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# Farmers Perception towards the Deterioration of Acacia Seyal Stands at Gedaref State

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## ABSTRACT

The continuous of clear felling of Acacia seyal at Gedaref State had changed the area covered by natural forests into a wide bare area. Local people depend mainly on forests products for their essential needs particularly at dry period. These practices encouraged them to cut trees to free the land for crop production even at khors, hills and mountains sides. This had negative results on the environment and local people have been subjected to the resulting impacts of desertification, soil deteriorated and decrease in production .This overall degradation affected forests, rangelands, wildlife and gum production.

**Keywords:** *Deterioration, perception, Acacia seyal, economic*

## 1. INTRODUCTION

The Gedaref State is the first part of the Sudan in which mechanized rain fed farming has been introduced at El Ghadambaliya area north of the State. Then it extended to the south and south-west areas. The selection of Acacia seyal for this study is due to its important of environment and economic roles .The area became exposed to the combined influences of large –scale destruction by mechanized agriculture and the tree cutting practices. The State lies approximately between latitudes 12-16 N and longitudes 33-36- E .It has an area of 71000 sq.Km and average altitude of 600 meters above sea level .The capital of the State is 490 Km from Khartoum and 770 Km. from Port Sudan. The average rainfall ranges between 175 mm in the north to 570mm at Gedaref center and 650 mm at Doka and Basunda in the south .According to Harrison and Jackson (1958) the vegetation at Gedaref State lies in the low to high rainfall woodland savannah belt on clay.

## 2. OBJECTIVE

The objective of this study was to assess the perception of farmers towards large –scale tree clearance for farming and their views on how to rehabilitate degraded areas.

## 3. MATERIAL AND METHODS

Different techniques of data collection were applied such as, collection of relevant data from reports, records and references. A questionnaire was designed for socio- economic study and was distributed among local people in the study area .it was designed to assess and evaluate the impacts of Acacia seyal removal at the study area, for example decline of forests, rangelands, gum Arabic production and cultivation impacts.

## 4. RESULTS AND DISCUSSION

### 4.1 Deterioration of Vegetation Cover

The environment of Gedaref area used to be a stable and a balanced one, but this equilibrium between environments components had became unstable due to the interference of human activities. The loss of balance resulted from the effects of mechanized rain fed farming in demarcated and non-demarcated areas .The best land for cultivating grains and cotton is the land occupied by Acacia seyal trees (Harrison and Jackson, 1958) . Many trees had disappeared including economic trees such as, Acacia senegal, Balanites aegyptiaca, Commiphora pedunculata and Dalbergia melanoxylon Grasses also disappeared from their environment include Cymbopogon nevatus and Hyparrhenia sp .which proved to be lacking the ability to survive in the new environment .The expansion of mechanization activities had also affected the tree cover in the State since the whole area was eventually devoted for crop production. Large- scale clearance of trees cover is expected to induce many changes .This is clearly seen in the decrease of animals and plants species. Perennials and biennials had been replaced by annual crops (Bebawi, 1983).

The respondents were sure that the area was covered in the early days by various tree species .They mentioned the existence of Acacia seyal stands ,Balanites aegytiaca , Ziziphus spini-christi , Acacia mellifrea ,Acacia nubica ,Sterculia setigra,Combretum hartmannianum and Boswelliia papyrewfera in hill series .They also ,stated that the dominant species at present time are Acacia mellifera and scatter trees of Acacia senegal .This fact reveal that there is deterioration of Acacia seyal stands in the area .

#### 4.2 Acacia Seyal Stands Deterioration

There was no protection of the resources from outside aggression. The reserved forests were removed and as a result the environment had changed. There was a decrease in rainfall and water of khors during rainy season had spread in a wide area. Jebeles were devoid of vegetation, range habit has changed and the soil became liable to be washed by water and blown by wind. Rainwater washed out the crops and wildlife animals disappeared and migrated to neighbouring areas. Honey was not found in the area. The peoples income from forests products including talh and hashab gum became less and they had to go for a long distance to fetch their building poles (FNC,2003). Grazing land became dominated by unpalatable plants. About 90% of the inhabitants of the area traditionally practiced agriculture and livestock raising. Large areas had been deforested as a consequence of Acacia seyal felling for charcoal and fuel wood production. Shifting cultivation, cutting for building poles, lopping for grazing and other uses had contributed to deterioration of the area. So the life of the people had been negatively affected. Most of the people left to big towns and cities except women, old men and children who were left behind. The farmers were also interviewed about illicit felling. Nearly 92.7% of the respondents stated that illicit cutting contributed to the deterioration of Acacia seyal stands. (Table 1).

**Table 1:** Illicit felling of Acacia seyal stands

Answer	Frequency	% of respondents
Yes	65	92.7
No	5	7.3
Total	70	100.0

#### 4.3 Expansion of Mechanized Rain Fed Schemes

Nearly 97.1 % of respondents stated that mechanized rain fed schemes were the main cause of the deterioration. Also traditional cultivation and shifting cultivation affect Acacia seyal stands. (Table 2)

**Table 2:** Expansion of mechanized rain fed schemes

Answer	Frequency	% of respondents
Yes	68	97.1
No	2	2.9
Total	70	100.0

#### 4.4 Grazing lands

The development of mechanized farming in the area did not take into consideration the animal resource, which was gradually pushed out of their traditional grazing lands. This practice resulted in a high pressure on the grazing area. Also some animals completely depend on forest trees and that consequently resulted in affecting Acacia seyal by lopping and bending of tree branches. In the beginning of autumn, this had more effect on the

environmental degradation of the area. Atta El Moula, (1985) found that large areas of the state had been overgrazed to a point that now the area looked bare ground. He also found that there was a decrease in silt and content of the overgrazing area, which triggered the occurrence of erosion.

Generally, the expansion of mechanized schemes into farmers grazing lands blocks traditional stock routes and contributed to desertification (El Tayeb and Lewandowski, 1983). The variation of rainfall rate has negatively affected the environment and its components. The fluctuation of rainfall and the drought years of the eighties caused desertification, misuse of forests and soil erosion. El Tayeb et al (1983), explained that the annual distribution of rains remained fairly constant during the past thirty years. They considered July, August and September as the main rainy season which contributes about 75 % of the rain. Nearly 78.6 % of farmers stated that overgrazing contributed to the deterioration of Acacia seyal due to lopping and bending of these trees. (Table 3).

**Table 3:** Over grazing

Answer	frequency	% of respondents
Yes	55	78.6
No	15	21.4
Total	70	100.0

#### 4.5 Fires

Seasonal fires caused by human activities often damaged trees and grasses in the area every year. The damage of the vegetation cover affects soil, micro-organisms and minerals. About 80 % of the respondents said that fires also, contributed annually to damaging of Acacia seyal in study (Table 4).

**Table 4:** Fires

Answer	frequency	% of respondents
Yes	56	80
No	14	20
Total	70	100.0

#### 4.6 Refugees

Refugees in the area are fond of wood collection whether green or dry and accumulate the wood around their houses. Their aim is to secure their fuel and also for economic reasons. They cut trees without leaving any stumps. Beside that they own livestock which graze extensively in the area.

#### 4.7 Area Rehabilitation through Agro- Forestry System

The farmers were asked if it is possible to rehabilitate the area with Acacia seyal in an agro- forestry system. Nearly 98.8% of the respondents agreed to the idea

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.But that task needs provision of seeds and seedlings which must be provided to the farmers free or at very low prices. This can be achieved through an extension programme so as to train them on how to establish plantations, either by broadcasting seeds or by planting seedlings. The priority is focused on planting the fragile lands and khors. It is also important to let the farmers participate in sowing, planting and looking after the trees and provide protection without cost.

## 5. CONCLUSION

This study revealed that environment and natural vegetation had been degraded in Gedaref area. It was found that the main factors contributing to this deterioration of Acacia seyal stands in these areas are expansion of mechanized rain fed schemes and illicit felling of trees for charcoal production in a wide trade .The reasons attributed to overgrazing through lopping and bending of trees were :-

- a. Inadequate consideration for environment and natural resources due to unplanned horizontal expansion of mechanized rain fed agriculture and felling of the forests.
- b. Lack of definite environment policy to provide a base for positive and concrete actions leading to land and resource conservation.
- c. The absence of co-ordination between the concerned sectors such as Forest National Corporation (FNC), Mechanized Farming

Corporation (MFC), Range Management and Wildlife Administration Polices.

- d. The absence of legislation to deal with land tenure and environmental issues in a comprehensive way.

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