

## **Dedication**

I send my words, my work, and my hopes, to those who made me a successful person, taught me to cry when I succeed and laugh when I fall down; to my father's soul.

I think I am the luckiest person in the world, because I had a father like him; really he was the greatest friend, the eldest brother and the true father.

I wished to have written this thesis by my tears, but I do not want my father to feel sad in his grave, hoping to see him in my dreams, and to tell him how much the work was difficult, for no reason except his being very very far from me.

I wish to meet him in paradise with our honored prophet MOHAMED, and to make him very proud of his son Elmegdad.

Oh, father, I really miss you very much.....

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## Contents

Dedication.....	I
Acknowledgements... ..	II
Contents .....	III
List of Tables .....	V
List of charts.....	VII
List of Maps.....	VIII
English Abstract.....	IX
Arabic Abstract.....	XI
<b>Chapter One:</b> Introduction .....	1
<b>Chapter Two:</b> Literature Review .....	5
2.1 Camel population .....	6
2.2 Camels types in Sudan .....	6
2.3 Gedarif State .....	7
2.4 Butana Locality .....	8
2.4.1 Climate .....	9
2.4.2 Soil Types .....	9
2.4.3 The Plant Cover .....	9
2.4.4 Camel Research Center – El Showak .....	9
2.5 Production Systems .....	10
2.5.1 Nomadic .....	10
2.5.2 Transhuman or Semi intensive System .....	10
2.5.3 Intensive System .....	10
2.6 Camel Movements .....	10
2.7 Agricultural By-products .....	11
2.7.1 Mechanized Sorghum Farming .....	11
2.8 Ranchland.....	11

2.9 Water Resources .....	12
2.10 Pastoral System.....	12
2.11 Camel Uses.....	13
2.12 Camel Meat.....	13
2.12.1 Dressing Percentage and Camel Weight .....	15
2.12.2 Processing of Camel Meat .....	17
2.13 Camel Milk .....	18
2.14 Camel Marketing.....	20
2.15 Camel Leather.....	21
2.16 Camel Hair.....	23
2.17 Work.....	23
<b>Chapter Three: Materials and Methods.....</b>	<b>24</b>
3.1 Questionnaire.....	25
3.2 Geographic Information System (GIS).....	25
3.3 Normalized Difference Vegetation Index (NDVI).....	25
3.4 Rain Fall Distribution System (RFE).....	26
3.5 Using of Geographic Information System GIS.....	27
3.5.1 Satellite images.....	27
3.5.2 Processing of data.....	27
3.6 Questionnaire No. 1.....	28
3.7 Questionnaire No. 2.....	32
Charts.....	38
<b>Chapter Four: Results and Discussion .....</b>	<b>44</b>
<b>Chapter Five: Conclusions and Recommendations.....</b>	<b>49</b>
<b>References .....</b>	<b>52</b>
<b>Appendices.....</b>	<b>58</b>
<b>Questionnaires .....</b>	<b>59</b>
<b>Maps .....</b>	<b>63</b>

### List of tables

Table No.	Title	Page
1.	Total No. of camel reported in Gedarif State	8
2.	The No. of slaughtered camel in Gedarif abattoir 2005	13
3.	The Marketing process	28
4.	Sources of camels to El Showak market	28
5.	Reasons for selling camels	29
6.	Most expensive camel breeds at El Showak camel market	29
7.	Minimum and maximum prices at El Showak camel market	29
8.	Minimum and maximum prices for mature she-camels	29
9.	Minimum and maximum prices for camel calves	30
10.	Number of camel farms in Gedarif State	30
11.	Using agricultural by-products in camel feeding	30
12.	Uses of traditional medicines)	31
13.	Average daily milk production of she-camels(pounds)	31
14.	Importance of camel products	31
15.	Acceptance of ranches establishment	31
16.	Camel meat and milk demand	32
17.	Have you eaten camel meat?	32
18.	Meat test description	32
19.	Palatability	32
20.	Smell	33
21.	Flavour	33
22.	Increases of camel meat consumption	32
23.	The consumption when camel meat price be low	34
24.	Can camel meat compete in the meat market?	34
25.	Drinking camel milk	34
26.	Milk test description	34
27.	Palatability	35
28.	Smell	35
29.	Flavour	35
30.	Preferable milk in the milk market	36
31.	Can camel milk is processed?	36
32.	Marketing of camel milk products	36
33.	Possibility of marketing camel milk	36
34.	Camel milk uses	37
35.	Difference in the taste between cow milk and camel milk	37

36.	Camel milk influence on milk marketing	37
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### List of charts

No. of chart	Title	Page
1.	Prices of camel at El Showak market	38
2.	Number of camel herds at El Showak market	38
3.	Best age and sex for selling and buying	39
4.	Most uses for selling camels	39
5.	Fattening camels before slaughter	40
6.	Number of camel herds prepared for export	40
7.	Camel feeding system	41
8.	Water sources in Gedarif State	41
9.	Availability of water in Gedarif State (on the tracks)	42
10	Availability of camel veterinary care in Gedarif State	42
11.	Availability of camel meat in the meat market	43
12.	Availability of she-camel milk in the market	43

### List of maps

No.	Title	Page
1.	Gedarif State Boundaries	64
2.	The localities - Gedarif State	65
3.	Satellite Image - Rain Fall Estimation (RFE) Gedarif State (2001)	66
4.	Elevation – Gedarif State	67
5.	Farms Areas – Gedarif State	68
6.	Normalize Difference Vegetation Index (NDVI) Gedarif State - Dry Season (2000)	69
7.	Normalize Difference Vegetation Index (NDVI) Gedarif State - Dry Season (2001)	70
8.	Normalize Difference Vegetation Index (NDVI) Gedarif State - Dry Season (2002)	71
9.	Normalize Difference Vegetation Index (NDVI) Gedarif State - Dry Season (2003)	72
10.	Normalize Difference Vegetation Index (NDVI) Gedarif State - Dry Season (2004)	73
11.	Rain Fall Estimation (RFE) Gedarif State – Rainy Season (2000)	74
12.	Rain Fall Estimation (RFE) Gedarif State – Rainy Season (2001)	75
13.	Rain Fall Estimation (RFE) Gedarif State – Rainy Season (2002)	76
14.	Rain Fall Estimation (RFE) Gedarif State – Rainy Season (2003)	77
15.	Rain Fall Estimation (RFE)	78

## **Abstract**

This study was carried out in Gedarif State, (November 2006 to February 2007) to evaluate camel production potentials and availability of natural resources that help to locate optimum places for camel ranches, using the facilities of Geographic Information System (GIS).

The methods used in the study were questionnaires in two sample groups, of 25 camel owners in the largest two camel markets (El Showak and Gedarif market). and the second group of 25 consumers in Gedarif University.

Visits were made to El Showak and Gedarif camel markets, El Showak Camel Research Center, Gedarif University, Gedarif Pastoralists Union, Gedarif slaughter house, Finance Ministry – Herd Administration and Ministry of Agriculture and Animal Resources.

Data were collected from the Web to make maps and satellite images of Gedarif State, to record the rain fall estimation (RFE), Topography and Normalized Difference Vegetation Index (NDVI) were data analysed by GIS software (Arc GIS 9.1) for five years, from 2000 to 2004.

The results of the study showed that 100% of the herds were from inside Gedarif State.

60% of the owners and pastoralists indicated that numbers of camels in the market were increasing, 24% indicated decreasing and 16% stated fixed numbers.

All the owners sold their camels to buy food and water, and not for culling or renewing.



For camel purchasing, 48% of the owners voted for riding, 36% for packing and 16% for racing purposes.

As for fattening camels before slaughter, 12% stated all times, 40% sometimes and 48% no fattening.

More than 98% of the camel owners indicated absence of proper camel farming practices in Gedarif State against 2%.

The study showed that 100% of camel feeding always depended on agricultural by-products after the rainy season.

As for the availability of water in the dry seasons, 72%, 20% and 8% indicated rare, available all times and seasonal, respectively.

84% of the randomly selected sample of camel owners supported making ranch farms in Gedarif State and 16% disagreed.

From the consumer sample 80% indicated eating camel meat when it was available in meat markets and 20% when it was cheaper than other kinds of meat.

88% of the producers gave above 10 pound of milk for a she-camel; 56% of the sample used it for therapy and 32% for nutrition. However, 68% of the study sample indicated weak marketing and 80% of the consumers pointed that camel milk had no influence on milk marketing.

The study indicated potentiality for establishing camel ranching in Gedarif State as is indicated by the GIS techniques.

## الملخص

أجريت هذه الدراسة في ولاية القضارف ما بين نوفمبر 2006 إلى فبراير 2007 لتقييم إمكانيات إنتاج الإبل وتوفر الموارد الطبيعية لتحديد أفضل مواقع لإنشاء مزارع رعوية للإبل وذلك باستخدام تقنية نظم المعلومات الجغرافية. تم إجراء استبيان مقسم على جزئين، الأول 25 عينة لتجار ورعاة الإبل في سوق الشواك و سوق القضارف للإبل والثاني 25 عينة من طلاب جامعة القضارف كمستهلكين لمنتجات الإبل .

تمت زيارة كل من سوق الشواك وسوق القضارف للإبل، مركز بحوث الإبل بالشواك، جامعة القضارف، إتحاد الرعاة، مجزر القضارف، وزارة المالية - إدارة القطعان و وزارة الزراعة و الثروة الحيوانية بالولاية.

اتبعت طريقة أخرى للبحث وهي عن طريق شبكة المعلومات العنكبوتية لإستخراج صور أقمار صناعية و خرائط لولاية القضارف لتسجيل و تقدير كمية الأمطار و معرفة طبوغرافية الأرض و تقدير الغطاء النباتي بولاية القضارف لخمس سنوات من عام 2000 و حتى عام 2004م .

أظهرت الدراسة أن 100% من الملاك و الرعاة يرون أن القطعان في السوق تتوفر من داخل ولاية القضارف.

60% يعتقدون أن القطعان بالسوق متزايدة، بينما يرى 24% أن كمياتها متناقصة و 16% يرون أنها ثابتة.

100% من الملاك يبيعون إبلهم لغرض شراء الطعام و الماء للقطيع ، و لا يتم البيع لأي أسباب أخرى مثل الإستبعاد أو التجديد.

و أما عن أغراض بيع الإبل، فيرى 48% من الملاك أن الشراء أكثر لإبل الركوب، 36% لإبل الحمل و 16% لإبل السباق.

فيما يخص التسمين قبل الذبح يظن 12% من الملاك انه يحدث دائما ، 40% انه يحدث في بعض الأحيان و 48% انه لا يحدث مطلقا.

أكثر من 98% من ملاك الإبل يقولون بأنه لا توجد مزارع إبل داخل ولاية القضارف و 2% يعتقدون بوجود بعضها.

أظهرت الدراسة أن 100% من ملاك و رعاة الإبل يعتمدون في التغذية على مخلفات الزراعة بعد موسم هطول الأمطار.

جاءت آراء توفر الماء في فصل الجفاف بأنه يكون نادرا، متوفرا أو موسميا بنسب 72%، 20% و 8% على التوالي.

84% من ملاك الإبل يشجعون قيام مزارع رعوية بينما لا يرى 16% من

الملاك ضرورة لإنشاء المزارع الرعوية.

من عينة المستهلكين أفاد 80% أنهم سيشترون لحوم الإبل إذا توفرت

في الأسواق و 20% سيشترونها إذا انخفض سعرها عن باقي أنواع اللحوم.

تشير الدراسة إلى إمكانية قيام وإنشاء المزارع الرعوية للإبل بولاية

القضارف حسب ما أشارت إليه نتائج نظام المعلومات الجغرافية.