

Dedication

To all my family

To all my friends

To all those who supported me

Acknowledgement

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List of contents

Contents

	page
Dedication	i
Acknowledgement	ii
List of contents	iii
List of tables	x
List of figures.....	xi
List of maps	xii
List of plates.....	xiii
Abstract	xiv
المخلص.....	xvi

Chapter One

Introduction

1.1 The Study

Area.....	1
1.1.1 Location.....	...1
1.1.2 Population.....1
1.1.3 Topography.....	..3
1.1.4 Climate.....	.3
1.1.5 Vegetation.....	...3
1.1.6 Soil.....	5
	1.1.7 Water
Sources.....	5
	1.1.8 Traditional livestock migration
	routes.....
	8
1.1.9 Land- use.....8
	1.1.10 Socio-economic
aspects.....	9

1.1.11	Research problem and justification.....	14
1.1.12	The objectives.....	15

Chapter Two

Literature Review

2.1	General.....	17
2.2	Range land.....	23
2.3	Range management.....	25
2.4	Current methods of range evaluation.....	29
2.5	Range utilization.....	30
2.5.1	Physical factors affecting the use of rangelands.....	32
2.5.1.1	Soil.....	32
2.5.1.3	Precipitation.....	32

2.5.1.4	
Humidity.....	34
2.5.1.5	
Temperature.....	35
2.5.1.6	
Evaporation.....	35
2.5.1.7	
Climate.....	35
2.5.2 Effect of man uses and his cattle on rangeland.....	37
2.6 Plant succession.....	
...38	
2.6.1 Types of succession.....	40
2.6.1.1 Primary succession.....	40
2.6.1.2 Secondary succession.....	40
2.7 Plant-animal relationships.....	41
2.7.1 Grazing resistance.....	43
2.7.2 Species replacement.....	47

2.8 Pastoral systems.....	49
2.8.1 Nomadic system.....	49
2.9 Range problems.....	50
2.9.1 Soil degradation.....	52
2.9.2 The causes of soil degradation.....	52
2.9.3 Problems of land degradation in the Sudan.....	53
2.9.4 The analysis of soil degradation from an economic perspective...58	
2.10 Livestock.....	59
2.10.1 Livestock production.....	59
2.10.2 Water requirements for range livestock.....	60
2.11 Range assessment and evaluation.....	61
2.11.1 Vegetation cover.....	62

2.11.2 Density.....	
...63	
2.11.3 Plant composition.....	63
2.11.4 Biomass production.....	63
2.11.5 Carrying capacity.....	64
2.11.6 Stocking rate.....	
.....65	
2.11.6.1 The Adjusting of the stocking rate.....	65
2.11.6.2 Effect of livestock distribution upon grazing capacity.....	67
2.11.7 Range condition.....	68
2.11.8 Range condition trend.....	70
2.12 Forage production.....	71
2.13 Nutrition value.....	
...71	
2.13.1 The nutritive value of natural rangeland vegetation.....	72

2.13.2 Factors used in determining the value of rangeland.....	75
2.13.3 Effect of grazing on forage yield and feed quality.....	76
2.14 Feed conservation.....	77
2.14.1 Hay making.....	77
2.14.2 Silage making	83
2.14.2.1 Advantages of silage making.....	84
2.14.2.2 Different shapes of silage storage pits.....	85
2.14.2.3 Silage quality.....	87
2.15 Seed bank.....	87
2.15.1 Seed bank sampling.....	88
2.15.2 Dormancy status	89
2.16 Range improvement.....	90

2.16.1 The importance of range land improvement and development.....90

2.16.2 The ways of improving and developing rangelands.....91

2.16.2.1

Inventory.....91

2.16.2.2 Pilot areas

protection.....92

2.16.2.3 The use of water spreading for range land improvement.....94

2.16.2.4 Rangelands proper administration and control.....95

Chapter Three

Materials and Methods

3.1

General.....97

3.2 Vegetation

measurement.....97

3.2.1 Objectives.....
...97

3.2.2 Methods used in range vegetation measurements.....98

3.2.3 Equipment used.....	98
3.2.4 Number of measuring sample to be recorded.....	99
3.2.5 Method of vegetation measurements for the determination of condition.....	101
3.2.6 The determination of range condition.....	101
3.2.7 Method of measuring forage production for the assessment of the range carrying capacity.....	102
3.2.8 Carrying capacity.....	102
3.3 General.....	103
3.3.1 Silage making.....	103
3.3.2 Hay making.....	106
3.3.3 Crude protein content.....	106

3.3.4 Crude fiber content.....	106
3.4 Seed bank assessment.....	106
3.4.1 General.....	106
3.4.2 Seed extraction.....	107

Chapter Four

Results and Discussions

4.1 Vegetation measurements.....	108
4.1.1 Dominance.....	108
4.1.2 Species composition percentage.....	110
4.1.3 Forage composition percentage.....	112
4.1.4 Range condition class.....	113
4.1.5 Relative species frequency.....	114

4.1.6 Plant density.....	116
4.1.7 Vegetation cover.....	117
4.1.8 Forage production.....	118
4.1.9 Carrying capacity.....	119
4.2 Conserved forage.....	120
4.2.1 Crude protein.....	120
4.2.2 Crude fiber.....	121
4.3 Seed bank.....	122

Chapter Five

Conclusions and Recommendations

Conclusions	125
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Recommendations	127
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REFERENCES

Appendix

1. Temperatures (C°) in Babanousa station (from year 1978-2007)	146
2. Annual Rainfall (mm) in Babanousa station (from year 1978-2007)	147

List of Tables

Table	
Page	
1. Crude protein and crude fiber content of some forage plants in south Kordofan.....	78
2. The impacts of time on the CP % and CF % in south Kordofan...82	

3. The four dominant species for the two seasons (2006,2007)	110
4. Species composition percentage for the two seasons (2006,2007)112 Forage composition percentage for the two seasons (2006, 2007)..113 Range condition class for the two seasons (20062007).....	114
5. Relative species frequency for the two seasons (2006, 2007)...	116
6. Plant density for the two seasons (2006, 2007).....	117
7. Vegetation cover for the two seasons (2006, 2007)	118
8. Forage productions for the two seasons (2006, 2007)	119
9. Carrying capacity for the two seasons (2006, 2007)	120
10. The crude protein for the silage and the hay.....	121
11. The crude fiber of the silage and the hay.....	122
12. Seed bank density (seed/m ²) for the two depths (0-5 cm and 5-10 cm)	124

13. Seed bank (seed/m ²) for the different species in the two depths (0-5 cm and 5-10 cm)	124
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List of Figures

Figure.....	Pa ge
1. The recording sheet: - (100 points)	99
2. The sampling curve.....	100
3. Range condition classification.....	102

List of Maps

Map.....	page
1. Location of the study area.....	2
2. Annual pastoral migration routes in Sudan.....	6
3. Nomadic migration of Kordofan.....	7
4. Sudan regional environments.....	18
5. Sudan vegetation.....	19
6. Sudan average annual precipitation.....	33
7. Sudan average annual temperature.....	36

8. Protected areas of Sudan.....93

List of Plates

Plate	page
1. Donkeys are used to bring water for daily needs.....	10
2. Temporary Baggara houses.....	11
3. The temporary house of Baggara from inside.....	12
4. Oxen are used by Baggara for transportation.....	13
5. Crops grown by settlers.	21

6. Tree cutting at the area, is a sign of vegetation misuse.....	56
7. Silage making.....	104
8. Hay making.	105
9. Introduction of sheep as a new kind of animals.....	111
10.Deterioration of dry season area.	115
11.Nylon plastic bag used for the silage making.....	126
12.Shelter used for hay stocking at Babanousa area.	128
13.Stocked hay to be used during the summer time.	129
14.Range plants species are also used for building rakobas.....	130
15.Other uses of donkeys, they are used to transport hay from the field to the settlement areas.	131

Abstract

This study was conducted at Babanousa area, which is located in the western part of the south Kordofan state, between latitudes (10° - 12°) north and longitudes (27° - 29°) east. It lies at the low rainfall woodland savannah zone. The area is estimated to be about 15,000,000

feddans. Inhabitants of Babanousa area are mainly Baggara tribes, who are cattle breeders and they cultivate some crops beside grazing which is their main activity. The overall objective is to study the performance of some selected natural range plant species which currently are considered the main source of livestock feed within the study area. This study aims to select suitable methods and techniques that are to be used in forage conservation such as hay and silage making to improve livestock feed balance during the dry season. Also to determine if the rangelands under open grazing practices conform to the conventional thinking of decreased productivity.

The methodology used in the study included botanical measurements for the assessment of range vegetation composition, density, relative frequency and soil vegetation cover. This information was used in the determination of range vegetation current condition. The total forage biomass production was also measured for the determination of the range vegetation carrying capacity within the study area. Chemical analysis was used to determine crude protein and crude fiber of silage and hay. Soil samples were taken and a seed extraction technique was used to determine the seed bank of the area.

The study showed that the current condition of the range grass species of the area is affected largely by the

current utilization of its plants. The normal practice in the area is the grazing of the same plant species, by the same class of livestock at the same time yearly. Such practice is bound to bring about the suppression of certain plant species in favour of others. This practice results in the decrease of desirable plant species and increase of less desirable ones and the appearance of invader plant species. The study also showed that the cattle of the semi-nomadic tribes surrounding Babanousa usually suffer from shortage of grazing during summer time, so the remaining range plants (especially *Zornia diphylla* and *Eragrostis tremula*) can be harvested during the flowering stage and conserved whether as silage or hay to be used as feed for livestock during summer time.

الملخص

اجريت هذه الدراسة بمنطقة بابنوسة الواقعة بالمنطقة الغربية لولاية جنوب كردفان بين خطى عرض 12° - 10° شمالاً وخطى طول 29° - 27° شرقاً وذلك ضمن منطقة السافنا الشجرية منخفضة الأمطار. تقدر مساحة المنطقة بحوالى 15.000.000 فدان.

هذه المنطقة تعتبر المنطقة الرئيسة لقبائل المسيرية الذين يمتنون الرعى كمهنة أساسية إضافة الى الزراعة التقليدية والتي يمارسها بعض شبه المستقرين منهم.

الهدف الرئيسى لهذه الدراسة هو معرفة أداء مجموعة مختارة من نباتات المراعى التى تعتبر المصدر الاساسى حالياً لغذاء الثروة الحيوانية بالمنطقة وذلك لتقييم المكون النوعى لهذه النباتات كماً ونوعاً للإستفادة من هذه المعلومات لتحديد الوضع الراهن لهذه الأنواع النباتية من حيث كمية العلف الذى توفره وذلك لتحديد حمولة المرعى بالمنطقة.

كما أن الدراسة هدفت الى معرفة أفضل السبل لحفظ المتبقى من علف الحيوانات بالمنطقة بعد موسم الخريف وكيفية الإستفادة منه لسد النقص فى العلف فى الفترات الحرجة من السنة (خاصة موسم الصيف) وذلك اما فى صورة دريس أو سيلاج. هذا بالإضافة الى معرفة ما إذا كانت طريقة الممارسة الحالية لمنشط الرعى بالمنطقة ستؤدى الى تدهور المرعى تدريجياً أم غير ذلك.

استخدمت الدراسة طريقة قياسات النباتات لتقييم المكون النوعى لنباتات المرعى بالمنطقة، كثافة هذه النباتات، ترددها النسبى والتغطية الأرضية بالنباتات. وإستخدمت هذه المعلومات لتحديد ظرف النباتات الحالى بالمنطقة. كما أن الأنتاجية العلفية للمرعى تم قياسها لتحديد حمولة المرعى. هذا بالإضافة الى التحليل الكيمياءى الذى تم عمله للسيلاج والدريس لتحديد البروتين الخام والالياف الخام فيهما، كما أنه اخذت عينات للبذور من تربة المرعى بالمنطقة وتم استخلاصها لمعرفة مخزون البذور فيها.

توصلت الدراسة الى أن الممارسة الحالية لعملية الرعى والمتمثلة في الرعى لنفس النبات بنفس النوع الحيوانى فى نفس الفترة الزمنية من السنة سيؤدى وبمرور الزمن الى اختفاء مجموعة من النباتات وبخاصة النباتات المرغوبة للحيوان بصورة أفضل لتحل محلها نباتات اخرى أقل منها إستساغة مما يؤدى بمرور الزمن لسيادة الانواع الغازية.

كما أن الدراسة توصلت الى أن ابقار الرعاة شبه المتنقلين وبخاصة الموجودين حول بابنوسة تعاني من نقص في الغذاء فترة الصيف من السنة لذلك يمكن الإستفادة من المتبقى من العلف بعد عملية الرعى في الخريف ليحفظ في شكل دريس أو سيلاج ويستفاد منه في الفترة الحرجة.