and men aware of the key role women play in water management in rural environments, trying to improve the perception local societies have of women.
- **Facilitate the access of rural women** to resources in order to rehabilitate their social position, recognizing them the right of membership to WUAs and thus have the same water rights as men.
- **Facilitate the access of rural women** to credit and to the financial services to provide the required motivation and encouragement to invest in the irrigation and production equipment of their farms.
- **Building rural women's capacities**, through awareness-raising, training, granting assistance services to women who work on the farm. Such assistance has also to concern the facility to have access to new agricultural technology.
- **Improve rural women's capacity building** in the matter of co-operative association management, water users' associations and other local groupings.

AMSED experience in water resources - Example of Ksar Hammam Fougani Project

Since its establishment in 1993, AMSED has always recognized the great importance of the environmental issue and, in particular, of the preservation and management of natural resources and water in particular. It decided to strengthen and implement projects in this field in agreement with its usual strategy of supporting individuals and groupings for them to be involved in local development.

This experience in water resources extends from assistance to manage water points in the douars (villages) and schools, to the implementation of a wastewater treatment system for their reuse in irrigation on agricultural land. The project carried out by AMSED in partnership with the Association of Ksar Hammam Fougani at Figuig in the south-east Moroccan region is presented.

- **Situation of Ksar Hammam Fougani before the project**

Situated in the east of the town of Figuig (south-east of Morocco) Ksar Hammam Fougani is an agglomeration of 1500 inhabitants, where agriculture is the major activity (date-palm and vegetable crops). It is characterised by traditional production techniques and poor soils and at the time of the project design it lacked a reclamation system to face groundwater pollution caused by waste water spreading by the inhabitants.

- **Effects of the absence of a wastewater treatment system**

- Huge losses of fresh water in the absence of a well-controlled network ;
- Wastewaters partly discharged into the roads of Ksar and partly in the septic tanks of the houses;
- Tanks are cleaned by the inhabitants or abandoned to others;
- Long-standing accumulation of solid and wet wastes;
- Wastes are an environmental risk :
- Polluted water infiltration = groundwater pollution ;
- These waters are used for household consumption and in agriculture, which causes water-borne diseases ;
- Wastewater infiltration explained the reasons for the failure of underground channels that conveyed water from the sources to the agricultural farms.
- This generated a huge irrigation water loss and accounted for the collapse of some houses of Ksar.

- **Specific objectives**

- To reinforce the wastewater collection and treatment system by protecting the main sewer and the storage and treatment basins within eight months.
- To raise the awareness of the 1500 inhabitants of Ksar on the environmental protection techniques within eight months.

- **Expected results**

- Protected main pipe of the collecting system;
- Protected treatment basins;
- Improved water quality;
- Improved sanitation and reclamation practices by the inhabitants of Ksar.

- **Check indicators**

- Silting up rate of the basins with sand.
- The amount of treated water to be used for irrigation.
- The number of people involved in the awareness-raising sessions.
- The number of women who apply the preservation measures of the system in households.

- **Activities**

- To construct a gabion wall to protect some areas against land erosion and land sliding.
- To arrange all the edges of the basins to prevent the spread of sandy land.
- To construct a protection wall against sand and implement a fencing system.
- To reforest the basin surrounding areas.
- To organise awareness-raising sessions to the benefit of the inhabitants of Ksar on environmental protection practices
- To organize a round table on the issue of reclamation and environment in the town of Figuig.

- **Awareness-raising programme**

- Objectives
 - To promote municipal practices of sanitation and environment conservation, among the inhabitants of Ksar;
 - To inform all local players on the reclamation project of Ksar.

- Participants
 - Men, women and children at school.
 - The permanent inhabitants of Ksar are approximately 1500 people (approximately 800 men, most of them farmers and about 700 women. Additional 600 arrive in summer).
- Themes
 - For women: organizing awareness-raising meetings on the use of water and the problem of household wastes. These meetings were organized with the support of the Agricultural Co-operative Associations of ACAF
 - For men : (farmers in particular) meetings dealt with the use of water for irrigation. These meetings were animated by a resource person of IAV of Oujda.
 - For children at the primary school (a number of 185 of which 88 girls, two day nurseries, a middle school and a secondary school) the awareness-raising activities were established according to the level of schooling.
- Round table
 - Participation: All the local and regional stakeholders responsible for the environmental issue in general.
 - Carrying out: Representatives of association (local associations), municipal (elected members and technicians) players, representatives of decentralised services (technical services) and scientific research organisms (University of Oujda) to exchange experiences and debate on local environmental matters.
- **Management and follow up**
 - This project is characterized by the predominance of the technical aspects that will need know-how; a technical committee will be appointed to ensure permanent follow up of field activities. It will be made up of members of the AHAF and municipal technicians with the members of Jmaâ:
 - Technical follow up: Municipality;
 - Administrative and financial follow-up: AHAF;
 - Coordination & Institutional support : AMSED.
- **Length of the project**
 - Two years.
- **Learning**
 - A favourable context
 - Some elements have facilitated the appropriation of the idea of the project : to strengthen and reorganise local infrastructures for better management of water resources ;
 - Local culture based on solidarity and rationalisation of natural resources;
 - The JMAË system (collective, joint and concerted management of local affairs).
 - General involvement
 - There was general mobilization (men, women, children, aged persons of Ksar, local authorities AHAF, University of Oujda);
 - The partnership work, coordinated by the local association AHAF, has allowed having the collaboration of all the stakeholders and mainstreaming all the target-public in the project process;
 - The close institutional support by AMSED has allowed AHAF to successfully conduct its mission in the framework of the project.
- **Local players support**
 - A training workshop-based programme on: organizational and institutional structures of development associations, exploring the community needs, setting up and managing community development projects, mobilising funds and partnership.
 - Follow up and evaluation of development projects.
 - In addition to a series of field visits to Ksar, made by the personnel of Ksar to directly follow and support AHAF in its coordination, follow up and animation work of the activities of the project.
- **Effects on development of Ksar**
 - Improving sanitary conditions of the area: isolating underground layers and preserving water against liquid pollutants infiltration.

- o Raising population's awareness on the importance of water resource preservation: meetings organised for the families, young people and students have allowed better understanding of challenges to the local environment and of the importance of water use system; also, the importance of health through water.
- o Strengthening the local reclamation system: strengthening the local reclamation system has allowed improving the waste water collection, its disposal and reuse after recycling. Water to be recycled (in a station constructed within the framework of the project and in collaboration with the University of Oujda that will control the quality of redistributed waters) will be used for irrigation.
- o Strengthening the local association structure: the close institutional support (financing, training, consultancy) given by AMSED to IAHAf allowed the latter to build its capacities of mobilization, management and proposal of local alternatives for the development of Ksar.
- o Starting up a local social process: the project has strengthened local social dynamics, historically animated by JMAAÄ, providing a local association (AHAF) with tools and means to promote sustainable local human development.

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