

بسم الله الرحمن الرحيم

Sudan University of Science and Technology

College of Graduate Studies



**Socio –Economic Aspects of Sheep Preding for
Productive Families in Blue Nile State-Sudan
(Case Study: Blue Nile State)**

الجوانب الاقتصادية –الاجتماعية لتربية الضأن للاسر المنتجة في ولاية
النيل الأزرق-السودان
(دراسة الحالة : ولاية النيل الأزرق)

Thesis Submitted in Partial Fulfillment for Degree of M.Sc in Animal
Production

By:

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B.Sc. In Animal Production .College of Agricultural Studies . Sudan

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some villages in Blue Nile State
(Case Study: Blue Nile State)**

**أداء الضأن لئاسر المنتجة في بعض قري ولاية النيل الأزرق
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الآية

بسم الله الرحمن الرحيم

قال تعالى :

**(والأنعام خلقها لكم فيها دفاء
ومنافع ومنها تااكلون)**

صدق الله العظيم
سورة النحل الآية (5)

Dedication

*To my family with my respectful gratitude,
To my parent,
To my brothers,
And my daughter Rosmeen,
To whose patience & understanding
helped me a lot.*

Acknowledgments

I am thankful to the department of animal production, Sudan University of Science and Technology, College of Agricultural Studies. for granting me permission to do my M.Sc and for providing advice, facilitation and encouragement.

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My parents, brother and all relatives, for supporting, encouraging and believing me. Special thanks to my lovely mum, who still give me support .

I would like to express my appreciation to all those who in one way or another contributed to this study but are not mentioned here.

ملخص الاطروحة

هدفت هذه الدراسة لتقييم اداء الضان المملوك للاسر المنتجة بولاية النيل الازرق في الفترة من 2013م –2016م.

خلال هذه الفترة صمم استبيان ليغطي خمسون من مربى الحيوانات في قريتين (العزازة – ود الفكي) لتقييم (التعليم ، نوع الحيوان ، الإيواء ، التغذية ، المركبات ، رعاية الحيوان ، مسؤولية التغذية ، الدخل الشهري ، الحالة الصحية عند الاستلام ، الحالة الاصلحية العامة ، الحالة الصحية عند الزيارة ، النفوق في الامهات ، النفوق في المواليد ، معدل الولادات ، معدل الاجهاض ، انتاج الحليب ، الاستفادة من المشروع ، الفائدة الاقتصادية ، الفائدة التغذوية من المشروع ، الحالة الصحية للكباش ، الحالة الصحية للامهات ، الحالة الصحية للمواليد وحالات البيع) وقد استخدم في التحليل برنامج 9 Statistic ,

أظهرت النتائج أن تعليم المربيين كان 61.9% ، 69.1% في العزازة وود الفكي علي التوالي . الحيوانات الموزعة كانت خليط بين الذكور والاناث في القريتين ويعتمدون في إيواء حيواناتهم علي التربية المنزلية بنسبة 95.2% ، 100% في العزازة و ود الفكي علي التوالي أما طرق التغذية الطبيعية فكانت بنسبة 96.6% ، 90.5% في العزازة وود الفكي علي التوالي . لا تستخدم مراكز . ويعتمد المربيين علي انفسهم في رعاية حيواناتهم بنسبة 52.4% .44.8% في العزازة وود الفكي علي التوالي . ايضا يعتمدون علي انفسهم في تغذية حيواناتهم بنسبة 90.4% ، 96.6% في العزازة وود الفكي علي التوالي . كان لديهم دخل شهري بنسبة 95.2% ، 96.6% في العزازة وود الفكي علي التوالي .كانت الحلة الصحية عند الاستلام جيدة بنسبة 57.1% ، 100% في العزازة وود الفكي علي التوالي . الحالة الصحية العامة كانت ممتازة بنسبة 100% ، 69.1% في العزازة وود الفكي علي التوالي . اللنفوق في الامهات كان في الصيف والخريف بنسبة 57.2% ، 96.6% في العزازة وود الفكي علي التوالي . النفوق في المواليد كان بعد الفطام بنسبة 85.7% ، 89.7% في العزازة وود الفكي علي التوالي . معدل المواليد كان من 1-2 مولود بنسبة 71.4% ، 69% في العزازة وود الفكي علي التوالي .معدل الاجهاض كان بنسبة 52.4% ، 62.1% في الشهر الاول والثاني في العزازة وود الفكي علي التوالي . كان انتاج الحليب في مدة 200 يوم

بنسبة 90.5% ، 100% في العزازة وود الفكي علي التوالي . كانت الفائدة من المشروع ممتازة بنسبة 95.2% ، 65.5% في العزازة وود الفكي علي التوالي . كانت الفائدة الاقتصادية من المشروع لسد الاحتياجات اليومية بنسبة 76.2% ، 100% في العزازة وود الفكي علي التوالي . الفائدة التغذوية من المشروع كانت للمناسبات بنسبة 47.6% ، 75.9% في العزازة وود الفكي علي التوالي . لا توجد اي مشاكل صحية للكباش والامهات والموليد في العزازة وود الفكي

وان جميع مالكي الضأن يستخدمون الخدمات البيطرية مثل الفاكسينات والعلاجات دون تدخل من وزارة الزراعة والثروة الحيوانية.

وخلصت الدراسة إلى أن تملك الضان للأسر كان له عظيم الاثر في تغيير حياتهم للافضل من حيث الفائدة الاقتصادية والتغذوية .

Abstract

This study was aimed to evaluate the performance of sheep owned by productive families sheep in Blue Nile State between 2013 to 2016.

During this period designed questionnaire to cover (50)of the animal breeders in two villages (Alazzaza and Wad Elfaki) to evaluate (Education, Animal type, Housing, Nutrition, Concentrates, Care of animal, Nutrition responsibility , Monthly expenditure, Health status of receiving , General condition, Mothers mortality, Newborns mortality, Ewe parity rate , Abortion rate, Milk production, Project benefit, Economic benefit from the project , Nutritional benefit from the project ,The health problems of rams, The health problems of females, The health problems of newborns, sales cases . the statistic (9) software was analyze the data.

The results showed that the Education for breeders was 61.9%,69.1% in in Alazzaza and Wad Elfaki respectively . Animal distributed was mixture between males and females in two villages . depend on home breeding and their animals by 95, 2%, 100% in Alazzaza and Wad Elfaki respectively. The Natural feeding done by 96.6%, 90.5% in Wad Elfaki and Alazzaz respectively . No concentrates was used and the breeders depend on grazing their sheep by themselves by 52.4%, 44.8%. in Wad Elfaki and Alazzaza respectively. Also they depend on Nutrition responsibility for sheep by themselves by 90.4%,96.6% in Alazzaza and Wad Elfaki respectively . the breeders got Monthly expenditure by 95.2%, 96.6% in Alazzaza and Wad Elfaki respectively. Health status of receiving animals was good by 57.1%, 100% in Alazzaza and Wad Elfaki respectively. General health status of animals was Excellent by 100%, 69% in Alazzaza and Wad Elfaki respectively. Mothers mortality done

in summer and autumn by 57.2%,96.6% in Alazzaza and Wad Elfaki respectively. Newborns mortality was after weaning by 85.7%, 89.7% in Alazzaza and Wad Elfaki respectively. Ewe parity rate done for 1-2 birth by 71.4%, 69% in Alazzaza and Wad Elfaki respectively. Abortion rate done by 52.4%, 62.1% for first month and second month in Alazzaza and Wad Elfaki respectively. Milk production was 200 days by 907.5%, 100% in Alazzaza and Wad Elfaki respectively. Project benefit was Excellent by 95.2%, 65.5% in Alazzaza and Wad Elfaki respectively. Economic benefit from the project done by 76.2% 100% to fulfill the daily need in Alazzaza and Wad Elfaki respectively. Nutritional benefit from the project done by 47.6%, 75.9% for occasions in Alazzaza and Wad Elfaki respectively .There is no health problem of rams, females , newborns in Alazzaza and Wad Elfaki respectively .they also soled their animals by 95.2%, 100% in Alazzaza and Wad Elfaki .all sheep breeders used veterinary services without any inraction from Ministry of Agricultural and Animal Resource.

The study concluded that the ownership of sheep families had a great impact for change their lives to better in terms of economic and nutritional interest .

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CHAPTER ONE

1- Introduction

Sudan is the third countries in Africa, it has natural resources, the area is estimated as 1882000 M sq, which made the agriculture sector the main economic sector for national income beside that the life of more than 80% of population depends on this sector(**alnilin.com 2013**) .

It has one of the largest livestock population numbers in Africa with (28.618.000)million heads of cattle,(39.296.000) million sheep, (30.649.000)million goats and (4.715.000)million camels (**Abashar et al 2012**)

Damazine is the capital of the Blue Nile state the economic activity is based upon agriculture and livestock and incoming mineral exploitation (**Wikipedia free enclopidia**).

The livestock in the Blue Nile are under traditional nomadic systems in which the animals move for long distances to cope with the environmental stresses imposed on them by nature. The traditional method of livestock production is based on extensive grazing system where animals depend on the natural grazing land(**Eldaw at al 2006**).

Zakat chamber and (ILMP) Improving livestock and Marketing Project evcourage Productive families by gave them sheep to improving their income by selling the products and animals

Objectives of study:

To evaluate the production and reproductive performance of Ewes under the productive families program in Blue Nile State.

CHAPTER TWO

2-LITERATURE REVIEW

2-1- Blue Nile State

2-1-1-Located

In the southeastern part of the Sudan, has two international borders . The State lies in the fertile woodland savannah belt of eastern Sudan, and receives significant rainfall from May up to October, with a longer growing season than more northern states in Sudan. The topography is characterized by vast clay plains, the Ingessana Mountains, and the Blue Nile River flowing from Ethiopia. The Rosaries Dam on the Nile was the main source of hydroelectric power in Sudan until the completion of the Marawe Dam in 2010. The economy of Blue Nile State is based on mechanized and traditional rain-fed agriculture, livestock production, and increasingly, on mineral exploitation. Farming is the main livelihood activity, and when agricultural labor is included, is the principal source of food and income for about 75% of the population(**Getachew, et al, 2013**).

2-1-2- Education

There are dozens of schools in the city in various stages and types of public education, schools from the primary level to the secondary.

There is also one university in Blue Nile, which includes the University of Colleges of education, engineering, economics, and community development. Some research centers, including the University of Sudan continued to open the center in the area(**Geoba.se: Gazetteer - Ad-Damazin, Sudan**).

2-1-3- Pastoral and agricultural system in Blue Nile

Pastoral and agricultural system is among the pastoral systems agricultural home in Blue Nile state, which relies the majority of rural households living. Also Blue Nile State valid huge sizes agriculture area with a large amount of crop residues that enhance animal nutrition and encourage investment in the field of fattening animals for small holders and Medium-sized enterprises.

2-2-Poverty

Poverty in its various forms has increasingly occupied the attention of the international community during the last decade. Successive Summits have made commitments to drastically reduce the misery from which so many humans suffer throughout their lives. Such attention is in itself an encouraging step forward, but actual progress is still painfully slow, even though measures to improve the livelihoods of the poor are affordable. Hunger and food insecurity- the most serious forms of extreme poverty - have now become international priorities, and participants in the 1996 World Food Summit made a solemn commitment to halve hunger in the world by 2015 (**FAO 2002**).

There is also significant variation in the incidence of poverty between urban and rural areas as well as between states in the Federation. The incidence of poverty in Khartoum state is 26.0 percent and 69.4 percent in North Darfur (**Nuha .M.E. A.2015**).

Poverty rate Indicates, almost three billion people, or almost half of the world's population, live on less than US\$2 per day. More than 1.2 billion of these, or about 20 percent of the world population, live on less than US\$1 per day. Poverty is largely, but by no means only, a phenomenon of

the rural areas. Effective poverty reduction measures can only be successful if the livelihoods of the rural poor can be improved. Sheep and goats belong to the group of animals called small ruminants. Small-scale farmers keep small ruminants for both subsistence and economic reasons and, in either role, they generally improve household livelihoods, but they have the capability to do much more. Small ruminants contribute to landless, rural farming, peri-urban and increasingly to urban households by providing food, heat, income, socio-cultural wealth and clothing (**FAO, 2009**).

Noted that, in Ethiopia, sheep production is of subsistence nature with little or no market orientation. Additionally, the production system is constrained by several factors such as feed unavailability, both in terms of quality and quantity, disease prevalence, poor productivity of the animal and socio-economic circumstances of farmers/ pastoralists (**Helen. N, et al, 2015**).

2-3- Small Ruminants

2-3-1-Sheep

Sheep and goat industries are healthy and growing in the world but we cannot be satisfied that all is well. Total meat production per capita seems on the verge of a continued decline. Food production is barely keeping up with population growth. Per capita cereal production is leveling off and will likely decline until farm prices increase drastically. Then less and less meat will be produced from grain and less meat will be consumed at higher cost. Can sheep and goats, the most efficient convertors of low quality feed materials to high quality food, increase in numbers, productivity and efficiency to provide an adequate supply of low cost meat for everyone in the world? Are research and development efforts in

the past 25 years and at present sufficient to lead to a rapid upward trend in numbers, productivity and efficiency of sheep and goat (FAO, 1985). Estimates of the livestock population in Blue Nile State are 2,038,072 for cattle, 3,937,799 for sheep, 457,496 for goats, and 14,253 for camels. Generally, Blue Nile State has fewer livestock than the western states of Kordofan and Darfur, but the exception is numbers of sheep. According to these estimates, Blue Nile has the second-largest number of sheep, after North Kordofan, which is somewhat surprising and could reflect marketing anomalies with the way livestock numbers are calculated. Blue Nile State is considered an important dry season grazing area for pastoralists and nomads and as a result receives animals from different states, which can increase the concentration of animals in the grazing areas. There are eight major livestock routes: four on the western bank of the Nile and four on the eastern bank.⁴⁵ Livestock usually start migrating north to Sinner in August and return south to Kurmuk, Gaisan, and Yabous. In the past, herders used to move down to South Sudan's Upper Nile State, although they have faced difficulties in recent years. During the period 2007–2012, according to the DG of the General Directorate of Livestock, Fisheries, and Rangelands, average rainfall declined, the duration of the dry season lengthened, and the rainy season was shorter (MLFR, 2012).

2-3-1-1-Sudan Desert Sheep

There are four types of Sudanese sheep Desert, Nilotic, Arid Upland, and Equatorial Upland and including seventeen breeds (El-hag 2001; 2006).

Sudan Desert sheep are reared strictly within the semi-desert belt of the Sudan, in association with camels. They are owned exclusively by nomadic tribes of Arab origin or others closely related to them in the

region. Because of their nomadic existence their origin has been difficult to trace.(**Mason 1951**) has classified West African livestock and suggested the possible ancestry of sheep breeds or types in the region.

(M. E. Mufarrih 1991).

2-3-1-2-Watish Sheep

These are ecotype of the desert sheep. Watish sheep has the ability to live in places of heavy clay soils. It is geographical distribution, mainly the banks of the Blue Nile.(**El-Daw at al 2006**).

2-3-1-3-Breeding

Watish sheep have two seasons of breeding, the first is uncontrolled breeding known locally as (Bahlla). The other season is characterized by lambing throughout the year and this type require high sound nutrition. The age at first mating of the Watish is about 13 month of age, gestation period is 150 days, and lambing interval is about 210 days, while the average age at first lambing of the Watish ewe is 18 month (**MAFNR, 1974**).

2-3-1-4- Gazeira Type

Data on Shugor, Dubasi and Watish subtypes of Sudan Desert sheep, collected at El-Huda National Sheep Research Station, Sudan, in the period 1975-84, are analyzed. There were subtype differences in weights of ewes at first conception, at first parturition and at weaning of the first lamb(s) at 120 days after first parturition, the Watish being lighter than the other two subtypes. There were no differences among subtypes in age at first lambing (689 days). Litter size was bigger in Shugor (1.30) than in Watish (1.17) or Dubasi (1.18) subtypes, but lambing interval was shorter in Watish (403 days) than in Dubasi (425 days) or Shugor (449 days)

subtypes. Annual reproductive rate (lambs born per ewe per year) was higher in Shugor (1.18) than in Watish (1.14) or Dubasi (1.01) subtypes. Shugor and Dubasi sheep were generally heavier from birth to one year than Watish. Some Watish crossbreeds exhibited heterocyst in weight and growth. From 365 to 1095 days weights did not differ among subtypes. Postpartum weights of mature Watish ewes were longer (37.0 kg) than those of either Dubasi (42.2 kg) or Shugor (42.3 kg) subtypes at all parturitions. Watish had longer death rates to weaning (29.7%) than either Shugor (40.5%) or Dubasi (42.6%) subtypes. Productivity indices were 16.8 kg of young weaned (et 120 days) per ewe per year, 419 g of young weaned per kg ewe per year and 1.14 kg of young weaned per kg^{0,73} ewe per year and did not differ among subtypes. Effects of dam origin (station-bore or foundation), type of birth or parturition (single or twin), sex, season and year of birth or parturition and parity were also examined (**A H Sulieman, *at al* 1990**).

2-4-Characteristics of indigenous African and Asian sheep breeds

Although some features of indigenous breeds are still to be recorded, enough data are available to show that they have outstanding characteristics, the most important being adaptation to often harsh environmental conditions, demonstrated by their survival(**FAO,1990**).

Reproduction rate indicates ability to survive; they are available more often from experimental stations than from the field, but(**Wilson 1985**) gave data for lambs born/ewe/year in farmers' flocks in some sub-Saharan countries. These ranged from 1.05 to 1.51, with lambing intervals from 365 to 275 days, and pre-weaning death rates from 13 to 30 percent, resulting in valuable figures of 0.91 to 1.06 lambs weaned/ewe/year.

(**Lahlou-Kassi 1987**) gave figures from experimental stations for adapted breeds in North Africa. Age at first lambing ranges from 12 to 22 months, lambings per year from 1.0 to 1.7, and average litter size from 1.0 to as high as 2.65 for some flocks of D'man.

The ability to lamb more than once a year, with high litter size, is demonstrated also by the Java thin-tailed and fat-tailed sheep, as well as the Chios (Saki's) from Greece and Turkey, and hair sheep of tropical America (e.g. the Barbados Black belly), originally from West Africa (**FAO, 1980a**).

Other prolific Asian breeds are the large-tail Han of China and they were (local) breed of Bangladesh, suggested by Turner (1983) as possibly descended from the otherwise unidentified prolific Bengal sheep, which made a major contribution to the early sheep industry in Australia(**FAO, 1985a**).

stressed the need for increased reproduction rate in indigenous North African sheep to overcome the meat shortage(**Lahlou-Kassi (1987)**., and suggested it would be more profitable to use adapted local prolific sheep for crossing instead of imported breeds from very different environments, such as the Finn and Romanov(**FAO, 1980a**).

There are other considerations about these prolific breeds. Since it has been demonstrated that the high performance of the Australian Booroola Merino is controlled by a single gene, or group of genes (**Piper, Bindon and Davis et al, 1985**).

other fecund breeds have been examined. consider the large variation between individual sheep in reproduction rate in the D'man indicative of single-gene control, while **Bradford et al. (1986)**.

Suggested similar control for the Javanese breeds. Identifying single genes is still time-consuming, though techniques are advancing rapidly. The prospect of being able to transfer a gene without associated disadvantages of a hair coat or small body size, yet retaining characteristics of adaptation, is attractive, if distant.

2-5- Goats of Sudan

2-5-1- Desert Goats

Desert Goats called Sudan Desert goats similar to west Africa with long legs. Increasingly in dry areas of the Sudan, and generally to the north of latitude 12 ° N and north of 10 ° north in Darfur and West Kordofan. Mountain Goats are a few strains to spread to highland areas Red Sea Hills and the Nuba Mountains and Inqasna (Blue Nile) and Jebel Marra area of Central and West Darfur and South Sudan. Exotic goat breeds of Sudan called the French Alpine goat, Saanen, Toggenburg, Anglo-Nubian, Shami / Damascene and Shami Cyprus Goat (**Sawsan *at al* 2013**).

CHAPTER THREE

3-MATERIALS AND METHODS

3-1-The State Location

Blue Nile State is located in the southeastern of Sudan. It is delimited by Sinnar State in the northeastern, Ethiopia in the southeastern and the Upper Nile State in the west. Most important towns (Al-Damazin) is the capital of the State, Al-Roseires, Al-Kormok, Geisan. The village in Damazin is Wad Elfaki, In Roseires is Alazaza.

3-2 Data collection

The questionnaire was designed to cover various data relevant to this study. Fifty questionnaires consist of several questions as: (Education, Animal type, Shelter, Nutrition, Concentrates, Care of animal, Nutrition, Monthly expenditure, Health status, General condition, Health problems at visit, The mortality in mothers, Mortality in newborns, The number of births for the ewe, Abortion Cases, Period of milking time, The health problems of rams, The health problems of females, The health problems of newborns. The benefit from the project, Economic benefit, Nutritional benefit.

From the 50 questionnaire comprised (20 from Alazaza and 30 from Wad Elfaki). To be two villages.

3-3-Statistical Analysis

The statistic 9 software was used to analyze the data. Results are represented mainly in the form of descriptive tabular summaries in percentage.

CHAPTER FOUR

4-RESULTS

4-1- The Education Level

Table (4-1) shows the results of the analysis of :Education in Alazaza village by 23.8% , 9.5%,4.8, 61.8% for Illiteracy ,basic education , Secondary school, and khalwa (Quran school) respectively and by Wad Elfaki village 69.1 % , 24.1% , 3.4% , 3.4% respectively.

Table 4. 1: The Education levels of the people in the aria

Education level	Villages	
	Alazaza	Wad Elfaki
Illiteracy	23.8%	69.1%
Khalwa	61.9%	3.4%
Primary	9.5%	24.1%
Secondary	4.8%	3.4%

4-2- The Animals Type

The result of survey shows clear up the animals distributed to productive families was mixed between rams and ewes.

4-3-The Housing System

Table (4-2) show the housing system of sheep. The number of livestock by the owners in Alazaza, villages were 4.8 % ,95.2% , depend on farm breeding and In Wad alfaki village they depend on home breeding in the rate of 100%.

Table 4. 2: Housing system of animals in the area

Housing system	Villages	
	Alazaza	WadEl Faki
Farm breeding	4.8%	-
Home breeding	95.2%	100%

4-4- The Feeding System

Table (4-3) shows that the analysis of survey found in Alazaza village by 90.5 %,9.5% depend on natural grazing, and in Wad Alfaki by 96.6 %, 3.4 % respectively.

Table 4. 3: The Feeding of natural grazing and home feed

Feeding system	Villages	
	Alazaza	WadEl Faki
Natural grazing	90.5%	96.6%
Home Feeding	9.5%	-3.4%

4-5-Concentrates

The results show that there is no using of concentrates in the both villages.

4-6- The Animal Care

Table (4-4) show care of animal were in Alazaza village 19% , 28.6% , 52.4%. While in Wad alfaki village found 44.8% , 44.8% , 10.3% ,depend on for one of parents , for family member and worker respectively .

Table 4. 4: The Care of Animal

Taking care of animal	Villages	
	Alazzaza	WadEl Faki
One of the parents	19%	44.8%
A family member	28.6%	44.8
Worker	52.4%	10.4%

4-7- The Feeding responsibility

Table (4-5) shows in Alzaza village by 90.4% , 4.8 % , 4.8%, while in wad Elfaki it was 96.6%, 3.4 %. Households depend on nutrition responsibility for one of the parents , the family member, and worker.

Table 4. 5: Feeding responsibility

Feeding responsibility	Villages	
	Alazzaza	WadEl Faki
One of the parents	90.4%	96.6%
A family member	4.8%	3.4%
Worker	4.8%	-

4-8- Monthly income:

Table (4-6) show monthly income in Alazaza village .95.2%,4.8 % and Wad Elfaki 96.6% , 3.4 % respectively.

Table 4. 6: Monthly income

Monthly income	Villages	
	Alazzaza	Wad AlFaki
Yes	95.2%	96.6%
No	4.8%	3.4%

4-9-The health status

The Analysis of survey results shows that the health status of the in Alazaza village 57.1%, 42.9 % Good ,sick respectively. While in wad Elfaki it was 100% Good. Table (4.7)

Table 4. 7: Health status of animals

The health status	Villages	
	Alazzaza	WadEl Faki
Good	57.1%	100%
Sick	42.9%	-

4-10- General Health status

Table (4-8) shows that the Analysis of survey results in Alazaza village was100% Excellent for general health condition, While in Wad Elfaki it was 69% , 31 % Excellent, very good respectively.

Table 4. 8: General Health status

General health condition	Villages	
	Alazzaza	Wad ElFaki
Excellent	100%	69%
Very good	-	31%
Good	-	-

4-11- Health problems in Visit

Table (4-9) shows the Analysis of survey results shows in Alazaza village was 14.3% , 85.7% said that there is Health problems, there is no respectively , While in wad Elfaki it was 100% said there is no health problems.

Table 4. 9: Health problems in Visit

Health problems At visit	Villages	
	Alazzaza	Wad ElFaki
Yes	14.3%	-
No	85.7%	100%

4-12- Mothers Mortality

Table (4-10) show Mothers Mortality in Alazaza village was 57.2% , 42.8% in summer, Autumn respectively .while in Wad Faki village, was 3.4%, 96.6%in . Where it was noted that the highest percentage of mortality was in the village of Wad ElFaki in autumn.

Table 4. 10 Mothers Mortality

mothers mortality	Villages	
	Alazzaza	WadEl Faki
In Summe	57.2%	3.4%
Autumn	42.8%	96.6%

4-13- Newborns Mortality

Table (4-11): The Analysis of survey results shows that The percentage of mortality in newborns in Alazaza village 85.7%, 14.3% after birth , After weaning respectively. while in Wad Faki it was 89.7% , 10.3% Where the highest mortality rate was after weaning in both villages.

Table 4. 11: Newborns Mortality

Mortality in newborns	Villages	
	Alazzaza	WadEl Faki
after birth	85.7%	89.7%
After weaning	14.3%	10.3%

4-14- Ewe parity rate

Table (4-12) shows The number of births for ewe in Alazaza village it was 71.4%, 4.8% , 23.8% for One birth, Two, More than two respectively , while in Wad AlFaki it was 24.1%, 69% , 6.9%.

Table 4. 12 : Ewe parity rate

The number of births for the ewe	Villages	
	Alazzaza	WadEl Faki
One	71.4%	24.1%
Two	4.8%	69%
More	23.8%	6.9%

4-15- Abortions Rate

The Analysis of survey results shows the percentage of Abortions in Alazaza village it was 52.4% , 4.8% , 42.8% in first month, second month, third month respectively. While in Wad AlFaki village it was 37.9%, 62.1%. (Table 4-13).

Table 4. 13: Abortions Rate

Abortions	Villages	
	Alazzaza	WadEl Faki
First Months	52.4%	37.9%
Second Months	4.8%	62.1%
Third Months	42.8%	-

4-16- Milk Production

Table (4-14) the Analysis of survey results shows The percentage of Milk Production in Alazaza village it was 9.5% , 90.5% in 100 days, in 200 days respectively , while in Wad AlFaki the it was 100% at 200 days.

Table 4. 14: Milk Production

Milk Production	Villages	
	Alazzaza	WadEl Faki
100 days	9.5%	-
300 days	90.5%	100%
More	-	-

4-17- Project benefit

Table (4-15) the Analysis of survey results shows that The benefit from the project in Alazaza villageit was 95.2 % , 4.8% for Excellent , Medium respectively , While in Wad Elfaki it was 65.5 % , 34.5 % for Excellent, good.

Table 4. 15: Project benefit

Project benefit	Villages	
	Alazzaza	WadEl Faki
Excellent	95.2 %	65.5 %
Very good	-	-
Good	-	34.5 %
Medium	4.8%	-
Weak	-	-

4-18- Economic interest

Table (4-16) the Analysis of survey results shows that the economic benefit from the project in Alazaza village it was 76.2 % , 14.3% , 9.5 % for selling To fulfill the daily needs, To increase the herd , There are no respectively, while in Wad AlFaki it was 100% To fill the daily needs.

Table 4. 16: Economic interest

Economic interest	Villages	
	Alazzaza	Wad AlFaki
fill the daily needs	76.2 %	100%
increase the herd	14.3%	-
Selling meat	-	-
There are no	9.5%	-

4-19- Nutritional interest

The Analysis of survey results shows that the nutritional benefit from the project in Alazaza village it was 28.6% , 47.6 % , 23.8 % for direct consumption, Occasions consumption and there is no respectively, while in Wad AlFaki it was 75.9 % , 24.1 % for Occasions consumption, there are no (Table 4-17).

Table 4. 17: Nutritional benefit

Nutritional benefit	Villages	
	Alazzaza	Wad AlFaki
Direct consumption	28.6%	-
Occasions consumption	47.6 %	75.9 %
There are no	23.8 %	24.1 %

4-20- Health problems of rams

The Analysis of survey results shows that there is no health problems of rams in twovillages.

4-21- Health problems of females

The Analysis of survey results shows that there are no health problems of females in two villages.

4-22- Health problems of newborns

The Analysis of survey results shows that there are no health problems of females in two villages.

4-23- The services provided by the Government

The Analysis of survey results shows that there are no services provided by the Ministry of Agriculture and Livestock in the two villages.

4-24- Sales Cases

Table (4-18) the Analysis of survey results in Alazaza village for sales cases was 95.2 % , 4.8% of respectively. While in wad Elfaki 100% of households said that there is cases of sale.

Table (4-18) Sales cases:

Sales Cases	Villages	
	Alazzaza	WadEl Faki
Yes	95.2 %	100%
Not	4.8%	-

4-25- Sales Justifications

(Table 4-19) The Analysis of survey results shows that the Justifications for sales in Alazaza village was 90.4 % , 4.8% , 4.8% for lack of physical (financial) ability, for Not wanting to animal type, there are no respectively, while in Wad AlFaki it was 100%% for lack of physical (financial) ability..

Table 4. 19: Sales Justifications:

Sales Justifications	Villages	
	Alazzaza	WadEl Faki
lack of technical capacity	-	-
lack of physical (financial) ability	90.4 %	100%
Not wanting to animal type	4.8%	-
There are no	4.8%	-

CHAPTER Five

DISCUSSION

Livestock play important roles in human life, in the tropics as well as elsewhere. They are especially essential in semi-arid and arid zone, since they provide a wealth resource to the farmers (FAO, 2006).

Table (4-9) shows the health issues of the sheep at the visit, and they confirmed that there are no problems by 85.7% and 100% for both Al Alazaza and Wad Elfaki villages, there's also some other health issues due to the lack of concentrates and relying on the by-products and green grass which has led to swelling and worms

For mothers mortality in table (4-12) the highest percentage was in Wad Elfaki village by 96.6% at the beginning of autumn due to the low quality forage growing on the lands leads to mortality. And this percentage was considered high compared to the expected results which is 15%.

Table (4-13) shows that the weaning mortality rates from 13 to 30 % Wilson (1985) whereas disagree with present study it was shows mortality within newborns the percentage reached over 85.7% and 89.7 in Al Alazaza and Wad Elfaki. Quite noticeable the rising in mortality rates after birth immediately cause the milk contains some bad components as a result of the grasses that mothers were feeding on at the graze. And this percentage decreases after weaning down to 10% in Wad Elfaki and 13.9% in Al Alazaza (normal mortality).

For the newborns in table (4-14) lambs born per ewe per year was higher in Shugor (1.18) than in Watish (1.14) or Dubasi (1.01) subtypes. A H Sulieman, et al (1990). Where disagree with their present study It was notice a decreasing in numbers of newborns, found that the percentage of

the newborns for each Ewe in Al Alazaza was 71.7% for the single births, 4.8% for the twins, 23.8% for the births over more than two. In Wad Elfaki there was a high rate of twin births due the health status for the sheep. Also noticed the decrease in newborns compared to the expected percentage by 90%.

Table (4-19) shows the nutrition benefit by 28.6% for the direct consumption, they often slaughter animals for the extreme necessity cause they treasure their animals and consider it as a source of pride, 47.6% is occasional consumption (birth – marriage), and 23.8% confirmed that there's no nutrition benefit in Alazaza village. In Wad Elfaki 75.9% was for meat consumption 24.1% of families never get any advantage from the milk and they used to leave it to the newborns cause it wasn't enough (ounce and half) I agree with E. Mohammed (2006) for found that the family was not benefit from milk they took it for lambs that for lack of quantity (1.5) Lb.

From the tables (4-24, 4-25) the rates of sales in Al Alazaza was like 95.2% due to the lack of finance to cover the daily needs, 14.8% due to preference reasons (replacement) and 4.8% confirmed there's no reasons including I disagree with E. Mohammed the ewes produced 0.5-1.5 Kg milk/day. While 25% of them explained that the milk production varied between 2-2.5Kg./day. 4.8% no sales. And they was 100% of breeders in Wad Elfaki referred the reasons to the lack of resources for the breeders (selling rams).

Conclusion and Recommendations

Conclusion

This research which was conducted for this project to be concluded education level was lower 25%, housing system and feeding system was medium by the rate of 50%.

Also care of animal and feed responsibility was 33.3% , monthly income and health status of the receiving was 50% , general health status was 25% , health problems at visit was 50% .

Also mother mortality , newborns mortality was 50% , the number of births and abortions was 33.3% .

On the other hand; the interviewers explained that, The number of births for the ewe was 71.4% is one in Alazaza villages and , 69% is two in Wad Elfaki villages.

This study showed that general health situation of the flock was Excellent in both villages. on the other hand The results shows that there is no using of concentrates in both villages.

The interviewed livestock owners in both villages depend on Home breeding, in Alazaza village they depend on Worker for Taking care of animal while in the second village they used to.

Nutrition responsibility in both villages doing by the breeder. And did not register any Health problems At visit just 14.3% in Alazaza.

The results of this study showed that the most mortality in mother in autumn it was 96.6%in Wad Elfaki villages, immediately after birth in new born.

The Abortions Cases concentrated at first and second month in both villages.

This study showed that the Nutritional benefit was Occasions consumption in both villages, the results shows that there are no in problems of rams, females, newborns in both villages.

The results of this study showed that in both villages they register cases of sale for several Justifications most notably lack of physical (financial) ability.

Recommendations

The study was conducted that the evaluation of productive and reproductive performance for indigenous sheep in Blue Nile was good.

- (1) Management Breeding should be improved. Proper records should be kept of births, mating and possibility of production.
- (2) A veterinary advisory program should be drawn up to decide how to control and prevent prevalent diseases.
- (3) Support families physically to get grazing chances .
- (4) Support families by providing building materials that enable them to construct good sheds so as to ensure the protection of newborns.
- (5) Research into various fields of interest is imperative. It is a challenge to our society that we can combine our knowledge to evaluate performance of sheep in Blue Nile State.
- (6) The main objective is to Conceived for the production of sheep in the study area and Conceptualize farmers for ewe reproductive performance.

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