

Dedication

To The great prophet Mohamed (peace and prayers be upon him).

To My Mother, Brother, Sisters and Friends.

Acknowledgment

I praise and thank Allah for helping me, and I pray upon the soul of prophet Mohamed peace is upon him. I would like to express my deep gratitude and sincere appreciation to my supervisor Dr Farah Yousif Suliman who made a wide variety of input in to this piece of work.

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List of Tables

Table (1) Distribution of Respondent.....	16
Table (2) Age Groups.....	18
Table (3) Educational Levels.....	19
Table (4) Marital Status.....	19
Table (5) Occupations of Respondents.....	20
Table (6) Main Activities.....	20
Table (7) Perception of Farmers about Grazing inside the Forest.....	21
Table (8) Restocking Areas with Hashab through Taungya System.....	24
Table (9) Saving of Labor cost by Taungya System.....	27
Table (10) Perception of Taungya Farmers on the Cost of main Crops.....	28
Table (11) Perception of Farmers on mean production of Taungya Crops.....	28
Table (12) Benefits from Crops (Net Revenue Value) in SDG/ha.....	29

List of Plates and Maps

Map (1) Showing Delling and El Goz Localities.....	2
Map (2) Nabag Reserved Forest.....	2
Plate (1) Intercropping of Hashab with Hibiscus.....	23
Plate (2) Part of Nabag Nursery.....	25
Plate (3) Source of Water for Nabag Nursery.....	25
Plate (4) Deterioration of the forest (before rehabilitation).....	26
Plate (5) Rehabilitation of Nabag Forest Trough Taungya System....	26

Abbreviations and Acronyms

FEE: Forest Estate Enterprise

FAO: Food and Agricultural Organization of the United Nations

FED: Feddan

FNC: Forest National Corporation

ha: Hectar

IFAD: International Fund for Agricultural Development

SDG: Sudanese Pound

Cowpea: *Vigna unguiculata*

Dukhan: *Pennisetum typhoideum*

Dura: *Sorghum vulgare*

Groundnut: *Arachis hypogaea*

Hashab: *Acacia Senegal*

Karkade: *Hibiscus sabdariffa*

Melon: *Citrocyathus citrullus*

Onions: *Allium cepa*

Sesame: *Sesamum orientale*

Sunt: *Acacia nilotica*

Talih: *Acacia seyal*

Table of Content

Title	Page No
Dedication.....	I
Acknowledgement.....	II
List of Tables.....	III
List of plates and Maps.....	IV
Abbreviations and Acronyms.....	V
Table of Contents.....	VI
English Abstract.....	X
Arabic Abstract.....	XI

Chapter One

Introduction

1.1 General.....	1
1.2 Location.....	1
1.3 Nabag Reserved Forest.....	1
1.4 Climate.....	3
1.5 Soil Type and Topography.....	3

1.6 Geology.....	3
1.7 Vegetation.....	3
1.8 Population and Land Use.....	4
1.9 Agriculture.....	4
1.10 Problem Statement and justification	4
1.11 Objectives of the Study.....	5
1.12 Research Questions.....	5

Chapter Two

Literature Review

2.1 Introduction.....	6
2.2 Agroforestry System and Practices.....	7
2.3 Importance and benefits of Agroforestry.....	8
2.4 Taungya System.....	9
2.4.1 Classification of Taungya System.....	10
2.4.2 Taungya Practices in Some Selected Countries.....	11
2.4.3 Taungya Practices in Sudan.....	12
2.5 Socioeconomic benefits of Taungya System.....	14
2.6 Limitation and Constrains of Taungya System.....	14

Chapter Three

Materials and Methods

3.1 Primary Data.....	16
3.1.1 Selection of the villages and Respondents.....	16
3.1.2 Questionnaire.....	17
3.1.3 Interview.....	17
3.1.4 Observations.....	17
3.2 Secondary Data.....	17
3.3 Data Manipulation and Compilation.....	17
3.4 Data Analysis.....	17

Chapter Four

Results and Discussions

4.1 Characteristics and Perception of Respondent.....	18
4.1.1 Age.....	18
4.1.2 Educational Levels.....	19
4.1.3 Marital Status.....	19
4.1.4 Land Tenure.....	20
4.1.5 Main Activities.....	20
4.1.6 Perception about Grazing inside the Forest.....	21

4.2 Intercropping Hashab with Agricultural Crops.....	22
4.2.1 Hashab Establishment and Forest Rehabilitation.....	24
4.2.2 Restocking Areas with Hashab through Taungya.....	24
4.2.3 Saving of Labor Cost by Taungya.....	27
4.3 Gum Production.....	27
4.4 Crop Production.....	28
4.5 Perception of Taungya farmers on the cost of main crops.....	28
4.6 Perception of farmers on main production of Taungya Crops.....	28
4.7 Benefits from crops (Net Revenue).....	29

Chapter Five

Conclusions and Recommendations

5.1 conclusions.....	31
5.2 Recommendations.....	32
References	34
Appendix.....	36

ملخص الدراسة

أجريت هذه الدراسة في غابة نبق المحجوزة بمحلية القوز بولاية جنوب كردفان .

هدفت الدراسة إلى تقييم نظام ممارسة التونجيا بالاضافة إلى دراسة الآثار البيئية والاقتصادية - الاجتماعية ضمن برنامج إعادته ترميم الغابة والذي بدأ منذ العام 2003 باتباع نظام التونجيا في تنفيذ أنشطة الإستزراع والتي من خلالها تم ترميم (3024) ثلاثة الاف واربعه وعشرون هكتارا وهي تعادل (7200) سبعة الاف ومأتين فدان حيث تشكل نسبة 79% من المساحة الكلية للغابة.

إعتمدت الدراسة علي جمع البيانات الاولية وهي : الاستبيانات ، المقابلات ، الملاحظات وكذلك البيانات الثانوية مثل فحص الارشيف ، المراجع العلمية والاستعانة بشبكة الانترنت.

تم تحليل البيانات بإستخدام برنامج (SPSS) مع التركيز علي التوزيع التكراري.

أوضحت الدراسة أن هنالك نوعين من التونجيا بالغابة هي التونجيا المصلحية والتي تمارس بواسطة حراس الغابات وتشكل نسبة 10% من المبحوثين و التونجيا التقليدية والتي يمارسها المزارعون وتشكل نسبة 90% من العينة .

أسهمت التونجيا في تقليل نفقات الاستزراع بتوفيرها لحوالي 40 يوم عمل / هكتار/ الموسم (17 يوم عمل/فدان/الموسم) بتكلفة (255ج) مائتان خمسة وخمسون جنيه سوداني لكل فدان في الموسم.

هنالك فئة من المزارعين تمثل 41.7 % من العينة المبحوثة لا تملك أراضي زراعية تخصهم . ولقد أسهمت التونجيا في توفير الأرض الزراعية لهم .

أشارت الدراسة أن هنالك محاصيل رئيسية مسموح بزراعتها داخل الغابة وهي السمسم ، اللوبيا ، الفول السوداني ، الكركدي ، والبطيخ لأنها لا تعوق نمو شتلات الهشاب وذلك على إفاده مسؤولي الغابة. كما دلت النتائج بأن أغلب المزارعين يقومون بعمليات الطق وجمع الصمغ بعد مروره أربعة اعوام من

تاريخ إستزراع شتلات الهشاب علي ان يتم تقسيم إنتاج الصمغ مناصفة بين المزارع والهيئة القومية للغابات .

خلصت الدراسة بأن قيمة بيع نصيب المزارع من الصمغ المنتج مع انتاجه المحاصيل الاخرى تمثل حوالي 50% من إجمالي دخله السنوي .

Abstracts

The study was carried out in Nabag Reserved forest in El Qoz locality within Southern Kordofan State.

The main objective of the research was to assess Taungya practice in the study area, in addition to its ecological and socio- economic impact, within the rehabilitation programme of the forest. It was started since 2003 applying Taungya System in reforestation activities.

The practice succeeded to replant about (3024 ha) in nine years (7200 Fed). This figure constitutes (79%) of the forest total area.

The Research Methodology used was primary data such as Questionnaires, Interviews, and Observations; whereas the secondary data was Screening of Archives, Textbooks and Internet.

A package of (SPSS) programme was installed for data analysis. Mainly frequency distribution was used.

According to the study, two types of Taungya were found in the forest. Namely Departmental Taungya which was practiced by forest guards, with a percentage of 10% of respondents. The other type is traditional Taungya, which practiced by local farmers. With a percentage of 90% of respondents.

Through Taungya practices, results showed a reduction and saving of the initial establishment cost of the plantation for (40 man-day) /ha/season, which was about (17 man-day) /Fed/season. Costing of (255 SDG) /Fed in season 2012.

The system provided land for landless farmers. In this respect 41.7% of the respondent admitted that they own no agricultural land other than that provided by Taungya.

The study showed that, certain crops were allowed to be planted inside the forest such as; sesame, cowpea, groundnut, Hibiscus and Mellon. Because they have no negative interaction with Hashab seedling according to forest officials.

According to research findings, most of Taungya farmers practicing the activates of gum Tapping after (4) four year from Hashab planting on the basis of equal share with FNC.

The study reveals that the farmer's income from gum selling and crop production together was forming about (50%) of the total annual house hold income.