

LIVESTOCK DEVELOPMENT NEEDS ASSESSMENT REPORT FOR WEST NILE REGION

AFARD-AFRISA PARTNERSHIP MAY, 2012



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Together we can transform livelihoods in West Nile region.

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LIST OF ACRONYMS

AAH	Africa Action Help
ACP3	Academic, Community, Private, Public Partnership
AFARD	Agency for Accelerated Regional Development
AFRISA	Africa Institute for Strategic Animal recourse Services and Development
ASF	African swine fever
AU-IBAR	African Union Inter Bureau for Animal Resources
BQ	Black Quarter
CAADP	Comprehensive Africa Agricultural Development Programme
CBPP	Contagious Bovine Pleuro Pneumonia
CCA	Canadian Cooperative Association
CCPP	Contagious Caprine Pleuro Pneumonia
CEFORD	Community Empowerment For Rural Development
DRC	Danish Refugee Council
DVO	District Veterinary Officer
FAO	Food and Agricultural Organization
FIEFOC	Uganda Farm Income Enhancement and Forest Conservation project
GTZ	German Technical Cooperation
IFAPI	Integrated Finance and Agricultural Production Initiative
KTB	Kenya Top Bar
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
NAADS	National Agricultural Advisory and Development Services
NaLIRRI	National Livestock Resources Research Institute
NARO	National Agricultural Research Organization
NCD	Newcastle Diseases
NEPAD	New Partnership for Africa's Development
NGOs	Non Governmental Organizations
NUSAF	Northern Uganda Social Action Fund
PARUDA	Participatory Rural Development Agency
PMA	Plan for Modernization of Agriculture
SSA	Sub-Saharan Africa
SVN	Netherlands Development Organization
TBDs	Tick Borne Diseases
WENDI	West Nile Development Initiative
ZARDI	Zonal Agricultural Research Development Institute

EXECUTIVE SUMMARY

INTRODUCTION

Livestock serve many purposes in the livelihoods of rural communities in Africa namely: household source of income, investment, food, manure, draught power, raw materials, and bride price. These gains are crucial potential pathway out of poverty for rural producers and other actors along the marketing chain. Raising the subsector's value chain productivity and efficiency as enshrined in the Comprehensive Africa Agricultural Development Programme (CAADP) of the New Partnership for Africa's Development (NEPAD) is considered essential to the success of Sub Saharan Africa (SSA) rural economies and growth of incomes of rural populations.

Makerere University and the Government of Uganda (GoU) are deliberately promoting a unique, innovative, and alternative model of higher education to skill Ugandans and communities at a large scale in micro, small, and medium scale enterprises (MSMEs) and employability, while entrenching them as nuclei of community transformation. To operationalize this innovation, the Africa Institute for Strategic Animal Resource Services and Development (AFRISA) was established, with a focus on capacity building in the animal resource sector for wealth creation: Transforming the Livestock Sector into Profitable Businesses for Poor Rural Communities.

The ingenuity of this model has called on AFARD to partner with AFRISA to promote livestock production in the West Nile region. Some anecdotal data from AFARD revealed that there was no significant increase in livestock population and incomes in the region due to a number of factors: poor breeds, livestock diseases, and traditional management practices. The transformation of these inherent age-long impediments to livestock production as a business required this needs assessment. The objectives of the assessment were to: profile the livestock enterprises and their capacities in the AFARD operation areas; establish the constraints in livestock keeping; map out opportunities for livestock development in the areas; and propose market-oriented targeted interventions.

THE APPROACH TO AND FINDINGS OF THE ASSESSMENT

The assessment was predominantly qualitative. A descriptive, cross-sectional study was conducted in five districts of West Nile, namely; Arua, Moyo, Nebbi, Yumbe and Zombo. The interviewed study groups were purposively selected. Data was collected through focus group discussions, participant observations, transect drives, and key informant interviews and was analyzed using micro-analysis and descriptive statistical analysis techniques.

a. The livestock enterprises and their capacities

The main livestock enterprises in the region includes: cattle, goat, sheep, chicken, and apiary. Piggery and aquaculture remains limited.

- The main enterprise for cattle was beef (from Small East African Zebu and Long horned Ankole cattle). Attempts to introduce exotic dairy cattle under zero grazing system in districts like Arua, Moyo, and Zombo were largely unrewarding while in Yumbe district this initiative was a total failure.
- Small ruminants (goats and sheep) were the predominant enterprise in all the districts. They are mainly raised through tethering at subsistence level; a practice that suits the nucleus human settlement patterns and fragmented land with crop farming being the major economic activity. While majority of the households keep local breeds, there have been attempts to improve the local goats by cross breeding with boar and Mubende goats for meat.
- The chickens kept were mainly indigenous reared on free range system. Commercial farming of layers and broilers is commonly practiced in the urban and peri-urban areas of Arua, Nebbi and Moyo districts.
- Meanwhile apiary has enjoyed support from various NGOs and government programmes. Both modern (Kenya Top Bar & Langstroth) and traditional beehives (Log hives) are used.

a. The constraints to livestock development

The crucial constraints to the sector include among others: the policy on Agro-zoning gazette's West Nile for crop production thereby limiting livestock development interventions in the region. The other major constraints are: land fragmentation; lack of stockiest (as day old chicks and feeds are procured from Kampala, modern bee hives remain

inaccessible); livestock diseases; and attitudinal problems of community members that inhibit learning and improved technology adoption.

a. The opportunities for livestock development

In spite of the above constraints numerous opportunities exists for livestock development. There is ready market for all types of livestock and their products within the region and in DR Congo and South Sudan. Vast grazing land is readily available with significant cereal production. Cotton production in Arua and Nebbi districts together with silver fish and oyster shells on Lake Albert/Nile and rice brans in Amuru and Yumbe districts offers avenues for feed production. Besides, many (and trainable) farmer groups exists.

a. Key recommendations

From the above analysis, transforming livestock farming into a business in West Nile region is feasible. What farmers need is the change of their subsistence attitude through relevant knowledge and skills training for livestock keeping as a business. Achieving this will require: (i) a value chain analysis of the preferred livestock enterprises – goats, poultry, and apiary; and (ii) designing and executing a market-oriented approach using hands-on and enterprise-based skills development.¹ In this way, each farmer will grow his/her farm and knowledge basing on relevant and demonstrated market niches.

¹ AFRISA has well developed entrepreneurial livestock skills training packages which include, among others, skills for commercial goat production; Poultry production; Milk production; Yoghurt production; Feeds production; Pasture preservation and storage technologies; Water harvesting technologies; Zoo-technics (i.e., designing and producing livestock production equipment); and Community based animal health workers/Vet scouts.

1.3 AFARD-AFRISA PARTNERSHIP

1.3.1 AGENCY FOR ACCELERATED REGIONAL DEVELOPMENT (AFARD)

AFARD is a local non-denominational, non-governmental organization that is working in 5 of the 8 districts in West Nile namely, Nebbi, Zombo, Arua, Yumbe and Moyo districts. It was formed in July 2000 by professional sons and daughters of the region with the vision of having a prosperous healthy and informed people of West Nile. AFARD's mission is to contribute to the molding of a region in which the local people including those who are marginalized to participate effectively and sustainably in taking lead in the development of the region.

The objectives of AFARD are;

- To Harness the knowledge, skills and experiences of development practitioners within the region and channel it for accelerated, equitable and sustainable development of the region.
- To act as a midwife, an interim link between the grass-roots and sources of new information, innovations, expertise and funds required for the type of development that places people firmly in the centre of all development efforts.
- To avail their expertise by way of consultancy to other development stakeholders interested in the region.

The key thematic areas of AFARD's operation are food and income security, improved livelihood and community empowerment. Currently, AFRAD is working with 150 community groups that are at different stages of organizational growth. These groups are all: registered with local governments; have established and rotational leadership structures in line with their constitutions; and are involved in ensuring secure livelihoods of their members through the establishment of demonstration plots for skills training and production for the market, community policing on sanitation and hygiene and education, and building a community microfinance system. As a complementary activity, AFARD has also been involved in animal production through small ruminant promotion. Each household was provided with 2 local nannies and each group of 100 households with 4-6 male Boer goats for cross breeding. Basic trainings in better animal husbandry accompanied these inputs.

1.3.2 AFRICA INSTITUTE FOR STRATEGIC ANIMAL RESOURCE SERVICES AND DEVELOPMENT (AFRISA)

This is a Not-For Profit autonomous Agency of Makerere University and a company limited by guarantee. AFRISA functions as a platform for advancing Academic-Community-Public-Private Partnership (ACP3) engagements and foster implementation of the unique training model and programs in Uganda and beyond. The College of Veterinary Medicine, Animal Resources and Bio-security (COVAB) is the lead academic partner at the AFRISA Platform. The vision of AFRISA is "Healthier and Wealthier Communities in Africa" and seeks to anchor higher education into production, nurture healthier and productive entrepreneurial generations through providing transformative skills, technology, innovations and community engagement, fostering Africa's communities, farmers, youth and women to harness resources and opportunities presented by the animal sector.

STRATEGIC OBJECTIVES

1. Nurturing a skilled workforce for commercial livestock production, processing and entrepreneurship in the diverse animal resources value chain (SMEs);
2. Establish an integrated Educational model Emphasizing community service, advisory and extension system for a holistic animal resources industry (Service to learn and learning to serve);
3. To leverage costs of training & producing highly skilled and pragmatic human capital more efficiently;
4. Transformation of some livestock and animal production farms into both production and training units-community learning centers (ACP3 skills centers);
5. Securing the animal resource as an asset – behavioral transformation;
6. Enhancing productivity of the animal resources production systems;
7. Enhance engagement of the youth and women in the animal resource industry;
8. Incubation for livestock entrepreneurship and Value addition to enhance market access; and
9. A training model that promotes partnerships between the academia, public and private sectors (ACP3)

1.3.3 AFARD-AFRISA COLLABORATION

AFARD was seconded to AFRISA by His Grace Rt. Rev. Henry Luke Orombi, the Archbishop of the Church of Uganda in December 2011. In August 2011, the Church of Uganda and Makerere University signed a Memorandum of Understanding with a major objective of strengthening the animal sector production, productivity and service delivery system in Uganda to be operationalized through the AFRISA platform. A series of planning meetings between AFRISA-AFARD resulted into a Memorandum of Understanding that operationalizes the partnership. A team of Livestock specialists was also commissioned to conduct Livestock needs assessment in the region with the theme "Developing West Nile together" by using livestock as an entry point with the aim of healthier, wealthier and informed people of West Nile.

1.4 RATIONALE FOR THE LIVESTOCK NEEDS ASSESSMENT

The West Nile region has been left out of most government livestock intervention programmes since it lies outside the cattle corridor. As a result, almost all livelihood and food security interventions focus on crops. As a consequence the region has stagnated in livestock population. In spite of the prolonged support extended to the communities of West Nile through crop interventions, the few households that kept livestock were observed to be more income secure as compared to crop dependant households. Based on the above, AFARD felt the need to integrate livestock interventions in their food security programmes. However, to effectively integrate livestock within the household economic strengthening and productivity enhancing approach, a livestock needs assessment was deemed necessary.

1.4.1 AIM OF THE ASSESSMENT

The broad aim of this assessment is to establish profitable and sustainable livestock enterprises for communities in West Nile region.

1.4.2 SPECIFIC OBJECTIVES OF THE ASSESSMENT

- I. To profile the livestock enterprises and their capacities in the AFARD operation areas;
- II. To establish the constraints in livestock keeping;
- III. To map out opportunities for livestock development in the areas; and
- IV. To propose the crucial market-oriented targeted interventions relevant for communities in the West Nile region.

1.5 AFRISA TEAM COMPOSITION

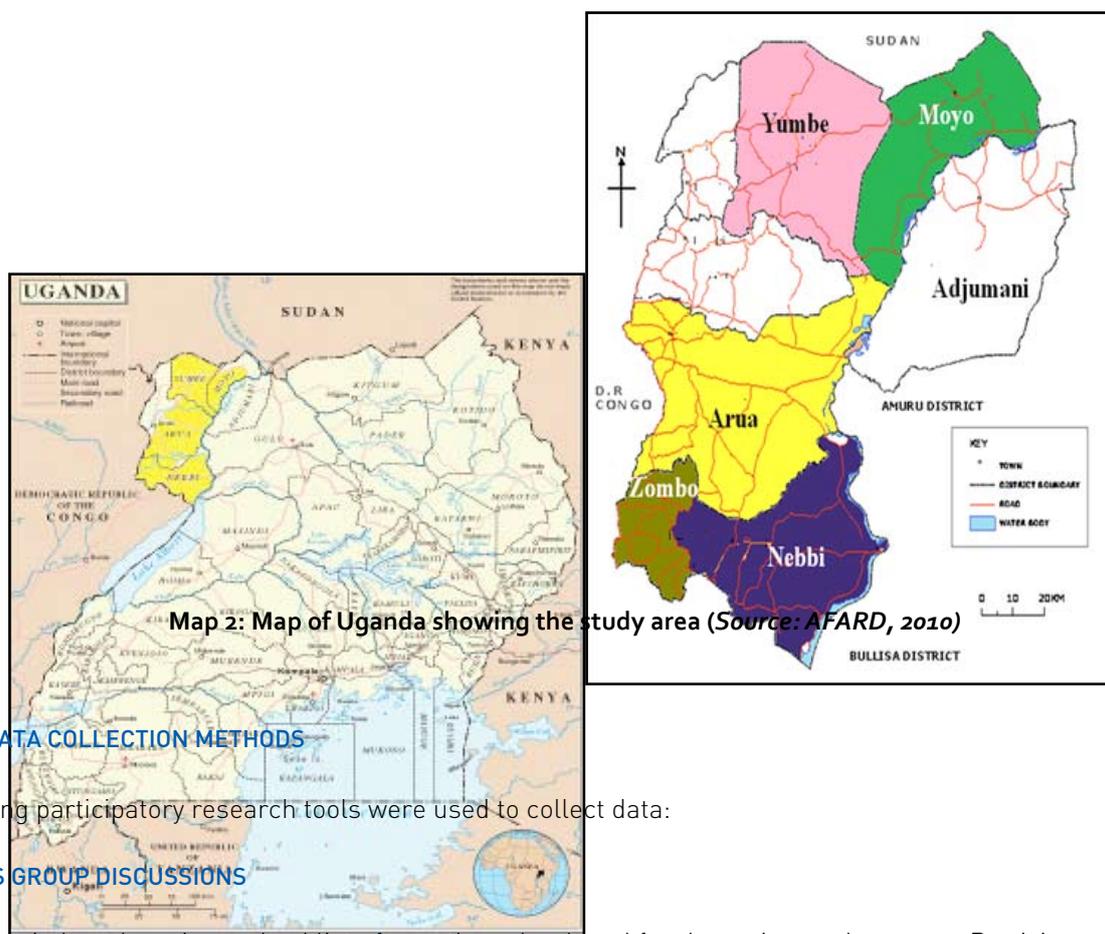
The AFRISA team included the following specialists; Livestock Socio-economist and Gender Expert/ Consultant, Project Planning and Management, Livestock Development Specialist, Animal Production and Health specialist, Rural Development specialist and animal product processing and value addition.

2.0 APPROACHES TO THE NEEDS ASSESMENT

2.1 THE STUDY DESIGN

The assessment was predominantly qualitative. A descriptive cross-sectional study was conducted in five districts of West Nile, namely; Arua, Moyo, Nebbi, Yumbe and Zombo (Map 2). The study involved use of participatory tools for obtaining data on the existing livestock enterprises and management practices, challenges, opportunities, skills and knowledge gaps, actors as well as critical areas of research and technology innovation. The groups interviewed were purposively selected with the help of AFARD field staff and because of homogeneity of the beneficiary groups, one farmer group was selected and visited per district.

Map 2: Map of Uganda Showing the Study Area



2.2 FIELD DATA COLLECTION METHODS

The following participatory research tools were used to collect data:

2.2.1 FOCUS GROUP DISCUSSIONS

This was carried out by using a checklist of questions developed for the various sub sectors. Participants in the focus group discussions were selected by the field officers in the respective sub counties. Depending on willingness of the female members to participate in discussions in the presence of men, participants were divided into different groups of women and men (plate 1) to encourage women to freely articulate their views without intimidation from men.



Plate 1: Men and Women in different discussion groups in Obongi-Moyo district

The research team for the different groups consisted of an interviewer and a note taker. Interviews were guided by checklists and discussions involved both verbal interviews and visual tools mainly pair-wise ranking and scoring and ranking. Pair wise ranking (Plate 2) was done mainly to determine priority livestock enterprises, constraints, training needs and opportunities of participants.



Plate 2: Primary Pair-wise ranking exercise in Obongi-Moyo district

2.2.2 PARTICIPANT OBSERVATION

This additional tool was used to observe the physical environment, farming systems, livestock enterprises, status of participants and general body language of respondents during interviews.

2.2.3 TRANSECT DRIVES

This was done together with selected farmers and key informants. The teams were able to observe, ask questions and discover more about the area in terms of livestock kept, crops grown, and general socio-economic and biophysical status of the areas.

2.2.4 KEY INFORMANT INTERVIEWS

These were conducted with selected stakeholders who are very instrumental in livestock sector development such as area veterinarian, NAADs officials, NARO personnel, local leaders, Community based organization and established farmers. Key informants were very important for obtaining data on livestock enterprises, constraints and opportunities for improvement. Through key informant interviews, research and technology innovation areas along the various values chains were mapped.

2.3 DATA ANALYSIS

Data was analyzed using mainly qualitative analysis tools, namely; micro-analysis, making comparisons, asking questions, and coding. Data was organized in sub themes, similarities and differences identified, their relationships determined and logic leading to conclusion was drawn. In addition, some descriptive statistical analysis was done using charts and tables.

3.0 SITUATIONAL ANALYSIS

3.1 LIVESTOCK MANAGEMENT SYSTEMS IN WEST NILE

The study revealed the following enterprises, dairy cattle, beef cattle, goats, sheep, piggery, poultry, apiary and Fish. The management systems for the different enterprises are described below;

3.1.1. BEEF CATTLE PRODUCTION

Beef cattle production has a great potential in all the 5 districts. Traditionally, the people of West Nile have been keeping the Small East African Zebu until recently when the long horned Ankole cattle (plate 3) were introduced by pastoralists who migrated from Bunyoro (Buliisa) and settled in the lower Nile belt areas the region.



Plate 3: Long horned Ankole cattle (Yumbe) and Small East African Zebu (Nebbi)

Feeding: A lot of natural pastures are present for beef animal feeding, however these pastures are wasted during dry season when they dry and are burnt. Animal herds are communally grazed. Individuals within a village or clan pool their animals together into kraal and graze them on communal land. This was practiced in all the districts visited. Tethering cattle was a very common practice on the uplands of Zombo, and Arua due to the high human population density and dominance of crop farming. The nucleus settlement pattern in Yumbe coupled with crop growing influenced the tethering of cattle.

3.1.2 DAIRY CATTLE PRODUCTION

Zombo district has the greatest potential in dairy production however selected areas in Arua and Nebbi districts can also support the enterprise. In Arua district the areas suitable for dairy production include; Vurra Sub county (S/C) which has high rainfall and good vegetation cover, Logiri S/C, Eceko parish in Arivu S/C (have vast land, good pasture density) and receives relatively high rainfall. In Nebbi, Erusi s/c and Goli parish in Nebbi S/C have equally good climate that can promote exotic dairy farming.

Previous attempts have been made to introduce exotic dairy cattle under the zero grazing system in the districts of Arua, Moyo, Zombo and Yumbe. However Yumbe and Moyo districts registered high failure rates since most animals died as compared to other districts.

CASE STUDY OF SUCCESS AND FAILURE IN DAIRY FARMING

In Moyo district Friesian cattle were introduced by Africa Action Hilfe (AAH) a Non-Governmental Organization under their food security programme in 1999. A total of 36 Friesian heifers were provided to 36 households in the sub-counties of Moyo, Moyo Town Council, Itula and Metu. In addition AAH procured AI materials, Health kits trained 2 AI technicians and facilitated them to provide advisory and AI services in the above sub-counties. This was reported as one of the most successful projects implemented by the district veterinary department from 1999 to 2003. However, problems started when the project phased out, farmers failed to sustain the husbandry practices. This resulted into death of many animals due to tick borne diseases and break down of AI services. There was also limited supervision by district veterinary officers due to inadequate facilitation.

In Yumbe district death of exotic dairy cattle was attributed to scarcity of water for livestock production, unreliable feed sources and limited knowledge on management of the animals as emphasized by the voice below.

In Yumbe District, 20 in-calf Friesian heifers were given to women groups during presidential election in 2011. As of January 2012, only 6 out of 20 cattle were surviving, 14 died. The few surviving cows have poor productivity and body condition. Mortalities occurred mainly due to ticks and tick borne diseases. Other challenges experienced included scarcity of pasture, water shortage and lack of knowledge in exotics dairy cattle management. Safe water coverage in the district stands at only 32% and boreholes are very few yet these animals drink a lot of water. "From the experience we had with these Friesians, most people believe dairy cattle cannot survive in Yumbe District.

A female Local Leader in Yumbe district.

As a result of this negative experience most farmers expressed fear for exotic breeds of animals citing that they are very difficult to keep.

Table 1: Livestock Statistics, Zombo district

Sub County	Cattle		Goats and Sheep		Pigs		Chicken	
	Local	Improved	Local	Improved	Local	Improved	Local	Improved
Atyak	2,384	83	7,796 9		594	0	9,673	6
Kango	3,283	1	8,794 8		1071	0	9,316	0
Zeug	1,656	3	6,753	80	915	0	9,326	74
Nyapea	741	0	6,153	40	1285	0	7,608	0
Jangokoro	1,088	25	6,299	64	677	0	9,048	0
Paidha	1,048	10	6,763	116	283	0	7,261	0
Paidha Town council	224	42	2445	03	56	75	3,249	2010
Total	10,424	162	45,003	320	4,881	75	55,481	2,090

(Adapted from CIS Household survey conducted in June 2009 by UBOS)

3.1.3 SMALL RUMINANTS (GOATS AND SHEEP)

The good vegetation cover and vast rangeland along the Nile belt favors small ruminant production in West Nile. Being drought resilient, small ruminants can thrive in areas of limited water supply as is the case during dry season in most parts of West Nile. Currently small ruminants are mainly raised through tethering at subsistence level especially in nucleus human settlements and fragmented land where crop farming is the primary activity. Communities mainly keep local breeds of goats and sheep. Some attempts have been made through NGO's which include AAH, AFARD, GTZ, PARUDA (Participatory Rural Development Agency), CARITAS, Send a Cow Uganda, DRC (Danish Refugee Council) among others and Government programmes like NAADS to improve the local goats by cross breeding with boar, Mubende, Toggenburg and Saanen. However, the challenges that have negatively affected goat improvement efforts as reported by key informants and farmers were high mortality of adult exotic goats and low kid survival rates.



Plate 4: Tethered goat on scanty pasture, typical goat house and Boar goat in Gimara, Obongi-Moyo district

Whereas farmers appreciated the economic roles of goats in generating household income, sheep were reared mainly for cultural reasons especially in Moslem dominant communities like Yumbe district.

3.1.4 PIGGERY

Piggery is one of the economically viable livestock enterprises in some parts of west Nile region especially in rural areas and Christian dominated communities. The enterprise is predominantly subsistence with farmers keeping on average 2-5 pigs per household. A few commercial farmers have introduced exotic breeds such as landrace, large white and cambrough. Pigs are managed on backyard and scavenging systems in peri urban areas and rural areas respectively. Caution has to be taken when introducing the enterprise in the region because of religious reasons as explained by examples below;

In most parts of Moyo (plate 5), uplands of Nebbi and Zombo district, piggery is a very attractive enterprise. However it is not the same for areas like Obongi county which is dominantly Muslim and the hot areas along the Nile belt. Peri-urban areas of Arua district are also not suitable for piggery due to the diversity of religions. In Yumbe district the enterprise may not be attempted because of high population of Muslims accounting for 82% (Lakwo, Cwinyai and Omar, 2008).

The enterprise has also had interventions from government programmes like NAADs and NUSAF which supported farmers by providing piglets.



Plate 5: A progressive pig farm and housing in Moyo district

The reasons why piggery is popular is because pigs take relatively short time (about 6-9 months) to attain a market weight of 90 Kg, and they require small space and have high carcass dressing weight. Pigs in West Nile region are mainly managed through backyard scavenging system, with majority of the pig keeping households having 2-5 local pigs. There are limited number of commercial farmers who use exotic breeds such as landrace, Large white, and cambrough, among others. A few farmers (supported by NAADS and NUSAF) keep pigs on intensive system. However, the Nile belt has hot climate, low feed resources and water shortages, thus not popular for piggery.

3.1.5 POULTRY

Local chicken was the main poultry species reared among others like turkeys, ducks, Guinea Fowls, geese and pigeons. This was mainly kept on free range system. In the peri-urban and urban areas of Arua, Moyo and Nebbi exotic breeds were commercially reared. The challenge was in acquiring inputs like day old chicks and feeds which were all purchased from Kampala. There was a lot of phobia about exotic breeds of chicken amongst farmers and also extension staff citing high losses due to mortalities. Farmers also expressed the high labour needs of the enterprise especially in management of day old chicks as backed by a voice below: "These birds need water, warmth, you have to be there and they eat a lot, when you have them it's like another baby!" female respondent Yumbe.

Previous attempts by individual farmers, government programmes and NGO's to introduce exotic breeds of chicken have had major setbacks due to high mortalities, high cost and poor quality feeds and low market for broiler birds. Broilers were perceived to have soft meat which the population did not appreciate hence the only market was a few hotels (where its deep fried) in the region. Layers can be promoted because the demand for eggs within the region and neighboring countries exceed the current production.

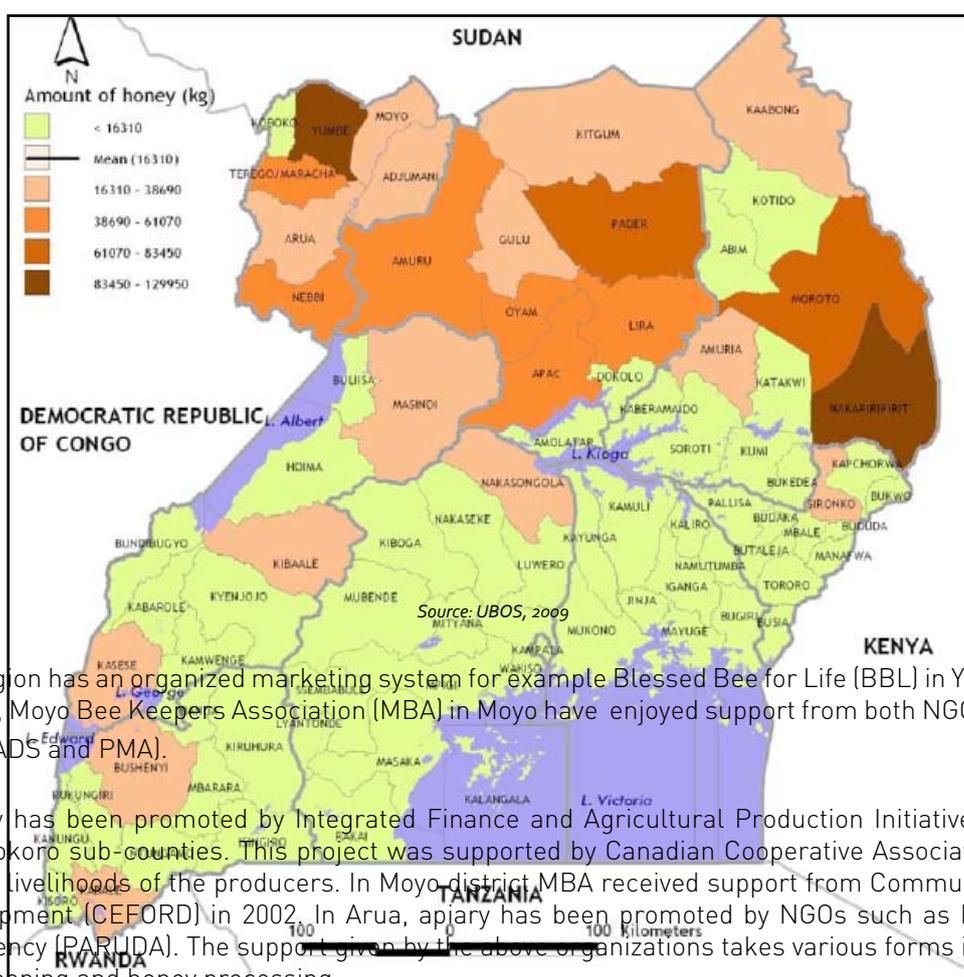
Local chicken production is economically viable since the prices were very attractive, local cock was 20,000-25,000/= as compared to a broiler at 8,000-10,000/=.

3.1.6 APIARY

The West Nile region has been identified as the best honey-producing region and produces up to three-quarters of honey in Uganda (Acai et al, 2010). Both modern (KTB & Langstroth) and traditional beehives (Log hives) are used for bee rearing (plate 6), characterized by low colonization rates and high rate of absconding. The modern beehives have been reported to be very expensive in all the districts visited despite efforts by NAADS to promote them.

Yumbe District is the highest producer of honey in Uganda. As per the 2008 livestock census (UBOS, 2009) the district was reported to have produced 129,950 Kgs of honey. The district that comes next to Yumbe district in honey production in West Nile includes Maracha (43,950 kg) and Nebbi (42,620 kg) as reflected in Map 3.

Map 3: Total production of honey in the different districts in Uganda



The West Nile region has an organized marketing system for example Blessed Bee for Life (BBL) in Yumbe, Bee Natural Products in Arua, Moyo Bee Keepers Association (MBA) in Moyo have enjoyed support from both NGOs and government programme (NAADS and PMA).

In Zombo, apiary has been promoted by Integrated Finance and Agricultural Production Initiative (IFAPI) project in Kango and Jangokoro sub-counties. This project was supported by Canadian Cooperative Association (CCA) with the aim of improving livelihoods of the producers. In Moyo district MBA received support from Community Empowerment for Rural Development (CEFORD) in 2002. In Arua, apiary has been promoted by NGOs such as Participatory Rural Development Agency (PARUDA). The support given by the above organizations takes various forms including beehives, training on beekeeping and honey processing.

The major challenges in bee keeping reported by farmers and key informants were bush burning that destroys beehives, bee pests, and absconding and low colonization rates. Women had low participation in the enterprise citing the difficulties they faced in harvesting and management of the apiaries. Women considered apiary as an enterprise that is better suited for men.



Plate 6: Different beehives used in the region and their vulnerability to bush fires

3.1.7 AQUACULTURE

Aquaculture is practiced on a small scale mainly in Arua and Zombo. River Nile is the source of fish in West Nile. However, the good quality semi-permanent/permanent streams in Zombo and Upper Arua provide opportunities for aquaculture. The Nile also provides good source of water for cage rearing in Nebbi, Arua and Moyo Districts.

3.1.8 OTHER LIVESTOCK ENTERPRISES IN THE WEST NILE REGION

Micro-livestock such as Rabbit and Guinea Pigs are kept by very few individuals for household consumption although some are sold for income. Although the above livestock were not popular, their small space requirements ease of rearing and wide range of forage makes them cheaper source of animal proteins. They can therefore be promoted for addressing malnutrition related to animal protein deficiency in poor households that cannot afford conventional (beef, goat and pork) meat.

3.2. OTHER ECONOMIC ACTIVITIES

The West Nile region being an agro-pastoral area implies that majority of the population derives their livelihood from crop and animal farming. Aside from livestock, the people of the region cultivate both food and cash crops mainly at subsistence level. The food crops grown in most districts from consumption and cash include groundnuts, cassava, potatoes, maize, simsim, bananas, and vegetables among others. Some examples of cash crops grown in the region include tobacco (Arua & Yumbel), coffee (Zombo), cotton (Nebbi, Zombo, Moyo) and sisal (Nebbi). Charcoal burning, brewing local alcohol, brick laying and cutting grass for thatching (by women) are also alternative sources of income for livelihood in the region.

4.0 LIVESTOCK ENTERPRISES PREFERRED

In order to ascertain the preferred animals in the region for eventual targeted intervention identification, a participatory ranking approach was used. All participants in the community meetings organized for the sampled farmer groups had their independent livestock ranked. Appendix 3 presents the cases on a group/district basis. The table 2 below shows the percentage aggregate picture of the most preferred enterprise and what follows is why the enterprises were ranked in that order.

Table 1: Preference ranking for preferred livestock

District	Percentage rank for the various livestock in West Nile											
	Cattle	Goats	Sheep	Chicken	Apiary	Pigs	Turkey	Ducks	Rabbits	Guinean fowl	Aquaculture	Total
Zombo	40	30	10	0	0	20	0	0	0	0	0	100
Nebbi	40	30	20	10	0	0	0	0	0	0	0	100
Arua	27	27	13	27	0	0	0	7	0	0	0	100
Yumbe	23	17	18	14	11	0	7	0	3	7	0	100
Moyo	18	20	16	11	13	0	8	6	6	0	3	100
Total weight	148	124	77	62	24	20	15	13	9	7	3	

Evident from table 2 above are: first, not all farmers groups studied had all the livestock enterprises (largely because of agro-ecological differences and religion). Second, different areas had different priorities (a function of value chain competitive advantages). Third, it is evident that a few enterprises, in aggregate terms, dominate in all the districts – cattle, small ruminants (goats & sheep), poultry and apiary.

The key reasons why the different livestock enterprises were selected are as hereunder:

Cattle enterprise was ranked as the first choice in all the districts except Moyo. However, its (perceived) benefits in almost all the districts included its lump sum return as a male respondent in Zombo remarked: “We prefer cattle to these other animals because selling cattle brings in more money which can be used for buying food, paying school fees, and farm workers.” Other benefits included being used as collateral for loans (Moyo), high appreciation for bride price than other livestock (Yumbe), availability of many products including milk which could provide food and generate daily income and manure for improving farm fertility. In Nebbi, it was ranked because there is large availability of pasture unlike in Moyo where it was considered unviable due to land scarcity, moving long distance in search for pasture and water in dry season. Farmers also observed that the death of a cow leads to greater loss than loss of a goat.

Goat enterprise was highly preferred because they are easy to keep, multiply easily, have high constant demand, and provide ready source of quick money (Arua and Nebbi) besides their vital role in social functions (Zombo). In Yumbe, goats were also reported to have high market value than cows, tasty meat, good adaptation to the local environment, high growth rate and the ease to convert into cash for solving domestic issues. In Moyo, goats were noted to require small pieces of land for rearing goats compared to cattle, high twining rate, being able to survive periods of water scarcity and low vulnerability as compared to sheep to wild animals.

Sheep enterprise ranked low because the farmers argued that though sheep has good market price, their demand is low, are prone to predation by wild animals, and are mainly used for cultural purposes (Zombo, Yumbe and Nebbi). In Arua, it was pointed out that sheep are not accepted for bride price although they are used during funeral rites. However, sheep were noted to multiply faster than goats, are resistant to diseases and with market in neighboring Sudan (Yumbe) and their feaces are used as local salt and medicine for curing ulcers and diabetes (Moyo).

Chicken was the only poultry that were considered to be economically important given the ease of low-input free range rearing practice and ready market for both eggs and chicken. It was reported in Arua to provide quick money required for solving daily household needs in addition to being used for social events. However, its ranking varied because local chicken are kept mainly on subsistence scale for domestic consumption as a respondent in Nyapea noted: “Chicken are mainly kept in our village for rewarding the labor for people who work in our gardens and are slaughtered when visitors come to our homes.” However frequent outbreak of diseases and predation were amongst the factors that discouraged

farmers from venturing into commercial local chicken production in Zombo district. In Nebbi they were also known to fetch small income. Keeping exotic chicken was reported to be very challenging due to their high feed requirements (Yumbe). The few farmers who were keeping exotic chicken in Moyo also expressed their frustration due to high cost of poultry feed, lack of veterinary drugs and the hardship involved in raising day old chicks.

Pig enterprise was not ranked at all in Yumbe due to religious reason. It also received low ranking because farmers noted that their local breed have low growth rate, require large amount of feed, are a source of conflict with neighbors due to destruction of crops, get easily killed by crop farmers and African Swine Fever (ASF) (Zombo). It was also noted that the enterprise management is difficult (Nebbi).

The main cross cutting enterprise was apiary (and in Nebbi, fisheries) given its low work load and high market demand. The lack of focus on apiary was due to high bush burning practice, theft of bee hives and honey at night (Yumbe and Arua), high cost of modern beehives and risk to life from bee sting that killed some people (Moyo).

Other non-commercial small scale livestock enterprises were: Turkeys and ducks reported as marketable but not much preferred because they are very destructive to crops thence a source of conflict with neighbors (Yumbe). In Arua, ducks are also considered dirty birds besides their high requirement for water. Guinea fowl, rabbits and guinea pigs were reared mainly for household consumption and not considered economically viable (in Yumbe). Aquaculture is a new phenomenon in Moyo since the county depends on natural fish from the Nile which passes through the county.

5.0 CONSTRAINTS TO LIVESTOCK REARING

5.1 MARGINALIZATION OF THE LIVESTOCK SECTOR IN THE REGION

The technical staff in the production department cited marginalization of the region from most livestock improvement projects in MAAIF since it is not in the cattle corridor. This stems from the fact that West Nile region has been zoned as an agro-pastoral agro-ecological zone. The enterprise selected by the government for the region was apiary and crops (cassava, groundnuts and simsim). However, history has it that the people of the region have strong attachment to livestock. In Madi sub-region people were given names that were attributes of cattle e.g. Tikaa, Tikumbea, Leiga and Timuru, suggestive of their strong attachment to cattle. The recent influx of pastoralists (Balalo) into the region is an indication that area can support livestock production. Much as apiary was emphasized; it was not a traditional enterprise and was poorly adopted even after intervention in most districts. It was also noted that zoning of the region was done with no or limited consultation of key technical staff. As such, most of the agricultural development projects in the region are crop related. The district veterinary staff in the various districts strongly urged MAAIF to support development of the livestock sector in the area since it has a very big potential.

5.2 LAND FOR LIVESTOCK PRODUCTION

5.2.1 LAND PRESSURE

This was reported by farmers as a big constraint in areas with high population density and nucleus settlement. The WENDI groups in Yumbe and Obongi County particularly emphasized how their nucleus settlement pattern has constrained livestock rearing. In Obongi county, the greatest challenge was water hence farmers left their distant agricultural land to come and settle near the trading centre. The pattern of land use in which crop fields are scattered have also disrupted cattle routes for water access. On the other hand, it was also evident that most of the districts visited had vast communal lands which were underutilized. Such lands are currently being used by pastoralists from Bulisa as the local communities look on.

5.2.2 DISTANT UNDERUTILIZED LAND

Although land pressure was reported in the nucleus settlements, it was also noted that most farmers had distant agricultural lands which were either underutilized or unused. It was amazing that some farmers in Obongi and other sub-counties along the Nile had over 100 acres of un-utilized land less than 10 Kilometers from where they are currently settled. Such farmers reported that their lands are used by the pastoralists who were evicted from Bulisa district. The major reasons the farmers gave for not using such distant but viable agricultural land was lack of clean water for household use. However, they are willing to go and use their land for livestock and crop production if organizations like AFARD can construct for them clean water sources. Other forms of support that may help to stimulate use of such lands include developing livestock infrastructures eg. Permanent crushes and communal cattle dip especially along the Nile belt. Farmers also need to be sensitized on land use planning so that such land is well planned prior to livestock and crop development.

5.3 WATER SHORTAGES AND OR CONSTRAINTS TO ANIMAL PRODUCTION

This was reported by the farmers as a common problem especially during dry seasons when the seasonal streams dry off. As such, cattle farmers have to look for water several kilometers from their kraals. This was reported to predispose their cattle to diseases such as CBPP since animals from different kraals converge at the few sustainable water points in the dry season. However even where permanent water sources exist, they lack stock routes to access to such water points. It was also evident that the water harvesting culture during the rainy season is still uncommon in the rural areas of the region. This may be attributed to the fact the majority of households live in grass thatched houses and do not permit rain water harvesting. However, in the long run the government needs to establish valley dams or water pump systems in the uplands of the region so as to address

5.4 BUSH BURNING AND PASTURE SCARCITY DURING DRY SEASON

The dry season in West Nile may last for 3 months (December to March) and during this period (plate 7) all the available pasture dries off. Unfortunately, such standing hay is burnt by hunters thus causing cascade of bush fires during the dry season. This destructive practice has persisted in the region because communities and local leaders have not strongly come out to condemn bush burning. Cattle are the most affected by such pasture shortages since small ruminants and pigs are left to roam freely during the dry season.

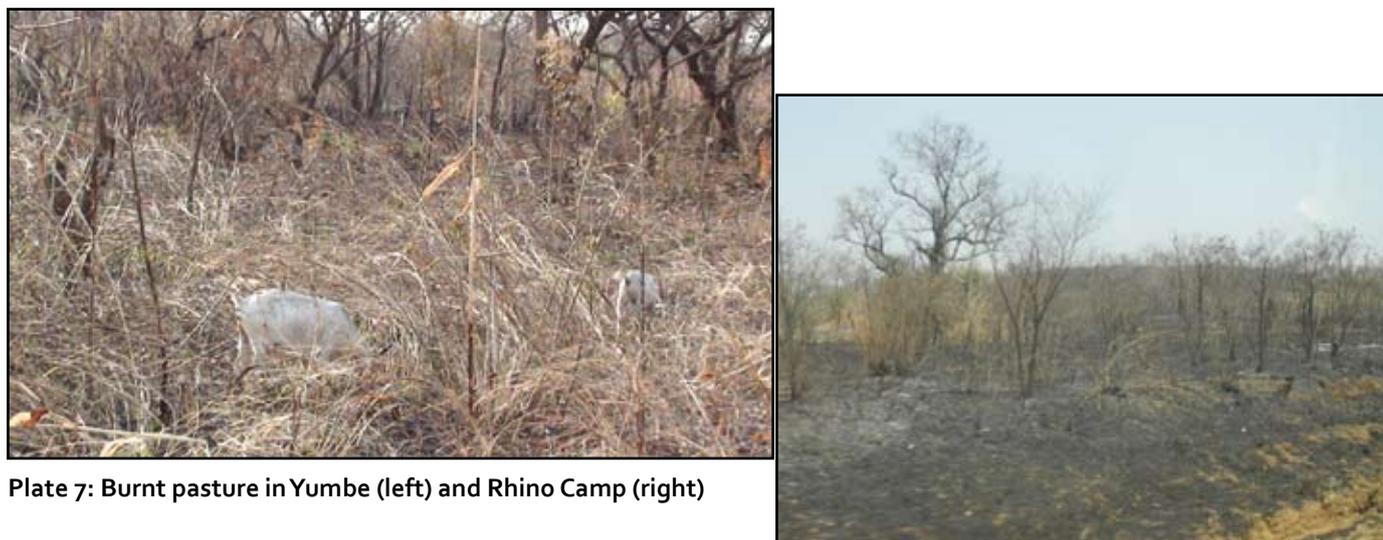


Plate 7: Burnt pasture in Yumbe (left) and Rhino Camp (right)

Bush burning also destroys the humus from organic matter causing soil infertility. It also affects bee keeping because sometimes beehives get burnt thus discouraging farmers from bee keeping.

Despite the known threat to pasture during dry seasons, livestock farmers in the region were not preserving pasture in form of hay or silage.

5.5 LIVESTOCK AND POULTRY DISEASES

This was reported as one of the major constraints to animal production in the region. In all the districts visited, farmers and technical staff alike mentioned that for any livestock intervention to succeed in the region a lot has to be done to tackle the endemic animal diseases. The important diseases affecting the different livestock enterprises are mentioned below;

5.5.1 CATTLE

- Contagious Bovine Pleuro Pneumonia (CBPP) outbreaks occur frequently especially in the dry seasons when cattle congregate at the remaining water points thus spreading the disease.
- Black quarter (BQ) also occurs along the Nile and during the dry seasons as cattle graze on scanty pastures up to soil surfaces thus acquiring the bacteria that cause the disease.
- Tick Borne Diseases (TBDs) such as East Cost Fever (ECF), Babesiosis and Anaplasmosis are common causes of mortality in calves and exotic cattle. This is because the region has high density of ticks like *Rhipicephalus appendiculatus*, *Boophilus decoloratus* and *Amblyoma variegatum*. Despite this, use of chemical tick control is still low in the region.
- Helminthiasis was also reported to be a major cause of stunted growth in calves especially liver flukes and round worms were reported by technical staff as the major helminthes of cattle. The morbidity of the disease is exacerbated by the warm climate of the region which favors survival of the worms and irregular control of worms by farmers.
- Trypanosomosis is a big problem in the region especially in the tsetse belt in which tsetse fly density is high. Although routine spraying of cattle with acaricides (synthetic pyrethroids) helps in protecting cattle against the disease, rarely are cattle sprayed in the region.

5.5.2 SMALL RUMINANTS

Gastro-intestinal Helminths, ectoparasites such as ticks and mange, Respiratory tract infections, Orf, Neonatal mortalities due to clostridial infections and nutritional deficiencies due to restricted feeding through tethering. Contagious Caprine Pleuro Pneumonia (CCPP) was reported in Arua and suspected in Moyo although confirmatory laboratory diagnosis was not done.

5.5.3 PIGS

Frequent outbreak of African Swine Fever (ASF) has paralyzed the promising pig industry in the region. Other diseases include gastro-intestinal helminthes, ectoparasites especially lice and mange, mastitis-agalactia complex, pneumonia among others.

5.5.4 POULTRY

Newcastle disease (NCD), salmonellosis, coccidiosis, fowl pox, helminthes, ectoparasites such as lice. However, the technical staff noted that confirmatory diagnosis of bacterial and viral diseases of poultry should be provided for by the government (MAAIF).

5.6 INSUFFICIENT VETERINARY EXTENSION SERVICES

Although the government boasts that agriculture is the backbone of the country, the staffing level suggests contrary. The district production departments reported that there has been a ban on recruitment of new agricultural staff including extension vets by the local governments. Very low staffing levels in District Veterinary departments have affected the efficiency of service delivery across the region. E.g. Arua district with 27 sub-counties has only 8 veterinarians; Moyo district with 8 sub counties and the town council has only two Veterinarians who have administrative roles in addition to their professional duties hence having very little time for extension work.

5.7 LIMITED VETERINARY INPUTS

The prevalence of animal diseases necessitates use of veterinary drugs, biological, chemicals, and spraying pumps for treatment and control of diseases. Unfortunately, most of the veterinary shops that sale the above materials are found in urban centers which are several kilometers away from livestock rearing areas. These inputs were also reported to be very expensive for small scale farmers and were used inappropriately due to lack of knowledge.

POULTRY VACCINE

Most of the vaccines for poultry are packaged to favor large scale poultry production. For example a vial of NCD vaccines is meant for vaccination of 1000 birds. This creates wastage when a vial is opened for vaccinating a few birds by small scale farmers. Thus the need to have a nucleus of small holder farmers who can agree to buy a vial for covering all their birds in a village

COLD CHAIN

Although the government strategy is to provide services at sub-county level, lack of cold chain facilities for storage of vaccines at sub-county level has made vaccination difficult.

5.8 CHALLENGES OF COMMERCIAL FEEDS

Compounded feeds for animal production are not readily available and where they exist their costs are very high and were also reported to be of poor quality. All processed feeds and/or ingredients that were sold in the region came from mainly Central Uganda. Feed associated challenges have mainly constrained commercial poultry production in particular. Given this challenge, farmers wished they are helped to formulate their own animal feeds from locally available raw materials.

5.9 LACK OF QUALITY ANIMAL BREEDERS IN THE REGION

Most of the livestock breeds kept are local breeds that have low productivity. There was apparently no information on commercial livestock breeding in the five districts visited. As a result, implementers of projects on breed improvement procure livestock from Western and Central Uganda. This coupled with poor certification of breeding animals, were reported by the technical staff to have resulted into spread of diseases such as Food and Mouth Disease (FMD) and Brucellosis.

Artificial insemination services were also offered by a limited number of Veterinary departments in the region. Amongst the districts visited, only Moyo had operational AI services. In the absence of AI, most smallholder dairy farmers use natural (Bull) breeding.

5.10 APIARY RELATED CHALLENGES

Apiary has been perceived as a side agricultural activity and most farmers undertake the enterprise with limited commitment. This explains why bee farmers alluded to high rates of bee absconding and destruction of hives by bushfires. Certainly, if this enterprise is to achieve its full potential in the region, bee farmers need to be helped to understand the need for commitment towards bee farming.

Although several groups have attempted to train farmers, it was noted that bee farmers were exposed to limited level of training. The farmers were trained mainly through workshop mode which does not allow them to have sufficient practical experience.

It was also realized that each district in the region employs only one entomologist who doubles as a vector control officer and apiary development officer. Moreover, entomologists are employed at district but not sub-county level. This means that a single entomologist cannot efficiently provide services to the grass root where their technical knowledge is needed. Although some NGOs have tried to bridge this gap, the collaboration between NGOs and the production departments were still limited.

The farmers reported that most organizations that promoted apiary have been urging them to use modern expensive beehives such as Kenya Top Bar (KTB) and Langstroth. Moreover, on average KTB and Langstroth costs 80,000/= and 170,000/= respectively. These prices were reported to be prohibitive to candidate farmers hence discouraging them from pursuing the enterprise. Farmers preferred local hives that were sold cheaply (at most 10,000/=) although they acknowledged that the honey yield from such hives are lower compared to the modern hives.

Although some farmers are knowledgeable in bee farming, most farmers are not fully endowed with the knowledge and skills for bee farming. This has been attributed to lack of training and few trainings organized by various organizations were reported as workshop-type with limited practicals on hive establishment, queen rearing, honey harvesting, processing, packaging and value addition to the wax as well as propolis.

The research institutions such as Abi-ZARDI and NaLIRRI have not sufficiently introduced technologies for improving bee farming in the region. Key technology areas needed include cheap but effective beehives, colony multiplication and breeding for less aggressive behavior.

Bush burning destroys beehives and bee pests like ants were also reported by the farmers as the major cause of bees to abscond. However, theft of beehives and honey were also reported by the different WENDI groups.

5.11 ATTITUDINAL PROBLEMS OF COMMUNITY MEMBERS

Poor attitude towards work and adoption of new technologies were cited by technical staff as a major constraint to livestock development in the region. It emerged that farmers often time do not assume full ownership of livestock given to them under different interventions. This explains why some farmers still call animals they received from government program as NAADs or NUSAF goats. In essence, they expect NAADs to provide all the support needed to keep the goats healthy since it was NAADs that gave it to them. This kind of attitude was reported by technical staff as one of the factors that has led to poor sustainability of livestock development intervention in the region. Similarly, poor attitude of farmers has also led to low technology adoption from research institutions in the region such as Abi-ZARDI/ NARO.

Quite often, community members have not adopted a culture of hard work and the desire to be a leader in a given livestock enterprise. There is reluctance of learning from neighbours, and whoever innovates is perceived as a threat and not an asset to neighbors. These negative beliefs have suffocated the emergence of progressive farmers since evidence of success could attract envy and trouble.

5.12 CONSTRAINTS TO FISHERIES AND AQUACULTURE

Decreased fish catchment from the River Nile has been reported by fishermen in all the districts served by the Nile. The reasons given by technical staff for the depletion include overfishing using illegal fishing gears and aquatic weeds like water hyacinth.

Aquaculture has not yet taken off very well in the region probably due to the availability of natural fish from the Nile. However, the following are the reasons why even the few existing fish farms are struggling;

- Lack of feeds due to absence of Aqua shops in the area
- Lack of access to quality fish fingerlings since there is no hatchery in the whole region.
- The price of fingerlings is high because all the latter have to be procured from Kajjansi
- Consumers prefer fish from the Nile to those from the pond in Madi sub-region. They believe fish from the pond are tasteless while those from the Nile are sweet.
- Limited efforts geared towards fish farming by the production departments and local NGOs.

5.13 GENDER DYNAMICS AND RELATED CONSTRAINTS

Women prefer to own smaller livestock such as small ruminants (especially goats) to cattle. This is because men tend to grab cattle away from them claiming that they did not come with them. Cattle are mainly owned by households or sometimes a clan if they are brought as dowry. There were cases of men grabbing women's cattle, and to secure cattle ownership and avoid grabbing by men, women ensured that they are co-owned with their children especially sons.

Women took care of the goats but men did the marketing of goats.

6.0 OPPORTUNITIES FOR THE LIVESTOCK SECTOR IN WEST NILE REGION

High demand for livestock and products

There is ready market for all types of livestock/poultry and their products in the region. The West Nile region is bordered by two other Countries (DR Congo and South Sudan) who depend on Uganda for a lot of their food supplies. Prices of the various animal products are shown in table 2.

Table 2: Prices of livestock and their products in the various districts in West Nile

Livestock Commodity	Average costs (Ug. Shillings) by farmers in the different Districts				
	Arua	Moyo	Nebbi	Yumbe	Zombo
Local Chicken (cock)	25,000	20,000	20,000	25,000	20,000
Hen	12,000	12,000	15,000	10,000	9,000
Broiler (6-8 weeks)	9,000	12,000	-	-	
Eggs	300	400	300	300	300
Local goat	150,000	60,000	120,000	125,000	80,000
Improved goat	220,000	→160,000		200,000	
Price of goat meat/kg	9,000	8,000		7,500	8,500
Sheep	120,000	60,000	90,000	95,000	90,000
Local Piglet (2 months old)	40,000	50,000	20,000	-	20,000
Adult local pig	180,000	250,000	180,000	-	180,000
Local Cattle (Bull)	800,000	→600,000	700,000	650,000	800,000
Local Cattle (Heifer)	600,000	500,000	500,000	550,000	600,000
Meat price/kg	8,000	8,000	8,000	7,000	8,000
Milk price/ litter	1400	800	1400	1000	1,200

FARMERS VALUE LIVESTOCK

In all the districts, farmers attach much value on livestock. This is because livestock is looked at as a form of financial and social security. It is through sale of livestock such as cattle and small ruminants that most households are able to raise money for school fees and meet their basic household needs. Live animals are also used in solving socio-cultural issues such as bride price. The strong value attached to livestock implies that communities in the region would be willing to undertake livestock enterprises for livelihood improvement and poverty reduction.

GOOD POLITICAL WILL AT THE LOCAL LEVEL

The political leaderships at various levels in the West Nile districts are becoming aware about the importance of livestock in income security and livelihood. This has been accentuated by crop failures due to the adverse effects of climate change such as prolonged draught and flooding. It was evident that all the local governments in the region have put the livestock sector as a priority area. This was reflected in the increasing support for the livestock enterprises under different government programmes such as NAADs, NUSAF and PRDP. For example, under PRDP Moyo district local government has earmarked development of livestock infrastructures such as permanent crushes, rehabilitation of communal and construction of dips. However, the livestock sector has not received priority in terms of local government budgets.

ARABLE LAND

There is enough arable land and significant cereal production in upper Zombo and Arua Districts. Nebbi District produces a lot of cotton and in the Lake Albert/Nile, fisher men also collect silver fish and oyster shells which also supplies the central Uganda. These provide potential sources of ingredients for local commercial livestock feed production and intensification of livestock management. Amuru and Yumbe have large amounts of rice bran which can be used in feed processing. Also, along the Nile and other upland areas in West Nile, there is vast and less populated land which is good for range land grazing (for ruminants).

WATER AVAILABILITY FOR AQUACULTURE

There are good quality semi-permanent/permanent streams in Zombo and Upper Arua which provide opportunities for aquaculture while the Nile provides good source of water for cage rearing. Similarly **areas with permanent water** like Metu Subcounty are suitable for aquaculture. In Obongi County, Moroki area (Itula subcounty) has been piloted for aquaculture by both Danish Refugee Council (DRC) and Moyo district production department and the results are with very promising.

GOOD CLIMATE IN ZOMBO FOR EXOTIC DAIRY CATTLE

Zombo district is relatively cooler compared to the rest of West Nile region. The cold weather favors exotic dairy cattle such as Friesians and Jersey.

GOOD ENVIRONMENT FOR APIARY

West Nile has good forage for apiary and there is promotion of agro-forestry in the region by different actors such as Uganda Farm Income Enhancement and Forest Conservation project (FIEFOC) that can be integrated with bee keeping. This synergy would ensure that trees for producing timber necessary for making modern hives locally are available. Nonetheless, the diversity of natural forage for bees makes the region suitable for apiculture. However, this potential would be best harnessed if local bee hive technologies are innovated and supplied at relatively cheaper price than the available modern hives.

ORGANIZED FARM GROUPS

Through various NGOs and government programmes like NAADS, community farmer groups have been established at various administrative strata in West Nile region. AFARD in particular has a very organized, highly gender balanced WENDI groups which makes mobilization and access to the communities easy. This will certainly make it relatively easy to train especially the WENDI groups in the various districts.

TRAINABLE FARMERS

Unlike pastoralists, livestock farmers in the region have no knowledge 'hangover' and so are likely to willingly welcome new knowledge given to them. The continued engagement between farmer groups with development agencies through training means that organized farmers have the basic knowledge that needs improvement.

PREVAILING PEACE IN THE REGION

Aside from border conflicts between Yumbe and Moyo districts as well as Southern Sudan and Moyo district, the region remains peaceful. This has encouraged farmers to start relocating to their agricultural lands located away from human settlements. The prevailing peace also encourages farmers to seek for better markets for the agricultural produce in neighboring districts and countries.

ANIMAL TRACTION CREATING HIGH DEMAND FOR BULLS

The use of bulls for traction is increasingly becoming popular in the West Nile region. This is even more important in this era where family labor is becoming scarce as children get enrolled in formal education through universal primary and secondary education. The use of oxen for ploughing in the region has been supported by Northwest Smallholders Agricultural productivity improvement project (NSADP). The project supported several farmer groups through provision of oxen, ox plough and training of farmer groups. This labour saving technology has greatly increased the size of land opened for crop farming. Oxen are also used for transporting agricultural produce, water and construction materials. As more people resort to use of oxen for ploughing the demand for bulls in the region is also increasing.

7.0 CONCLUSION AND ACTION POINTS

From the above analysis, transforming livestock farming into a business in West Nile region is feasible. Vast opportunities exist to promote this transformation. What farmers need is the change of their constraining subsistence attitude through relevant knowledge and skills training for livestock keeping as a business. Achieving this will require strategic and innovative approach that is based on market-driven focus rather than the common charity based support by NGOs and government programmes alike. Herein, there is need to:

STRATEGIC ENTERPRISE DEVELOPMENT

There is need to conduct a detailed value chain analysis of the three preferred livestock enterprises – goats, poultry, and apiary. These enterprises are favoured region wide and are not new to the rural small scale farmers to whom they provide quick sources of income within an existing ready market. Herefrom, will results the designing and executing hands-on and enterprise-based skills development so that farmers ably grow their farm businesses and knowledge building on market returns. This component can greatly benefit from the already tested commercial livestock farming and entrepreneurship artisan training programmes developed by AFRISA, among which are:

- Commercial goat production;
- Commercial poultry production;
- Profitable and clean milk production;
- Zero grazing and techniques for Yoghurt Production;
- Formulation/compounding various livestock and fish feeds from available resources such as crop residues;
- Pasture preservation and storage technologies;
- Water harvesting technologies;
- Zoo-technics for designing and producing livestock production equipment;
- Community based animal health workers or vet scouts.

LIVESTOCK RESEARCH AND INNOVATIONS

There is need for Abi-ZARDI, NARO and related research institutions to unlock the enormous potential of the livestock sector in the region through research and technology innovations. The key research areas (as reflected in the Agricultural research priorities for districts like Moyo) across the various livestock value chains are outlined below:

- i. Mapping out the common diseases that account for seasonal outbreaks and mortalities
- ii. Identifying simple technologies for prevention and control of predation of local poultry
- iii. Use of local feed resources for formulation of cheaper animal feeds especially poultry feeds.
- iv. Quality assurance of the available animal feeds sold in the region.
- v. Improving the genetic vigor of the local livestock through crossbreeding with appropriate exotic breeds. Similarly, the reason for poor survival rates of boar crosses needs to be established.
- vi. Assessing the suitability of Jersey breeds of dairy cattle as alternative to Friesian cattle given their low feed requirement.
- vii. Establishing appropriate technologies for reducing kidding interval and kid mortality in goats.
- viii. Identifying efficacious indigenous traditional medicinal plants as alternative to the expensive modern veterinary drugs.
- ix. Establishing technologies that improve the hatchability of local poultry.

ANIMAL HEALTH

The low productivity of livestock in the region is partly attributed to high burden of vectors and diseases. The following actions need to be instituted to reduce morbidity and mortality due to the endemic livestock diseases in West Nile:

- i. Encourage farmers to adopt routine vaccination of their animals against prevalent animal diseases in the respective districts.
- ii. Cattle and small ruminant farmers should be encouraged to control ticks and protect their animals against tsetse flies through regular spraying using acaricides.
- iii. Strategic and tactical control of worms in livestock using appropriate antihelmintics needs to be encouraged

especially in cattle, small ruminants and pigs.

- iv. The districts need to establish mechanisms for increasing farmers' access to essential veterinary pharmaceuticals such as dewormers, acaricides and vaccination services.

VETERINARY EXTENSION SERVICES

To increase farmers' access to veterinary advisory and clinical services in the region, the following are recommended;

- i. Increasing veterinary staffing level in the districts to at least one veterinarian per subcounty. This will help to bring services closer to those who direly need them.
- ii. Extension service providers also need to be supported with transport facilities to allow for efficient response to diseases outbreaks and increase in vaccination coverage.
- iii. There is also need for modest financial incentive for veterinarians who work in hard to reach areas for purposes of retaining their services.

LIVESTOCK INFRASTRUCTURE FOR HERD HEALTH

To optimize herd health programmes at community level, establishment of livestock infrastructures is very important. The following are therefore recommended;

- i. The various districts should establish permanent crush at parish level for vaccination and any other herd health programmes.
- ii. Rehabilitation of communal dips should be considered in areas where they exist for purposes of effective tick and fly control.
- iii. **Construction of water points for livestock use during dry seasons**

ORGANIZED MARKETING OF LIVESTOCK AND LIVESTOCK PRODUCTS

To improve farmers' penetration of good markets and increase their bargaining power, the following are recommended;

- i. Formation of farmer groups or cooperatives for collective marketing and bargaining.
- ii. Increase access to market information
- iii. Value addition to livestock products
- iv. Establishment of market infrastructure

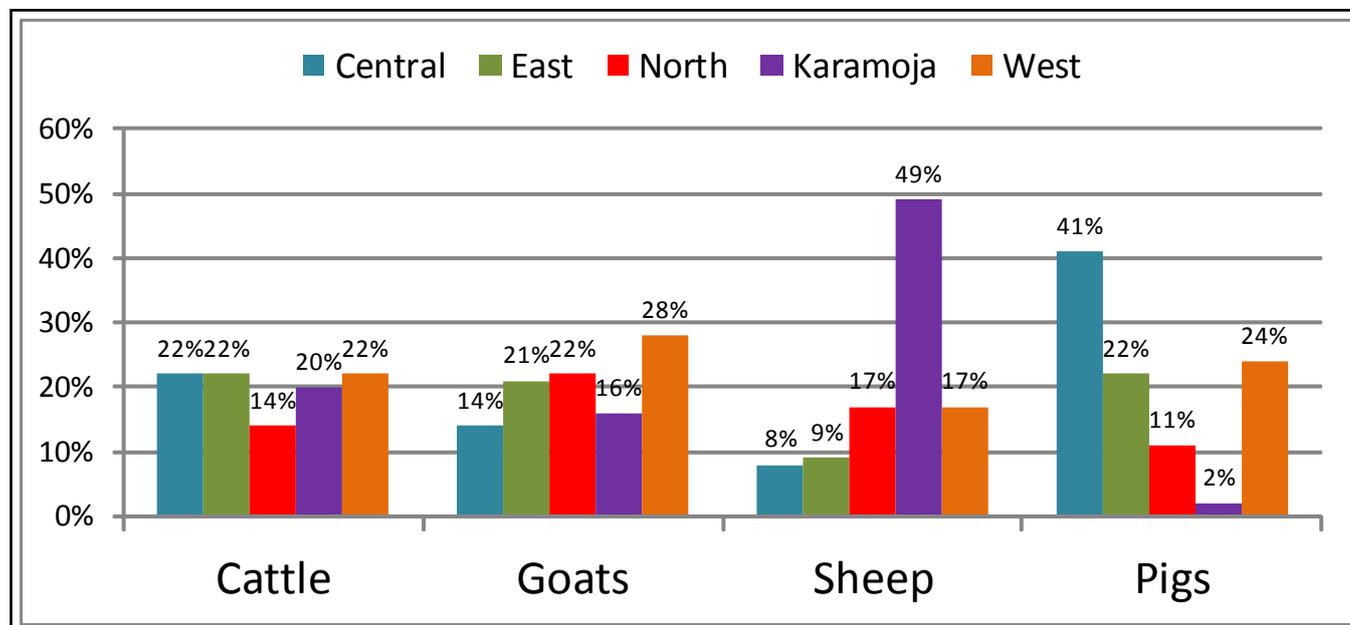
BIBLIOGRAPHY

1. African Union – Inter African Bureau of Animal Resources (AU – IBAR), 2010. Framework for Mainstreaming Livestock in the CAADP Pillars. April 2010, Nairobi. Available on: <http://www.nepad-caadp.net/pdf/Action%20plan%20for%20development%20of%20livestock.pdf>
 - 2.
 3. Food and Agricultural Organization of the United Nations (FAO), 2006. Livestock a major threat to the Environment: Remedies urgently needed. Retrieved from [http://www.fao.org/Food and Agriculture Organization of the United Nations \(FAO\), 2006](http://www.fao.org/Food and Agriculture Organization of the United Nations (FAO), 2006).
 - 4.
 5. Karl M. Rich and Brian D. Perry (2010). The economic and Poverty impacts of animal diseases in developing countries. New roles, new demands for economics and epidemiology. PREVET (2010), doi : 10.1016 / Journal of Prevetmed. 2010.08.002
 - 6.
 7. Lakwo A, Cwinyai W, and Omar A (2008). Agency for Accelerated Regional Development (AFARD). West Nile Profiling Report.
-
1. MAAIF (2010). Agriculture for food and income security. Agriculture sector development strategy and investment plan: 2010/11-2014/15
 1. Martin C. Webber and Patrick Labaste, 2010. Building Competitiveness in Africa's Agriculture. A guide to Value Chain Concepts and Applications. The International Bank for Reconstruction and Development / The World Bank.
 2. Perry B. D., Randolph T. F. , Ashley S., Chimedza R., Forman T., Morrison J., Poulton C. , Sibanda L., Stevens C., Tebele N., Yngstrom I., 2003. The impact and poverty reduction implications of foot and mouth disease control in South Africa with special reference to Zimbabwe. ILRI, Nairobi, Kenya, 152 pp. and CD-ROM.
 3. S. Forman, F. Le Gall, D. Belton, B. Evans, J. L., Francois, G. Murray, D. Sheesley, A., Vandersmissen and S. Yoshimura (2009). Moving towards the global control of foot and mouth disease: an opportunity for donors. Rev. Sci. Tech. Off. Int. Epiz. 2009, 28 (3), 883 – 896.
 4. S.M.K. Naqvi and V. Sejian (2011). Global Climate Change : Role of Livestock. Asian Journal of Agricultural Sciences 3(1) 19 – 25, 2011. ISSN: 2041 – 3890.
 5. Uganda Export Promotion Board (UEPB), The Uganda National Apiculture Development Organisation ((TUNADO), Bees for Development Report (2007). Assessment of the status and capacity of honey packers and beekeepers in Uganda.
 6. Moyo district production Department. Agricultural Research priorities (2010).

APPENDICES

Appendix 1: List of Key informants

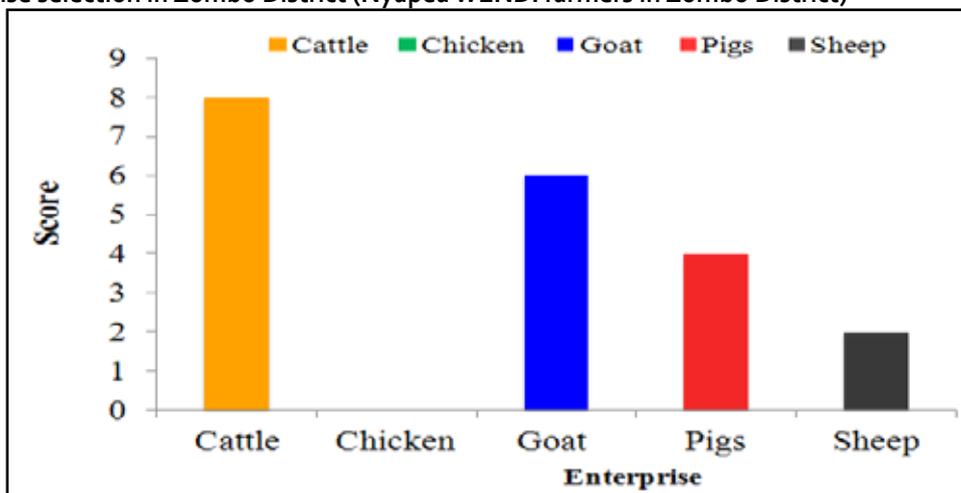
SN	Name	Title	District
1	Dr Robert Canpara	District Veterinary Officer	Nebbi
2	Dr Rober Abedicane	District Veterinary Officer	Zombo
3	Dr Walter Komakech	NAADS Coordinator	Zombo
4	Dr Victor Gordon Toa	District Veterinary Officer	Arua
5	Dr Thomas Anyanzo	District NAADS Coordinator	Moyo
6	Dr Richard Akule	Ag. District Veterinary Officer and S/C NAADS Coordinator	Moyo
7	Mr. Bakole Steven	District Production Coordinator	Yumbe
8	Mr. Buga Semi	District NAADS Coordinator	Yumbe
9	Mr Christopher Enima	District Fisheries Officer	Arua
10	Mr Moses Kalenzi	Animal Production Technician , ABI-ZARDI,	Arua
11		Fisheries officer	Nebbi
12	Mr. Orale James	AHO and S/C NAADS Coordinator	Yumbe
13	Mr. Ajiga Godsam	Chairman Farmers Forum	Yumbe
14	Hon. Alejo	District Secretary for Production	Yumbe
15	Dr. Idibu Joachime	Former Livestock Production Officer ABI-ZARDI and Lecturer in Makerere University	

Appendix 2: Uganda's Livestock Sector Landscape, 2008

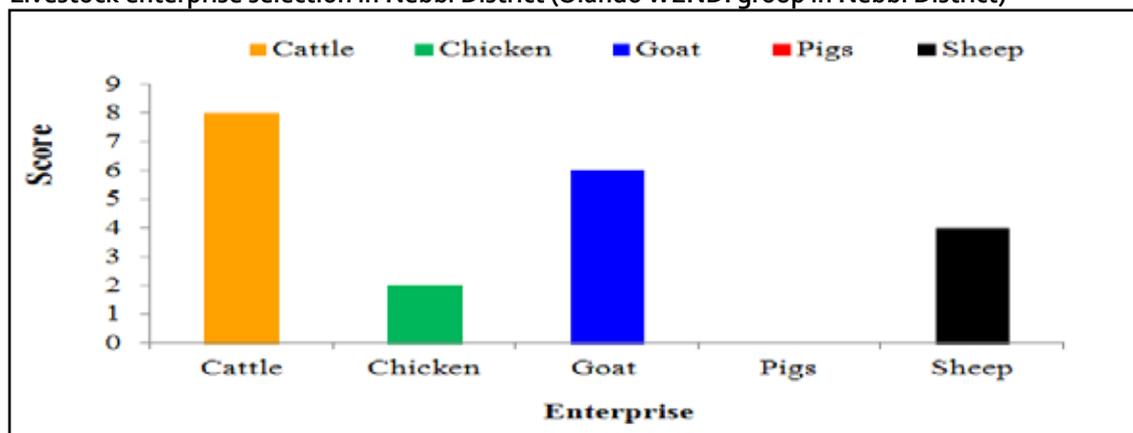
Source: UBOS, 2008

Appendix 3: List of Livestock preferred by district

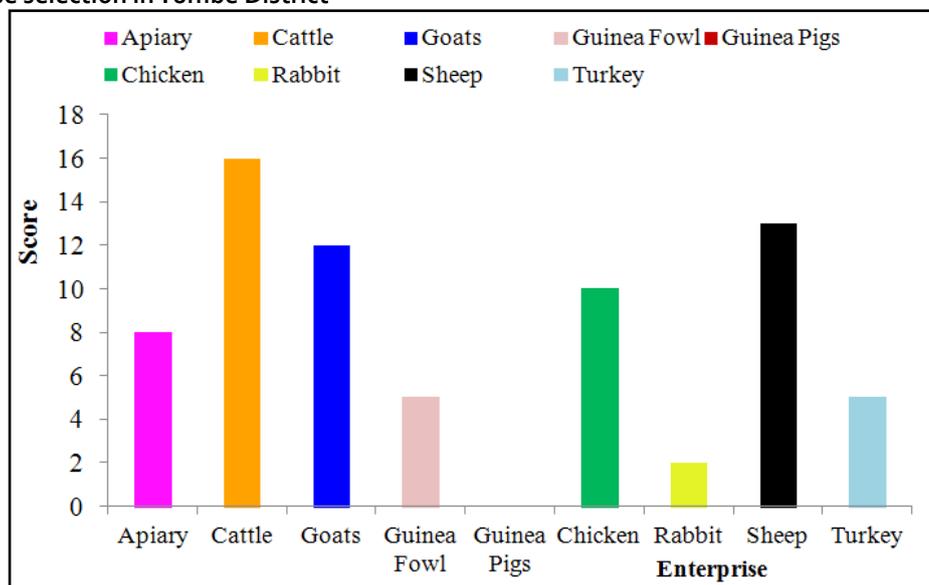
Livestock enterprise selection in Zombo District (Nyapea WENDI farmers in Zombo District)



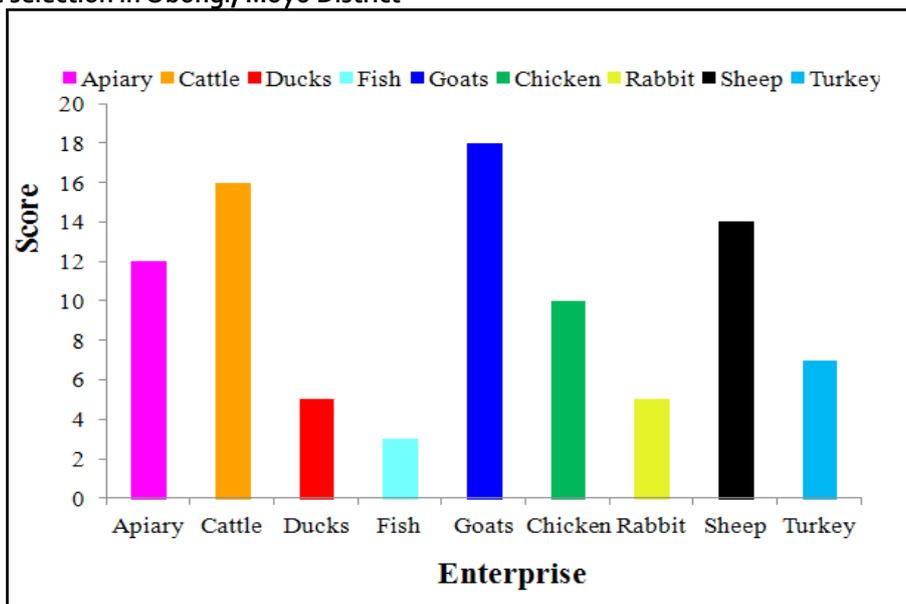
Livestock enterprise selection in Nebbi District (Olando WENDI group in Nebbi District)



Livestock enterprise selection in Yumbe District



Livestock enterprise selection in Obongi, Moyo District



Livestock enterprise selection in Arua (Rhino Camp WENDI group)

