

# An Attempt for Analyzing the Economic Empowerment Opportunities for Rural Communities – Case Study of Bara Locality in North Kordofan State - Sudan

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**Abstract:-** The environmental conditions coupled with the general poverty among the communities have forced many population living in the Semi-Arid zones to aggressively jump into the use of the natural resources without attention to consequences might affect the population themselves and the environmental in general and aggravate the global plight with regard to environmental issue. The intervention of the scientists and specialists and educate the communities about the best use of the natural resources and ways to increase their capabilities for income generating activities and to alarm the decision makers about the future consequences of ignoring the support of the rural communities. Bara locality is located in the northern part of El Obied the capital of North Kordofan state. It has been linked by asphalt road with El Obied town, the same road is heading towards Umdurman but not yet completed. It is inhabited by diversified tribes. The majority of these populations are driving their livelihood from two main sources of livelihood options namely farming and rearing animals. However; the fluctuation of rainfall had severely affected the productivities of most cultivated crops in the area. Nevertheless; the area characterized by some sort of vegetation cover has become favorable condition for rearing of animals mostly sheep and goats in small scale holdings. In addition to that the area is enjoying sufficient water table, most of communities utilizing shallow wells dug along the available seasonal valleys and depressions for lifting water for both human and animal consumption. The availability of water was attributed to the location of the area which was located in depression area geologically contributed for accumulation of groundwater; hence the area has micro-climatic status compared to neighboring areas. But due to continuous cultivation for long years coupled with the nature of the soil type and fluctuation of annual rainfalls; the soil fertility has become very low and the productivities of crops have declined sharply especially with regard to cereal crops. This has contributed to poverty and low income of most households residing in the area and negatively affected their economic and livelihood status. This paper is aiming at exploring the needs and priorities of the population in Bara locality for their economic

empowerment and conserve the environmental conditions on their respective areas. This is to reduce the economic vulnerability of population in the area and alleviate poverty. The specific objectives were included the study of current situation of the communities in terms of their main livelihood options, the technical skills, the levels of their products and profits, and to propose workable plans for the economic empowerment of the communities. The methodology used for data collection was through the adoption of Focused Group Discussions (FGDs) method with the communities in the visited areas in the study area. The study had covered ten community based organizations in two administrative units in the locality of Bara, namely Gerigikh and Bara rural administrative units. The assessment process was conducted in each community based organization independently with the different stakeholders including main community sectors such as women, youth, farmers, and livestock owners using unified checklist. Each community sector was investigated about the main livelihood problems, reasons behind these problems, effects of the problems, affected community sectors, and the proposed solutions. The gathered information's have been analyzed using Excel application package and the Statistical Package for Social Analysis (SPSS) tools. The key findings of the study were included that the majority of the population are driving their livelihood from two main sources namely the farming and rearing of animals. However; due to climatic problems many people were engaged in other sources of income including travelling outside the area to search for working opportunities during the dry season such as traditional mining and other activities in the national capital. Findings related to farming were included low productivities of the main cultivated crops, food shortage most of the time. Findings related to investment in livestock were included limited holdings of different animals species, unavailability of working opportunities for the women and the youth in the study area. The priorities were included the focus on improving the productivities of the rainfed crops, provision of financial resources for agricultural implements such as animal drawn implement & other farming inputs, restocking of animals for the households, support to encourage the households for

**fattening of animals, and introduction of horticultural farming in the area, this is potentially capable for creating working opportunities for the women and youth categories during the dry season, etc.**

## I. INTRODUCTION

Bara locality is located in the northern part of El Obied town, the capital of North Kordofan state. It is divided up into five administrative units namely of Umm Sayala, Umm Garfa, Jirayjikh, Bara town, and rural Bara. Bara locality has been linked by asphalt road with El Obied town, the same road is heading towards Umdurman but not yet completed. The locality is inhibited by diversified tribes dominated by Gawama, Dar Hamid and other small tribes and sub clans. The majority of these populations are driving their livelihood from two main sources of livelihood options namely farming and rearing animals. However; the fluctuation of rainfall had severely affected the productivities of most cultivated crops in the area.

Nevertheless; the area characterized by some sort of vegetation cover has become favorable condition for rearing of animals mostly sheep and goats in small scale holdings. In addition to that the ground water is available in most areas of the locality in reasonably short depths, most of communities utilizing shallow wells dug along the available seasonal valleys and depressions for lifting water for both human and animal consumption. The availability of water was attributed to the location of the area which was located in depression area geologically contributed for accumulation of ground water; hence the area has micro-climatic status compared to neighboring areas. Nevertheless; due to continuous cultivation for long years coupled with the nature of the soil and fluctuation of annual rainfalls; the soil fertility has become very low and the productivities of crops have declined sharply especially with regard to cereal crops. This has contributed to poverty and low income of most households residing in the area and negatively affected their economic and livelihood status.

In an attempt to reduce the economic vulnerability of the population in the area and alleviate poverty; SOS Sahel Sudan with support from NCA have proposed an intervention through the Economic Empowerment and Livelihood Improvement” in the locality of Bara in North Kordofan. This study is aiming at exploring the needs and priorities of the population on those areas for the implementation of the project which covers approximately three years.

## II. OBJECTIVES

The overall goal of this research is to contribute to economic empowerment and improving livelihoods of disadvantaged groups specially women and youth in Bara locality in North Kordofan State through analyzing the potential opportunities in the area and propose workable suggestions for economic empowerment.

## III. RESEARCH METHODOLOGY

Focused Group Discussion (FGD) method was adopted for this study. The study had covered ten community based organizations in two administrative units in the locality of Bara, namely Gerigikh and Bara rural administrative units. The assessment process was conducted in each community based organization independently with the different stakeholders including the main stakeholders such as women, youth, farmers, and livestock owners and later on the gathered information were amalgamated to form the final shape of this report. In each community the community leadership and some of the community members were classified into four main groups as mentioned above. Each group was investigated about the main livelihood problems, reasons behind these problems, effects of the problems, affected community sectors, and the proposed solutions. This process was repeated with the remaining nine community based organizations in the study area. At the end the investigated community was also questioned to prioritize the solutions for the mentioned problems. In addition to this method, the study had included observations and individual interviews as additional methods to gather adequate information about the economic empowerment. The gathered information's from the different sources were analyzed by the screening of the different answers and organizing them in a meaningful manner to help for achieving the objectives of the study.

## IV. STUDY AREA

The study area (the locality of Bara) is located approximately forty kilometers north part of El Obied town, the capital of North Kordofan state. It is located in a typical Arid zone which has been severely affected by desert encroachment, signs of drought, and successive of intervals of limited rainfalls. Nevertheless; the area has been described as the base for Bara oasis which is considered as major source of ground water. This has been observed in possibility of lifting water from relatively shallow wells in the area which used for human and animal consumption and irrigation of horticultural crops. General poverty, low income and limited of working opportunities are the characteristics of the majority of the population residing in the area. Despite the potentiality of the area to provide means of income for the population, but the majority of the population are driving their means of livelihood depending on casual labour in other areas and subsistence farming under difficult condition and low productivities of most cultivated crops.

## V. ANALYSIS TECHNIQUES

The gathered data have been initially captured using excel package. The tabulated data were analyzed using Excel formulas to produce the means, tables, and graphs.

## VI. THE RESULTS

### Economic Empowerments challenges

#### A. Cultivation of Crops

In relation to farming constraints, the low productivities of the rainfed crops and continuous of crop failure were the central problem reported by the different stakeholders in the ten communities in the two administrative units. This problem was attributed to the low rainfall patterns and uneven distribution of the rainfall in most cases. Another problem led into the low productivities

of crops was associated with the infestation of pests and the weak crop protection control. In addition to that the soil type itself has been classified to be dry arid zones, potentiality of high production is very low. Therefore, the issue of the pest control remains the responsibility of the farmer who has no resources for such inputs. The majority of the farmers are only using primitive agricultural implements unable to enhance the productivities of crops. On the other hand Significant numbers of communities have raised the issue of desert encroachment and decreasing of cultivated fields accordingly.

Admin Unit	Community	Cultivated crops							
		Millet		Sesame		Watermelon		Groundnut	
		Area cultivated (ha)/HH	Yield Kgs/Ha						
Bara Rural	Fashoda	2.0	100	2.5	60	3.5	100	0.13	200
	Tugour	1.5	50	2.25	80	3	70	0.2	300
	Um Asal	2.25	60	2.75	50	2	50		
	Um Ramaad	1.75	100	1.25	70	3	100	0.25	250
	Ganato	1.85	40	1.63	65				
Gerigikh	Hamdan.	3	60	2	75				
	Rawkab	2.88	80	2.13	60				
	Meima Sharoum	5	50	2.5	67				
	Meima Al Zakei	2.5	50	3.5	100	3.5	65		
	Eyal Hussein	1.5	100	1	50				

Table 1:- Crops Cultivated and Yields in Bara Rural Administrative Unit:

Table 1 is presenting the cultivated crops and average productivity for each crop in each community in the two admin units. Almost all the households in the study area practice the rainfed farming and cultivating different crops. Sesame is the main crop cultivated by all the households. Due to low productivity of the cereals crops; the majority of households are cultivated sesame with the objective to get enough financial resources for purchasing cereal crops for their households. Other crops such as millet, watermelon, and okra were also cultivated but in very small areas. The low productivities of these crops are the central problems reported by the majority of the communities in the study area. The main factors contributing to low productivities were included continuous deterioration of the soil fertilities, infestation of pests, fluctuation of rainfalls, lack of

improved seeds, and limited financial resources. The majority of the soils in the area were cultivated for long years without fertilizers or proper crop rotation; in addition to that the soil itself is very vulnerable to the essential elements needed. The majority of the farmers have increased their farm areas to compensate the low productivities. This had contributed to clearance of vast areas and made the land susceptible to land erosion and sign of desertification in some areas, especially in the northern parts of the locality. The aforementioned factors have culminated into lack of financial resources to be used for provision of the agricultural inputs, then the decreasing productivities of the cultivated crops have become the common phenomenon in the study area.



Fig 1:- An Orchard of Citrus in Bara Town Owned by an Individual. It is Well Established and Already in Production Stage.



Fig 2:- A Vegetable Farm in Um Ramaad Village Owned by the Community. The Community were Not Able to Run it Due to Lack of Financial Resources.

On the other hand; despite the availability of ground water and suitability of soil for the horticultural cultivation; almost all the households are not able to establish horticultural farms for their households. The historical background about the study area has indicated the potentiality of horticultural farming in the area and could be the best alternative capable to alleviate the poverty from the shoulder of the households and lead for economic empowerment for the majority of the population in the study area. Hence, the major demands of the populations in the study area related to farming were focused on the facilitation of financial and technical resources for the establishment of horticultural farming. The historical information has proved the success of cultivation of several horticultural crops such as lemon, Guava, tomatoes, onions, chilies, and many other crops were already tested by some of the farmers in small scale.

#### *B. Rearing of Livestock*

About the constraints associated with rearing of livestock. The main problem reported to be the decreasing of animal holdings per household which is the second source of livelihood for many families. Some of the animal

species (cattle) have almost depleted due to successive droughts hit the area over years. Some of the communities remained with other animal species such as sheep, goats, and some camels. Many communities have informed that they had lost their animal holdings as the result of successive crop production failure over the past years. It has been informed that during the seasons of crops failure most of the families were heavily depending on selling out their animals and convert the outcomes to food. Now this phenomenon has been almost disappeared due to diminishing of animals from the hands of many families. Alternatively a significant number of households and individuals have embarked on fattening animals in small scale at household level during the dry season for six to twelve weeks; the length of fattening period was depending on the availability of the resources for feeding those animals. Another problem was the limited financial resources for restocking animals or for buying animals for fattening. Despite the interest of the people, knowhow about the fattening technique and the feasibility of this business; many people were not able to practice it. The phenomenon of poverty become stagnant and affecting the majority of population in the area.

Admin Unit	Community Based Organization	Goats		Sheep		Camels	
		% HHs with goats	No of animals/HH	% HHs with sheep	No of animals/HH	% HHs with camels	No of animals/HH
Bara Rural	Fashoda	62%	5-15	20%	3-7	0.01	1-3
	Tugour	58%	4-10	11%	2-8	-	-
	Um Asal	61%	3-9	13%	3-5	-	-
	Um Ramaad	39%	4-10	7%	6-10	-	-
	Ganato	41%	5-10	10%	4-6	0.02	1-2
Gerigikh	Hamdan.	45%	5-13	4%	2-6	-	-
	Rawkab	36%	4-8	6%	3-7	-	-
	Meima Sharoum	29%	2-7	2%	4-8	-	-
	Meima Al Zakei	28%	5-11	1%	2-6	-	-
	Eyal Hussein	16%	2-6	0%	0	-	-

Table 2:- % of Households with Animal and Average Animals per Households in the Study Area

Table 2 is showing the percentage of households own different animals and average animal holdings per each animal species for each household in each community in the two admin units. Due to continuous drought over the past two decades, fluctuations of rainfall, and decreasing quantities of pastures especially during the dry season; these factors have significantly affected the level ownership of different animal species and absence of some of the species specifically the camels. The majority of the households were only own goats and some sheep. Even those animals were in small numbers. Several households are completely without any type of animals. The study area is relatively rich in terms vegetation cover. The efforts exerted by some of the organizations and the government related authorities over the past two decades have raised the environmental awareness among the communities and supported for the environmental conservation. This has made a favorable condition for rearing of different animal species specially sheep, goats, and some cattle's in the area. This activity has become the main supportive for the livelihood component for the significant number of households due to the deterioration of rainfed farming and reduction in productivities of most of cultivated crops in the rainfed sector.

significant number of households to engage in fattening small number of animals using both the natural grazing and supplementary feeding for feeding the animals. This exercise was found to be quite profitable and important in supporting the families to fill the gap of food shortage during the year and provide good amount of financial resources to meet the household needs and support the family.



Fig 4:- An Example of Fattening Sheep at Home Level in Ganato Village (About Fourteen Sheep for an Extended Family).



Fig 3:- Flock of Sheep Owned by Three Families in Um Ganato Village.

C. Animal Fattening

The limited of income generated activities in the area, low income of farming, availability of natural grazing, easy accessibility to El Obied and Umdurman markets, experience on rearing animals, etc.. have stimulated

However; the people had acquired reasonable experience in this business, but the lack of finance was the main limiting factor. So far only about 5-9% of the households in the study area have engaged in fattening of animals at household level but in small numbers. Sheep and sometimes goats were the most common types of animals used in this business, most of those engaged in this business they depend on purchasing the animals from the surrounding markets, and then feed them for specific period of time depending on the available fattening ingredients. On average the profit per animal would be about 25% of the total cost in duration of six weeks' time. Supporting the households by increasing increasing the number of animals for fattening per household and by increasing number of households engaging in this business would definitely support in empowering the population economically in the study area. The discussions with the communities had revealed that only about less than forty percent of the households own sheep and most of them with small size of

herds. But slightly less than 60% of the households own goats ranging between 5-15 heads per household. Shifting the attention of the population towards the investment in animals would minimize the attention towards the rainfed farming and this might reduce the pressure on land and possibly rehabilitate the soil fertility for increasing the productivity of crops in future. On the other hand supporting the investment on livestock would increase the working opportunities for both the women and the youth categories that were lacking the working opportunities most of the time. It is very advisable to support the population on this regard.

Generally speaking in summary the meetings with the different communities in the two administrative units have revealed a number of facts about their needs and the priorities of those needs for economic empowerment of the communities. It has to be noted that the majority of the communities residing in the study area are facing great difficulty to increase their income. The major income opportunities for the majority of the population residing in the area are limited to rainfed farming and rearing of some animals. The rainfed farming is not promising at all because of the continuous fluctuations of the annual rainfall, depletion of soil fertility due to continuous cultivation of land with the same crops without fertilizers for long years, and decreasing of rainfall quantities over the past two decades. All these constraints/problems have led into low productivities of all these crops and decreased the return of these crops and automatically decreased the capital of those communities and made them vulnerable and unable to change their life. The irrigated farming is feasible; however; the investment in this field needs great amount of financial resources for lifting the water and for the other inputs. All these are beyond the capabilities of most of the people on the ground. Hence, the phenomenon of poverty among the population in the study area has become obvious and seems to be beyond the capability of the people to solve it without external intervention.

On the other hand the rearing of animals had long history in the area. However; it has faced number of

challenges due to fluctuation of rainfall and decreasing of pastures. Some of the households have completely lost their animal holdings, while other households still keeping some animals but in small scale. But in both cases the populations have the excellent experience and knowledge about animal management but the financial resources is the main constraint impeding successful investment in this field. Most of the populations have raised their concerns about the need for restocking the animals and inputs for fattening the animals during the dry season for increasing the family income. Based on the discussions with the communities about their needs and their priorities, meetings with the governmental officials, and personal observations; it has become clear that the needs are focused on possible ways for increasing the productivities of the traditional farming, investment on horticultural farming through harnessing the ground water in the area for horticultural farming, and the animal fattening as means of income generating activities during the dry season.

*D. Available Assets*

An initiative from national humanitarian organization as recently embarked on forming community based organizations indifferent locations in the study area. These community based organizations were established with the objective to play the role of the producer’s associations. In simple words is to stay as buffer between the producers and the governmental and non-governmental institutions such as lending institutions which normally are not prepared to deal directly with the individual producers whom are not capable to present adequate safeguards always demanded by those institutions, also to facilitate the role of marketing on behalf of the producers for maximization of profits for the actual producers. The entire project area has ten community based organizations, each of them embraces number of villages. The community based organization is expected to represent the different categories. It supposed to take the lead in organizing the different population categories with regard to the production of different commodities including rearing of animals.

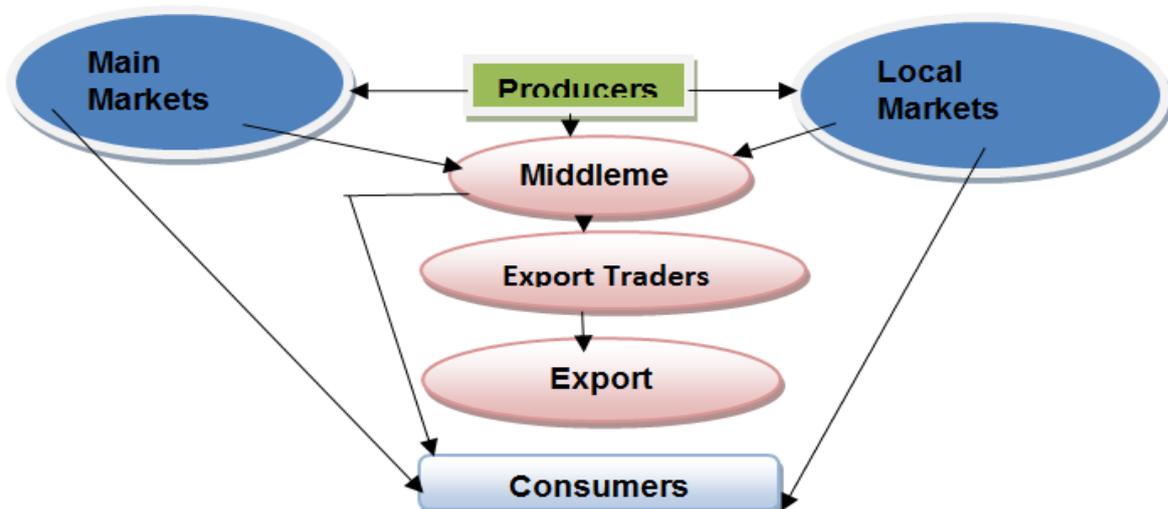


Fig 6:- A Diagram for Marketing of Animals in the Project Area

The above diagram is showing the major marketing channels in the study area practiced by different population communities. Normally the rural markets were created due to the availability of agricultural products including livestock. The numbers of the rural markets are very limited in the study area as the result of the low production of crops, they are only about four markets in the entire locality of Bara, but it normally accessed by the population in the study area. Those markets are located in Bara town, Gerigikh, Mima Sharoum, and Al Shawal villages. In relation to marketing of animals in the study area; there were three marketing channels practiced in the area: Firstly: the animals were transported to the aforementioned markets by the owners using local transports and also sometimes transported to El Obied town, this is in case of sizable number of animals to be marketed. Secondly: There were mobile traders who were normally touring the villages to buy the animals and form sizeable herds to be transported either to El Obied or Umdurman depending on the financial capabilities of mobile merchants. Those merchants could be the actual traders or the middlemen working for the actual traders. Thirdly: The owners take their animals directly to local markets. In all cases the producers are quite weak in bargaining level, this is because most of the producers are fattening small number of animals with the objective to support their families using the generated profits. In most cases they find themselves in a position to agree with the decision made by the traders or the middlemen. This situation in most cases minimizes the level of profits for the producers. Hence, the empowerment of the community based organizations is potentially positive for supporting the producers for maximization of their profits out of this business through decreasing of marketing chains.

*E. Effects of Prevailing Challenges on Economic Empowerment of Population:*

The study area has been characterized by prevailing of low fertility of sandy soils, fluctuations of rainfall patterns, rapid decreasing of rainfall quantities, loss of animals, lack of working opportunities, high illiteracy rates specially among the women category. The accumulation of the aforementioned factors have resulted into low income of families and general poverty among the majority of them. Previous studies have indicated that the majority of the households in the study area are sharing the pattern of low annual income and weak financial positions for most of the families. The below tables is presenting the average annual income per household and the classification of the households in terms of economic status.

Admin units	Main activities	Secondary activities	Total
Gerigikh	3219	5734	8953
Bara Rural	4349	6244	10593

Table 3:- Estimated Annual Household Incomes in SDG (Sudanese pounds)

Source: Project Baseline survey 2015

The above table is showing the overall income per household from the different sources including farming, livestock and other income generating activities practiced

by the household different members specially the youth and the male household heads. On average the household in Gerigikh admin unit earns about 8953 Sudanese pounds per year while the household in Bara rural slightly better earns about 10593 Sudanese pounds per year, these information presents the facts about the fragility of households capabilities in both admin units. A quick observation with regard to the variations in the annual income of the different households in the two administrative units had indicated the range of annual income in Gerigikh admin unit is ranging between 6540 – 12060 Sudanese pounds, while the range in Bara rural is 2916 – 25077. This is clearly indicating the huge variations of annual income between the different households. Despite the low income per household in both admin units for the majority of the households, the outcomes of the main activities were representing only about 36% and 41% of the household total annual income for Gerigikh and Bara rural admin units respectively. In most cases the main activities were including farming and livestock. This is clearly indicating the current deterioration of those activities and in-capabilities of the households to improve them using their own resources.

Admin units	Poorer families	Medium families	Better off families
Gerigikh	41.6%	51.5%	6.9%
Bara Rural	53.7%	42.1%	4.2%

Table 4:- Household Economic Status Percentage

Source: Project Baseline survey 2015

Further investigations had indicated that the majority of those families were sharing common characteristics of in-capabilities with exception of very few of them seem to be better off compared to other households. The above table is showing that approximately 93% of the populations in Gerigikh are either of low or medium annual income and only about 7% seems to be fairly better. While about 54% of the population in Bara rural are severely poor and only about 4% looking better off comparatively. Some of the families in Bara rural earn less than five thousands Sudanese pounds a year. In summary very significant number of households in both admin units were facing severe challenges to meet their requirements using their current available resources.

*F. Proposed Interventions for Economic Empowerment*

Building on the available resources for the economic empowerment of such communities would be the best approach. Accordingly four interventions are proposed for these communities namely; improvement of rainfed crops, restocking of animals, fattening of animals, and introduction of horticultural farming.

➤ *Improvement of Crop Productivities*

Almost all the interrogated communities have reported the problem of low productivities of cultivated rainfed crops. Many reasons have been reported about the low productivities, most of these reason are beyond the control of the farmers and the local authorities, these are included

the fluctuation and low quantities of rainfall, and the deteriorations of the soil fertilities. Others were included lack of the financial resources, lack of improved seeds, decreasing of cultivated lands as the results of desert encroachment, etc.. The aforementioned factors have allegedly decreased the production of cultivated crops and reduced the household income. Due to dependence of majority of population on the rainfed crops for their livelihood and stable food; the attempt for improving the productivities is highly essential. However; the only feasible attempts could be related to introduction of low maturity varieties relevant to such areas.

#### ➤ *Restocking and Fattening of Animals*

Table 2 has shown the percentage of households with animals and average animals per household. Based on the deteriorations of the farming activity, high proportion of communities have demanded the restocking of animals (Sheep and goats) have demanded the restocking of animals for their households as an alternative support for the families for increasing their income. This request has been prioritized by the fact that the area itself is favorable for the rearing of animals and in addition to experience and knowledge of rearing animals had acquired over years prior to loss of their animals.

Based on this experience many households have already embarked on fattening of animals on small scale at home level as means of income generating activities. Despite the potential income out of this business, but allegedly this activity is costly and beyond the financial capabilities of majority of households. The area has been described as a micro-environment area (Geologically know as Bara Basin Ground Water) with plenty of ground water easily accessed by the communities and also with dense trees population which would add an extra fodder for feeding the animals during the dry season. Supporting the households to be able to practice this activity would enable many households to empower their economic status.

#### ➤ *Horticultural Farming*

The experience of horticultural farming had deep deeply rooted in the area of Bara. For long years the people migrated from the northern parts of Sudan had added the value of establishing the horticultural farming specially the cultivation of citrus (Lime trees), vegetables, Guava, and other crops around the town of Bara. The horticultural farming was proved to be very successful, but it was in small scale. The indigenous communities were not involved in this business because their options was to continue with the rainfed farming and rearing of animals as easy jobs and most of the communities were familiar of their techniques as the result of inheritance from their grandfathers. Recently many people from outside of the area have obtained plots of lands through the government leases for cultivation of horticultural crops. The horticultural farming is still not yet fully established, but the leased farms were fenced for determination of ownership, some have dug the boreholes for lifting the water for irrigation of crops, and some have already planted some trees, but still in small scale. The success of this business, deterioration of rainfed

farming, availability of land, and need for the economic empowerment have stimulated to communities to shift their attention towards the horticultural farming as an alternative. However; the shortage of financial resources had impeded this objective, and so far the local communities are not able to engage in this business yet. Nevertheless; the voices of the communities to get support to the engagement in this business is very high.

#### G. *Strategic Approach for Implementation of the Activities*

For the sake of success of the proposed interventions for the economic empowerment of the communities in the study area, a number of points need to be in place prior to actual implementation, moreover; specific considerations have to be noted as well. The necessary points could be as follows:

#### ➤ *The Project Duration*

Need to be minimally three years for restocking of livestock, fattening of animals and rainfed farming and five years or above for the horticultural farming.

#### ➤ *Fattening of Animals and Restocking of Animals*

The justification for prioritizing the fattening of animals as an important tool for economic empowerment of the population has been emanated from the fact that the intervention is simple to be implemented, short term intervention (it is possible to be implemented several times during the year with different households categories) there is possibility to be implemented as revolving fund (giving the opportunity to use the same resources for different batches of households), in addition to that the governmental relevant authorities (livestock department) could be an asset for providing technical knowhow including the preparation of fodder on behalf of the households and provision of the necessary technical requirements for the animal fattening. After sometime the community based organizations could take over from the livestock department and later on the households could take the whole responsibility after enough capital formation for running the work independently. In this regard a clear selection procedure has to be adopted for the selection of potential households for each batch (that means perfect selection criteria has to be prepared in advance. With regard to restocking of animals it is highly necessary based on many factors to be sheep and goats only.

#### ➤ *Increasing the Productivities of Crops*

The ideal approach is to deal only with the crops that are potentially capable to improve their productivities with the minimum intervention. These crops could include sesame, watermelon, cowpea, and hibiscus which are potentially capable to increase their productivities through some inputs. In this regard the optimal intervention is the introduction of the improved seeds of those crops, especially the short maturity varieties which are capable to cope with the shortage of rains and fluctuation of rainfalls in the area. At the same time the local authorities have to be encouraged to legislate regulations for prohibiting the use of heavy ploughing tools in the sand soils. The use of the animal drawn implements and the focus on cultivating the

legumes (cowpea) is possibly stimulate the fertilization of lands and increase the productivities of crops and possibly the farmers return for cultivation of cereals after a while.

#### ➤ *Introduction of Horticultural Farming*

The introduction of the horticultural farming should be designed for longer term and comes after the intervention on fattening of animals and improving of crop productivities. The intervention made on fattening of animals and improvement of productivities of rainfed crops are expected to give good support to households and help for the establishment of horticultural farming. No doubt the engagement in horticultural farming demands a lot of resources that include fencing of farms, land preparation, procurement of seedlings of different crops and seeds for the vegetables, drilling or digging of boreholes, etc.. There it should come after the preparation of the farmers. The experiment of cooperative horticultural farm in Meima community in the study area had come with some lessons. Firstly: the horticultural farming is economically feasible, the farm had produced significant profits for the shareholders. Secondly: it was quite productive of diversified type of crops. Thirdly: the disadvantage of that farm was the bad management, after some time of communal management, it has faced many challenges and eventually rented to an individual, following the rental it went smoothly under the management of the individual farmer. The investigation made with the contractor had revealed that the success of the farm under his management, but it demanded sufficient resources to run it, especially the initial establishment and the annual operating cost. Fourthly: The good lesson out of this experiment had indicated that success of the horticultural farming in the area and the individual management is far better than the communal management.

The intervention on the horticultural farming is also needs to be through the community based organizations. However; it needs several steps to be prepared prior to the actual intervention. Firstly: The households have to be encouraged for legalization of their lands potential for horticultural farming to avoid future conflicts. Secondly: perfect selection of pioneers to start the experiment and stand as pulling factors for other comers. The pioneers have to be assisted technically and financially to get loans from the lending institutions for the main issues. The relevant governmental departments (horticultural department) have to be encouraged to take the role of establishing the nurseries for the production of seedlings, training the farmers on farming techniques, determination of optimum seasons for cultivation of different crops, pesticides management, irrigation techniques, etc.. Thirdly: it is also possible for this activity to be run through revolving funds to be rotated among the beneficiaries. In this regard the installments repaid by different loan takers have to be redirected for new households and so forth.

## VII. SUMMARY AND CONCLUSIONS

This assessment has been conducted during the month of July in 2017 in two administrative units of Bara locality in north Kordofan state with the objective to assess the capability of the existing natural resources in the area to support for the empowered of the population residing in the area through technical intervention to encourage the residents to maximize the utilization of the natural resources to improve their economic situation . The assessment has confirmed the economic inability of the majority of the population, the deterioration of natural resources in the area which included the low fertility of soil, loss of animals which were sold out for purchasing food due to low productivities of most crops, prevalence of illiteracy among the population specially among the women category, general poverty among the population, etc.. However; the assessment has revealed positive points among those population, these were included deeply rooted experience of the population in rearing animals, acquirement of land by major of population suitable for cultivation of horticultural crops, availability of underground water in relatively shallow deeps possible for the population to dig wells for irrigation of their crops, the area has relatively rich vegetation cover contributed for the availability of natural range and pasture. The study has built on the positive characteristics of the area and proposed for some interventions to support for the economic empowerment of the population. The intervention has proposed the engagement of the local communities, the governmental local authorities in a project to support the local communities economically. The proposal has included restocking of animals to some households, introduction of animal fattening to be prioritized for women category, and eventually to encourage the communities for horticultural farming which is expected to be the most profitable and sustainable project for the majority of population and could treated as model project to be replicated in other areas where there is similar conditions.

## RECOMMENDATIONS

The study has recommended the primary intervention should focus mainly on investment in horticultural farming and livestock through coordination with the agricultural and livestock departments in the area for technical support and adoption after the end of the project. The intervention on livestock should focus on women and youth categories. While the secondary support could be devoted for rainfed farming through provision of the agricultural inputs such as improved seeds and short maturity crops. The sequential order of the intervention should start with restocking of and fattening of animals, while the horticultural farming should take place at the end after relatively empowerment of the population economically.

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