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Title:

The Impacts of Community Based Natural Range Resource Management in Achieving Sustainability (CBNRRM) (White Nile State, Elshegaig villages, Sudan)

أثر الإدارة القاعدية المجتمعية في استدامة الموارد الرعوية الطبيعية (السودان- ولاية النيل الأبيض- قرية الشقيق الجعليين)

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قال تعالى:

﴿قَالَ تَزْرَعُونَ سَبْعَ سِنِينَ دَأَباً فَمَا حَصَدتُّمْ فَذَرُوهُ فِي سُنبُلِهِ إِلاَّ قَلِيلاً مِّمَّا تَأْكُلُونَ﴾

صدق الله العظيم

سورة يوسف الآية (47)

Dedication

To soul of my mother & my father.

To my brother and sisters.

To my nephew and niece

To my children.

To my husband.

To all my friends and colleagues.

Acknowledgement

My thanks and gratification is to Almighty Allah who had given me the ability to finish this research in this form.

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Abstract

This study was carried out at Eshegaig-Elgaalien village, Umrimta Administration unit, Edduiam locality, White Nile State, Sudan, during march 2018 under field surveying to find out the impacts of community based range resource management in achieving sustainability. More over to measure the contribution of CBNRM in rural economic development, analyze the contribution of CBNRM in enhancing rural livelihoods socio-economic aspects and benefit sharing, define the power been developed to the rural communities especially in relation to resource ownership and management and know the existing opportunities and potential challenges facing the successful implementation of CBNRM in the study area. The study selected Eshegaig-Elgaalien village for its large population, existence of VDCs and the project activities executed in it. Number (80) was selected as respondents. proportional sample by individuals 10% from the total population but the data obtained from 90 respondents. The primary data were gathered through interviews and group discussions. Secondary data were obtained from documents, reports and other relevant resources. Statistical package of sciences (SPSS) were used including frequencies percentages and chi square. The study concluded that (86.7 % of respondents have their own lands and the main source of income is agriculture, Community participation depended on men more than women, respondents were participating in planning and executing programs but they poorly represented among decision makers, use of common lands is organized by customs and traditional rules, leaders had the authority to approve and protect traditional rules governing the use of pastoral resources, services like extension, veterinary and finance were missed. When testing the significance of the relationship between some dependent and independent variables, using chi square test, the study showed that there was a significant relationship at a significance level of 0.05 between: Gender and participate in community management

activities, Marital status and access to appropriate fodder consumption, Education level and achieving development, Income level and participation in community management activities, level of income and benefit from management of pastoral resources. Based on the study findings the following recommendations were proposed: CBOs must introduce participatory tools to engage with communities, facilitate discussions and mobilize community members. Empowerment in creating and strengthening community organizations and improving the status of rural women. The enforcement of laws and legislation in the natural resources conservation and management need to pay special attention to local communities and their traditional and long established rights and consideration of their interests There is a need to adopt collaborative approach to guarantee the coordination between institutional government, CBOs and NGOs.

مستخلص الدراسة

أجريت هذه الدراسة بقرية الشقيق الجعليين- وحدة أم رمته الإدارية- محلية الدويم- ولاية النيل الأبيض- السودان خلال شهر مارس عام 2018 م باستخدام البحث الاجتماعي لمعرفة تأثيرات الإدارة المجتمعية القاعدية في استدامة الموارد الرعوية الطبيعية وقد هدفت الدراسة إلى قياس مساهمة التنظيمات المجتمعية القاعدية في تحسين مستوى المعيشة الاقتصادية والاجتماعية للريفيين وتشارك الفائدة من إدارة الموارد الرعوية الطبيعية إلى جانب معرفة مدي تقوية المجتمع المحلي خاصة في جانب ملكية وإدارة الموارد الطبيعية ومن ثم معرفة الفرص المتاحة والعقبات التي يمكن أن تواجه تنفيذ برامج الإدارة المستدامة للموارد الطبيعية الرعوية في منطقة الدراسة. اختيرت قرية الشقيق الجعليين كمنطقة دراسة لكبر عدد سكانها ووجود لجنة تنمية و تنظيمات قاعدية أخرى مع تنفيذ الكثير من أنشطة المنظمات العالمية بها. تم اختيار عدد (80) مبحوث بطريقة العينة التناسبية البسيطة وأخذت نسبة 10% من جملة عدد الأسر (800) لكن تم اخذ البيانات من عدد 90 مبحوث, تم جمع البيانات الأولية بواسطة الاستبيان بإجراء مقابلات فردية من المبحوثين و مجموعات النقاش كما أخذت البيانات الثانوية من الكتب, التقارير, الإنترنت والمصادر الأخرى ذات الصلة. استخدم برنامج SPSS لتحليل البيانات مستخدمين التكرارات والنسب المئوية إضافة إلى مربع كاي لمعرفة معنوية العلاقة من المتغيرات, خلصت الدراسة إلى عدة نتائج أهمها أن 87 % من المبحوثين لديهم أراضي زراعية و يعتمدون على الزراعة كمصدر دخل رئيسي, المشاركة القاعدية في أنشطة إدارة الموارد تعتمد على الرجال أكثر من النساء, المبحوثين يشاركون في التخطيط والتنفيذ لكن مشاركتهم في اتخاذ القرارات ضعيفة, استخدام الأراضي تحكمه القوانين العرفية التي يحميها وينفذها القادة التقليديون. تفتقر منطقة الدراسة إلى الخدمات الإرشادية من الجهات الحكومية. أظهرت نتائج مربع كاي وجود علاقة منوية بين النوع والمشاركة, الحالة الاجتماعية والوصول إلى كمية العلف المناسبة, مستوى التعليم وتحقيق التنمية, مستوى الدخل و الفوائد من إدارة الموارد. استناداً على النتائج المذكورة تمت التوصية لمنظمات المجتمع القاعدية بخلق آليات فعالة للمشاركة وتسهيل النقاش للمبحوثين, خلق وتقوية منظمات مجتمع قاعدية تهتم بقضايا المرأة الريفية, تقوية القوانين والتشريعات في مجال إدارة الموارد الطبيعية والمحافظة عليها من قبل المجتمعات المحلية والقادة التقليديين مع وضع وضمان الحقوق التي تحفزهم للمحافظة على الموارد واستدامتها. أهمية تبني منهج تكاملي لضمان التنسيق بين الجهات الحكومية والمنظمات والمجتمعات المحلية لضمان استدامة التنمية في مجال الموارد الطبيعية الرعوية.

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Abbreviations

CBNRM	Community Based Natural Resource Management
CBOs	Community Based Organizations
EEA	European Environmental Agency
FNC	Forest National Corporation
HCENR	The Higher Council for Environment and Natural Resources
IFAD	International Fund for Agricultural Development
MoARFR	Ministry of Animal Resources, Fisheries and Range
MoEFPD	Ministry of Environment, Forestry and Physical Development
NGOs	Non-Governmental Organizations
RPA	Range and Pasture Administration
SSNRMP	Sudan Sustainable Natural Resource Management Project
UN	United Nations
UNDP	United Nations Development Program
VDCs	Village Development Committees

Chapter One

Introduction

1.1 Background:

Across Sudan, local communities are facing a number of concurrent processes of change, including climate change, drought, migration and, in places, conflict and civil war. These processes threaten the natural resource base communities rely on for their livelihoods.

It is recognized that local participation in resource management is an important mechanism to ensure environmentally sustainable development. Hence, for different reasons, agencies working in the field of resource use and management support grass – root participation in their activities (Mohammed, 2015).

Sudan rangelands plants are basic natural renewable resources having their prominent role in the socio-economic development and well-being of the pastoralists, agro-pastoralists and sedentary population. The grasses, the forbs, the shrubs and the trees in the Semi- Desert and the Low Rainfall Savanna range areas beside providing cheap feed for domestic and wild herbivores.

These natural plants reduce carbon dioxide in the atmosphere and as well these plants remain good genetic resources that could be resorted to, for crops improvements in future (Idris, 2013).

CBNRM gives locals an incentive to invest in the environment to ensure it is not degraded and that resources are available for the use of future generations (IFAD, 2006).

CBNRM can be considered a management strategy aiming to reduce poverty, conserve natural resources and promote good governance and decentralization, in a single process.

In the recent years, debates on rural development and sustainable management of natural resources in many African countries have emphasized the importance of Community-Based Natural Resource Management (CBNRM) systems as the main driving force for sustainable development in rural communities (Fabricius, C, Koch, E, Mogome, H, Turner, S, 2004).

1.2 Previous studies:

Many studies related to CBNRM were conducted in the Sudan and other African countries, some of them concern the success and failure of the cases which occurred.

The study conducted by Ali, 1996 in Idd Al–Firsan in Darfuraimed at analyzing and discussing the participatory bottom-up approach applied by (ADS) to achieve sustainable development in the area and presenting the use of social animation technique by local communities to identify and formulate development , traditional leader and local NGOs played active work in mobilizing community to participate in conserving and managing natural resources. The finding was that ADS has failed to achieve sustainable for many reasons including the centralization of decision making and absence of community participation . The recommendations ensured adopting bottom-up approach to assure community participation.

The second study conducted by Mohammed, 2011, Ph.D thesis in Agricultural Extension and Rural Development aims at investigating the effectiveness of community – based organizations (CBOs) from different aspects of rural development with special focus on village development

committees(VDCs). The study assessed the participation of VDCs and local communities in the development planning in the study area and measured community participation in stages of development process. The result showed that few women were involved as respondents, respondents received limited training to develop their skills, only half of the respondents attended the meetings. The role of VDCs in agricultural activities are limited as stated by respondents. The participation of local communities was not fully in development stages. Respondents were not involved in decision making especially women. VDCs role was limited to distribution of inputs. Due to discontinuity of villages sandoqes development project stopped. Inadequate technical and managerial training. Recommendations include building and upgrading capacities and skills of VDCs, involvement of community members specially women in development process reestablishment of village sandoqes under the supervision of VDCs and introduction and diversification of more income – generating activities to improve beneficiaries living conditions. There is need for further studies on VDCs as important tool in development process.

1.3 Life problem:

Many non- governmental organizations NGOs recognized in the study area since twenty years ago such as IFAD, PLAN SUDAN and others, most of them followed participatory approach and they tried to involve local community as village development committees (VDCs) through all the projects stages. People received funds and services including financial and training services. they got benefits and achieved successes in projects implementation. Their services met the needs and aspiration of the community in rural areas, but the researcher observed that many programs and activities of NGOs projects had stopped or decreased at the

termination of the external support ,the researcher feels that the local community was not qualified enough to lead sustainable development activities.

1.4 Research problem:

This research aims to assess what are the impacts of CBNRM in achieving sustainability in Al-Sheqaiq Al-Ja'alin village?

1.5 Research importance:

This study will identify the community members in the study area, it will declare their social and economic characteristic, the way they are thinking and to what extent they understand their development situation, their relations with the decision makers and governmental institutions, their accessibility to financial institutions, their collaborations, and union groups which lead the community, the leaders and their qualifications, the international NGOs which support the region and their residual impacts and any other information appear since the period of the study and all these data may form basic data for many strategies and plans for government and NGOs.

1.6 Research objectives:

To know if CBNRM has contributed to sustainable NRR use through the following:

1. To measure the contribution of CBNRM in rural economic development.
2. To analyze the contribution of CBNRM in enhancing rural livelihoods socio- economic aspects and benefit sharing.
3. To define the power been developed to the rural communities especially in relation to resource ownership and management.

4. To know the existing and potential challenges facing the successful implementation of CBNRM in the study area.

1.7 Research questions:

This study aimed to know:

1. To what extent has CBNRM contributed to sustainable NRR use?
2. To what extent has CBNRM contributed to rural economic development?
3. To what extent has CBNRM contributed to enhance rural livelihoods and benefit sharing?
4. To what extent has power been developed to the rural communities especially in relation to resource ownership and management?
5. What are the existing opportunities and potential challenges facing the successful implementation of CBNRM in the study area?

1.8 Variables:

Independent variables	**Dependent variables**
Sex	improved local people quality life
Age	Community empowerment
Education	Raising rangeland production
Income	Achieving development and poverty alleviation
Existence of people's organizations	Satisfaction of local community aspiration
Land ownership system	Positive income
Available credit	Increase animal number
Access to ;natural range resources	Increased diversity
Distribution of benefits of MNRR	Sustainable natural resource
Participation in NRM community activities	
Adopted techniques to conserve NRR	
Rules for exploiting resources	
Conflict resolution mechanism.	
Training programmes in NRM	
Rights and duties in MNRR	
Measures to protect NRR	
Policies and laws related to CBMNRR	

1.9 Research hypothesis:

1. No association between CBNRM and sustainable NRR use.
2. No association between CBNRM and sustainable rural economic development.
3. No association between and enhance rural livelihoods and benefit sharing.
4. Power has not been devolved to the rural communities especially in relation to resource ownership and management.

1.10 Organization of the study:

This study includes five chapters. Chapter one comprises an introduction, problem context, the research problem and question, objectives, and the importance of research and organization of the study. While Chapter two discusses the theoretical framework of the research. Covering topics as: Natural resource management Definitions and concepts, CBNRM. The third chapter deals with study area, research population, sample selection, research methodology.

Data analysis. Whereas, chapter four presents the results and discussion. Finally, chapter five tackles the summary of the result, conclusions and recommendations.

Chapter two

Literature Review

This chapter presented literature which covered concept of national resource definitions, management importance and CBNRM aims, objectives and benefits etc.

2.1 Natural resources:

2.1.1 Natural resources definitions:

The definition of natural resources is broad, covering agriculture, forestry, ranges, conservation, tourism, fisheries and 'everyday' resources such as land, water and fuel wood. Natural resources are the foundation from which rural poor people can overcome poverty. (IFAD,2006)

According to Oxford dictionaries "Natural resources are resources that exist without actions of humankind. This includes all valued characteristics such as magnetic, gravitational, electrical properties and forces etc. On earth it includes: sunlight, atmosphere, water, land (includes all minerals) along with all vegetation, crops and animal life that naturally subsists upon or within the heretofore identified characteristics and substances.''

Natural resources are useful raw materials that we get from the Earth. They occur naturally, which means that humans cannot make natural resources. Instead, we use and modify natural resources in ways that are beneficial to us. Natural resources may be further classified in different ways. Natural resources are materials and components (something that can be used) that can be found within the environment. Every man-made product is composed of natural resources (at its fundamental level).

A natural resource may exist as a separate entity such as fresh water, air, and as well as a living organism such as a fish, or it may exist in an alternate form that must be processed to obtain the resource such as metal ores, rare earth metals, petroleum, and most forms of energy (Wikipedia, 2018).

The European Commission defines natural resources to include: raw materials (e.g. minerals, fossil, energy carriers, biomass), environmental media (e.g. air, water, soil), flow resources (wind, geothermal, tidal and solar energy), and space (land use for human settlements, infrastructure, industry, mineral extraction, agriculture and forestry) (EEA, 2005).

2.1.2 Importance of natural resources in Sudan:

As Sudan is a wealthy country in Africa in term of natural resources, therefore its natural resources are focal points for competition and conflict. Resource conflicts are often the result of a growing population, climate change, and poor management of the environment, but the constantly shifting power struggles of national politics also have intervened at a local level, turning groups that coexisted peacefully into rivals. Decades of neglect and heavy-handed control by the central government have left many Sudanese communities on the periphery without access to land and water and cut off from the financial and developmental benefits of resource wealth, particularly from oil and agriculture (Nasrallah. N & Sullivan. J.P, 2010).

Human wealth is based on the use and consumption of natural resources, including materials, energy and land. Continued increase in resource use and the related environmental impacts can have a multitude of negative effects leading to ecological crises a security threats. The sustainable use and management of natural resources have therefore come into focus and

have been the subject of many policy discussions over more than a decade, beginning with the summit in Rio de Janeiro in 1992 (EEA Report 2005).

2.1.3 Natural resource management:

Natural resources management is a discipline in the management of natural resources such as land, water, soil, plants and animals, with a particular focus on how management affects the quality of life for both present and future generations. Hence sustainable development can be followed where there is a judicial use of resources which compromises the needs of the present generations as well as the future generations (Investor words, 2016).

Management of natural resources involves identifying who has the right to use the resources and who does not for defining the boundaries of the resource. The resources are managed by the users according to the rules governing of when and how the resource is used depending on local condition.

Natural resource is defined here as a scientific and technical principle that forms a basis for sustainable management (conservation and use) and governance management of natural resources such as land, water, soil, plants and animals, with a particular focus on how management affects the quality of life for both present and future generations.

2.1.3.1 Natural resource management in Sudan:

Throughout Sudan, ordinary men and women are managing and using natural resources (for example, plants, animals, forests and crops) in ways that enhance their lives. They get their food, fuel, building materials from natural resources and manage these resources through the local rules.

Although natural resources have long been an integral part of rural Sudan livelihoods, it is only in recent decades that outsiders have sought to promote natural resource management as a rural development strategy.

Natural resource management in Sudan is fragmented due to a lack of coordination and communication as many relevant platforms are not working effectively. The United Nations Environment Program (UNEP) has been working to improve the sustainable and equitable governance management, and use of environmental management (UNEP, 2021).

2.1.4 Institutional context for forest, rangelands and biodiversity conservation in Sudan:

2.1.4.1 Federal level ministries and specialized agencies:

The Ministry of Environment, Forestry and Physical Development (MoEFPD) and the Ministry of Animal Resources, Fisheries and Range (MoARFR) are the main federal actors managing natural resources in Sudan. The key roles of these ministries are policy formulation, planning and monitoring of progress in the sector development, research and extension services for agriculture, livestock, forestry, fisheries, pastures and overall natural resources protection, conservation and development. A number of research centers are associated with various ministries, related to agriculture; animal resources; wildlife; and forestry. Key agencies include:

* The Higher Council for Environment and Natural Resources (HCENR) was established in 1991 to coordinate and advise on making effective policies, laws, plans and institutions that solve problems of natural resources degradation in Sudan. The HCENR is affiliated to the MoEFPD, and represents Sudan as a focal point for most of the global environmental conventions. * The Forest National Corporation (FNC), a

semi-autonomous institution under the MoEFPD, was created in 1989 with the responsibility of coordinating the forestry sector, formulating and following up the implementation of policies, planning and undertaking administrative tasks for forests and woodland management. * The Range and Pasture Administration (RPA), a decentralized authority under MoARFR, has responsibility for planning, conservation and development of rangeland programs, protection of rangelands against bushfires, rehabilitation of degraded rangelands and execution of national and internationally assisted projects (World Bank, 2013).

2.1.4.2 At the local level:

Local associations, farmer/producer and grassroots groups in the environment, under the chairmanship of the State Governors are involved with natural resources management, such as the farmer's associations, village councils, agricultural cooperatives, women's groups, youth groups, vocational training centers, market vendors, livestock producer associations, unions and service providers.(NGOs), community-based organizations (CBOs) and, sometimes, the private sector (World Bank, 2013).

2.2 Range and livestock in Sudan:

As revealed the ministry of Animal Wealth records (2006) much of Sudan surface area is more suited for livestock grazing than cultivation. Cattle, sheep, goats and camels are all herded in various combinations by the nomadic groups of the country, who account for approximately 8% of the population (1993 Census). In addition, settled people often keep some animals. Total herd size is over 40 million for cattle, 49 million for sheep, 42 million for goats, and 3.9 million for camels). Annual growth rate for

the period 2000-2005 is found to be 1.2% for cattle, 1.4% for sheep, 1.7% for goats, and 4.3% for camel.

2.2.1 Sudan rangeland plants:

Sudan rangelands plants are basic natural renewable resources having their prominent role in the socio-economic development and well-being of the pastoralists, agro-pastoralists and sedentary population. The grasses, the forbs the shrubs and the trees in the Semi- Desert and the Low Rainfall Savanna range areas beside providing cheap feed for domestic and wild herbivores, they provide:

Soil conservation, Watershed protection, Famine foods, medicine for (humans and livestock), source of energy, industrial ingredients, building materials. These natural plants luxuriant growth reduces carbon dioxide in the atmosphere and as well these plants remain good genetic resources that could be resorted to, for crops improvements in future.

With further increase of population in the Sudan pastoral and agro-pastoralist ecosystems and climate change and increased livestock population, this situation will induce undesirable effects on many plants survival and regeneration.

Since the natural forage plants in the pastoral ecosystems of the country have played their role in sustaining the livelihood of the pastoralists and agro-pastoralists urgent need is required to develop a strategy to cater for the sustainability of the role:

1. By conservation and enhancement of the natural forages plants genetic resources diversity for the prosperity development of the country.

2. To insure conservation of the biological heritage of the present and the coming generations through practical and applicable interventions.

Such a strategy could be only realized; through thorough knowledge and assessment of the natural forage plants in the two pastoral and agro-pastoral ecosystems of the country (Idris, 2013).

2.2.2 Range resource problems and proposed solution:

Rangelands cover an estimated area of 117 million hectares (RPA, 1993) several factors have adversely affected this resource such as:

1. Uncontrolled burning: specially in semi desert and dry areas.

2. Overgrazing: In the traditional Pastoral Systems, which constitute about 90% of national herd, concentration of large livestock population around permanent sources of water and in the wet season grazing areas often result in overgrazing.

3. Development policies: Absence of clear-cut policy towards pastoral resource coupled with a sectoral approach in development planning often result in amiss allocation of land resources.

4. Legislation: The absence of legislation that protects rangelands and lack of effective policies that graven their management and utilization is an important factor in the deterioration and / or misuse of this resource.

5. Social Aspects: Traditional management systems organized and controlled by local administration and its institutions, by-laws and traditions, have succeeded in maintaining some degree of balance between range resource and level of utilization, but abolishing this effective system without a sound alternative has contributed to the deterioration of rangelands.

6. Natural hazards: Frequency occurrence of drought in Sahel during the last decades and rainstorms/ floods affected the pastoral sector. and

caused the death of large numbers of livestock and migration of pastoralists (RPA, 2003).

2.2.3 Environmental impacts of range resources problems:

Serious environmental impacts resulted from the factors mentioned above, are as follows:

1. Reduction of rangeland areas.
2. Shift in botanical composition away from palatable and diverse forage species.
3. Replacement of perennial grasses by annual grasses and in some cases, noxious species (undesirable).
4. Reduction of forage production per unit areas as a result of land deterioration.
5. These impacts have in turn resulted in several adverse secondary impacts such as soil erosion, land degradation and desertification in some cases.

2.2.4 Suggested solutions to solve range problems:

1. Active participation of local communities in the range rehabilitation programs.
2. Development of land use and guiding map.
3. Adopting of sound suitable rehabilitation programs.
4. Protection against seasonal fires.
5. Reinforcement of traditional local institutions.
6. Demarcation, rehabilitation and registration of livestock migration routes (RPA, 2003).

2.2.5 Conditions needed for managing natural resources:

In order to manage common property resources a number of conditions need to be met, they include:

- Clearly defined boundaries of the area managed.
- Appropriate rules for exploiting the resource and for conserving it.
- The people affected by the rules must be able to participate in changing them.
- Effective resource monitoring procedures must be in place and monitors of rules must be resource users or accountable to them.
- Conflict resolution mechanisms must be in place.
- The right of resource users to devise their own institutions are recognized by external authorities.
- Resource users must have the right of exclusion of outsiders from using the resource (Carew, R,J, Prescott, A,R, Bass, S and Dalal, C, 1994).

2.3 Public participation in resource management:

It is known that public participation in resource management is the main tool to guarantee environmentally sustainable development. Therefore, for different reasons, agencies working in the field of resource use and management support grass- root participation in their activities. However, the level of participation and the power of decision- making given to grass- roots differs according to decision- makers understanding of the meaning of participation. Hence, it is possible to distinguish between participation as a means or an end. Some view participation as a means to more effective and efficient realization of the objectives of sustainable management of resources. In this aspect, focus is on the results of participation. When participation is seen as an end, major importance is

given to the process of participation itself which includes institutional development, capacity building and upgrading abilities to respond to local needs. In many cases, participation of the public is restricted to the provision of labor, self- help contributions, informants and sometimes asked to give their opinion. Both understanding affected the level of participation of local communities in resource management or in projects implemented at local level. According to (success and sustainable) One of the pillars of CBNRM is community participation in natural resource management. Through local involvement and ability to derive economic benefits from their resources in their local environment, it is assumed that they will develop positive attitudes towards natural resources hence use them sustainably (Mohammed, 2015).

Resources have to be managed in such a way that the demand of the present generation can be satisfied without exhausting, degrading or destroying them in the long term in order to preserve them as a basis of survival for future generations.

Several dimensions of true participation have been defined. Participation must have:

1. Social reach, where greater numbers of different sections of the local community actually participate in the project. In resource management, all stakeholders including farmers, nomads and other users must participate.
2. Functional reach focus on the content of participation and how they are involved in the project components and phases.
3. Decision- power of participants considers the extent that people take all the major decisions concerning the design and implementation. of

the project to the extent that the role of project proponents is restricted to facilitation.

4. Direction of the participation which maybe positive or less collaborative. This form of low participation may in fact mean change of project policies and may prevent the project from pursuing interventions that do not fit in the local context.
5. Incentives and motivation to participate. It is important to know why people participate and why they resist positive participation. (Mohammed, 2015).

2.4 Community- based natural resource management:

Community- based natural resource management refers to the collective use and management of natural resources in rural areas by a group of people with a self-defined district identity using communally owned facilities.

2.4.1 Aims of CBNRM:

CBNRM aims to create the right incentives and conditions for an identified group of resource users within defined areas to use natural resources sustainably. This means enabling the resource users to benefit (economically) from resource management and providing strong rights and tenure over land and the resources. CBNRM also supports the development of accountable decision-making bodies that can represent community members and act in their interests. USAID.

The aims of CBNRM are:

- Obtain the voluntary participation of communities in a flexible program that incorporates long- term solutions to problems rising from the use of natural resources.

- Introduce to natural resources anew system of group ownership and territorial rights for the communities' resident in the target areas. The management of these resources should be placed under the custody and control of resident peoples.
- Provide appropriate institutions under which resources can be legitimately managed and exploited by local people for their own direct benefit.
- Provide technical and financial assistance to communities that join the program to enable them to realize their objectives.

2.4.2 Objective of CBNRM:

As mentioned by Treue, T., & Nathan, I. 2007 CBNRM has the triple objectives:

(1) Poverty reduction.

(2) Natural resource conservation.

(3) Good governance.

CBNRM is not a stand-alone solution to poverty, resource degradation and bad governance. Rather it is a development process and constant power struggle. Thus, even after years of implementation, donors are still likely to have a mission in promoting CBNRM. Lessons learnt will feed into the new agenda of community-based adaptation to climate change. Donor support may be channeled as program-based or as earmarked support for monitoring and research that deliver credible and easily accessible information. Checks and balances can be supported through civil society as well as the media. An informed public debate based on the results of sound monitoring is, in all likelihood, the key to the long-term success of CBNRM (Treue, T., & Nathan, I. 2007).

2.4.3 Benefits from CBNRM:

The followings are the benefits from CBNRM:

(1) Direct benefits Investment in rural infrastructure through CBO projects.
(2) Direct cash dividends earned from partnerships Employment opportunities with private sector Employment opportunities with community based organizations.
(3) Indirect benefits Maintenance or growth of stocks of natural resources.
(4) Capacity building Opportunities to diversify local economy.
(5) integration into the market place (Gruber, 2010).

2.4.4 Organizational principles of CBNRM:

A. Public participation and mobilization.
B. Social capital and collaborative partnerships.
C. Resources and equity.
D. Communication and information dissemination.
E. Research and information development.
F. Devolution and empowerment including establishing rules and procedures.
G. Public trust and legitimacy.
H. Monitoring, feedback, and accountability.
I. Adaptive leadership and co – management.
J. Participatory decision – making.
K. Enabling environment: optimal pre or early conditions.
L. Conflict resolution and cooperation (Gruber, 2010).

2.4.5 History of CBNRM in Sudan:

Prior to 1970, was largely carried out informally through Local Community Leaders (Nazir, Shiks, Omads and Shartai).These resource management systems were sustainable in the sense that they were time-tested and had survived for long period while maintaining the natural resources. Post 1970, control of resource use, which was previously largely the domain of the traditional leadership, was progressively alienated to government. Many natural resources were put under the hands of public administrations and excluded local communities . Un registered lands (natural forests or range) are also brought under government control. Land allocation and land tenure changed to individual ownership, and often at the expense of community use rights.

Later on the ability of government to enforce sustainable use of resources began to erode as aresult of constraints of capacity, local people pressure on resources and the changes in the concept of rural development towards basic needs of local communities and their involvement. The revision of the existing forest management plans indicated the need to involve the local people to successfully manage the forest reserves and non-reserved in sustainable way. This confirms the need for clear definition of stakeholders rights and responsibilities in resource management planning. Nowadays there is a growing understanding among government officials that the management of natural resources (forest, range and wildlife habitats) needs to complement the strategies of natural resource development, based on national interests with new strategies focusing on basic needs, equity and popular participation , hence a change in policy statement is necessary to clearly accommodate local communities in its management (Elsiddig, A, Awimbo, J, Barrow, E and Karaba M,2004).

2.5 Land tenure system:

In rural Sudan, land use followed institutional and tribal-based management system, within which, rights of use are well organized and communally managed, and applied to sedentary and mobile pastoral communities. The system of native administration, before and during the colonial period, and up to 1969, was based on this traditional system of territorial rights and management. The system enabled sustainable practices of landuse, based on community involvement. The traditional systems are well recognized and understood at the village and regional levels and are a good opportunity for CBNRM. The system of traditional management was supported by equity of use right, and social customs governing common property resources.

Unclear land ownership constitutes major constraint to long-term resource use patterns. Land reservation and registration in Government or individual ownership results in reduced rights of accessibility and of resource use unless tenure is secured.

The entire environmental and natural resources management structure of the country suffers from lack of definitive policy framework within which programs and actions can be designed and implemented. There are widespread ambiguities and uncertainties in laws governing land tenure and use. This situation led to conflicts between land uses and land users (El Siddig, 2004).

2.6 Local participation through traditional institutions:

Traditional resource managers used to play important roles in the management of natural resources through providing the structures enabling participation in order to respond to felt need. Studies that investigated these institutions have showed clearly the roles played by

different tribal and ethnic institutions in the control and proper use of natural resources Traditional forms of collective work are deeply rooted in Sudanese culture e. g. Nafir, Faza'a, etc. under the guidance of local leaders, the local communities willingly participate in opening fire- lines, control bushfire and fight bird and locust attack. It is based on labor contribution made by members of the society to manage common property (natural resources) for the benefit of all. Land use is organized by tribally- based management system within which the right of use is recognized and communally managed. This applies to sedentary and mobile pastoral communities. Native Administration and traditional regulations enabled sustainable practices in land use based on community involvement. This system is supported by equity of use right and social customs governing the use of common property resources (El Siddig, 2004).

2.7 Women contribution in managing natural resources:

Women in many parts of the country and their status as producers are generally marginalized because of the male biased and urban biased policies that affected their traditional role as resource managers. With environmental deterioration and erosion of natural resources, women's roles are rendered into survival strategies. Under such circumstances, women's new roles are directed towards food production and hence, their knowledge of natural resources is classified from a user perspective. Hence, they become to perceive natural resources differently and accordingly, they take decisions mainly to ensure food security. In this matter, group and collective work provided them with power to implement their priorities. They devised the Sheika as an institution to mobilize women in communal activities and hence, integrate female efforts to male efforts in resource management. The survival strategies

led to the creation of women institutions designed to lift the burden of resource degradation from women. All these led to changes in the strictly gender specific jobs as more women became involved in the establishment of woodlots, in the establishment of green belts and in other community activities (Mohammed, 2015).

2.8 SSNRM project:

Sudan Sustainable Natural Resources Management (SSNRM) is a project funded by the Global Environment Facility (GEF) and involved the World Bank (WB) and the Ministry of Environment and Physical Development as an implementing agent. The objective of the project is to increase the adoption of sustainable land and water management (SLWM) practices in targeted landscapes. The project aims to achieve this objective through the adoption of improved soil and water management practices, forested ecosystem rehabilitation and rangeland management, creation of sustainable alternative livelihood activities related to natural resource management; and strengthened capacity to implement SLWM and biodiversity conservation. It is implemented in three States: White Nile, Gezira and Kassala.

The project has three components:

2.8.1 Institutional and policy framework:

This component is looking for strengthening and building the capacity of the project actors and to enable them achieve the project objective and remove critical knowledge barriers that might hinder their roles. There are three subcomponents under this component including institutional capacity building, support to policy framework and information and knowledge management.

2.8.2 Community based management of rangelands, forest and biodiversity:

The objective of this component is to promote and enhance more adoption of community based sustainable land and water management. It also targets rehabilitation, restoration and protection of targeted ecosystem through adoption of workable and effective management plans for natural resources in the targeted areas.

2.8.3 Project management:

The objective of this component is to have an effective implementation for the project resources and activities that fulfill achievement of its objectives. It includes procurement and all other services to be provided in addition to project monitoring and evaluation, with the outcome of planned implementation processes that can enable achievement of the project activities.

Chapter three

Methodology

This chapter presents two sections: The first one deals with the location, topography, geography and socio- economic setting of the area of the study. The second one deals with the methodology.

3.1 Study area:

3.1.1 Location:

The White Nile State is located south west of Khartoum state between the latitudes 11◦ 55″ and 15◦ 15″ North and the longitudes 31◦ 40″and 33◦ 15″ East. It is boarded by the Northern and the Western Kordofan states from the west. Gezira and Blue Nile state from the East, Khartoum from the North and the South Sudan from the East, Khartoum from the North and the South Sudan from the South (map 3.1) The state is divided by the White Nile River into eastern and western parts.

Administratively the state is divided into four governorates, Elgitainah, EdDueim, Elgabalain and Kosti. Each Governorate is divided into numbers of administrative units which consists of numbers of cities and villages.

3.1.2 Climate:

White Nile state has three different ecological zones ranging from sub-humid to semi-arid. Average annual rainfall ranges from 300 mm in the north to more than 600 mm in the south.

3.1.3 Area and population:

Total land area is nearly 40 thousand square kilometers with a population of more than 1.7 million, of which almost 70% earn a living based on

traditional rain fed agriculture and livestock. Animal resources (sheep, goals, cattle) are nearly 8 million head. As one of Sudan's most vulnerable regions, the White Nile State is severely impacted by the climate change induced droughts and floods. Most notably, increasing temperatures, decreasing trends of annual precipitation as well as increased variability, are causing a gradual shift of climate end ecological zones from north to south. That is, formerly semiarid ecological zones, such as the majority of the White Nile State, are gradually moving southward as the climate becomes increasingly hotter, thus taking on characteristics similar to the arid zones currently found further north. This situation has adversely impacted water availability and agricultural potential, through increased frequency of droughts, dust storms and heat waves. There is also an increasing frequency of extreme flooding events caused by an increase in intensity of rainfall both during the rainy season and in rainstorms (flash flooding). These climate trends and risks are exacerbated by a number of non-climate issues such as: decreased vegetation cover due to overgrazing and deforestation, and inefficient management of water resources- thus further increasing trends of ecological zone shift and desertification. Almost all localities in the western side of White Nile River were found to be among the most vulnerable to droughts and other impacts of climate change. These impacts have already been manifested in declining crop productivity, loss of grazing resources and rangeland valuable species, land degradation, increased frequency of diseases crops, livestock and population, loss of livelihoods and human migration in search for jobs and alternative livelihoods. While climate impacts are severe across the state, the communities on the western bank of the White Nile River are particularly vulnerable due to several factors. These include: low general awareness of climate change; lack of knowledge about water harvesting; lack of

access to improved seeds and other agricultural inputs; presence of overgrazing and severe deforestation; high poverty levels and lack of alternative livelihood systems; lack of technology and know-how for better agricultural practices; and high frequency of rangeland fires (Hcenr, NAP 2016).

3.1.4 Economic activities:

Agriculture is the main economic activity in the state, followed by animal breeding beside many other activities including trade and industries.

Agriculture is practiced by the majority of people in the state, the main crops grown are food crops (i.e sorghum; wheat and millet) which are widely grown in rainy and irrigated sectors and represents the main stock for urban and rural areas inside and outside the state in addition to the cash crops which include cotton as main cash crop beside sunflower, sesame, watermelon, muskmelon, sugar cane, fruits and vegetables.

There are many problems facing and limiting the agriculture (i-e lack of finance. poor management and the marketing constraints).

The White Nile state has a large population life stock. It has 8.3%, 4.3 %, 5.4 %, and 2.9 % of the national herd of cattle, sheep, goats and camels respectively. These figures to total of 7.8 million head during 1999- 2000 0f which 3.1 million are cattle, 2.5 million are sheep, 2.0 million are goat and 2.0 million are camels.

The highest population of goat's amount to 74.5% and camels about 42% found in EdDueim governorate.

Generally the state is considered as one of the industrial states for the presence of many factories like Kenana and Assalya Sugar Companies, Rabak cement factory in addition to sweets, cheese , salty fish , soap and

oils industries which scattered along the state mainly in / or around Kosti, Rabac and EdDueim cities.

Moreover, the population of the White Nile State have been engaged in many other activities including private and public sectors and commerce in addition to internal migration and handicrafts.

3.1.5 Social services:

Education:

Education services in the White Nile State have started at early adopters of innovations who contributed in the establishment of many institutions (i.e Bakht Elrida Institute in EdDueim).

Recently the number of schools has widely increased, but the education sector still suffers from lack of basic needs such as suitable building and furniture, lack of trained and skilled teacher and far distance school in many villages beside the low awareness of many people on the benefit of education.

It is worth mentioning that nomads have gained opportunities in education, they have mobile schools for primary education with one or two teachers for each school.

Health services:

The health services are provided to the people in the State through many health institutions. These institutions were established by the government of the state and NGOs. UNs agencies (i-e WHO) and some international NGOs such as PLAN Sudan support these institutions and provide many services related to the health domain . These services include provision of drug, training of workers and beneficiaries. The health institutions in the

State include hospitals in rural and urban areas, health centers and units for primary health care in addition to the health training school for mid wives, medical assistance and nurse schools. Moreover, there is a faculty of medicine beside a faculty of medical laboratories, of the university of El-Imam Elmahadi.

Water resources:

The White Nile river is the main source of water in the state. The river reaches the highest level of flow at the end of October and decreased to reach the lowest level of flow at the end of April. This in addition to water reservoirs, surface wells, water yard, ground water beside the nets of water in the cities and progressive villages.

3.1.6 Al-Shuqaiq Al-Ja'alin:

Al-Shuqaiq Al-Ja'alin is one of the largest villages in the White Nile Located northwest of Dweim. Administratively affiliated with Um Ramtah. Its land is sandy where the trees of Mars and herb grow and are grown corn crops, sesame and melon seeds. They raise camels, cows and sheep in addition to goats. Most of its people work in rain fed agriculture, grazing and trade between the markets of the region and has emerged modern crafts such as construction work. It is about 70 km away from Omdurman and is commercially connected to the market of Omdurman. The first school was established in 1985 and it has number of basic schools and one secondary school, one hospital was opened. There is water well. It is the first well drilled in the period of English rule and has been maintained and rehabilitated with funding from non-governmental organizations operating in the region besides government support and community contribution.

3.2 Research method:

The research methods adopted in this study include the descriptive and statistical methods.

3.2.1 Study population:

Society is the primary goal of the study, as the researcher finally circulates his results to it in order to reach a solution to the problem studied and the extent of the capacity of the community to sustain natural pastoral resources in the study area. the study covered one region namely Um rimta include 9 villages got benefits from Sudan Sustainable natural resource management project. For similar social and economic conditions and to reduce the cost and effort one represented village has been chosen namely Al-Shuqaiq Al-Ja'alin which consist of 800 households.

3.2.1 Sample selection technique:

Simple proportional sample technique was followed to select the respondents,10% of the 800 households which equal 80 households were chosen but the real filled questionnaires were90 households.

The local leaders who are committee members were 9 persons, all of them were selected and surveyed.

3.2.2 Means of data collection:

Both primary and secondary data were collected and used in this study.

Primary data were collected by using interview schedule (questionnaire) and observations.

Interview schedule: To study the factors that affect the sustainability of the participation of the local community to the sustainability of natural resources in the study area the researcher designed Specific questionnaire

consisting of four Sections, three sections represent independent variables and one section represents dependent variables:

1. The first section include personal data related to the socio-economic characteristics of the respondents.
2. The second section includes data related to participation in community management activities.
3. The third section includes data related to policies and laws regulating natural range resource management.
4. The fourth section includes data related to benefit from participation in community management activities.

Secondary data were obtained from several relevant means included:

1. Official documents e.g. plans and studies.
2. Reports.
3. Books.
4. Internet.
5. Thesis and other relevant sources.

3.2.3 Analysis techniques:

Descriptive statistics was used in this study using program of Statistical Package for Social Science (SPSS) for data management and analysis.

The researcher used frequency distribution to measure socio-economic characteristics and Chi-square test to check the significance of relation between the variables.

3.3 Research difficulties:

1. Scarcity of references related to the research topic.
2. Far distance of the study area.

3. Expensive cost of the research.
4. The Corona virus pandemic.
5. The political turmoil that Sudan hadgone.

Chapter four

Results and Discussions

This chapter presents and discusses the empirical result of the study. It consists of many sections. Section one shows the main characteristics of the respondents.

Section one

4.1 Socio-economic characteristics of the respondents:

4.1.1 Sex distribution:

Table (4.1.1) Distribution of the respondents according to their sex

Sex	Frequency	Percent
Male	82	91.1
Female	8	8.9
Total	90	100.0

Source (field survey, 2018)

Table (4.1.1) reflected that 91.1% of respondents were men and 8.9% of them were women. This result reflected that the majority of headed households were men, it may reflect the low level of migration in men side.

4.1.2 Age distribution:

Table (4.1.2) Distribution of the respondents according to their age

Age	Frequency	Percent
Less than 30	2	2.2
30 - less than 50	45	50.0
50 - less than70	35	38.9
70 and more	8	8.9
Total	90	100.0

Source (field survey, 2018)

Table (4.1.2) showed that 88.9% of the respondents ranged between (30-70) years old. It may mean that the majority of the respondents were economically active and fall in the productive age.

4.1.3 Marital status:

Table (4.1.3) Distribution of the respondents according to their marital status

Marital status	Frequency	Percent
Single	4	4.4
Married	79	87.8
Divorce	2	2.2
Widow	5	5.6
Total	90	100.0

Source (field survey, 2018)

Table (4.1.3) showed that 87.8% of the respondents were married. That means they had responsibilities and needed socio economic services and it may reflect the early age of marriage due to traditional values.

4.1.4 Educational level:

Table (4.1.4) Distribution of the respondents according to their educational level

Educational level	Frequency	Percent
Illiterate	38	42.2
Khalwa	1	1.1
years before university	50	55.6
University	1	1.1
Total	90	100.0

Source (field survey, 2018)

Table (4.1.4) declared that 42.2% of respondents were illiterate and 55.6 of them had been educated for years varied between 2-12 years before university. In spite of the history of the study area as a center of education through all Sudan but the level of education was low-grade. This may be

due to socio- economic conditions like nomadic system and not being aspirated as many pupils beside poverty. It was observed that, continuous infiltration from education in this study area.

4.1.5 Level of income distribution:

Table (4.1.5) Distribution of the respondents according to their level of income

Level of income	Frequency	Percent
> 20000	26	28.8
20000 > 40000	33	36.7
40000 > 60000	22	24. 5
60000>80000	7	7.8
80000>100000	2	2.2
Total	90	100.0

Source (field survey, 2018)

Table (4.1.5) showed that the annual income 0f 73.6 % of respondents was less than 45000 SP. People who were involved in this category were very poor and this was clearly observed in their life aspects. They rely on seasonal occupation. Their income was very limited and doesn't satisfying their daily basic needs.

4.1.6 Main source of income:

Table (4.1.6) Distribution of the respondents according to their main source of income

Main source of income	Frequency	Percent
Agriculture	40	44.4
Grazing	10	11.1
Trade	14	14.6
other free work	24	26.7
Job	1	1.1
Help	1	1.1
Total	90	100.0

Source (field survey ,2018)

Table (4.1.6) showed the main sources of income in the study area were agriculture 44.4%, grazing 11.1, trade 14.6%, other free works 26.7%, jobs 1.1% and helps 1.1%. This result revealed the fact that agriculture is the main economic activity, it is seasonal occupation (often traditional rain fed agriculture). It depends on the family labor. Recently building force work appeared as a new and desirable occupation in addition to simple trade in the village market. Few women started to work as house labors (wash clothes and clean houses). Jobs often means teachers and few in health sector.

4.1.7 Secondary source of income:

Table (4.1.7) Distribution of the respondents according to their secondary source of income

Secondary source of income	Frequency	Percent
Agriculture	34	37.8
Grazing	11	12.2
Trade	9	10.0
Other free work	5	5.6
Job	1	1.1
Help	2	2.2
There is no	23	25.6
Ag ,gr	1	1.1
Gr ,tr	3	3.3
Other, help	1	1.1
Total	90	100.0

Source (field survey, 2018)

Table (4.1.7) showed that 23% of respondents in the study area had no other source of income, 37.8% agriculture ,12.2% grazing, 10.0% trade,

4.1.8 Existence of committees:

Table (4.1.8) Distribution of the respondents according to the existence of committees

Existence	Frequency	Percent
yes	90	100.0

Source (field survey, 2018)

Table (4.2.1) resulted that the answer of 100% of respondents agreed with committee's existence.

4.1.9 Types of committees:

Table (4.1.9) Distribution of the respondents according to the type of committees

Type of committees	Frequency	Percent
VDC, PC,EC	90	100.0

Source (field survey, 2018)

Table (4.1.9) showed that all of respondents mentioned the same committees. The field work data indicated that there were three committees in the study area, namely the popular committee (PC) which existed as a governmental means represents an intermediately instrument between the people and the local government, the village development committee (VDC) and education committee (EC).

Village development committee was formed to encourage popular participation in ongoing development activities.

Education committee was developed to promote the education process at the village level to provide good conditions to sustain the education process in the study area. there were other small committees deal with women interests and problems.

4.1.10 Member of committees:

Table (4.1.10) Distribution of the respondents according to the member of committee

Member of committee	Frequency	Percent
Yes	2	2.2
No	88	97.8
Total	90	100.0

Sources (field survey, 2018)

Table (4.1.10) showed that 2.2 % of respondents were members of committees and 97.8 were not. Members of committees are often the traditional leaders as Omads and Sheikhs in addition to the teachers; their mission was to lead development work and activities in the study area.

4.1.11 Land dedication:

Table (4.1.11) Distribution of the respondents according to the land dedicated to pasture

Land dedicated	Frequency	Percent
Yes	67	74.4
No	22	24.4
Don't know	1	1.1
Total	90	100.0

Source (field survey ,2018)

Table (4.1.4) declared that 74.4% of the respondents ensured that there was land dedicated to pasture.

4.1.12 Type of dedication:

Table (4.1.12) Distribution of the respondents according to the type of dedication

Type of dedication	Frequency	Percent
Record	1	1.1
by sheikh	3	3.3
known by people	69	76.7
By sheik and people	17	18.9
Total	90	100.0

Sources (field survey ,2018)

Table (4.1.12) mentioned that 76.7% of respondents dedicated rangelands by convention. The land was not dedicated to pasture but it was known by people across their generations.

4.1.13 Owned agricultural land:

Table (4.1.13) Distribution of the respondents according to own agricultural land

Own agri. Land	Frequency	Percent
Yes	79	87.8
No	11	12.2
Total	90	100.0
Total	90	100.0

Sources (field survey ,2018)

Table (4-1-13) reflected that 87.8 % of respondents owned agricultural land.

4.1.14 Use of agricultural residues:

Table (4.1.14) Distribution of the respondents according to the use of agricultural residues

Agric, residues	Frequency	Percent
[,	78	86.7
Direct grazing	1	1.1
Sale	1	1.1
Burn	7	7.8
Palling &sale	2	2.2
Palling & burn	1	1.1
Total	90	100.0

Sources (field survey, 2018)

Table (4.1.14) reflected that 86.7 % 0f respondents using palling techniques to benefit from agricultural residue. It was noted that the citizens in the study area did not receive regular counseling services except the guidance accompanying the programs of non-governmental organizations that have worked in the area in previous and current periods. They rely on their traditional expertise in conserving pastoral resources and maximizing their utilization.

4.1.15 Finance:

Table (4.1.15) showed that 94.4% of the respondents had not got any finance. People in the study area have no fixed source of money to enhance the execution of the development activities which related to management of natural resources except the funded activities through non-governmental organizations(NGOs) projects.

Table (4.1.15) Distribution of the respondents according to the use of finance

Get finance	Frequency	Percent
Very much	1	1.1
Sometimes	2	2.2
Scarcely	2	2.2
No	85	94.4
Total	90	100.0

Sources (field survey ,2018)

4.1.16 Access to pastoral resources:

Table (4.1.16) Distribution of the respondents according to their access to pastoral resources

Access to pastoral	Frequency	Percent
very much	2	2.2
Much	1	1.1
sometimes	39	43.3
Scarcely	22	24.4
i do not have	26	30.0
Total	90	100.0

Sources (field survey ,2018)

Table (4.1.16) showed that just 3.4% of respondents had appropriate access to pastoral resources and the others were varied from 43.3% of sometimes, 24.4% scarcely and 26.7% had no access to pastoral resources. It was noted in the study area that there is a lack of fodder after the Autumn period which forced citizens to buy fodder from the markets of the Gezira State.

4.1.17 Benefits from pastoral resources:

Table (4.1.17) Distribution of the respondents according to their benefit from management of pastoral resources

Benefit from manage	Frequency	Percent
Nery much	4	4.4
Much	3	3.3
Sometimes	32	35.6
Scarcely	21	23.3
No	30	33.3
Total	90	100.0

Sources (field survey ,2018)

Table (4.1.17) showed that 7.7% of respondents often got benefits from MNR, 35.6% were sometimes got benefits, 23.3 were scarcely got benefits and 33.7% were not. Individual interviews with citizens in the study area showed that all benefited from water services for a nominal monthly fee in addition to benefit from seed dispersal by NGOs, which led to the rehabilitation of vegetation significantly as weeds and trees. Doum palm trees had been planted in many places in the region, creating job opportunities for the sale of fruits and leaves. A number of women in the region were trained in handicrafts using fronds, increasing the income of some poor families.

4.1.18 Cooking fuel:

Table (4.1.18) Distribution of the respondents according to their fuel cooking

Fuel cooking	Frequency	Percent
Charcoal and firewood	66	73.3
Gas	18	20.0
Charcoal & gas	6	6.7
Total	90	100.0

Sources (field survey ,2018)

Table (4.1.18) showed that 73.3% of respondents were using charcoal and firewood for cooking, 20.0% were using gas and 6.7% were using gas

and wood. High gas prices and the difficulty of obtaining it during the study period led to the return of women to use firewood for fuel. With strict forest management laws that prevent logging. Solutions must be adopted to help women in the region solve the fuel problem.

4.1.19 Soil conservation techniques:

Table (4.1.19) Distribution of the respondents according to their techniques of soil conservation

Soil conservation	Frequency	Percent
Terrace	1	1.1
Agricultural rotation	17	18.9
Other	1	1.1
Nothing	71	78.9
Total	90	100.0

Sources (field survey ,2018)

Table (4.1.19) showed that 1.1% of respondents adopted terrace technique., 18.9 % adopted crop rotation and 78.9% were not. These are all individual selections based on local knowledge as well as skills gained from non-governmental organizations and some media.

4.1.20 Water resources techniques:

Table (4.1.20) Distribution of the respondents according to improving water resource techniques

Water conservation	Frequency	Percent
Pumps	85	94.4
Other	1	1.1
Nothing	4	4.4
Total	90	100.0

Sources (field survey ,2018)

Table (4.1.20) declared that 94.4% of respondents mentioned pumps as using tool to improve water resource.

4.1.21 Veterinary services:

Table (4.1.21) Distribution of the respondents according to their access to veterinary services

Veterinary services	Frequency	Percent
Therapy	5	5.6
Extension	2	2.2
Nothing	79	87.8
Therapy, extension	4	4.4
Total	90	100.0

Sources (field survey ,2018)

Table (4.1.21) declared that 87.6% of respondents in the study area claimed that there were no veterinary services. In the study area breeders indicated that they get medication from a veterinarian comes to the village market once a week to sell medicines. According to their experience, they know the symptoms of the disease and the medicine required for treatment.

Section Two

4.2 Participation:

4.2.1 Participation in community management activities:

Table (4.2.1) Distribution of the respondents according to their participation in community management activities

Participate in CMA	Frequency	Percent
Very much	3	3.3
Much	14	15.6
Sometimes	33	36.7
Scarcely	11	12.2
No	29	32.2
Total	90	100.0

Sources (field survey ,2018)

Table (4.2.1) showed that 19.0% of respondents often participate in community management activities, 36.7% sometimes participated, 12.2%

scarcely participated and 32.2% did not. This result may reflect many visions about participation in community management activities. It was observed that the participation in the study area tooks three aspects including labour, opinion and cash. These types may occur separately or together to perform a given activity.

Section Three

4.3 Benefits from range resource management:

4.3.1 Increasing income:

Table (4.3.1) Distribution of the respondents according to their vision in increase income

Increase income	Frequency	Percent
Large	7	7.8
Medium	34	37.8
a little	19	21.1
never	30	33.3
Total	90	100.0

Sources (field survey, 2018)

Table (4.3.1) showed that the answers of respondents about increasing income vary between 7.8% as large, 37.8% as medium, 21.1% as a little and 33.3% never.

4.3.2 Herd size:

Table (4.3.2) Distribution of the respondents according to their vision of increasing herd

Increase herd	Frequency	Percent
Large	6	6.7
Medium	7	7.8
A little	8	8.9
None	68	75.6
Decrease	1	1.1
Total	90	100.0

Sources (field survey, 2018)

Table (4.3.2) showed that the answers of respondents about increasing herd vary between 6.7% as large, 7.8% as medium, 8.9% as a little, 75.6% as none and 1.1% as decreased.

4.3.3 Fodder productivity:

Table (4.3.3) Distribution of the respondents according to their vision of increasing fodder productivity

Increase fodder	Frequency	Percent
very large	1	1.1
Large	6	6.7
Medium	1	1.1
A little	6	6.7
None	76	84.4
Total	90	100.0

Sources (field survey ,2018)

Table (4.3.3) showed that the answer of respondents about increasing fodder productivity vary between 1.1% as very large, 6.7% as large, 1.1% medium, 6.7% as a little, 84.3 as none.

4.3.4 Realize society wishes:

Table (4.3.4) Distribution of the respondents according to their vision in realized society wishes

Realized wishes	Frequency	Percent
Completely	1	1.1
very much	3	3.3
Medium	40	44.4
A little	23	25.6
None	23	25.6
Total	90	100.0

Sources (field survey ,2018)

Table (4.3.4) showed that the answer of respondents about realize society wishes vary between 1.1% as completely, 3.3% as very much, 44.4% as much, 25.6% as a little and 25.6% as none

Section Four

4.4 Policies and laws:

4.4.1 Existence of policies and laws:

Table (4.4.1) Distribution of the respondents according to their vision of policies and laws regulating resource management

Policies and laws	Frequency	Percent
Yes	90	100.0

Sources (field survey ,2018)

Table (4.4.1) showed that the answer of respondents about policies and laws regulate resource management 100% of respondents disclaimed the existence of them.

4.4.2 Power of law:

Table (4.4.2) Distribution of the respondents according to their vision of power of laws

Power of laws	Frequency	Percent
Strong	87	96.7
None	3	3.3
Total	90	100.0

Sources (field survey ,2018)

Table (4.4.2) showed that the answer of 98.9% of the respondents about power of laws was strong.

Section five

4.5 Chi-square test to study the relations between dependent and independent variables and the effect of independent variables upon dependent variables at significance level of 0.05:

4.5.1 Sex upon member of committee:

Table (4.5.1) Showed the result of chi-square test for sex upon member-of-committee

Sex	Frequency& Percent	Member of Committee		Total
		Yes	No	
Male	Frequency	2	80	82
	Percent	2.2	88.9	91.1
Female	Frequency	-	8	8
	Percent	-	9.1	8.9
Total	Frequency	2	88	90
	Percent	2.2	97.8	100.0
Value		200[a]		
Sig		.665		

According to table (4.5.1) there was no association between sex and member of committee at Chi- Square level of 0 .05.

4.5.2 Sex upon own agricultural land:

Table (4.5.2) Showed the result of chi-square test for sex upon own agricultural land

Sex	Frequency& Percent	Own agric land		Total
		Yes	No	
Male	Frequency	73	9	82
	Percent	81.1	10.0	91.1
Female	Frequency	6	2	8
	Percent	6.7	2.2	8.9
Total	Frequency	79	11	90
	Percent	87.8	12.2	100.0
Value		1.336[a]		
Sig		.248		

According to table 4.5.2 there was no association between sex and own agricultural land at Chi- Square level of 0 .05.

4.5.3 Sex upon benefit from pastoral resources:

Table (4.5.3) Showed the result of chi-square test for sex upon benefit from pastoral resources

Sex	Frequency & Percent	Benefit from pastoral Resources					Total
		very much	much	sometimes	scarcely	No	
Male	Frequency	4	3	31	18	26	82
	Percent	4.4	3.3	34.4	20.0	28.9	91.1
Female	Frequency	0	0	1	3	4	8
	Percent	0	0	1.1	3.3	4.4	8.9
Total	Frequency	4	3	32	21	30	90
	Percent	4.4	3.3	35.5	23.3	33.3	100.0
Value		3.483[a]					
Sig		*.481*					

According to table 4.5.3 there was no association between sex and benefit from pastoral resources at Chi- Square level of 0 .05.

4.5.4 Sex upon participate in community management activities:

Table (4.5.4) Showed the result of chi-square test for sex upon participate in community management activities

Sex	Frequency & Percent	participation. CMA					Total
		very much	much	sometimes	scarcely	No	
Male	Frequency	3	14	33	9	23	82
	Percent	3.3	15.6	36.7	10.0	25.6	91.1
Female	Frequency	0	0	0	2	6	8
	Percent	0.0	0.0	0.0	2.2	6.7	8.9
Total	Frequency	3	14	33	11	29	90
	Percent	3.3	15.6	36.7	12.2	32.2	100.0
Value		11.083[a]					
Sig		.026					

According to table 4.5.4 there was association between sex and participate in community management activities.

4.5.5 Sex upon access to fodder consumption:

Table (4.5.5) Showed the result of chi-square test for sex upon access to fodder

Sex	Frequency & Percent	Access to fodder					Total
		always	often	sometimes	little	no	
Male	Frequency	6	1	46	21	8	82
	Percent	6.7	1.1	51.1	23.3	8.9	91.1
Female	Frequency	0	0	1	5	2	8
	Percent	0.0	0.0	1.1	5.6	2.2	8.9
Total	Frequency	6	1	47	26	10	90
	Percent	6.7	1.1	52.2	28.9	11.1	100.0
Value		8.294[a]					
Sig		.081					

According to table 4.5.5 there was no association between sex and access to fodder at Chi- Square level of 0.05.

4.5.6 Sex upon participate in editing system:

Table (4.5.6) Showed the result of chi-square test for sex upon participate in editing system

Sex	Frequency & Percent	Participate in editing system				Total
		very much	much	sometimes	None	
Male	Frequency	4	1	3	74	82
	Percent	4.4	1.1	3.3	82.2	91.0
Female	Frequency	0	0	0	8	8
	Percent	0.0	0,0	0.0	8.9	8.9
Total	Frequency	4	1	3	82	90
	Percent	4.4	1.1	3.3	91.1	100.0
Value		.857[a]				
Sig		.836				

According to table 4.5.6 there was no association between sex and participate in editing system at Chi- Square level of 0 .05

4.5.7 Sex upon participate in decision making process:

Table (4.5.7) Showed the result of chi-square test for sex upon participate in decision making

Sex	Frequency & Percent	Participate in decision making					Total
		very much	much	sometimes	scarcely	none	
Male	Frequency	4	3	11	3	61	82
	Percent	4.4	3.3	12.2	3.3	62.2	91.1
Female	Frequency	0	0	0	0	8	8
	Percent	0.0	0.0	0.0	0.0	8.9	8.9
Total	Frequency	4	3	11	3	69	90
	Percent	4.4	3.3	12.2	3.3	76.7	100.0
Value		2.672[a]					
Sig		.614					

According to table 4.5.7 there was no association between sex and participate in decision making at Chi- Square level of 0 .05

4.5.8 Sex upon achieve development:

Table (4.5.8) Showed the result of chi-square test for sex upon achieve development

Sex	Frequency & Percent	Achieve development					Total
		very much	Much	A little bit	A little	none	
Male	Frequency	1	20	38	16	7	82
	Percent	1.1	22.2	42.2	17.8	7.8	91.1
Female	Frequency	0	1	4	1	2	8
	Percent	0.0	1.1	4.4	1.1	2.2	8.9
Total	Frequency	1	21	42	17	9	90
	Percent	1.1	23.3	46.7	18.9	10.0	100.0
Value		2.725[a]					
Sig		.605					

According to table 4.5.8 there was no association between sex and achieve development at Chi- Square level of 0 .05

4.5.9 Age upon member of committee:

Table (4.5.9) Showed the result of chi-square test for sex upon achieve development

Age	Frequency & Percent	Member of committee		Total
		Yes	No	
Less than 30	Frequency	0	2	2
	Percent	0.0	2.2	2.2
30-50	Frequency	2	43	45
	Percent	2.2	47.8	50.0
50-70	Frequency	0	35	35
	Percent	0.0	38.9	38.9
70 and more	Frequency	0	8	8
	Percent	0.0	8.9	8.9
Total	Frequency	2	88	90
	Percent	2.2	97.8	100.0
Value		2.045[a]		
Sig		.563		

According to table 4.5.9 there was no association between age and member of committee at Chi- Square level of 0.05

4.5.10 Age upon benefit:

Table (4.5.10) Showed the result of chi-square test for age upon benefit from management of pastoral resources

Age	Frequency & Percent	Benefit from management of pastoral resources					Total
		very much	much	sometimes	Scarcely	No	
Less than 30	Frequency	1	0	0	0	1	2
	Percent	1.1	0.0	0.0	0.0	1.1	2.2
30-50	Frequency	2	2	15	11	15	45
	Percent	2.2	2.2	16.7	12.2	16.7	50.0
50-70	Frequency	1	0	14	8	12	35
	Percent	1.1	0.0	15.6	8.9	13.3	38.9
70 and more	Frequency	0	1	3	2	2	8
	Percent	0.0	1.1	3.3	2.2	2.2	8.9
total	Frequency	4	3	32	21	30	90
	Percent	4.4	3.3	35.6	23.3	33.3	100.0
Value		15.132[a]					
Sig		.234					

According to table 4.5.10 there was no association between age and Benefit from management of pastoral resources at Chi- Square level of 0.05

4.5.11 Age upon participation in community management activities:

Table (4.5.11) Showed the result of chi-square test for age upon participation in community management activities

Age	Frequency & Percent	Participation in community management activities					Total
		very much	Much	sometimes	Scarcely	No	
Less than 30	Frequency	0	0	0	0	2	2
	Percent	0.0	0.0	0.0	0.0	2.2	2.2
30-50	Frequency	3	9	15	7	11	45
	Percent	3.3	10.0	16.7	7.8	12.2	50.0
50-70	Frequency	0	4	16	2	13	35
	Percent	0.0	4.4	17.8	2.2	14.4	38.9
70 and more	Frequency	0	1	2	2	3	8
	Percent	0.0	1.1	2.2	2.2	3.3	8.9
Total	Frequency	3	14	33	11	29	90
	Percent	3.3	15.6	36.7	12.2	32.2	100.0
Value		13.225[a]					
Sig		.353					

According to table 4.5.11 there was no association between age and participation in community management activities at Chi- Square level of 0.05

4.5.12 Age upon participation in editing system:

Table (4.5.12) Showed the result of chi-square test for age upon participation in editing system

Age	Frequency & Percent	Participate-editing-system				Total
		very much	much	Sometimes	none	
> 30	Frequency	1	0	0	1	2
	Percent	1.1	0.0	0.0	1.1	2.2
30-50	Frequency	2	1	2	40	45
	Percent	2.2	1.1	2.2	44.4	50.0
50-70	Frequency	1	0	0	34	35
	Percent	1.1	0.0	0.0	37.8	38.9
70 and <	Frequency	0	0	1	7	8
	Percent	0.0	0.0	1.1	7.8	8.9
Total	Frequency	4	1	3	82	90
	Percent	4.4	1.1	3.3	91.1	100.0
Value		14.856[a]				
Sig		.095				

According to table 4.5.12 there was no association between age and participate in editing system at Chi- Square level of 0.05

4.5.13 Marital status upon member of committee:

Table (4.5.13) Showed the result of chi-square test for marital status upon member of committee

Marital status	Frequency & Percent	Member of committee		Total
		Yes	No	
Single	Frequency	0	4	4
	Percent	0.0	4.4	4.4
Married	Frequency	2	77	79
	Percent	2.5	97.5	100.0
Divorce	Frequency	0	2	2
	Percent	0.0	2.2	2.2
Widow	Frequency	0	5	5
	Percent	0.0	5.6	5.6
Total	Frequency	2	88	90
	Percent	2.2	97.8	100.0
Value		.285[a]		
Sig		.963		

According to table 4.5.13 there was no association between marital status and member of committee at Chi- Square level of 0 .05

4.5.14 Marital status upon own agricultural land:

Table (4.5.14) Showed the result of chi-square test for marital status upon own agric land

Marital status	Frequency & Percent	Own agric. land		Total
		Yes	No	
Single	Frequency	4	0	4
	Percent	4.4	0	4.4
Married	Frequency	69	10	79
	Percent	76.7	11.1	87.8
Divorce	Frequency	1	1	2
	Percent	1.1	1.1	2.2
Widow	Frequency	5	0	5
	Percent	5.6	0.0	5.6
Total	Frequency	79	11	90
	Percent	87.8	12.2	100.0
Value		3.928[a]		
Sig		.269		

According to table 4.5.14 there was no association between marital status and own agricultural land at Chi- Square level of 0.05

4.5.15 Marital status upon participate in management activities:

Table (4.5.15) Showed the result of chi-square test for marital status upon Participate in management activities

Marital status	Frequency & Percent	Participate in management activities					Total
		very much	Much	sometimes	scarcely	No	
Single	Frequency	0	0	2	1	1	4
	Percent	0.0	0.0	2.2	1.1	1.1	4.4
Married	Frequency	3	14	31	8	23	79
	Percent	3.3	15.6	34.4	8.9	25.6	87.8
Divorce	Frequency	0	0	0	1	1	2
	Percent	0.0	0.0	0.0	1.1	1.1	2.2
Widow	Frequency	0	0	0	1	4	5
	Percent	0.0	0.0	0.0	1.1	4.4	5.6
Total	Frequency	3	14	33	11	29	90
	Percent	3.3	15.6	36.7	12.2	32.2	100.0
Value		12.711[a]					
Sig		.390					

According to table 4.5.15 there was no association between marital status and Participate in management activities at Chi- Square level of 0.05

4.5.16 Marital status upon benefit from management of pastoral resources:

Table (4.5.16) Showed the result of chi-square test for marital status upon benefit from management of pastoral resources

Marital status	Frequency & Percent	Benefit from management of pastoral resources					Total
		very much	Much	Sometimes	scarcely	No	
Single	Frequency	0	0	1	0	3	4
	Percent	0.0	0.0	1.1	0.0	3.3	4.4
Married	Frequency	4	3	30	16	26	79
	Percent	4.4	3.3	33.3	17.8	28.9	87.8
Divorce	Frequency	0	0	0	1	1	2
	Percent	0.0	0.0	0.0	1.1	1.1	2.2
Widow	Frequency	0	0	1	4	0	5
	Percent	0.0	0.0	1.1	4.4	0.0	5.6
Total	Frequency	4	3	32	21	30	90
	Percent	4.4	3.3	35.6	23.3	33.3	100.0
Value		14.947[a]					
Sig		.244					

According to table 4.5.16 there was no association between marital status and benefit from management of pastoral resources at Chi- Square level of 0.05

4.5.17 Marital status upon access appropriate fodder consumption:

Table (4.5.17) Showed the result of chi-square test for marital status upon access appropriate fodder consumption

Marital status	Frequency & Percent	Access appropriate fodder consumption					Total
		Always	much	Sometimes	scarcely	No	
Single	Frequency	0	1	2	0	1	4
	Percent	0.0	1.1	2.2	0.0	1.1	4.4
Married	Frequency	6	0	44	20	9	79
	Percent	6.7	0.0	48.9	22.2	10.0	87.8
Divorce	Frequency	0	0	1	1	0	2
	Percent	0.0	0.0	1.1	1.1	0.0	2.2
Widow	Frequency	0	0	0	5	0	5
	Percent	0.0	0.0	0.0	5.6	0.0	5.6
Total	Frequency	6	1	47	26	10	90
	Percent	6.7	1.1	52.2	28.9	11.1	100.0
Value		37.178[a]					
Sig		.000					

According to table 4.5.17 there was strong association between marital status and access to appropriate fodder consumption at Chi- Square level of 0.05

4.5.18 Educational level upon improving community life:

Table (4.5.18) Showed the result of chi-square test for educational level upon improving community life

Educational level	Frequency & Percent	Improving community life					Total
		very much	much	Sometimes	scarcely	none	
Illiterate	Frequency	2	12	12	8	4	38
	Percent	2.2	13.3	13.3	8.9	4.4	42.2
Khalwa	Frequency	0	0	0	0	1	1
	Percent	0.0	0.0	0.0	0.0	1.1	1.1
Before university	Frequency	1	26	14	1	8	50
	Percent	1.1	28.9	15.6	1.1	8.9	55.6
University	Frequency	0	1	0	0	0	1
	Percent	0.0%	1.1%	0.0%	0.0%	0.0%	1.1%
Total	Frequency	3	39	26	9	13	90
	Percent	3.3	43.3	28.9	10.0	14.4	100.0b
Value		18.439[a]					
Sig		.103					

According to table 4.5.18 there was no association between educational level and participate in editing system at Chi- Square level of 0.05

4.5.19 Educational level upon community empowerment:

Table (4.5.19) Showed the result of chi-square test for education level upon community empowerment

Educational level	Frequency & Percent	Community empowerment					Total
		very much	to great degree	little bit	A little	none	
Illiterate	Frequency	2	22	10	1	3	38
	Percent	2.2	24.4	11.1	1.1	3.3	42.2
Khalwa	Frequency	0	0	0	0	1	1
	Percent	0.0	0.0	0.0	0.0	1.1	1.1
Before university	Frequency	3	31	10	3	3	50
	Percent	3.3%	34.4%	11.1%	3.3%	3.3%	55.6%
university	Frequency	0	1	0	0	0	1
	Percent	0.0%	1.1%	0.0%	0.0%	0.0%	1.1%
total	Frequency	5	54	20	4	7	90
	Percent	5.6	60.0	22.2	4.4	7.8	100.0
Value		13.764[a]					
Sig		.316					

According to table 4.5.19 there was no association between education level and community empowerment. at Chi- Square level of 0 .05

4.5.20 Education level upon achieving development:

Table (4.5.20) Showed the result of chi-square test for education level upon achieving development

Educational level	Frequency & Percent	Achieving _development					Total
		very much	much	A little bit	A little	none	
Illiterate	Frequency	0	6	21	11	0	38
	Percent	0.0	6.7	23.3	12.2	0.0	42.2
Khalwa	Frequency	0	0	0	0	1	1
	Percent	0.0	0.0	0.0	0.0	1.1	1.1
Before unimersit	Frequency	0.0	6.7	23.3	12.2	0.0	42.2
	Percent	1.1	15.6	23.3	6.7	8.9	55.6
University	Frequency	0	1	0	0	0	1
	Percent	1.1	15.6	23.3	6.7	8.9	55.6
Total	Frequency	1	21	42	17	9	90
	Percent	1.1%	23.3%	46.7%	18.9%	10.0 %	100.0 %
Value		24.184[a]					
Sig		.019					

According to table 4.5.20 there was association between education level and achieving development at Chi- Square level of 0.05

4.5.21 Educational level upon poverty alleviation:

Table (4.5.21) Showed the result of chi-square test for educational level upon poverty alleviation

Educational level	Frequency & Percent	Poverty-alleviation				Total
		much	medium	none	not observe	
Illiterate	Frequency	2	14	15	7	38
	Percent	2.2	15.6	16.7	7.8	42.2
Khalwa	Frequency	0	1	0	0	1
	Percent	0.0	1.1	0.0	0.0	1.1
Before university	Frequency	2	21	20	7	50
	Percent	0	0	1	0	1
University	Frequency	2	21	20	7	50
	Percent	2.2	23.3	22.2	7.8	55.6
Total	Frequency	4	36	36	14	90
	Percent	4.4	40.0	40.0	15.6	100.0
Value		3.505[a]				
sig		.941				

According to table 4.5.21 there was no association between educational level and poverty alleviation.

4.5.22 level of income upon member of committee:

Table (4.5.22) Showed the result of chi-square test for level of level upon member of committee

Level-of-income	Frequency & percent	Member-of-committee		Total
		yes	no	
2000>20000	Frequency	0	26	26
	Percent	0.0	28.8	28.8
20000>40000	Frequency	0	33	33
	Percent	0.0	36.6	36.6
40000>60000	Frequency	0	22	22
	Percent	0.0	24.4	24.4
60000>80000	Frequency	1	6	7
	Percent	1.1	6.6%	7.7%
80000>100000	Frequency	1	1	2
	Percent	1.1	1.1%	2.2%
Total	Frequency	2	88	90
	Percent	2.2	97.8%	100.0%
value		30.170[a]		
Sig		.089		

According to table 4.5.22 there was no association between income level and member of committee.

4.5.23 Level of income upon benefit from management of pastoral resources:

Table (4.5.23) Showed the result of chi-square test for income level upon benefit from management of pastoral resources

Level-of-income	Frequency & percent	Benefit-from-management-of-pastoral-resources					Total
		very much	much	sometimes	scarcely	no	
2000>20000	Frequency	1	1	4	5	15	26
	Percent	1.1	1.1	4.4	5.6	16.5	28.8
20000>40000	Frequency	1	0	11	10	11	33
	Percent	1.1	0.0	12.2	11.1	12.1	36.6
40000>60000	Frequency	2	0	12	4	4	22
	Percent	2.2	0.0	13.3	4.4	4.4	24.4
60000>80000	Frequency	0	2	4	1	0	7
	Percent	0.0	2.2	4.4	1.1	0.0	7.8
80000>100000	Frequency	0	0	1	1	0	2
	Percent	0.0	0.0	1.1	1.1	0.0	2.2
Total	Frequency	4	3	32	21	30	90
	Percent	4.4	3.3	35.6	23.3	33.3	100.0
Value		139.879[a]					
Sig		.000					

According to table 4.5.23 there was strong association between level income and benefit from management of pastoral resources.

4.5.24 Level of income upon participation in community management activities:

Table (4.5.24) Showed the result of chi-square test for income level up on participation in community management activities

Level of income		Participation in community management activities					Total
		very much	much	sometimes	scarcely	No	
2000>20000	Frequency	0	2	6	4	14	26
	Percent	0.0	2.2	6.6	4.4	15.4	28.8
20000>400000	Frequency	0	3	16	4	10	33
	Percent	0.0	3.3	17.7	4.4	11.1	36.6
40000>60000	Frequency	2	3	10	2	5	22
	Percent	2.2%	3.3	11.1	2.2	5.6	23.4
60000>80000	Frequency	1	4	1	1	0	7
	Percent	1.1%	2.2%	1.1%	1.1%	0.0%	7.8
80000>100000	Frequency	0	2	0	0	0	2
	Percent	0.0%	2.2%	0.0%	0.0%	0.0%	2.2%
Total	Frequency	3	14	33	11	29	90
	Percent	3.3%	15.6%	36.7%	12.2%	32.2%	100.0%
Value		114.838[a]					
Sig		.014					

According to table 4.5.24 there was association between income level and participation in community management activities.

4.5.25 Level of income upon participate in editing system:

Table (4.5.25) Showed the result of chi-square test for income level upon participate in editing system

Level-of-income		Participate-editing-system				Total
		very much	much	sometimes	none	
2000>20000	Frequency	1	0	1	24	26
	Percent	1.1	0.0	1.1	26.6	28.8
20000>40000	Frequency	1	0	2	30	33
	Percent	1.1	0.0	2.2	33.3	36.6
40000>60000	Frequency	1	1	0	20	22
	Percent	1.1%	1.1%	0.0%	22.2	24.4
60000>80000	Frequency	1	0	0	6	7
	Percent	1.1%	0.0%	0.0%	6.6	7.8
80000>100000	Frequency	0	0	0	2	2
	Percent	0.0%	0.0%	0.0%	2.2%	2.2%
Total	Frequency	4	1	3	82	90
	Percent	4.4%	1.1%	3.3%	91.1%	100.0%
Value		61.670[a]				
Sig		.524				

According to table 4.5.25 there was no association between income level and participate in editing system.

4.5.26 Level of income upon participate decision making:

Table (4.5.26) Showed the result of chi-square test for income level upon participate in editing system

Level of income		Participate decision making					Total
		very much	much	sometimes	scarcely	none	
2000>20000	Frequency	0	0	3	0	22	26
	Percent	0.0	0.0	3.3	0.0	24.3	28.8
20000>40000	Frequency	1	0	3	1	28	33
	Percent	1.1	0.0	3.3	1.1	31.1	36.6
40000>60000	Frequency	2	2	3	2	13	22
	Percent	2.2	2.2	3.3	2.2	14.3	24.3
60000>80000	Frequency	1	0	1	0	5	7
	Percent	1.1	0.0	1.1	0.0	5.6	7.8
80000>100000	Frequency	0	0	1	0	1	2
	Percent	0.0	0.0	1.1	0.0	1.1	2.2
Total	Frequency	4	3	11	3	69	90
	Percent	4.4	3.3	12.2	3.3	76.7	100.0
Value		75.331[a]					
Sig		.739					

According to table 4.5.26 there was no association between income level and participate in decision making.

4.5.27 Level of income upon improving community life:

Table (4.5.27) Showed the result of chi-square test for income level upon improving community life

Level of income		Improving community life					Total
		very much	much	medium	A little	none	
2000>20000	Frequency	2	11	4	5	4	26
	Percent	2.2	12.1	4.4	5.6	4.4	28.8
20000>40000	Frequency	0	11	15	3	4	33
	Percent	0.0	12.1	16.5	3.3	4.4	36.6
40000>60000	Frequency	1	10	5	1	5	22
	Percent	1.1	11.2	5.6	1.1	5.6	24.4
60000>80000	Frequency	0	3	2	0	0	5
	Percent	0.0	3.3	2.2	0.0	0.0	5.6
80000>100000	Frequency	0	2	0	0	0	2
	Percent	0.0	2.2	0.0	0.0	0.0	2.2
Total	Frequency	3	39	26	9	13	90
	Percent	3.3	43.3	28.9	10.0	14.4	100.0
Value		88.218[a]					
Sig		.355					

According to table 4.5.27 there was no association between income level and improving community life.

Chapter five

Summary of Conclusion and Recommendations

5.1 Summary:

This study was conducted to investigate what are the impacts of community based natural range resource management in achieving sustainability in the study area.

The natural resource base (land, water range and forest) is fundamental to the persistence and source of revenue of the majority of people in the area of the study.

It is known that community organizations which are closely connected to their community can understand community needs and problems more than the government and people from outside community.

Natural resource management has been global issue, executing their programs many organizations adopted participatory approach to enhance local community participation.

In the study area, people have organized themselves in many collaborations for some time to meet their social, economic and emergency needs. Many nongovernmental organizations established some new organizations like village development committees to enhance popular participation in the activities which related to natural range resource management.

It is argued that the CBOs in the study area have succeeded in managing natural range resource in sustainable manner in spite of the constraints.

To meet the objectives of the study both primary and secondary data were gathered and used.

5.2 Conclusion:

The main findings drawn from the study are:

(1) 86.7% of respondents have their own lands and therefore they are able to sustain their livelihood.
(2) Majority of respondents work mainly agriculture.
(3) Community participation depended on men more than women.
(4) The respondents were participating in planning and executing programs but they poorly represented among decision makers.
(5) Lacking access to natural resources sometimes contributes to many of the local level conflicts in which pastoralists are involved, as farmer/ herder conflicts.
(6) Use of common lands is organized by customs and traditional rules that have long been recognized by local communities.
(7) The leaders had the authority to approve and protect traditional rules governing the use of pastoral resources. They even usually had the power to solve conflicts when they occurred.
(8) Women often face social, cultural and at times legal constraints that limit their decision-making capacity in farming and natural resources management.
(9) In the study area services like extension, veterinary and finance were missed.
(10) Study findings shows that policies, laws and regulations are not fully applied for most of the institutions working in natural resources management, due to lack of clear tools and mechanism for their application.

When testing the significance of the relationship between some dependent and independent variables, using chi square test, the study

showed that there was a significant relationship at a significance level of 0.05 between:

1. Gender and participate in community management activities.
2. Marital status and access to appropriate consumption fodder.
3. Education level and achieve development.
4. Income level and participation in community management activities.
5. Income level and benefit from management of pastoral resources.

5.3 Recommendations:

Based on the study findings the following recommendations were proposed:

5.3.1 For local community:

(1) Solving community problems cannot come from outside, so community members must combine efforts and line up in associations with specific goals and programs that are consistent with the goals and programs of the state so that they can attract the required support from government and donor organizations.

(2) All community members should be keen to participate in planning, implementation and decision-making in all natural pastoral resource management programs in order to maximize the benefit and achieve sustainability.

5.3.2 For local leaders:

(1) Community-based and grassroots institutions must represent and protect local interest. They must introduce participatory tools to engage with communities, facilitate discussions and mobilize community members.

(2) Local leaders should represent their communities and speak on their behalf in all forums to help solve their problems.

5.3.3 For NGOs:

(1) Empowerment in creating and strengthening community organizations and improving the status of rural women.
(2) Support committees to influence and empower the behaviors of local people and protect their interests.

5.3.4 For the governmental institutions:

(1) The role of pasture and fodder management should be emphasized in raising the level of awareness and knowledge of the users of pastoral resources in the region and providing the services required for the sustainability of pastoral resources.
(2) There is a need to develop clearly defined and agreed upon land-use policy and legislation, to be developed through the participation and involvement of all relevant stakeholders.
(3) The enforcement of laws and legislation in the natural resources conservation and management need to pay special attention to local communities and their traditional and long established rights and consideration of their interests.
(4) There must be concentrated efforts and an attempt to coordinate between governmental institutions, voluntary organizations, donors and grassroots organizations to facilitate the provision of the required services.
(5) An educated programs should be adopted to help attract the efforts of young people and children and ensure their participation in the management of pastoral natural range resources.

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بسم الله الرحمن الرحيم

جامعة السودان للعلوم و التكنولوجيا

كلية الدراسات العليا

أسئلة بحثية لقياس دور المجتمعات المحلية في استدامة الموارد الطبيعية الرعوية

استبيان

أولاً: الخاص بعامة أرباب الأسر :

المحور الأول : البيانات الاقتصادية و الاجتماعية للسكان المحليين

1 : النوع :

(1) ذكر (2) أنثى

2 : العمر:

(1) اقل من 30 سنة (2) 30 - اقل من 50 سنة 3) 50 – اقل من 70 (4) 70 فما فوق

3: الحالة الاجتماعية :

(1) عازب (2) متزوج (3) مطلق (4) أرمل (5) حالة هجر(غياب)

4 : مستوي التعليم :

ما هو مستوى تعليمك: (1) أمي (2) خلوة (3) سنوات الدراسة قبل الجامعة (4) جامعي (5) فوق الجامعي

5 : مستوي الدخل :

كم دخلك السنوي: ..... جنيه

6 : مصدر الدخل :

ما هو مصدر دخلك الرئيسي:

(1) زراعة (2) رعي (3) تجارة (4) أعمال حرة أخرى (5) وظيفة (6) مساعدات

ما هو مصدر دخلك الإضافي :

(1) زراعة (2) رعي (3) تجارة (4) أعمال أخرى (5) وظيفة (6) مساعدات (7) لا يوجد

ثانيا : محور المتغيرات المتعلقة بالدراسة :

1 : وجود المنظمات المجتمعية

هل توجد منظمات – لجان مجتمعية في منطقتك:

(1) نعم (2) لا (3) لا اعرف

نوع اللجنة :

(1) لجنة شعبية (2) لجنة تعليم (3) لجنة تنمية (4) لجنة مرأة

(5) أخرى تذكر

2 : العضوية في المنظمة أو اللجنة :

هل أنت عضو في المنظمة – اللجنة :(1) نعم(2) لا

3 : نظام ملكية الأراضي

هل توجد ارض مخصصة مرعي:

(1) نعم (2) لا

4 : نوع التخصيص :

(1) سجل (2) بواسطة اللجان (3)بواسطة الشيخ (4)عرف أهالي

5 : هل تملك ارض زراعية :

(1) نعم (2) لا

6: نوع الحيازة :

(1) سجل(2) وضع يد(3) شراكة(4) إيجار

7: هل تدخل العلف في الدورة الزراعية:

(1) نعم (2) لا

8: كيف تتعامل مع المخلفات الزراعية:

(1) حزم (2) رعي مباشر (3) حرق (4) بيع (5) أخرى تذكر

9 : وجود التمويل

كم حصلت علي تمويل:

(1) كثيرا جدا (2) كثيرا (3) أحياناً (4) نادرا (5) لم يحدث

10 : مصادر التمويل

ما هي مصادر التمويل:

(1) مؤسسات حكومية (2) بنوك تجارية (3) منظمات (4) صندوق دوار (5) تذكر

11 : الحصول علي الموارد الرعوية

ما مدي حصولك علي الموارد الرعوية :

(1) كثيرا جدا (2) كثيرا (3) أحياناً (4) نادرا (5) ليس لدي

12 : الاستفادة من إدارة الموارد الرعوية

مدي استفادتك من إدارة الموارد الرعوية:

(1) كثيرا جدا (2) كثيرا (3) أحياناً (4) نادرا (5) لم يحدث

13 : المشاركة في لأنشطة الإدارة المجتمعية

مدى مشاركتك في أنشطة الإدارة المجتمعية:

(1) كثيراً جداً (2) كثيراً (3) أحياناً (4) نادراً (5) لم يحدث

14 : نوع الوقود المستخدم في الطبخ

ما هو نوع الوقود المستخدم في الطبخ:

(1) فحم و حطب (2)غاز (3) كهرباء (4) مخلفات محاصيل

15: تبني تقانات صيانة التربة

تبني تقانات صيانة التربة:

((1) ترس(2) دورة زراعية(3) أسمدة (4) أخرى تذكر (5) لا يوجد

16 : تحسين مصادر المياه

كيف يتم تحسين مصادر المياه:

(1) صيانة حفائر(2) حفر آبار (3) دونكي (4) أخرى تذكر (5) لا يوجد

17 : خدمات بيطرية

مدي تلقي خدمات بيطرية:

(1) تطعيم (2) علاج (3) إرشاد (4)أخرى تذكر (5) لم يحدث

18 : نوع حيوانات القطيع

ماذا تربي من حيوانات:

(1) أبقار (2) ضان (3) ماعز (4) ابل (5) أخرى

19 : استهلاك الحيوان للعلف

مدي حصول الحيوانات علي كمية مناسبة من العلف الطبيعي:

(1) دائماً (2) غالباً (3) أحياناً (4) قليلاً

20: تقانات تساعد التنوع

ماذا تطبق من تقانات لزيادة التنوع:

(1) حجز مراعي (2) نثر(3) إزالة غازية (4) أخرى تذكر (5) لا يوجد

21 : نظم وأعراف استغلال الموارد

هل لديك نظم لاستغلال الموارد :

(1) نعم توجد (2) توجد لكن غير فعالة (3) لا توجد (4) لا أعلم

22 : المشاركة في النظم

هل تشارك في تعديل النظم :

(1) كثيراً جداً (2) كثيراً (3) أحياناً (4) نادراً (5) لم يحدث

23 : المشاركة في اتخاذ القرار

هل تشارك في اتخاذ القرار:

(1) كثيراً جداً (2) كثيراً (3) أحياناً (4) نادراً (5) لم يحدث

24 : المتابعة لأنشطة إدارة الموارد الطبيعية الرعوية

مدي فعالية إجراءات المتابعة:

(1) فعالة جداً (2) فعالة (3) متوسطة (4) ضعيفة (5) لا توجد

25 : النزاعات

هل توجد نزاعات حول استخدام الموارد الطبيعية الرعوية:

(1) نعم (2) لا

26: نوع النزاع:

(1) بين الرعاة و المزارعين (2) بين الرعاة (3) مع المناطق المجاورة

(4) أخرى تذكر

27 : وجود لجنة لفض النزاعات

هل توجد لجنة لفض النزاعات :

(1) نعم (2) لا

28 : إذا موجودة ممن تتكون :

(1) جهات رسمية (2) رسمية + شعبية (3) شعبية (عمد و شيوخ)

(4) أخرى تذكر

29 : تقليل استخدام الأعلاف – منزلي

ما هي نسبة استخدام الأعلاف في الأغراض المنزلية :

(1) ربع (2) نصف(3)ثلاثة أرباع (4) كل الكمية

30 : التدريب في إدارة الموارد

هل نلت تدريب في برامج إدارة الموارد :

(1) كثيراً جداً (2) كثيراً (3) أحياناً (4) نادراً (5) لم يحدث

31 : الحدود الواضحة للمنطقة

هل توجد حدود واضحة للمنطقة المدارة:

(1) نعم توجد (2) غالباً (3) أحياناً (4) نادراً (5) لا توجد

32 : أحقية أصحاب الموارد الرعوية

هل لديك حقوق معروفة لمنع الآخرين من مواردك الرعوية:

(1) نعم(2) غالباً (3) أحياناً (4) نادراً (5) لا توجد (6) لا أعرف

33 : وجود منطقة محجوزة مرعي

هل توجد مناطق محجوزة مرعي :

((1) نعم(2) غالباً (3) أحياناً (4) نادراً (5) لا توجد (6) لا أعرف

34 : قياس المرعي المحمي

كيف نقيس المرعي المحمي :

(1) وجود حيوانات برية (2) سيادة الاتواع المستساغة(3) تنظيم الرعي

35 : تحسن حياة المجتمع

مدي تحسن حياة المجتمع بعد إدارة الموارد:

(1) كثيرا جدا (2) كثيرا (3) وسط (4) قليلا (5) لم يحدث

36 : تمكين المجتمع

مدى تحقيق المجتمع التمكين بعد إدارة الموارد:

(1) نعم (2) إلى درجة كبيرة(3) بعض الشيء (4) قليلاً (5) لم يحدث

37 : زيادة الدخل

مدى زيادة دخلك بإدارة الموارد :

(1) كثيراً جدا (2) كثيراً (3) قليلاً (4) لا يذكر (5) لم يحدث

38 : زيادة القطيع

مدي زيادة القطيع بعد تطبيق الإدارة:

(1) كبيرة جداً (2) كبيرة (3) قليلة (4) لم يحدث

39 : زيادة الإنتاجية للعلف

هل زادت إنتاجية العلف بعد إدارة الموارد:

(1) كبيرة جدا (2) كبيرة (3) قليلة (4) لم يحدث (5) لم ألاحظ

40 : تحققت التنمية

هل تحققت التنمية بعد إدارة الموارد:

(1) نعم(2) إلى حد كبير (3) بعض الشيء (4) لم يحدث (5) لم ألاحظ

41 : قلت حدة الفقر

هل قلت حدة الفقر بعد إدارة الموارد:

(1) كثيرا جدا (2) كثيرا(3) قليلا (4) لم يحدث (5) لم ألاحظ

42 : تحقق رغبات المجتمع

هل حققت نتائج مناشط إدارة الموارد رغبات المجتمع:

(1) تماماً (2) إلى حد كبير (3) قليلاً (4) لم يحدث (5)لم ألاحظ

43 : سياسات و قوانين تنظم إدارة الموارد

هل توجد سياسات وقوانين منظمة لإدارة الموارد:

(1) نعم (2) قوية (3) ضعيفة (4) غير مناسبة (5) لا اعرف

القادة المحليين

المحور الأول : البيانات الاقتصادية و الاجتماعية للسكان المحليين

1 : النوع : (1) ذكر (2) أنثى

2 : العمر (1) اقل من 30 سنة (2) 30 - اقل من 50 سنة (3) 50 – اقل من 70 (4) 70 فما فوق

3: الحالة الاجتماعية : (1) عازب (2) متزوج (3) مطلق (4) أرمل (5) حالة هجر(غياب)

4 : مستوي التعليم :

ما هو مستوي تعليمك: (1) أمي (2) خلوة (3) سنوات الدراسة قبل الجامعة (4) جامعي

(5) فوق الجامعي

5 : مستوي الدخل :

كم دخلك السنوي: ..... جنيه

6 : مصدر الدخل :

ما هو مصدر دخلك الرئيسي: (1) زراعة (2) رعي (3) تجارة (4) أعمال حرة أخرى (5) وظيفة (6) مساعدات

ما هو مصدر دخلك الإضافي : (1) زراعة (2) رعي (3) تجارة (4) أعمال أخرى (5) وظيفة (6) مساعدات (7) لا يوجد

ثانيا : محور المتغيرات المتعلقة بالدراسة :

1 : وجود المنظمات المجتمعية

هل توجد منظمات – لجان مجتمعية في منطقتك: (1) نعم (2) لا (3) لا اعرف

نوع اللجنة : (1) لجنة شعبية (2) لجنة تعليم (3) لجنة تنمية (4) لجنة مراة

(5) اخري تذكر

2 : العضوية في المنظمة او اللجنة :

هل انت عضو في المنظمة – اللجنة :(1) نعم (2) لا

3 : نظام ملكية الاراضي

هل توجد ارض مخصصة مرعي (1) نعم (2) لا

4 : نوع التخصيص : (1) سجل (2)بواسطة اللجان(3)بواسطة الشيخ(4)عرف اهالي

5 : هل تملك ارض زراعية :(1) نعم (2) لا

6: نوع الحيازة (1) سجل (2) وضع يد (3) شراكة (4) ايجار

7: هل تدخل العلف في الدورة الزراعية (1) نعم (2) لا

8: كيف تتعامل مع المخلفات الزراعية (1) حزم (2) رعي مباشر (3) حرق (4) بيع

(5) اخري تذكر

9 : وجود التمويل

كم حصلت علي تمويل: (1) كثيرا جدا (2) كثيرا (3) احيانا (4) نادرا (5) لم يحدث

10 : مصادر التمويل

ما هي مصادر التمويل:

(1) مؤسسات حكومية (2) بنوك تجارية (3) منظمات (4) صندوق دوار (5) أخرى تذكر

11 : الحصول علي الموارد الرعوية

ما مدي حصولك علي الموارد الرعوية : (1) كثيرا جدا (2) كثيرا (3) احيانا (4) نادرا (5) ليس لدي

12 : الاستفادة من ادارة الموارد الرعوية

مدي استفادتك من ادارة الموارد الرعوية: (1) كثيرا جدا (2) كثيرا (3) احيانا (4) نادرا (5) لم يحدث

13 : المشاركة في انشطة الادارة المجتمعية

مديمشاركتك في انشطة الادارة المجتمعية: (1) كثيرا جدا (2) كثيرا (3) احيانا (4) نادرا (5) لم يحدث

14 : نوع الوقود المستخدم في الطبخ

ما هو نوع الوقود المستخدم في الطبخ: (1) فحم و حطب (2)غاز (3) كهرباء (4) مخلفات محاصيل

15: تبني تقانات صيانة التربة

تبني تقانات صيانة التربة:((1) ترس (2) دورة زراعية (3) اسمدة (4) اخري تذكر

(5) لا يوجد

16 : تحسين مصادر المياه

كيف يتم تحسين مصادر المياه: (1) صيانة حفائر (2) حفر ابار (3) دونكي (4) اخري تذكر (5) لا يوجد

17 : خدمات بيطرية

مدي تلقي خدمات بيطرية: (1) تطعيم (2) علاج (3) ارشاد (4)اخري تذكر (5) لم يحدث

18 : نوع حيوانات القطيع

ماذا تربي من حيوانات: (1) ابقار (2) ضان (3) ماعز (4) ابل (5) اخري

19 : استهلاك الحيوان للعلف

مدي حصول الحيوانات علي كمية مناسبة من العلف الطبيعي: (1) دائما(2) غالبا (3) احيانا (4) قليلا

20: تقانات تساعد التنوع

ماذا تطبق من تقانات لزيادة التنوع: (1) حجز (2) نثر (3) ازالة غازية(4) اخري تذكر (5) لا يوجد

21 : نظم و اعراف استغلال الموارد

هل لديك نظم لاستغلال الموارد (1) نعم توجد (2) توجد لكن غير فعالة(3) لا توجد (4) لا اعلم

22 : المشاركة في النظم

هل تشارك في تعديل النظم : (1) كثيرا جدا (2) كثيرا (3) احيانا (4) نادرا (5) لم يحدث

23 : المشاركة في اتخاذ القرار

هل تشارك في اتخاذ القرار (1) كثيرا جدا (2) كثيرا (3) احيانا (4) نادرا (5) لم يحدث

24 : المتابعة لانشطة ادارة الموارد الطبيعية الرعوية

مدي فعالية اجراءات المتابعة (1) فعالة جدا (2) فعالة (3) متوسطة (4)ضعيفة (5) لا توجد

25 : النزاعات

هل توجد نزاعات حول استخدام الموارد الطبيعية الرعوية (1) نعم (2) لا

26: نوع النزاع (1) بين الرعاة و المزارعين (2) بين الرعاة (3) مع المناطق المجاورة (4) اخري تذكر

27 : وجود لجنة لفض النزاعات

هل توجد لجنة لفض النزاعات (1) نعم (2) لا

28 : اذا موجودة ممن تتكون : (1) جهات رسمية (2) رسمية + شعبية (3) شعبية (عمد و شيوخ) (4) اخري تذكر

29 : تقليل استخدام الاعلاف – منزلي

ماهي نسبة استحدام الاعلاف في الاغراض المنزلية (1) ربع (2) نصف(3)ثلاثة ارباع (4) كل الكمية

30 : التدريب في الادارة

هل نلت تدريب في برامج الادارة (1) كثيرا جدا (2) كثيرا (3) احيانا (4) نادرا (5) لم يحدث

31 : الحدود الواضحة للمنطقة

هل توجد حدود واضحة للمنطقة المدارة (1) نعم توجد (2) غالبا (3) احيانا (4) نادرا (5) لا توجد

32 : احقية اصحاب الموارد الرعوية

هل لديك حقوق معروفة لمنع الاخرين من مواردك الرعوية (1) نعم (2) غالبا (3) احيانا (4) نادرا (5) لا توجد (6) لا اعرف

33 : وجود منطقة محجوزة مرعي

هل توجد مناطق محجوزة مرعي ((1) نعم (2) غالبا (3) احيانا (4) نادرا (5) لا توجد (6) لا اعرف

34 : قياس المرعي المحمي

كيف نقيس المرعي المحمي (1) وجود حيوانات برية (2) سيادة الانواع المستساغة(3) تنظيم الرعي

35 : تحسن حياة المجتمع

مدي تحسن حياة المجتمع بعد ادارة الموارد(1) كثيرا جدا (2) كثيرا (3) وسط (4) قليلا (5) لم يحدث

36 : تمكين المجتمع

مدي تحقيق المجتمع التمكين بعد ادارة الموارد (1) نعم(2) الي درجة كبيرة (3) بعض الشئ (4) قليلا (5) لم يحدث

37 : زيادة الدخل

مدي زيادة دخلك بادارة الموارد (1) كثيرا جدا (2) كثيرا (3) قليلا (4) لا يذكر (5) لم يحدث

38 : زيادة القطيع

مدي زيادة القطيع بعد تطبيق الادارة(1) كبيرة جدا (2) كبيرة (3) قليلة (4) لم يحدث

39 : زيادة الانتاجية للعلف

هل زادت انتاجية العلف بعد ادارة الموارد(1) كبيرة جدا (2) كبيرة(3) قليلة (4) لم يحدث (5) لم الاحظ

40 : تحققت التنمية

هل تحققت التنمية بعد ادارة الموارد(1) نعم (2) الي حد كبير(3) بعضالشئ(4) لم يحدث (5) لم الاحظ

41 : قلت حدة الفقر

هل قلت حدة الفقر بعد ادارة الموارد (1) كثيرا جدا (2) كثيرا(3) قليلا (4) لم يحدث (5) لم الاحظ

42 : تحقق رغبات المجتمع

هل حققت نتائج مناشط ادارة الموارد رغبات المجتمع (1) تماما(2) الي حد كبير(3) قليلا (4) لم يحدث (5) لم الاحظ

43 : سياسات و قوانين تنظم ادارة الموارد

هل توجد سياسات و قوانين منظمة لادارة الموارد: (1) نعم(2) قوية (3) ضعيفة (4) غير مناسبة (5) لا اعرف

قائمة بأسماء المحكمين

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