



## Review Article

## Activating the role of women in water projects

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## Abstract

Water is one of our most precious natural resources. A growing human population, and the expansion of economic activities that comes with it, will intensify the pressure on water resources. Therefore, in Egypt water management become particularly important as it located in the Arid/Semi-Arid belt. Accordingly, water in Egypt is a limiting factor for – economic and social development activities and development plans. The integrated water resources management is the approach that strengthens and supports the sustainable management and development of water resources in addition to other resources in order to achieve the most appropriate economic and social benefits. Also to achieve social justice in distribution without any disturbance in the environment and allow the participation of interested in water in making process. From that way, a deep conviction about activating and vital economic and social role of women in facing the challenges of development at all levels. Therefore women should contribute to achieve a comprehensive reform for the communities in development areas as a partner of the inherent social and economic system and represents half of the manpower affecting its development, Therefore, the Ministry of Water Resources and Irrigation has given considerable interest for women's affairs and included the importance of their role in water management principally in Ministry of Water Resources Recent Strategies.

This study aims at evaluating the economic and social roles of women in water resources development projects in Egypt. In addition, the study is extended to crises-cross the impact of women presence in water resources projects on the efficiency and effectiveness of one of these projects.

Thus, in the current study New Assiut Barrage Project has targeted the economic and social role of women in some villages of Assiut Governorate. A sample was selected to identify the obstacles faced women role in developing the economic and social effects of new Barrage and put down or propose same methodology to activate this role. On the other hand, investigating of the social role of women was concerned with the surveying of the most important facilities women have in the study area in addition to the potentials in the research sample that contributes to the establishment of women's roles in social education and awareness for water projects.

Finally, the study ended up that women have a significant role in raising the efficiency and effectiveness of New Assiut Barrage. The findings of the study can be summarized as the success of water projects is depending partially on the women role through

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changing the negative social traditions achieving effective participation of individuals, raising of women community self-confidence, improve women different roles, stimulating their spirit of competition, participation and volunteering.

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## 1. Introduction

Egypt has implemented many national projects to bring aspired hope to save any drop of water to ensure the expansion of development; there are several pilot projects along the Nile River, such as the establishment of many Barrages that guarantee delivery of water to the largest possible area of agricultural land in Egypt. The creation of the New Assiut Barrage project is one of the most important national projects to support the overall development in Egypt. The project's main objective is to create a New Assiut Barrage that replaces the current Barrage as shown in Fig. 1 which was constructed in 1902 on the River Nile at 544.75 km north of the Aswan High Dam to ensure the suitable water required to provide sufficient water levels to feed the Ibrahamiya canal, which has a length of 316 km and serves 1.64 million acres in Middle Egypt, as well as to improve the performance of river navigation in addition to generating electricity necessary for development projects, which also serve the environment at the same time "ECRI (2010)".

This project is considered one of the hugest projects, which serve more than 18 million people at 5 governorates of Middle Egypt with area of 1.6 million acres to improve river navigation through the establishment of two first-class navigation locks, as well as the production of clean electrical energy by generating new hydroelectric station with energy of 32 MW and providing new corridor by establishment of a bridge that load 70 tons which locates over the new Barrage to connect the east and west of the Nile, in addition to providing control system on the latest global systems to control the discharges and levels, which leads to better improvement of water management in Upper Egypt, and contributes to economic return of agricultural products increment.

The role of women in economic and social activities associated with the field of water in Egypt is the lowest at the global level. This is associated with the lack of women awareness of the importance of water and its socio-economic effects on national income and livelihood of Egyptian.

## 2. Identifying of the problem

The effective contribution of women in society adds an important human resource to face the challenges of progress, development and growth. Water is considered as one of the determinants of development. Women roles activation is a



Fig. 1. Assiut Barrage.

serious challenge that the Egyptian government is facing when starting large water projects. The study evaluated the impact of some challenge; social, cultural and economic, to activate the participation of women in those projects.

### 3. Objectives

Several researches proved the low rate of women's participation in major national projects is one of the key elements affecting the efficient and effectiveness of these projects. So, this research aims to monitor the most important obstacles facing women to participate in achieving their development of such projects and to propose necessary proposals to avoid these obstacles in order to maintain an efficient and effective the New Assiut Barrage project.

### 4. Methodology

This research has followed the descriptive and quantitative analysis methods to treat the published and unpublished data, which have been obtained from the use of field questionnaire, in addition to the use of data of the previous research studies.

- The current study conducted by the following steps: Dividing the study area into three sectors that are: (i) the southern part of the study area started from 541 to 547 km south Cairo city representative in Al-Wosta village from the eastern side and Abdella area from the western side of the Nile River, (ii) the second sector of the project area represented in Assiut city from the west and the city of Fath and the village of Al-Assarah from the east; (iii) the third sector represents the northern part of the study area represented in Walidiya village from the west and Bany Mor village and island.
- The social Research samples have been selected from different areas and communities which are in the vicinity of the Assuit Barrage Project and it is expected that these villages will be directly affected by the new project, number of samples have been selected to study the economic and social environment. These samples are 120 women, (40 women representing the southern part and 40 women for the search area and 40 women representing the northern part distributed on both banks of the River Nile). Therefore, spatial sampling method has been used as a way to

identify the research samples, where the target geographical areas and identifying the human sphere within the target area have been determined to achieve the goal of the research.

## 5. Sources of collected data

This research depended on secondary data, which was collected from the information center of the city of Assiut, while the field data has been collected by doing some interviews with the women in the villages of Assiut during October 2011.

## 6. General characteristics of sample members

Sample members were classified as follow:

- Family size are classified according to number of persons, family members is more than 5 individuals occupies the first rank, equivalent to 60% of the total number of sample members, while families with number of members less than 5 individuals occupies about 40% of the total sample. It is noted that the size of the family tends to increase in Al-Wosta, Al-Assara, Al-Walidya and Bani Mor villages where the overcoming of the rural culture values leading to large family sizes.
- Number of male members were 24 which represent about 20% of the total sample members who are distributed between Al-Wosta and Bani Mor villages while the number of females 96 individuals, 40 of them from Assiut and El-Fath city and 56 from Al-Wosta, Al-Assara, Al-Walidya and Bani Mor villages, generally it is obvious that the sample distribution between the urban and rural assembly is almost equal.
- It is obvious that 15% of the sample members were in the age group less than 25 years old, while 25% of the sample members ranged in age from 25 years to less than 35 years old; also it is clear that 50% of the sample members ranged in age from 35 to 45 years old. While the sample members whom ages are of 45 years and above representing about 10% sample search.
- Rural upbringing was ranked first among sample members with relative importance of about 70%, while urban upbringing representing relative importance of about 30%.
- It was found that 20% of the sample members are single and 70% married, in addition to the presence of widows or divorced by 5%.
- Education status of sample were 40 individuals high educated which represent about 33.3%, while 30 individuals of the total number of sample members received secondary educational which represent about, while the qualifications below average (primary and preparatory) were 24 sample members representing 20%, while, there were 16 sample members who can barely read and write only representing 13.3%, also the illiteracy rate decreased to about 10 sample members at a rate of about 8.4% of the total number of sample members.
- In terms of employment status there were about 40% were students. On other hand about 41.7% of workers where participate in agricultural and commercial activities.

## 7. Results and discussion

### 7.1. The trends of sample members to achieve their economic and social role

The relative awareness of the importance of the economic and social roles in water projects increased among sample members as shown in [Table 1](#), also their awareness to its importance was almost equal (58.3%), it also showed the samples of sample members from both groups who have great willingness to do the economic and social development role in the implementation of different phases of the project sampling 50%. This result also indicated that the economic and social roles among sample members to support the implementation phases of water projects was positively played but lacked organization and community mobilization in the phases of the project with the availability of role models or legitimate channels for the organization of participation efforts.

Table 1  
The trends of respondents to do their economic and social role.

Content	Impact	Repetitions	Percentage
<b>Subliminal</b>			
Importance of economic and social role	Important	70	58.3
	To some extent	35	29.2
	Unimportant	15	12.5
<b>Propensity</b>			
Degree of readiness to perform economic and social role	Ready	60	50
	To some extent	35	29.2
	Not ready	25	20.8

Source: Data collected and calculated from the questionnaire.

Table 2  
Level of women’s membership of community-based organizations in research area.

Serial no.	Means of economic and social role performance of women	Repetitions	Percentage of membership level	Percentage
1	Community development association	60	48	1
2	Women’s association	18	15	5
3	Voluntary association	18	15	6
4	Charity committee	30	25	4
5	Unions	48	40	2
6	Political party	36	30	3
The average percent of relative weight (%)			29.2	

Source: Data collected and calculated from the questionnaire.

7.2. Level of women’s membership of community-based organizations

The membership was low in the civil society organizations among sample members and the overall average percentage of membership was about 29.2% as shown in Table 2. This results also put a request when compared with the recognition of the importance of participation and willingness to participate which may be due to lack of promotion for participation in civil society organizations, with the exception of Community Development Associations (CDAs) and trade unions, which means that the majority of these organizations are based on maintaining the structure of the founders in the context of the balance of electoral potential which stimulates the new membership and its renewal.

A significant correlation was estimated at 25.1% at the level of significance 1% was observed when the relationship between the degree of willingness and means of performing the economic and social role which indicates a significant

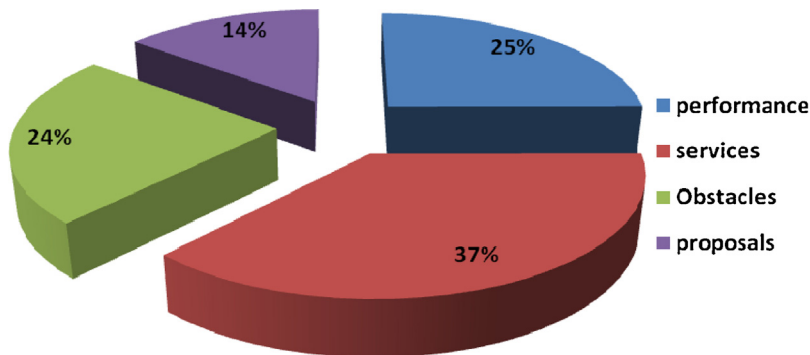


Fig. 2. the ratio of ingredients effect of readiness.

Table 3  
Distribution of respondents according to their vision about the adequacy of the services provided in research area.

Serial no.	Type of services	Repetitions	The adequacy of the services
1	Educational services	90	75
2	Health services	72	60
3	Social services	54	45
4	Economic services	48	40
5	Political services	66	55
6	Environmental services	60	50
7	Refueling services	72	60
8	Family planning services	84	70
9	Reproductive health services	78	65
10	Literacy services	54	45
11	Training services	36	30

Source: Data collected and calculated from the questionnaire.

effect between the means of the performance of the economic and social role (membership of organizations) and the degree of willingness to do the role, which is shown in Fig. 2 and Table 5.

### 7.3. Expected vision of the sample members about the adequacy of the services of new Barrage

According to the vision of sample members there was impairment in the general level of the adequacy of the services provided, it was unanimously agreed that there are low economic and training services (less than 50%) as shown in Table 3, while social, health, political, supply, environmental and literacy services (with average level of less than 75%). The sample members have not estimated any high level of adequacy of any of the studied services except educational, family planning and reproductive health services which refers to the need to develop the services in various fields of life.

When the relationship between the degree of willingness to perform the economic and social role and the availability of services provided in the area was studied it was obvious that a significant correlation by 37.2% at the level of significance 1%, which indicates a significant effect between the availability of the services provided to perform economic, social role and the degree of readiness to perform these roles, Which is shown in Fig. 2 and Table 5.

### 7.4. Expected vision of the sample members about obstacles of the delivery of services and proposals to increase its efficiency

Generally, it can be mentioned that low level adequacy of services caused by the lack of cooperation between the executive bodies in solving problems (represented 83.3%), followed by lack of financial resources (70.8%). this illustrates the importance of cooperation between the executive entities in solving problems and increasing financial resources as shown in Table 4.

By studying the relationship between the degree of willingness to participate in improving the social, economic role and face obstacles of services in the study area indicated correlation is about 23.8% at 1% level of significance which indicates the effect between the performance obstacles of economic and social role and the degree of willingness of women to perform the economic and social role in study area, as shown in Fig. 2 and Table 5.

That sample proposals for activating the role of women showed that the vision of the sample members about the importance of studying the deep role of women in water projects is about 63.3%, while, about 58.3% of the sample members propose to do courses to aware women about the importance of water projects for increasing the role of women to conduct their economic and social role in projects of water in the study area.

Non-significant correlation was observed between the degree of readiness to perform the social, economic role and assistance proposals in this role which indicate the lack of impact between the proposals for improving the performance of the role and the degree of readiness to perform this role, as shown in Fig. 2 and Table 5.

Table 4

Distribution of respondents according to obstacles facing the performance of services in the study area and proposals to increase their efficiency.

Serial no.	Obstacles and proposals	Repetitions	Total sample (%)	Order
<b>Obstacles of the performance of the economic and social role of women</b>				
1	Decrease of awareness about the importance of projects among women	80	66.7	3
2	Lack of familiarity with the related water laws	78	65	4
3	Difficulty of transportation	55	45.8	6
4	Lack of financial resources	85	70.8	2
5	Negative manner of some project managers	40	33.3	7
6	Reducing the ability of women to participate and vary	70	58.3	5
7	Lack of cooperation between the executive entities in assigning roles for women projects	100	83.3	1
<b>Proposals for activation of economic and social role of women</b>				
1	Conducting awareness sessions for women about the importance of water projects	101	58.3	2
2	Increasing the positive role of women's participation	65	54.2	3
3	Identifying problems more accurately and focus	45	37.5	4
4	Deep examination of the role of women in water projects	76	63.3	1
5	Provide support to encourage women participation by stockholder's officials	40	33.3	5

Source: Data collected and calculated from the questionnaire.

Table 5

The correlations of the analyzes tests.

	performance	Services	Obstacles	Proposals
<b>Degree of readiness</b>				
Pearson correlation	0.251**	0.372**	0.238**	0.145
Sig. (2-tailed)	.006	.000	.009	.114
N	120	120	120	120

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

## 8. Conclusion and recommendations

### 8.1. Conclusion

This study aimed at evaluating the social role of women and the impact of this role on the efficiency and effectiveness of water projects in Egypt. The study conducted through a special field survey to collect the required information and data. The collected data were analyzed via the social analysis techniques and in what follows the conclusions of the current study will be introduced:

- The relative awareness of the importance of the economic and social roles in water projects increased among sample members. Their awareness to its importance was almost equal; it also showed the responses of sample members to achieve the economic and social development role in the implementation of different phases of the Assuit Barrage project.
- There was a low level of joining the civil society organizations among sample members, which may be due to lack of announcement for participation in civil society organizations, with the exception of community development associations (CDAs) and trade unions. Also moral correlation was estimated at level of significance 0.01 which indicates a moral effect between the means of performance of the economic and social role (membership of organizations) and the degree of willingness to do the role.
- The general level of the adequacy of the services provided was in decrease, it was agreed that there are low economic, training, social, health, political, supply, and environmental and Literacy services which refers to the need to develop

the services in various fields of life. Also a moral correlation at level of significance 0.01, which indicates a moral effect between the availability of the services provided to perform economic, social role and the degree of readiness to perform these roles.

- Generally sample members attributed the cause of the low level of adequacy of services to the lack of cooperation between the executive bodies in solving problems (occupied the top ranking), followed by lack of financial resources in second rank which illustrates the importance of cooperation between the executive bodies in solving problems and increasing financial resources also, there was a significant correlation at 0.01 level of significance which indicates the impacts between the performance obstacles of economic and social role and the degree of willingness of women to perform that role.
- The results of the questionnaire for proposals to activate the role of women showed that the vision of the sample members about the importance of studying the deep role of women in water projects. While unmoral correlation was observed between the degree of readiness to perform the social and economic role and assistance proposals in this role which indicate the lack of impact between the proposals for improving the performance of the role and the degree of readiness to perform this role.

## 8.2. Recommendations

Through the questionnaire, survey and analysis of data illustrated by the present study, the study recommends the following:

- The community mobilization, role models and legitimate channels should be available in all phases of the project for organization of the participation efforts.
- Promotion for participation in civil society organizations, community development associations (CDAs) and trade unions.
- The development of services in various fields of life is necessary.
- Cooperation between the executive bodies to solve problems, and the need to provide the necessary financial resources to these bodies as possible.

## Reference

ECRI (Environment and Climate Changes Research Institute), 2010. [Study of Assessment of Environmental Impact on the Hydroelectric Station Attached to the New Barrage Assiut. National Water Research Center \(NWRC\), Ministry of Water Resources and Irrigation \(MWRI\).](#)