

Dedication

To

My late teacher Mr. Mohammad Ahamed Hamad

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Contents

Contents -----	page
Dedication-----	I
Acknowledgement-----	II
List of Contents-----	III
List of Tables-----	VIII
List of Figures-----	IX
List of map-----	IX
English Abstract-----	X
Arabic Abstract-----	XII

Chapter I

Introduction

Contents -----	page
1.1General-----	1
1.2 The Study Area-----	1
1.3 The Climate-----	3
1.4 The Vegetation-----	3
1.5 Topography-----	3
1.6 The Soil and Water Sources -----	3
1.7 Land Use types-----	4
1.8 Previously Projects in the Area-----	7
1.9 The Problem-----	7
1.10 Objective of study-----	8
1.11 The Hypothesis-----	8

Chapter II

Literature Review

2.1 General-----	9
2.2 Economic Importance of Rangeland-----	11
2.3 Ecological Importance of Rangeland-----	12
2.4 Social Importance of Rangeland-----	13
2.5 Pattern of an Open Rangeland Utilization-----	14
2.5.1 General-----	14
2.5.2 Main User for Rangeland Utilization-----	14
2.5.3 Traditional Strategy for Open Rangeland Utilization-----	15
2.5.4 Traditional Herd-----	17
2.5.5 The Importance of Mobility Herds on Rangeland-----	19
2.5.6 The Importance of the Time Use of Rangeland-----	21
2.5.7 Problems in the Rangeland Utilization-----	22
2.6 Range Resource Assessment and Evaluation -----	24
2.6.1 General-----	24
2.6.2 Purposes of Range Resource Assessment and Evaluation-----	26
2.6.3 Parameters of Range Assessment-----	27
2.6.3.1 Ground Vegetation Cover Survey-----	27
2.6.3.2 Tree Cover Survey-----	28
2.6.3.3 Carrying Capacity and Stocking Rate Assessment-----	29
2.7 Concepts and Purpose of Rangeland Management-----	31
2.7.1 General-----	31
2.7.2 Traditional Range Management-----	31
2.7.3 New Concepts of Rangeland Management-----	34
2.7.3.1 Ecological and Economic Carrying Capacity-----	34
2.7.3.2 Grazing Ecologies not at Equilibrium-----	35
2.7.3.3 The Spatial Heterogeneity of Rangeland Resources-----	36
2.8 Socioeconomic Aspects of Rangeland-----	37
2.9 Seed Bank-----	38

2.9.1 General-----	38
2.9.2 Seed Bank Sampling and Estimation-----	39
2.9.3 The Nature of Seed Bank Biology-----	40
2.9.4 Relationship between Seed Bank and Species Composition-----	41
2.9.5 Persistency and Buried Seed-----	42
2.9.6 Effects of Grazing on the Seed Bank-----	42
2.10 Sustainability in Range Management-----	43
2.10.1 General-----	43
2.10.2 Challenges to Sustainability-----	43
2.10.3 Effect of Utilization Rangeland on Sustainability-----	44
2.10.4 Effect Balancing Herbage Growth with Defoliation on Sustainability-----	45
2.10.5 Effected Drought in the Pastoralism Strategy for Sustainability----	45

Chapter III

Materials and Method

3.1 General -----	47
3.2 Range Vegetation Assessment-----	47
3.2.1 Materials used-----	47
3.2.2 Sampling Procedure-----	47
3.2.3 Browse Sampling and Assessment-----	49
3.2.4 Carrying Capacity-----	49
3.3 Seed Bank Assessment-----	50
3.4.1 Seed Bank Sampling-----	50
3.4.2 Seed Extraction-----	50
3.4.3 Seed Identification-----	51
3.5 Range Socioeconomic Survey-----	51

3.6 Data Analysis-----	51
------------------------	----

Chapter IV

Results and Discussion

4.1 Vegetation Assessment-----	53
4.1.1 Ground Cover Assessment-----	53
4.1.1.1 Cover Percentage-----	53
4.1.1.2 Frequency-----	55
4.1.1.3 Species Composition-----	57
4.1.1.4 Diversity-----	57
4.1.1.5 Dominance-----	58
4.1.1.6 Density-----	62
4.1.1.7 Biomass-----	62
4.1.1.8 Grazing Browsing ratio-----	63
4.1.2 Trees Assessment-----	64
4.1.2.1 Canopy Cover-----	64
4.1.2.2 Browse Productivity-----	64
4.1.2.3 Trees Density-----	64
4.2 Seed bank-----	65
4.3 Socioeconomic Aspects-----	69
4.3.1 Age-----	69
4.3.2 Education Levels-----	69
4.3.3 Children Education-----	70
4.3.4 Diversification of income sources-----	71
4.3.5 Utilization of Range Resources-----	74
4.3.5.1 Selection of Grazing Sites-----	74
4.3.5.2 Range assessment by users-----	75
4.3.5.3 Movement Pattern-----	75

4.3.5.4 Herds Structure-----	76
4.3.5.5 Grazing Pattern-----	78
4.3.5.6 Regularity of using rainy season domain-----	78
4.3.5.7 Regularity of using dry season domain-----	80
4.3.5.8 The Time of Entrance to the Forest-----	80
4.3.5.9 The Time of Exit from the Forest-----	81
4.3.5.10 Duration of the stay in the area-----	81
4.3.11 Livestock ownership-----	82
5. Conclusion and Recommendations-----	87
6. References-----	89
7. Appendix 1-----	101
8. Appendix 2-----	104

List of Tables

<u>Table</u>	<u>page</u>
1. Percentages of plant cover, bare soil, and litter for early and late readings at both sites (A & B)-----	54
2. Plant density per /m ² for the early and late readings at both sites (A&B)-----	54
3. Average biomass graze productivity (ton/ ha) for the two readings at both sites (A&B)-----	54
4. Percentages of plant frequency for early and late readings at both Sites (A & B)-----	56
5. Percentages of plant composition and diversity for the early and late readings at both sites (A& B)-----	59
6. Percentages of plant dominance for the tow readings at both sites (A&B)-----	60
7. Percentage of Grazing browsing ratio-----	61
8. Average browse productivity and trees density per /ha-----	61
9. Seed bank (Seed /m ²) for the different spp in open and forested site-----	68
10. Percentages of Nomads, Villagers and farmers according to age groups-----	72
11. Percentages of Nomads, Villagers and farmers according to education levels-----	72
12. Percentages of the three groups according to willing of sending children to school-----	73
13. Percentages of Nomads, Villagers and farmers according to diversification of income sources-----	73
14. Percentages of users groups according to site selection-----	79
15. Users % according to range assessment-----	79

16. Percentages of all groups according to movement pattern-----	83
17. Percentages of herds structure between all groups-----	83
18. Percentages of the grazing pattern for all groups-----	84
19. Percentage of all users according to regularity of using summer domain-----	84
20. Percentages of the users according to the time of entrance-----	85
21. Percentages of the users according to the time of exit-----	85
22. Percentages of the users according to the duration of stay in the forest-----	86
23. Percentages of livestock ownership between all groups-----	86

List of Figures

1. Figure: 1 sampling plots and schematic map for the transects layout in the 1st and 2nd readings-----	52
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List of Maps

1. Map: 1 situation map of rawashda and wad kabo forest-----	2
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ABSTRACT

The study was conducted in (Rawashda forest) east of Gedarif areas. Under the objective of investigating the key approaches towards sustainable management of natural rangelands. Provision of information that assist in range management is rather problematic under existing pattern of open rangeland use, in term of numbers and types of livestock, time of entrance, time of exist, and duration of the stay. Where range resources and their pattern of utilization were assessed in carried twice in the rainy season early and late, the early was in the first week of August, and the late was in October, where ground cover was assessed in the four sites in open and forested areas, each of the sites with an area of two ha. In addition to tow, circular plots for assessment available browse each of the circular plots with an area of 0.1ha. The seed bank was assessment at both sites, where the socioeconomic survey done for the pastoral communities. The quantitative and qualitative assessment such as composition, density, frequency, diversity, covers, biomass productivity and carrying capacity in the ground vegetation were assessed. In addition to quantitative and qualitative assessment such as trees density, height, browsing level, diameter at browsing point, crown area, diameter at breast height, available twigs numbers and available browse productivity in the forested range were done. Data collected were organized and tabulated for vegetation survey. The study showed that, there were variations in the quantitative and qualitative results of the cover assessment between open and forested areas. The open site has higher frequency, density, composition, cover, biomass productivity than forested site at both assessment readings. The open site was dominated by *Justica flava*, (الفخة), *Chenopodium spp* (العفين) and *Spermacoce spp* (أم دقيبات) early and *Justica flava* (الفخة), *Coccirea grandis* (خضرة), *Abutilon spp* (أم قريقدانا) and *Corchorus spp* (عرق أبو دم).

late, while the forested are dominated by *Justica flava* (الفخة), *Pennisetum spp* (ضنب الكديس) and *Brachiaria eruciformis* (أم فراو) early reading and *Justica flava* (الفخة), *Coccirea grandis* (عرق أبو دم), *Pennisetum spp* (ضنب الكديس) and *Ophirus spp* (الرزة) late reading. The results showed that, the available browse estimated as relatively low, because the density of trees was high leading to tall trees and less all available branches. According to this the grazing browsing ratio was small. The seed bank density obtained was 703 seed /m² in open site and 391 seed /m² in the forested site, where many of species were absent in the seed bank. The study showed that the rangeland and forest were utilized by three groups of users (Nomads- Villagers- Farmers). The socioeconomic survey showed that, 86.66% of the nomads, 69.23% of the villagers and 83.33% of the farmers were illiterate. The herders from all groups preferred herding in open grazing area, because they had different kinds of livestock and an open site has higher productivity than forested site. The majority of the herders come to the areas early in the season for 2-3 months, this is considered as an improper time of use, and such utilization has its negative impact on the range resource, and may affect the species composition and production of the vegetation. The study concluded that there is a need for management interventions rainy season and summer domains in addition to transhumant routes in order to control reasonable the time of entrance and exit in addition to duration of stay.

ملخص الدراسة

أجريت الدراسة في غابة الرواشدة شرق منطقة القضارف, بهدف استقراء المؤشرات المناسبة لإدارة المراعي الطبيعية. التزود بالمعلومات يساعد على إدارة المراعي الطبيعية من خلال منظور المشاكل المرتبطة بأنماط استغلال المرعى الطبيعي والتي ترتبط بأعداد و أنماط الماشية و زمن الدخول و الخروج و مدة البقاء.

أجري تقدير المورد الرعوية و أنماط استغلالها على مرحلتين (مبكرة - متأخرة) خلال موسم النمو. كانت المرحلة المبكرة في بداية الأسبوع الأول من شهر آب (أغسطس) و كانت المرحلة المتأخرة في شهر تشرين الأول (أكتوبر). قدر الغطاء النباتي العشبي في أربعة مواقع من مناطق الرعي المفتوحة و الغاييه مساحة كل موقع (2 هكتار) إضافة إلى تقدير العلف الشجري المتاح في قطاعين دائريين مساحة كل قطاع (0.1 هكتار). قدر المخزون البذري للتربة في الموقعين كذلك تم إجراء المسح الاقتصادي الاجتماعي للمجتمعات الرعوية. التقديرات الكمية و النوعية علي سبيل المثال التركيب النوعي, الكثافة, التنوع, التغطية, الإنتاجية, الحمولة الرعوية للغطاء النباتي العشبي قدرت إضافة إلى تقدير الكثافة الشجرية, ارتفاع الأشجار, مستوى الرعي الشجري, قطر الفرع عند نقطة القطم, المساحة التاجية, قطر الساق عند مستوى الصدر, عدد الفروع المتاحة, الإنتاجية العلفية الشجرية المتاحة قد تم تقديرها للمرعى العلفي الشجري. المعلومات المتحصل عليها فقد نظمت و جدولت لمسح الغطاء النباتي. أظهرت الدراسة أن هنالك فروقات كمية و نوعيه لنتائج تقدير الغطاء النباتي العشبي بين مناطق الرعي المفتوحة و الغاييه. فمناطق الرعي المفتوحة تمتلك نسبة أعلى من التردد, الكثافة, التركيب النوعي, التغطية و الإنتاجية النباتية من المناطق الغاييه و على مرحلتي القراءات. مناطق الرعي المفتوحة كانت سائدة بنبات الفخه و العفين و ام دقيلات في القراء المبكرة و الفخه و عرق أبو دم و أم قرقيدانه في القراء المتأخره بينما مناطق الرعي الغاييه كانت سائدة بنبات الفخه و ضنب الكديس و أم فراو في القراء المبكرة و نبات الفخه و عرق أبو دم و ضنب الكديس و الرزة في القراء المتأخرة. أوضحت النتائج أن كمية العلف الشجري المتاح كانت منخفضة و ذلك بسبب ارتفاع الكثافة الشجرية العالية التي أدت إلى زيادة في ارتفاع الأشجار مما قلل من الفروع العلفية الشجرية المتاحة و لذلك فان نسبة العلاقة بين العلف الشجري و العشبي كانت صغيرة. كثافة المخزون البذري للتربة المتحصل

عليها كانت 703 بذره في المتر المربع في مناطق الرعي المفتوحة و 391 بذره في المتر المربع في المناطق الغابية بينما كان هناك غياب لبذور العديد من الأنواع النباتية من المخزون البذري للتربة. أظهرت الدراسة بأن المرعى و الغابة يتعرضان للاستغلال من قبل ثلاثة أنماط من المستخدمين وهم (الرحل, القرويين و المزارعين). اظهر المسح الاقتصادي الاجتماعي للدراسة أن 86.66 % من الرحل و 69.23 % من القرويين 83.33 % من المزارعين أميين و أن كل الرعاة من تلك الأنماط المستغلة يفضلون رعي حيواناتهم في مناطق الرعي المفتوحة لأنهم يمتلكون أنواعا مختلفة من الماشية ومناطق الرعي المفتوحة أعلى إنتاجيه من المناطق الغابية. لوحظ أن غالبية الرعاة يدخلون الى الغابة و يستخدمونها في وقت مبكر مما يعتبر أن له التأثير السلبي على حالة الموارد الرعوية بما في ذلك التركيب النوعي و الانتاجية. وقد أوصت الدراسة بضرورة النظر في تدخلات بكل من المصايف و المخاريف و المسارات بغرض التأثير على زمن الدخول و الخروج و مدة البقاء بالإضافة الى تطوير آلية الاستفادة من الرعي الصيفي.