Integrating gender in water management projects: Egypt case study

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INTEGRATING GENDER IN WATER MANAGEMENT PROJECTS: EGYPT CASE STUDY

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ABSTRACT – History witnessed man and woman equality in human rights and responsibilities. They both ruled Egypt as well worked in agriculture fields as farmers. Water in Egypt is a dominant feature for civilization, development and life. Water management is everyone business and should be undertaken with understanding to its vital value for food security. Pollution due to industry and different human activities is an alarming trend concerning the poorest nation.
Despite considerable advances in gender equality in recent decades, gender discrimination in most countries remains pervasive in many dimension of life. Gender gaps are widespread in access to and control of resources. In order to reduce the gender gap, positive reform in favor of women is needed; more policy emphasis should be put on women's needs. Rural women play a predominant role in food production cycle. To ensure a viable and sustainable irrigation scheme, it is therefore; necessary to take into account the increased demand for women's labor in irrigation and agriculture production. The irrigation projects should have clear objectives, be demand driven, consultative, and participatory and co-managed by the beneficiaries supporting rural women in their productive activities. Policies and programmes should adequately address the needs of rural women as for men. Men's gender awareness and commitments are indispensable for rural women's development in particular.
The author presents in the paper a general review of the most important analysis made in this field up to date in Egypt, the main efforts made at the field level, and the findings obtained. Also, the author reached some conclusions and recommendations which reflects personnel opinions and future vision for strengthening the rural woman's role in Egypt which can be a value added to post experiences and efforts.

1. INTRODUCTION

Egypt life is granted by the River Nile and the irrigation system in Egypt is one of the oldest and most sophisticated systems in the world. The Ministry of Water Resources and Irrigation (MWRI) is responsible for managing the irrigation system and responsible for improvement and maintenance operations. The lack of full participation of farmers (users) results in low irrigation efficiency. The water saved from increasing the water use efficiency forms a significant part in the water budget and can be used for the expansion plans. MWRI established the Irrigation Improvement Project (IIP) to implement an ambitious program for improving the irrigation conditions and save water. Also, include the farmers' participation in water management. However, the task of improving an irrigation system is not simple and straightforward task, due to a number of interrelated factors such as technical, economical, environmental and social. Another example is Fayoum Water Management Project (FWMP) which applied mainstreaming gender issues into integrated water management and water boards. The IIP and Fayoum areas are selected as case studies to indicate activities, constraints and future perspectives.

The IIP has innovated several measures to raise the performance of the irrigation distribution networks and on-farm practices in Egypt's old lands. The innovations that have been introduced by the project were, applying continuous flow with downstream level control, converting the low level private ditches(mesqas) with multiple pumping to gravity delivery mesqa with pumping stations at the head reach, establishing the Irrigation Advisory Service to provide farmers with services, organizing the farmers to establish sustainable Water User Associations.

The Fayoum is an old irrigation area, located in a huge depression west of the Nile River. The large gradient in the Fayoum enabled a water management system based on gravity. The closed water management system, makes water budgeting and pollution control more important compared to the irrigation systems in the Nile valley and Delta. The FWMP is piloting an innovative partnership

between the irrigation communities and the district irrigation office, this partnership will enhance the local responsibilities for the operation and maintenance of the public-owned irrigation system. During the final phase, the project focused on the formation of a Water Boards organizations at the secondary canals level. It is worth mentioning that another mega national project is the subsurface drainage, where cost recovery and farmers's participation is one of its components where gender has a role to play.

2. OBJECTIVES OF THE STUDY

The overall goal of this paper is to enhance and activate the role of women in irrigation development projects and indicate its impact on the household and family standard of living; to point out the challenges facing women participation and suggest recommended strategies for future actions.

In order to achieve this objective; two case studies are illustrated and their results are analyzed and discussed to explore the degree of success and consequently extracts the points of strength and weakness.

As for the IIP, the following points are considered:

- Identify and determine the role of rural women in IIP regarding landholding size.
- Examine rural women's awareness and perception about IIP objectives and to the limited water resources in Egypt.
- Analyze the significance of women's participation and its effect on their families' welfare. Also, their tendency to join WUA's
- Identify the role of rural woman in decision making.-Measure the changes resulted of using improved irrigation on agricultural production and reduce irrigation costs from the point of view of the rural woman respondents.
- Provide guidelines for implementing and financing agencies, for effectively involving women in future irrigation development projects.

With respect to FWMP, the following points are considered:

- Identify reasons female-headed households manage smaller farms than their male colleagues, and hence obtain lower yields than men.
- Investigate about water distribution fairness at tertiary, secondary and primary level.
- Search for the following:
  a- "female farmers have problems in approaching the water management officials".
  b- "Women are more responsible for water pollution than men".
  c- "only women from influential families and female officials can speak at public meetings".
  d- "leaders of WB pay little attention to the interest of small farmers and female headed households".

3. RESEARCH METHODOLOGY

It deemed important to indicate that the basic elements for sustainable water based and irrigation development projects are; water, human and the environment.

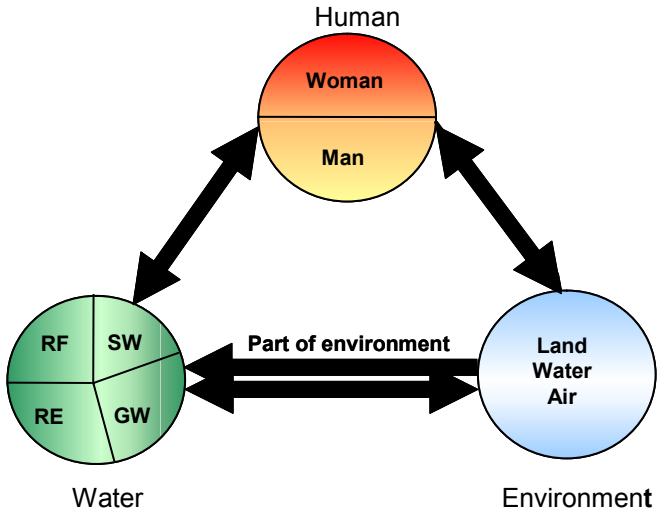

Fig. 1. Water, human, environment relationship

Water is in fact, part of the environment and the human element is affected by and affecting on the environment. Such triangular relationship represents the strong interaction between the three basic elements for development on earth. However, to sustain future development, optimum use of such combination without influencing the environmental balance must be secured. This indeed what requires strict rules, knowledge and experiences, continuous monitoring and assessment, use of logic indicators to measure the success or failure. According to this understanding, one has to differentiate between natural constraints due to resources limitation and /or adversely affecting the environment, and man made imposed constraints on the efficient involvement of the whole community.

Regarding IIP case study project the data and information were collected through two sets of questionnaires:

The study was conducted in Upper Egypt IIP areas (El Wasat, El Manaifa and Saidia command areas. Data were collected by personnel interview using 2 pre-tested questionnaires. The first was for the beneficiaries (sample selection: Wives of WUA's council members- Women as landowners- Women as laborers). The second questionnaire was for the IIP staff. Questionnaires included indicators to fulfill the study objectives. Meetings were held with the women farmers in their fields and houses. Percentages, frequencies and averages were used to analyze data statistically. Results, conclusions and recommendations were derived for future projects. The results and findings are discussed later.

The approach with respect to FWMP little bit different:

The explorative study conducted in the Fayoum area about woman and water management is carried out in the command area of Senouris primary canal. A purposive sampling method has been used to select 3 secondary or branch canals in the head, middle and tail of Senouris. The assumption made was that the branch canals in these reaches have different water duties, which can affect the female headed households in their on-farm water management strategies. Data collected about the internal water distribution during the summer season 2003 shows that the assumption was right, and that the selected branch canal did not have extreme high or low water duties. The surveyors collaborated with the Water Board WB leaders to select randomly 3 mesqas located respectively in the head middle and tail reach of the branch canal. For each mesqa the surveyors and the leaders prepared a list of de-jure and de-facto female-headed households. Women heads of de-facto were visited and asked to organize meetings with other respondents. Questionnaire was used with explanation of the survey objective and gender aspects of water management. Some women were interviewed individually using the semi-structured questionnaire.

4. ANALYSIS OF RESULTS

The outcome of the two field survey studies revealed some common results and others unique to each case study.

4.1. Common Results

They can be summarized as follows:

- Both men and women are involved in irrigation and agriculture. Female farmers contribute relatively more labor to the water management process than controlling management of resources itself, decision-making and planning.
- Women know when to irrigate, and they are aware of irrigation and drainage problems.
- Women have information about the project benefits and that it focuses on environmental protection, channel cleaning and saving irrigation time and efforts. But they have no access to modern technology application and training.
- Women are willing to participate in addressing issues such as: pitching and building walls on sides to protect their children.
- Many women cannot own land, and those who do generally command smaller land holdings than men, have less access to machinery, fertilizer, extension services. Female farmers are left with less fertile land, which makes them to do more work in addition to their family work (double burden).
- Disparities inhibit women's ability to participate in development and to attain higher living standards for their families.
- Lack of property rights, since without land as collateral they cannot obtain loans to purchase seeds, fertilizers…etc.
- Women suffer the disadvantage in receiving services because extension workers are male. They are also directed towards crops for subsistence economy, and not consulted in the resources management process or express their problems.
- Although women have direct contact with authority, water resources management neglects linking the quality of water to health, environment and economic development.
- Social and cultural norms have a strong impact on women participation. In under developed countries, women do not automatically participate in new projects which are designed to meet technical aspects rather than social.
- Donors and governments often use the term gender when addressing different needs with respect to water resources, they usually mean women which make men provoked and reluctant to let their wives participate
- Engineers rarely examine the pattern of needs of different groups of potential users and consider this information when designing the system. It is usually assumed that social group will change their habits of interaction to accommodate and take advantage of available water.

4.2. Experiences From IIP

They revealed the following outcomes;

- Women's participation varied according to the project' phase. Results showed that women were not direct beneficiaries in the project formulation. In introducing the project objectives in the field, some women were accessible and showed interest to know about the project. In forming the WUA's it was not culturally accepted for women to attend the meetings in men's houses and women did not participate in the initial meetings. Since they did not participate in any WUA activities, they are not members of the WUA's.
- The age and marital status influence women's participation. Survey showed that the project information was explained to 56% of the women over 40 years and to 26% of women under 40 during the introductory phase. Women farmers participate more than the house women do, since they have more time to devote. Socially it is acceptable for older women in what is traditionally considered as male activities. In case of widowed women, they are the heads of their households and in many cases, they have to manage their households and farms.
- Great majority of women know enough about the IIP new system, but their knowledge come from their husbands neighbors…etc.
- Women own land in the project command areas, they never join the WUA's. They ask their husbands or sons to respond to project's men staff. In addition, their access to water resources is often strictly controlled by their husbands and indirectly by cultures norms and practices. For woman to be active member in WUA's or a WB she should attend meetings with men: -Husbands do not agree that they attend meetings at night/ - too far from homes/ -They are not trained to act as female representatives. The participation of influential women is accepted and encourages other women to participate.

- Poverty and illiteracy have strong impact on the management of the farms. Due to the limited participation and the high illiteracy rate of the respondent women, it was hard to detect any relationship between women participation and education, 75% of the women interviewed had no formal school education.
- Women's participation influenced by social norms. In Egypt, the society expects women to be socially careful about their virtual and reputation, these norms limits their ability to associate with non-related males. Although, all women interviewed identified culture and social customs as the reason for their non-participation, yet results showed that 38% of these women are willing to participate.
- Men recognized the increase of the income, yield and saving of time and labor more than women did. However, women recognized the positive environmental impact more than men did. Women farmers and widows have more benefits than married women and house women. In addition, 94% of the women pointed out that they benefited from the saved time and labor in the household and child care activities, 20% used it in more farm management. Compared to men, 87% of them used the saved time in more farm management.

4.3. Findings From the FWMP

They are summarized in the following;

- Women in Fayoum control 17% of the lands, and about 20% of the farming households are female headed. However, female-headed farming households control smaller holdings than male. About 60% of the farms managed by respondents are less than 0.5 feddan and 22% of the farms between 0.5 and 1 feddan. Farms larger than 1 feddan, are managed by 18% respondents. 7.5% of the respondents managed farms between 1 and 3 feddans, 4 % managed 4.5 feddans and 7.5% managed farms larger than 10 feddans. About 15% of the respondents are married and their husbands work outside Fayoum governorate. They do not commute and therefore the households are de-facto female-headed. The other 85% are widows and they are middle and old aged women.
- Women respondents, mentioned that they manage smaller farms than male due to Islamic inheritance systems (female receives only 50% of the male share). In addition, they adjust the cropping pattern and farm operations according to their cash, labor and information constraints. Almost 74% of the respondents consider that they have more problems to manage their fields. They also plant food crops for family needs. About 85.4% of the respondents confirmed obtaining lower yields. Hence, they organize the minor farm operation with family labor.
- The WB work towards a fairer water distribution and the female farmers expressed an interest to contribute to that effort, since they have clear opinion about the irrigation distribution system. About 92% of them, considered that they have more problems in solving water management than males due to social constraints that female farmers have in approaching water management officials, leaders of the water users group, village heads.
- Women opinions regarding water pollution and its causes are changing in the urban environment. Women in the area held the local government responsible for developing an effective and affordable waste disposal system. They consider that the stakeholders jointly develop action plans to reduce pollution of water and canals.
- Women's participation in the water users organizations is restricted to the branch and primary canal level. Men lead almost exclusively the local irrigation networks, since they are the leaders of its rotation operations. The project has encouraged female leaders to participate in the newly established WUAs at the canal level. Only two women managing large farms have been elected to represent their mesqas. Female farmers are interested in the WB efforts in integrated water management, however sometimes they cannot participate in evening meetings.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

The literature review showed that, in general, cultural habits, attitudes towards woman in the communities of under developed countries as well as institutional and legal norms are behind the backward standards of women more than men are. The two specific case studies, which were considered in the paper, IIP and FWMP, are both step forward to correct old believes and understandings about the important role of women in water based development projects. However,

such step must be followed by other continuous reform programme to raise the women status in the rural community and structure a solid strategy for institutional and legal reform aiming at more women education, legal representation , full participation and motivation to preserve her civil political rights, although lack of opportunities create competition in poor countries. The author noticed an important remark in both cases. There was no gender consideration in feasibility studies, which is the normal procedure; that field study must be stage one and must precede project implementation and not vice versa.

The most dominant conclusion could be summarized in the following points:

a. There is a clear shortage in the field survey to explore the real problems and realistic reasons for the absence of the rural women and their active role, which significantly differ with respect to geographic locations and local community habits in the south and north of Egypt.

b. Project managers and some legal authorities always keep low profile about engaging rural woman at the different phases of water related projects.

c. There is little attention given to girls education, rural women awareness, political representation, equal opportunities and health care.

d. The absence of NGO's to protect rural women rights and play an advisory role to introduce rural women as members and partners on the WUA's and WB in order to assure their equal participation in water management.

e. The existence of some barriers, social, economic, political, legal….etc; inhibit the efficient involvement of rural women in the water projects and environmental protection schemes.

5.2. Recommendations

Gender issues are strategic issues in the development process, if not resolved it may turn to sever community problems that, in turn if neglected it might turn to civil crisis. The author, according to experiences and recognition of the gender problem roots in Egypt, have own vision and proposed strategy to tackle the whole issue as one package from the socio-engineering angle. The following points are presented expressing personal opinion:

a. There must be an accurate and updated gender database at the village, town and governorate' big city levels. The designed formats for each level may slightly differ according to the nature of the labor market (housewife….administrator.). Data and information collected focused on water should include age, education, social status, skills, nature of present occupation experience, marital status, family status…etc.

b. The labor offices and statistics must have access to the database through networking in order to link it with the unemployment situation at all levels and to cooperate with the NGO's representatives.

c. These data and information should be analyzed by gender experts and consultants to develop plans and actions proposed to the ministries and stakeholder concerned, meantime the points of strength and weakness must be clearly highlighted and categorized in order to apply proper mitigation.

d. It is highly recommended to create " Gender affairs Boards" related to water projects from the inhabitants themselves at the village level to follow up proposed plans, actions, help resolve gender problems with governmental and non-governmental organizations. Also, the civil boards will ensure that labor laws, health and environmental needs, services including education…. etc are provided on equal base.

e. Derive certain measuring criteria to monitor the suggested actions.

The proposed indicators may include:

1. Percentage of girls to boy's schools, in the past 10 years, at present and targeted after 10 years. The trend is the indicator at different age group (education index).
2. The percentage number of patients (M to F) recorded visiting the village and town hospitals and clinics to be categorized according to water born and non-water born diseases (health index), to distinguish between women farm labors and non-farmers using a valid indicator to health.
3. The number of economic dependent and non-dependent rural women at the village and town levels must be recorded. The indicator derived is the percentage of women landowners (non-dependent) to the unemployed women (men dependent) which can be used as economic indicator (economic index).

4. The percentage of active women willing to participate to the total rural women in community this reflects the social indicator of specific location (social index) assuming that there are no other constraints.

f. In order to integrate gender organizations efforts and disseminate knowledge, information and experiences in the field of water based projects, mainly irrigation, domestic and sanitation, where the author suggests focusing on training of trainers (TOT). Therefore, training centers, under the umbrella of the "National Council for Women" in Egypt can adopt and supervise women training centers at each governorate. The real reason is that, since the gender field is new in the underdeveloped countries, there is no adequate number of gender specialists to advise and guide rural women communities' nation wide. These centers will train and educate "Gender Experts" who can take the lead and through "Gender Affairs Board", they can transferee knowledge and experiences at the village and town levels. Training for different locations in Egypt (North, South, desert or oasis) should be custom fit designed and requires different tools, facilities and programs. The author strongly believes that by this long term policy, gender problems could be solved in the proper way. The required action plan and mechanism could be the scope of a following paper by the author.

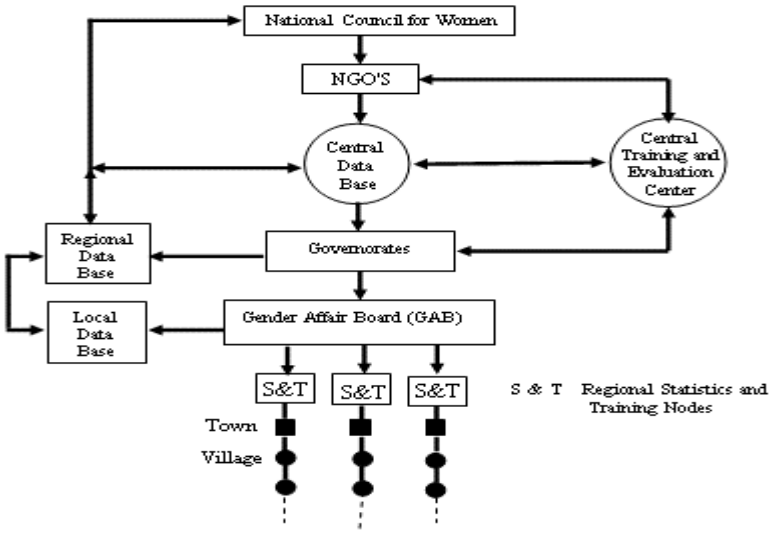

Fig. 2. Proposed Schematic Organizational Chart for Integrating Gender in Development System

In brief the author would like to stress on three main points:
I. Provide education II. Build self-confidence III. Use common technical language

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