



## Study the Role of Forests in Improving Livelihoods and Poverty Alleviation of Rural Communities (A Case Study: Eldisa Reserverd Forest) –Blue Nile State –Sudan

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### Abstract

This study was conducted at Eldisa forest in Eldamazin locality at Blue Nile State-Sudan during the year 2016- 2017. The aim of this study was to assess the Role of forests in improving of livelihood and Poverty alleviation of rural communities. The data collection depends mainly on the primary data which includes general survey and observations to the study area. Three villages namely (Goney, Elbangadeed, and El disa) were selected randomly from the total villages around the forest. A total of 90 household were selected as sample size from these villages which constituted about 5%. The questionnaire was design to collect the information's from the household in order to achieve the objectives of this study. Beside these, focus groups discussion was conducted with stakeholder and check list with forest manager at the state level. Data was analyzed using Statistical Package for Social Sciences (SPSS) software version 18 and descriptive statistical methods were applied .The majority of Households (67.8%) were dependents on forest mainly in providing the basic needs for them such as charcoal, firewood collection, opportunities of work inside the forest, producing honeybee and fodder for animals. And also majority of respondent 72.2% mention that forest managers in study area provided different extension message throughout seedling productive in home nurseries and distribution of those seedling, which reflected a great awareness among the rural people about the importance of trees in their life. The result also indicates that about 46.7% of respondent describe that the forest contributed directly to their life through representing as the source of income for poor family in surrounding villages. The study recommended that local people should be encourage to participate in forest management lead to sustain production of forest and reduce the pressure of people to depend on natural forest, then alternatives source of energy and income generating should be introduce in the study area to reduce the consumption of wood and charcoal.

**Keywords:** Poverty Alleviation, livelihoods, Rural Community, Eldisa Reserverd Forest

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### Introduction

Global policy interest in forest ecosystem services has increased due to their role in mitigating climate change and providing services that are important to rural livelihoods in developing countries (Wunder, 2001 and Sunderlin et al., 2005.In

developing countries forest products are an integral component of the livelihoods of the majority of rural households. Forests provide multipurpose benefits such as timber, fuel wood and Non-Wood forest products NWFPs. NWFPs are usually overlooked commodities, even though they

are important products at both local and national levels. The rural population of Sudan, as well as much of its urban population, depends on forests. Trees are the main source of energy and provide timber for roofing and building. In rural Sudan, the extensive benefits derived from forests include grazing, hunting, shade, forest foods in the form of tree leaves, wild fruits, nuts, tubers and herbs, tree bark; for medicinal purposes, and non-wood products such as honey and gum Arabic. In addition, the commercial lumber industry is a small but growing source of employment. (FNC, 1988). It is estimated that more than 15 million people in sub-Saharan Africa earn their cash income from forest-related enterprises such as fuel wood and charcoal sales, small-scale saw-milling, commercial hunting and handicraft. In addition, between 200,000 and 300,000 people are directly employed in the commercial timber industry (Oksanen and Mersmann, 2003). For some countries, the forestry sector is an important foreign exchange earner. For example, between 1993 and 2002, the value of net exports of various wood-based products from countries in sub-Saharan Africa amounted to more than US\$2 billion (FAO, 2003). However, the national statistics on the contribution of forest products to the countries' economies are extremely poor (Mabugu and Chitiga 2002; Vincent, 1998). The fact that natural forests and poverty are found in the same place in some areas of the world is no accident. Natural forests are home to human evolution and human populations that have lived there for millennia are at a relatively low level of socio-economic development. Moreover, migrant rural populations that colonize forested areas and seek new agricultural lands are often relatively poor. Forests often serve as an employer of last resort for economically

marginalized people, for example, due to skewed land distributions in the lowlands. In the course of history, forests have often served as a refuge for less powerful people fleeing oppression, conflict and war. Hundreds of millions of people depend on forests. It is difficult to be specific about the numbers because such an assessment depends on how dependence is defined (Byron and Arnold 1999; Calibre Consultants and SSC 2000). Forests serve as a vital safety net for millions of people around the world. Their role in eliminating poverty is not as well documented, though probably applies to a smaller number of people (Wunder, 2001). Little is known about the extent to which forests can alleviate poverty in developing countries in the future.

#### **Material and Methods**

**Study Area:** The study was conducted in Blue Nile state in Eldamazin locality which located in southern of the state, The State consists of six localities, namely Damazin, Rosaries, Kurmuk, Gaissan, Baw and Tadamun. It lies between latitude 9°30' and 12°30' N and longitude 35°3' and 33°5' E., with a total area of 40000 Km (UNDP, 2010).

**Study Concept:** The concept of this study was to assess the Role of forests in improving of livelihood and Poverty alleviation of rural communities in Eldisa reserved forest-Blue Nile state – Sudan.

**Data Collection:** The primary data were collected through a questionnaire to obtain information from the heads of households. A descriptive household was conducted during the period between October and December 2016. Three villages namely: Goney, Elbanga-deed, and El disa were randomly selected to representing the locality. A total number of 90 household heads were chosen representing 5% of total

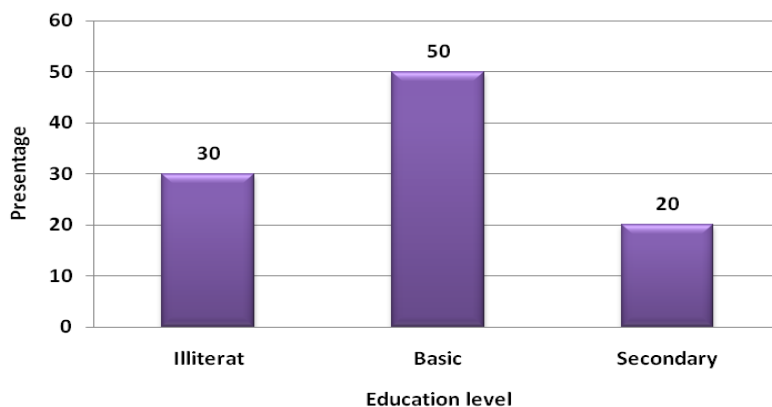
households. Also group discussions were held in these villages to collect information from the local leaders and staff of forest National Corporation (FNC) at the state level through checklist about role of forests in improving the livelihoods and poverty alleviation of local communities in the area. Secondary information for the study was obtained through the literature review including textbooks, Journals, Network, reports and previous studies that available.

**Data Analysis:** The collected data were analyzed

using the Statistical Package for Social Sciences (SPSS) software by computing descriptive statistics. The results were presented using frequency and percentages.

**Results and Discussions**

The socio-economic aspects use descriptive means to reflect the relations and influences between forest and rural communities in the study area. The results of the study indicate for the area considered that forests contributes to the subsistence of the rural economies and beneficially impacts the well-being of the people.



**Figure 1: Education levels of respondents**

The result in figure (1) showed that 50% of respondent they educated at primary school, while 30% were illiterate and 20% at high secondary school. These indicated that more than 70%of respondent they were educated which could help to understand the extension massage and constrain

concerning the forest. This agreed with Singh et. al. (2006) found that there was appositively significant relationship between the education level and participation level of the respondents in maintenance practices of forest resources.

**Table 1: Contribution of forest in improving the livelihood for the local communities:**

Forest Role	Frequency	Percentage%
Improved	61	67.8
Not improve	29	32.2
Total	90	100

Source: Field Survey, 2016

Table (1) showed that about 67.8% of respondent said that forests improved their livelihood, while only 32.2% of them

mention that the role of forest was not improving their livelihood. This result revealed that the forest contributed mainly in

providing the basic needs for the local people such as charcoal, firewood collection, opportunities of work inside the forest, producing honeybee and fodder for animals. This result explained that majority of respondent depend mainly on forest products for meet their basic need and

improving their income generations. This result agree with Elsiddig, (2013)who state that majority of rural community depends on forest production to meet their daily need, while there were no enough other alternative to gain money.

**Table 2: Direct benefits of forest to the local community in the study area**

Direct benefits	Frequency	Percentage%
Wood and charcoal collection	71	78.9
Building materials and fruits.	18	20.0
Grazing for animals.	1	1.1
Total	90	100

Source: Field Survey, 2016

The result in Table (2) Showed that approximately about 78.9% of respondents have direct benefit get form forest like wood and charcoal collection. About 20% of them depend on forest for collection of building materials and mention trees used as fruits, and only 1.1% they were depended on forest as asource of fodder for their animals. Several recent studies on the livelihood

strategies of rural people in developing countries have highlighted the significance of livelihood diversification (Zoomers, 2001). Today, many rural households diversify their livelihoods and combine various strategies to obtain food, consumer goods and income, without focusing on a single activity, crop or even space (Ellis, 1998).

**Table 3: Indirect benefits of forest for local people in the study area**

Indirect benefits	Frequency	Percentage%
Source of income	42	46.7
Protection of water resources.	1	1.1
Improve the production of crops.	26	28.9
Entertainment and Tourism.	21	23.3
Total	90	100

Source: Field Survey, 2016

The result in Table (3) indicated that about 46.7% of respondent describe that the forest contributed indirect to their life through representing as the source of income for poor family in surrounding villages, while 28.9 answered that increased the crops production, followed by 23.3% have custom and recreation values, and only 1.1% of them said forest contributed in direct in

protection of water resources, this agreed with( Slee et al. 2004) acknowledge a set of new directions for the of forest in rural development through environmental benefits such as creation of new markets for forest products and services like the carbon trading market, the generation of social values inside communities,

**Table 4: The role of forest products in household food security:**

Food security &Income Generation	Frequency	Percentage%
Secure and generate	80	89
Not Secure and generate	10	11
Total	90	100

Source: Field Survey, 2016

The result in Table (4) indicated that about 89% of the respondents stated that many forest products of both plant and animal were consumed by household either directly as food or as supplement to other food products. Some are eaten in raw form without prior cooking, boiling or processing while others are only consumable after processing. These products play significant roles in supplementing household food intake particularly during the period of scarcity of food when the previous year's crops are exhausted and the new crops are

yet to mature. This due to increases in their awareness about the direct consumption and nutrition value of forest products which include different types, while the rest 11% of them said that was no clear role in used of NWFPs for food security. As stated by Olawoye (1996) forests make significant direct contributions to food security of the rural population by providing a wide range of food which provides essential nutrients especially at times when other food sources are not available.

**Table 5: Main activities practice by respondents to improve their livelihood**

Activities	Frequency	Percentage%
Herds animals.	15	16.7
Crops Cultivation	67	74.4
Building and making bricks	8	8.8
Total	90	100

Table (5) showed that about 74.4% of respondent depends on crops cultivation, while 16.7 of them depend on raring animals, fallowed by 8.8% were depend on Building and making bricks in their villages. This indicate that the most of the

communities depend on the crops production because they practice agricultural inside the forest and heavy rainfall in this area, on the hand the forest provide the animal by fodder through browsing the trees and the palatable grass inside the forest.

**Table 6: Types of fuel used by the respondents in the study area**

Types of fuel	Frequency	Percentage%
Crop residues	3	3.3
Charcoal.	39	43.3
Firewood	44	48.9
Gas cylinder	4	4.4
Total	90	100

According to the result in table (6) the majority of respondent about 48.9% utilized the wood as main source of energy fallowed by 43.3% were used charcoal, while 4.4% of them used gas cylinder and only 3.3% of them used agricultural residues. The result

explained the rate which the respondent depends on fire wood and charcoal for energy, this agreed with Alsaadig (2007) who state that alternative energy source should be settled to reduce the pressure on forest by local people.

**Table 7: Contribution of forest in providing fodder for livestock**

Fodder for livestock	Frequency	Percentage %
Provided	84	93
Not Provided	6	7
Total	90	100

Source: Field Survey, 2016

According to the result in table (7) which showed that about 93% of the households mentioned that forests contribute in feeding their livestock in study area, through many types of trees such as: *Ziziphus spina-christi* *Acacia nilotica*, *Balanites aegyptiaca*, while only 7% of them said that there were no clear roles for forest in providing fodder for livestock. (Kamwend, 1999), stated that fodder from some trees and shrubs are particularly important during dry seasons when availability of grasses is markedly reduced. Feeding livestock inside forest therefore takes place during this season when resources within public land have been exhausted

### Conclusions and Recommendations

#### Conclusions

- More than 50% of respondent were practice cultivation in forest through seasonal contracts and at same time they look after trees and participate in activities such seeds broad casting, thinning and final cutting.
- The majority of the respondents depended mainly on forest products (fire wood, charcoal) as a source of energy.

Most of respondent work in the forest through collection of fuel wood and produce charcoal to support their income generation and improvement of livelihoods.

#### Recommendations

- Encourage local people participation in forest management that lead to sustain forest production and reduce the pressure of people on natural forest.
- Private forests (community forestry) should offer alternatives for small businesses in rural areas, and help to create new jobs for the local people.

Enhancing of forest extension methods to raise awareness of local people about the importance of forest in their live.

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دراسة دور الغابات في تحسين سبل كسب العيش وتقليل حدة الفقر للمجتمعات الريفية (دراسة حالة : غابة الديسة النيلية المحجوزة) محلية الدمازين - ولاية النيل الأزرق- السودان

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### المستخلص

أجريت هذه الدراسة بغابة الديسة النيلية المحجوزة بمحلية الدمازين - ولاية النيل الأزرق خلال الفترة للعام 2016- 2017 ، هدفت الدراسة لمعرفة دور الغابات في تحسين سبل كسب العيش وتقليل حدة الفقر للمجتمعات الريفية، بالإضافة إلى التحقق من آراء وأفكار المجتمعات المحلية تجاه المشاركة في إدارة الغابة بجانب التعرف على دور الإرشاد في زيادة الوعي بالنسبة للسكان المحليين للمحافظة على الغابة والمشاركة في أنشطتها. اعتمدت طريقة جمع المعلومات بصورة أساسية على المعلومات الأولية والتي اشتملت على الزيارة الميدانية و المسح الاجتماعي والاقتصادي للمجتمعات المحلية التي تسكن حول الغابة لمعرفة الخصائص الشخصية المميزة بجانب الأنشطة الاقتصادية التي يمارسونها كمصدر للدخل. بناء على ذلك تم تصميم استبانة استهدفت عدد 90 رب أسرة حيث تم اختيارهم بصورة عشوائية من مجموع عدد الأسرة في تلك الثلاثة قرى المختارة عشوائياً وهي ( الديسة، قونى والبان جديد) لتمثل مجتمع البحث من مجموع عدد القرى المجاورة والمستفيدة من الغابة بالإضافة إلى ذلك تم طرح بعض الاسئلة البحثية على القادة المحليين وإدارة الغابة بالولاية لمعرفة دور الغابة مساهمتها في زيادة الدخل وتقليل حدة الفقر للمجتمعات الريفية. تم الحصول على المعلومات الثانوية والتي غطت الموضوعات ذات الصلة بالبحث من الكتب ، المراجع ،البحوث العلمية والأنترنيت. تم تحليل البيانات إحصائياً باستخدام الحاسوب عن طريق برنامج الحزم الاقتصادية للعلوم الاجتماعية SPSS لاستخراج النتائج في شكل نسب مئوية و تكرارات. أظهرت النتائج غالبية المستهدفين بنسبة 67.8% يعتمدون بشكل رئيسي على غابة الديسة النيلية في تلبية احتياجاتهم المختلفة والتي تتمثل في جمع حطب الوقود وإنتاج الفحم ، توفير الأعلاف للحيوانات و جمع بعض المنتجات غير الخشبية بالإضافة لإتاحة فرص العمل داخل الغابة مما ساعد ذلك في تحسين سبل كسب عيشهم وزيادة دخل الأسر الفقيرة بالمنطقة. كما توصلت الدراسة الي أن أكثر من 50 % من السكان المحليين يسمح لهم بممارسة الزراعة لإنتاج المحاصيل الغذائية داخل الغابة وذلك من خلال العقود الموسمية مع إدارة الغابة وفي نفس الوقت يقومون بالمحافظة ورعاية الأشجار ، بجانب مشاركتهم في كثير من الأنشطة التي تستهدف الغابة مثل الرقاعة ، نثر البذور ، تخفيف كثافة ، الشلخ بالإضافة الى القطع النهائي للأشجار. أوصت الدراسة بضرورة أن تعمل إدارة الغابات على استيعاب و مشاركة السكان المحليين في إدارة الغابات مما يساعد ذلك مقابلة احتياجات الاسرة الفقيرة بجانب ضمان استدامة الإنتاج والمحافظة على الغابة . كما أوصت الدراسة بأهمية تعزيز وتفعيل الإرشاد الغابي لزيادة الوعي وسط السكان المحليين بأهمية الغابات في حياتهم وتشجيع قيام الغابات المجتمعية لتقليل الضغط على الغابة، بالإضافة لإدخال مصادر بديلة للطاقة وزيادة الدخل للحد من استهلاك حطب الوقود والفحم من قبل السكان المحليين.