

MARWI DAM CONSTRUCTION: OPPORTUNITIES AND CHALLENGES ON COMMUNITY LIVELIHOODS IN ALHAMDAB VILLAGE (2&3)

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Abstract

This study aimed to assess the influence of the Marwi dam construction on the community livelihood in term of opportunities and challenges. The study adopted the analytical descriptive approach and it depended on questionnaire and personal communications as primary sources for data collection. Results obtained indicated that about half of the respondents of the population under the study was changed their livelihood pattern due to some challenges. Some of social services were established in the new area represented as one of opportunities from the dam construction. The study recommends that the government should solve irrigation System problem and maintain the Baira (main irrigation tool) to bring life for Alhamdab project. Also, the government should to listen to the voice of farmers in the displaced villages.

Keywords: Public administration, livelihood, displacement, resettlement

INTRODUCTION

Sudan is the largest country in Africa; dominated by the Nile and its tributaries. The River Nile is a natural process that is constantly altering its surrounding environment and influencing the biophysical ecosystems it flows through. It has provided opportunities for sustainable human settlement and agriculture for over 7000 years (Chesworth. 1990).

Throughout history people have looked for various ways to benefit from the river, thus a relationship between the environment and the society has always existed. However, since the human population and settlements have expanded around the Nile *river valley*, the need for industrialization and irrigated agriculture has consequently increased. This has resulted in the growing demand for alterations and harnessing of the river Nile (Wallin. 2013).

Agriculture in Sudan is the principal source of income and livelihood for between 60 per cent and 80 per cent of the population. Agriculture remains a crucial sector in the economy as a major source of raw materials, food and foreign exchange. It employs the majority of the labour force, and serves as a potential vehicle for diversifying the economy (Mahgoub. 2014).

The River Nile and its major tributaries provide two riverine livelihood zones, Northern and Southern, in which irrigation managed by riverside smallholders allows some cultivation of cereals but especially of high-value crops such as vegetables and fruits (Holt.et.al. 2011).

Dams are constructed for a specific purpose such as water supply, flood control, irrigation, navigation, sedimentation control, and hydropower. A dam is the cornerstone in the development and management of water resources development of a river basin.

The Merowe Dam project is the one of largest hydropower project currently being developed in Africa. The dam's civil work is located at the fourth cataracts on the River Nile at Merowi island where the river divides into multiple smaller branches with large island in between, near Merowe city, about 350 km north of the capital Khartoum. The purpose of the dam is to generate hydropower with an installed capacity of 1250 megawatts with ten turbines of 125 megawatts for each, comparing to the existing Sudan's electricity generating capacity which is very small. Although the project of the dam followed by creating a lake covering a huge area of land extends to over than 180km, and a lot of people should leave their areas to new resettlements areas.

The main aim of this paper is to investigate the influence of Merwe Dam project on the livelihood of Alhamdab area (No2' No3).

LITERATURE REVIEW

The livelihood is a means of support, something that provides income to live on, especially paid work to secure the necessities of life. Livelihood activities are economic activities that people know, own and undertake to earn income today and into the future.

Most development agencies adopt the definition of Chambers and Conway (1991) of livelihoods which holds that: *“A livelihood comprises the capabilities, assets (including both material and social resources), and activities required for a means of living. Livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base”* (DFID, 1999).

Agriculture and livelihood

The majority of the world's extremely poor people live in rural areas and have livelihoods which are bound closely to smallholder agriculture as farmers, labourers, transporters, marketers and processors of produce and as suppliers of non-agricultural services to households whose income is principally agriculture-derived. Furthermore, the poor in rural towns and the larger cities are often engaged in the processing and distribution of agricultural products from the hinterland. The food needs of poor urban households are purchased, except where supplemented by supplies from rural relatives (Kuipers.Epko 2014).

Risks & Development-Induced Displacement and Resettlement

According to Michael Cernea(2000), there are eight major risks to which displaced and resettled people are vulnerable, Landlessness Joblessness, Homelessness these Marginalization, Food Insecurity, Increased Mortality and Morbidity, Loss of Access to Common Property and Social Disintegration

METHODOLOGY

The study was conducted in the Northern state where the dam is located 40 Km north of Merowe and 27 Km north of Karima. According to selection of the study area, the selection focusing on areas were affected directly by Merwe Dam construction, those villages were displacement by Sudanese government. A quantitative method was used to collect data from the respondents. A sample of 117 respondents was chosen randomly from the study area. The data collected was subject to descriptive statistics.

ANALYSIS AND DISCUSSION OF RESULTS

Demographic Information of the Respondents

Table 1 Distribution of the respondents by Demographic information

Gender	Frequencies	%
Male	88	75.2
Female	29	24.8
Total	117	100
Marital status		
Marital status	Frequencies	%
Married	66	56.4
single	47	40.2
Widowed	4	3.4
Total	117	100
Age		
Age	Frequencies	%
18-35	73	62.4
36-50	25	21.4
<50	19	16.2
Total	117	100

In the term of gender, the majority of the study sample (75.2%) were males, while females 24.8%. Both sexes affected by the dam construction and migration, any programmed designed to reduce the impact of resettlement on livelihood activities and food security in the area must be such that it covers both genders.

Regarding to the age of respondents, result indicates that, the age of all the respondents they would be more active and mobile that means all of them economically active.

The above result shows 56.41% married, 41% single, and 3.4% widow, most of them, their opinion about marriage there is decreased in the percentage of marriage that is due to the economic downturn after migration.

In the Interview with Galal Awad Alhamdab, the teacher of the boys basic school of Alhamdab; *“there are consensus that the age of marriage has risen between men and women in the new villages than the old area as result of changing in the livelihood and migration of young people to other states in Sudan to search about new livelihood’*.

The periods of migration by respondents

Table 2 Distribution of the respondents by duration of resettlement

Duration of migration	Frequency	Percent
Below 5 years	1	0.9
10 years	37	31.6
11 to 15 years	79	67.5
Total	117	100

From the table above, the majority of respondents were migrants before 10 years ago. This agree with interview of community leader said, "First time at 16th June 2003, second time at 16-October-2003, third time at 16-Feb.-2004 and last group at 2008."

Source of livelihood before and after resettlement

Table 3 Distribution of respondents according to the Source of livelihood before and after

Livelihood activities	Before		After	
	Frequency	Percent	Frequency	Percent
Agriculture	93	79.5	60	51.3
Pastoral	1	0.9		
Agriculture+ Merchant	3	2.6	20	17.1
Employee	18	15.4	10	8.5
Laborer	1	0.9	27	23.1
Total	117	100	117	100

According to table above, agriculture represent high percentage by (79.5%) before resettlement. It was main activity of livelihood in the old area, the people of Alhamdab practiced the mixed agriculture in the land called (Alsagya) around Nile bank. Farmers growing different crops and achieved self-sufficiency from food crops. Here there is a good story clarify life style in the old village from one of respondents. (*Women wake up in the morning, go to the farm, take the vegetable for cooking, take the milk, take the Palm fronds for firewood, and take the water from water fountain from the Nile and all this things from the farm (Alhwasha).*)

This statement indicated that, people live very simple life but the inhabitants felt satisfy and rich, also there is no more need for cash money because they can exchange their crops by other things.

After resettlement, the livelihood activities was directly affected by dam construction, it was clear in the answers of the respondents above, near to half were became depend on non-agricultural activities. Although for compensating the loss of their land, governments have resettled people in planned agricultural areas.

Table 4 Distribution of respondents according to agriculture crops cultivated before

Types of crops	Frequency	Percent
Wheat, faba bean, potatoes	7	7.1
Wheat.	18	18.4
Beans, onion, broth, clover, and okra, green.	29	29.6
Wheat, Shamar, beans, onion	35	35.7
Wheat, palm, Fodder ,Shamar and okra	9	9.2
Total	98	100

In the above table inhabitancies in the area cultivated different type crops, Wheat, onions, fennel, potatoes, etc. From This cultivation, area was achieved Self-sufficiency from these crops also exported it to other near villages in the north state. People in the area said Alhamdab achieved Annual production Cup, this cup awarded annually by government to village whose was achieve highly production in the state of Sudan, this before Merowe dam construction.

After resettlement the residents of Alhamdab cheered by new land, the soil in this region has been good for growing citrus fruit trees and also suitable for growing date palm. This indicated that, the new area is not suitable to grow vegetables and other crops like Wheat.

Table 5 Distribution of Respondents according to source of Irrigation before and after

Source of irrigation	Before		After		
	Frequency	Percent	Type	Frequency	Percent
Irrigation Lean	4	3.4	Irrigation Lean	10	8.5
Spate irrigation	1	0.9	pumping	107	91.5
pumping	108	92.3			
Sakia and sweep	2	1.7			
Matari	1	0.9			
Spate irrigation& pumping	1	0.9			
Total	117	100	Total	117	100

Above table clarify 92.3% depended on irrigation Baltalmbat (pumps draw water from the river), before dam irrigated directly from Nile by generators that operated two pumps in the same time. The pump draw water from the dam lack disrupted after 3 years, just work from 2004 to 2007 which is destroyed the agriculture activity in the area and pushed the farmers to create new way for irrigation or left the agriculture and search about new vocations. The lack of water has forced people into alternative sources of livelihoods. The only options they have to choose is to migrant into other areas for work or in search of gold, and working as laborers. Also to solve irrigation problem the citizens search about new type of irrigation

Interview with Ibrahim (President of the Farmers United in the Hamdab villages) “*After pump failure citizens turn to ambulatory irrigation (new type) of irrigation but it was several disadvantages:*

- *Work just in the winter season,*
- *Irrigation for just near farm.*
- *Breakdown after few times.*

Social services before and After Resettlement

Table 6 Distribution of Respondents according to source of drinking water

Source	Before		After	
	Frequency	Percent	Frequency	Percent
River	99	84.6		
Wills	13	11.1		
Tora	2	1.7		
Wills&river	3	2.6		
Water pipelines network			117	100
Total	117	100	117	100

Form table above, the main source of dirking is River Nile (84.6%), while other from wells, and (Alltora). water available for citizen in any time direct from the Nile.

After resettlement, the main source for domestic water pipelines network through (big willing) direct to the houses. Unfortunately water supply amount is limited time during the day according to system of distribution between the houses. Citizen was suffering so much from rare water during the day. Many residents were still depending on water tanks filled from the Nile and

trucked overland to the villages. This result indicated that, there big change in the source of water.

Table 7 Distribution of Respondents according to health Services

Health services	Before		After	
	Frequency	Percent	Frequency	Percent
Health clinic	117	100		
Health center			117	100
Total	117	100	117	100

Health services in the old area of Alhamdab was not better than the education situation, as the level of the health clinics were not more than small clinics. There are only six small clinics in the whole area; the clinics are administrated by nurse assistance from the same area. If there are any of emergency cases which they couldn't deal with them should take it directly to the nearest hospitals in the cities of Karima or Merowe as a reason of this shortage in medical services maternal mortality is not a rare phenomenon.

In the new area every village supplied with a health center. Recently health center was not work and use by citizens in the different purpose as place for hospitality. Health center stopped because the doctors escaped from the village and consider it just desert and tough environment, also low incentive was not attractive for them. Another factor most of the doctors from outside village and they haven't any belonging for those villages.

Table 8 Distribution of Respondents according to Education Services

Educational services	Before		After	
	Frequency	Percent	Frequency	Percent
Yes	117	100		
No			117	100
Total	117	100	117	100

The education services has started in the year 1956 with the first school established in that area with a system of only three years, and they should complete the rest of the years in other schools out- side their area. In 1969 the total number of schools were (3).

Recently before the time of immigration to their new resettlement area of New Alhamdab there were (6) basic schools. For those who want to continue their studies they should go and complete it in the around cities like Karima and Merowe, due to many reasons, students' families find it difficult to financially support them. As a consequence the level of illiterately among the people is about 10% without counting the number of those who only studied the basic level.

In the new area, 2 Primary schools, one for girls, and the second for boys. 2 High secondary schools, one for girls and the second for boys. Unfortunately most of population started to migrant outside the new settlements area due to suffer from main job and shortage in social services.

CONCLUSION AND RECOMMENDATIONS

The main aim of the study was to assess the impact of construction of Merwe dam on livelihood of Alhamdab villages (Alhamdab2&3) in the North Sudan. The results of the study revealed that farming is the major source of income in the old area. In the new area the citizen losing the main livelihood (agriculture) due to Alhamdab project stopped as a result of irrigation problem. Which transformed from productive villages to dependent villages. Most of citizen left their village and migrated to other states in Sudan to search about new livelihood source. General situation in the new area reflect difficult reality poverty, misery and deteriorate.

On the basis of empirical findings, the study recommended that,

- Government should be solved irrigation System problem and maintained the Baira (main irrigation tool) to bring life for Alhamdab project.
- Government should be listen to the voice of farmers in the displaced villages and participated them in the decision making for their life.
- Basic services and needs like health care and water source system must carefully be oriented

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