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in Karamoja, Uganda”**

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Tobias Mertzlufft BSc

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Betreut von: Dr. Friederike Bellin-Sesay

STATUTORY DECLARATION

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LIST OF ABBREVIATIONS

cf. compare

CSI Coping Strategies Index

EFSA Emergency Food Security Assessment

GAM Global acute malnutrition

HDDS Household Dietary Diversity Score

HFCS Household Food Consumption Score

NGO Non-governmental organization

SAM Severe acute malnutrition

1 Introduction

Background of the study:

Almost every 8th person or 842 million people of the world's population are chronically undernourished. Fifty percent of these people are small stockholder farmers, which were focused on in this study [Hooft and Wanyama, 2000]. The sub-Saharan African region still has the highest prevalence with 25% of the population undernourished [FAO, 2013]. Compared to other countries in the region, Uganda has good development indicators, but still had a gross domestic income per capita of 440\$ in 2012. Compared to this, the sub-Saharan African average is notably higher with 1350\$ [Worldbank, 2014]. This study is focused on one of the most problematic parts of Uganda: Karamoja. After decades of violence the consequences of droughts and chronic poverty has caused food insecurity and created a vulnerable region. Welthungerhilfe started its activities in Karamoja in August 2009. The activities have involved many different issues such as building bridges, teaching farmers or giving construction aid in the Manyattas. Another example is supporting the most vulnerable people of the region by supplying goats and bucks. The project's region is the part of Uganda with the highest rates of malnutrition and the goats are supposed to be a resource for food and a better income for vulnerable people.

Statement of the problem of this study:

After the beneficiaries of the "Welthungerhilfe" goat project were given their goats, it is not completely clear what happened to them in the "Manyattas". There is a set of questions which should be answered to optimize the support for these extremely vulnerable people in the "Manyattas".

Main questions of the study:

- What impact has the goat program had on the life of the people?
- Which challenges exist within the program?

Justification of the study:

Livestock interventions in Karamoja are an issue of discussion. There are many pros and contras for these kinds of policies. The results of this monitoring could help generate a hypothesis on the effects of the peoples' lives. Furthermore the monitoring could provide the Welthungerhilfe project important information and may be useful for the planning of other similar studies or interventions within this very sensitive environment.

2 Study Background

2.1 Study area

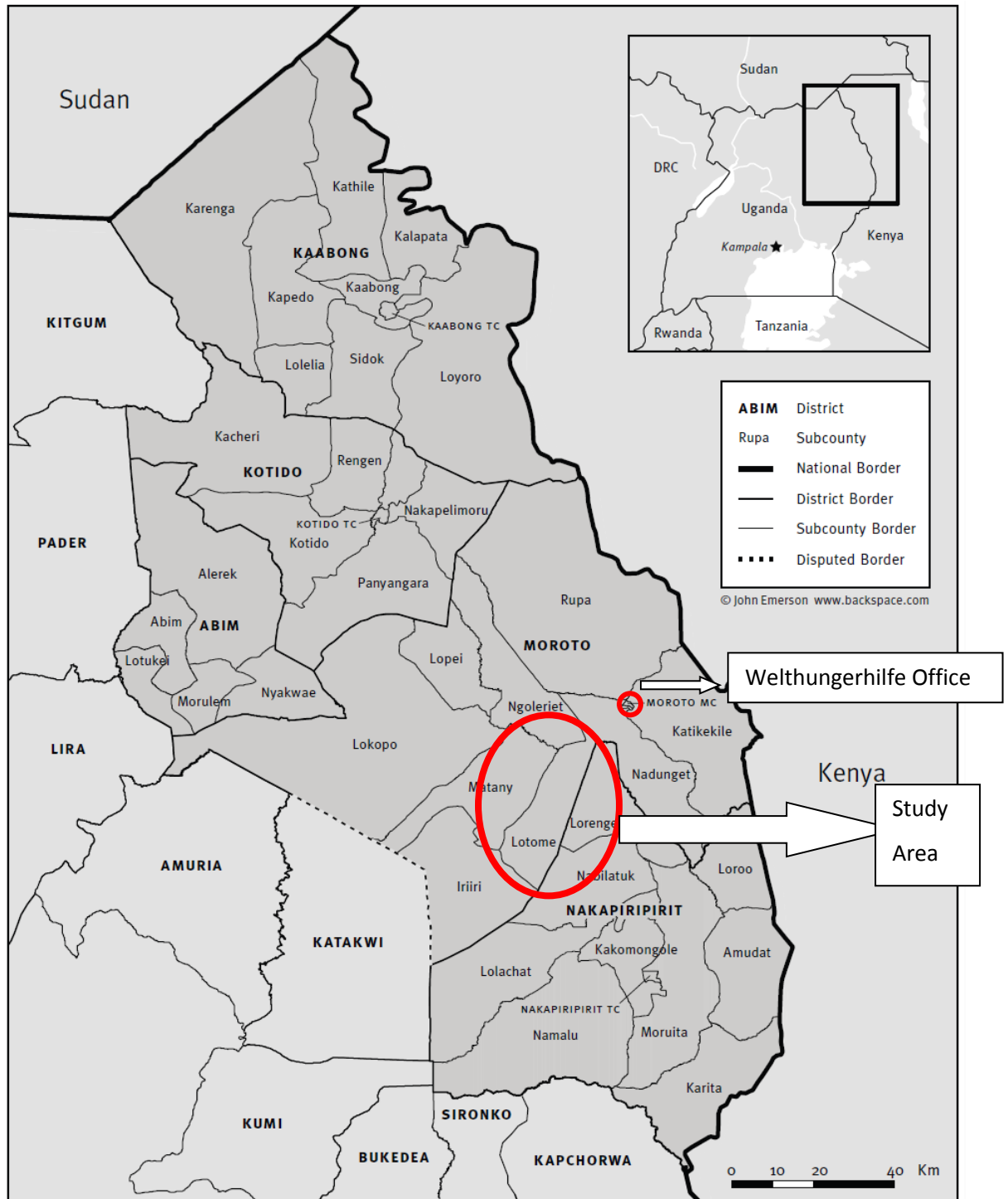


Figure 1: Map of Karamoja [Powel, 2010]

Uganda is located in the east of Africa and is crossed by the equator in the south. It borders to Kenya in the east, Sudan in the north, Democratic Republic of Congo in the west, Rwanda in the southwest and Tanzania in the south. In 2010 it had a population of 33.425.000 people [United Nations, 2012]. After the fall of Milton Obote, the National Resistance Movement Organization with Museveni as president has been leading the country since 1986. Although the GDP of Uganda has grown between 3% and 7% in the last three years, the GDP per capita in 2012 was only 440\$. Consequently it is still one of the poorest countries in the world [World Bank, 2012]. Poverty in Uganda is unequally distributed. The average percentage of people living below the poverty line lies at about 24%, whereas in the north there are more than 63% living below the poverty line. Even if Uganda is regarded as self-sufficient in food production, there is a large amount of people who suffer from food insecurity. While 93% of the Ugandan households are classified as food secure or moderately insecure, the prevalence of food insecurity in the region of Karamoja is about 20% [McKinney, 2009]. Karamoja is the most problematic region of Uganda. It is located in the north east of Uganda and borders to Sudan in the north and Kenya to the east. With an area of 27.200 square kilometers it almost has the size of Belgium. Karamoja is separated into the five districts of Nakapiripirit, Moroto, Kotido, Kaabongo and Abim [Uganda Bureau of Statistics, 2008]. In Figure 1 the study area (Lotome in Moroto district) is marked with a red circle. Eleven different social groupings with very similar dialects live in Karamoja. All of these groups go by the generic term "Karamojong". The main groups are the Dodoth (north); Jie (central); Pokot and Bokora (Kenyan border), Matheniko and Pian (south). Smaller ethnic groupings are the Tepeth, Nyakwe, lik, Ngipore and Ethur. Most of the "Karamojong" speak Ngakaramojong [Powel, 2010]. The ethnic groups of the Moroto district (study area) are the Matheniko, the Tepeth and the Bokora [Grey et. al., 2003]. The United Nations Office for the Coordination of Humanitarian Affairs estimated the total population of Karamoja to consist of 1.107.308 people. 82% of them live below the poverty line [OCHA, 2008]. The region is

mostly arid and can be divided into three zones, the western agricultural zone, the middle transition zone, and the eastern arid pastoral zone. Droughts and poor harvests occur every three to four years. As a result of the inadequate rainfalls every five out of six cropping seasons are at risk [Irish aid, 2008a]. This study was conducted in the agro pastoral zone, which stretches throughout the central part of the Karamoja region as you can see in Figure 3. Grasslands with scattered shrubs and acacia trees characterize the landscape. Soils predominantly consist of sandy loam with some black clay soils. Sandy clay alluvial soils are found in the valleys and plains. The rainy season is from March to September with an annual average of 500-800 mm of water as you can see in Figure 2[FEG and FAO, 2010].

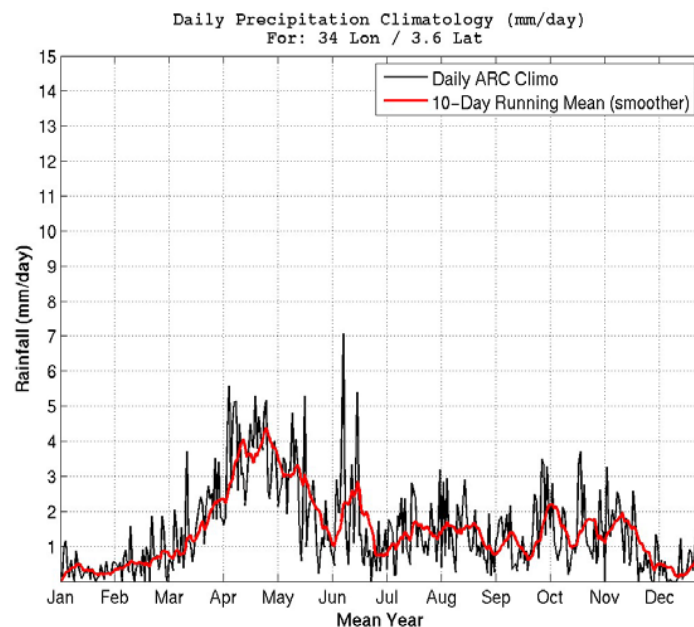


Figure 2: Rainfall data of Karamoja Livestock, Bulrush Millet and Sorghum Zone [Browne and Glaeser, 2010b].

Based on the purely distributed rainfalls, the Famine Early Warning Systems Network in 2005 characterized agro-pastoralism as the best livelihood option for the region. A livestock census from 2008 found out, that Nakapiripirit had the highest number of goats in the country, the Karamojan sub-region as a whole registered 19.8% of the total national cattle population and Kotido recorded the largest number of sheep in the country [Ministry of Agriculture Animal Industry And Fisheries, 2009]. In addition, rain-fed crop productions like sorghum, maize,

millet, groundnuts, sunflower, cowpeas and beans are cultivated throughout the zone. Usually hand hoes and oxen are used for plugging. Land preparation for most crops begins in March after the first rainfalls. Harvesting takes place from July/August to September/October. Livestock traditionally migrates to seasonally dry season grazing lands but since 2006, livestock has stopped migrating because of insecurity and the introduction of the government's protected kraal system. The hunger season generally goes from March to July. Most of the households depend on food purchases from the market combined with food from their own production. Access to bigger markets in larger cities exists given fairly well developed roads, though poorly maintained roads sometimes limit access to markets during the wet season. The zone is a net importer of crops and a net exporter of livestock [FEG and FAO, 2010]. The competition over resources like land, livestock and water, are, among other factors, the reasons for armed violence in the region [FEWS NET, 2005]. The failure of the government and the army in stopping the raids ended with a three-decade civil war in the north. After several disarmament programs in Karamoja, the security situation has improved and the governmental and nongovernmental support for livelihood recovery and adaptation has increased in the last few years [Gelsdorf et al., 2012a].

2.2 Social background

2.2.1 Insecurity

There are numerous factors for insecurity in Karamoja. Most of them are linked to each other. Some of the factors are:

- The tradition of cattle raiding [Powell, 2010]
- Clashes with neighboring tribes, induced by changes in the migratory patterns because of the reallocation of land [Powell, 2010]
- Competition for scarce resources, like grazing land and water, linked to changing climatic conditions [Powell, 2010].
- The rising prevalence of small arms [Gelsdorf et al., 2012a].

- Absence of state security in the region [FEWS NET, 2005].
- Food insecurity [FEWS NET, 2005]
- Intra-clan conflicts [FEWS NET, 2005]

Cattle raids are part of the tradition in the society of the “Karamojong” and are one of the reasons for insecurity in Karamoja. In the past, captured cattle was a source of wealth and food in difficult times. Furthermore it was rendered to pay the price of a bride, to enhance personal or generational status or to form alliances across families and communities [Knighton, 2006]. During this time it used to be a taboo to sell stolen livestock. Moreover, seers, elders, warriors and women were all involved in decisions regarding raids on other groups [Sites et al., 2007b]. As for today, raids are mostly motivated by individual economic interests and are undertaken for immediate profit. Livestock like cattle, but also goats and sheep are either sold for cash or taken directly to a meat processing plant, removing livestock from the pastoral system. Especially the incidences of small thefts have increased, at which only a small group of men go and steal animals [Gelsdorf et al., 2012b]. In the past, spears were used for hunting and raiding, but in the second half of the 19th century guns began to replace spears [Mirzeler and Young, 2000]. At first, guns were expensive and only a few families owned them. Though by the 1970s traders supplied the region with weapons and after the fall of the Idi Amin in 1979, the Matheniko and Jie seized many weapons and large amounts of ammunition from the Moroto barracks [Walker, 2002]. During this time, lootings of barracks, police posts and attacks on military convoys by other tribes were taking place as well. This and the civil war in south Sudan, the provision of weapons to pastoral groups in Uganda and a growing regional weapon trade with markets in Sudan, Kenya, Uganda, and Ethiopia lead to huge amounts of weapons in this region [Bevan, 2008]. At the same time, climate changes with increased incidence of drought induced food insecurity for the people and the livestock. In addition, there was restricted access and migration to some traditional dry season grazing areas caused by large-scale agriculture, forest reserves and private land purchases. This in combination with

the presence of the new weapons created a new dimension of conflict factors [Powell, 2010]. Numerous government-led disarmament initiatives were undertaken between 1945 and 2007, but according to Bevan, none of these achieved a reduction in armed violence in the region. He argues that disarmament campaigns are only suitable as a second step after people were reassured of protection and felt safe enough to disarm at all. Bevan comments: “These weapons are the tools of violence, but they are rather a symptom, than a cause, of the conflicts” [Bevan, 2008]. Nevertheless the continued disarmament programs and a greater security presence in the last years has helped put an end to the active conflict and abduction in Northern Uganda and security has improved in Karamoja [Gelsdorf et al., 2012c]. But even when incidents of raids are at a low, the fear of attacks is still pervasive [Sites et al., 2007c]. The impact of insecurity reduces the number of livestock, the access to food and education, health care services and trade. It affects the levels of food production and dietary diversity in households due to a reduction of livestock and the uncertain access to markets and wild fruits [Hesse and Mc Gregor, 2006]. Many households transfer all of their animals to kraals at or near military barracks. This protected kraal system was established by the government in 2005/2006. There are countless problems related to restrict grazing hours, distances to grazing areas and amount of livestock all leading to increased disease outbreaks and deaths. These are the main reasons why herders tend to take their animals there for protection only at night [FEG and FAO, 2010].

2.2.2 Livelihoods

Karamoja is classified into three different livelihood zones: The pastoral, agro-pastoral, and Agricultural zone. Figure 3 shows the partition of livelihood zones in Karamoja.

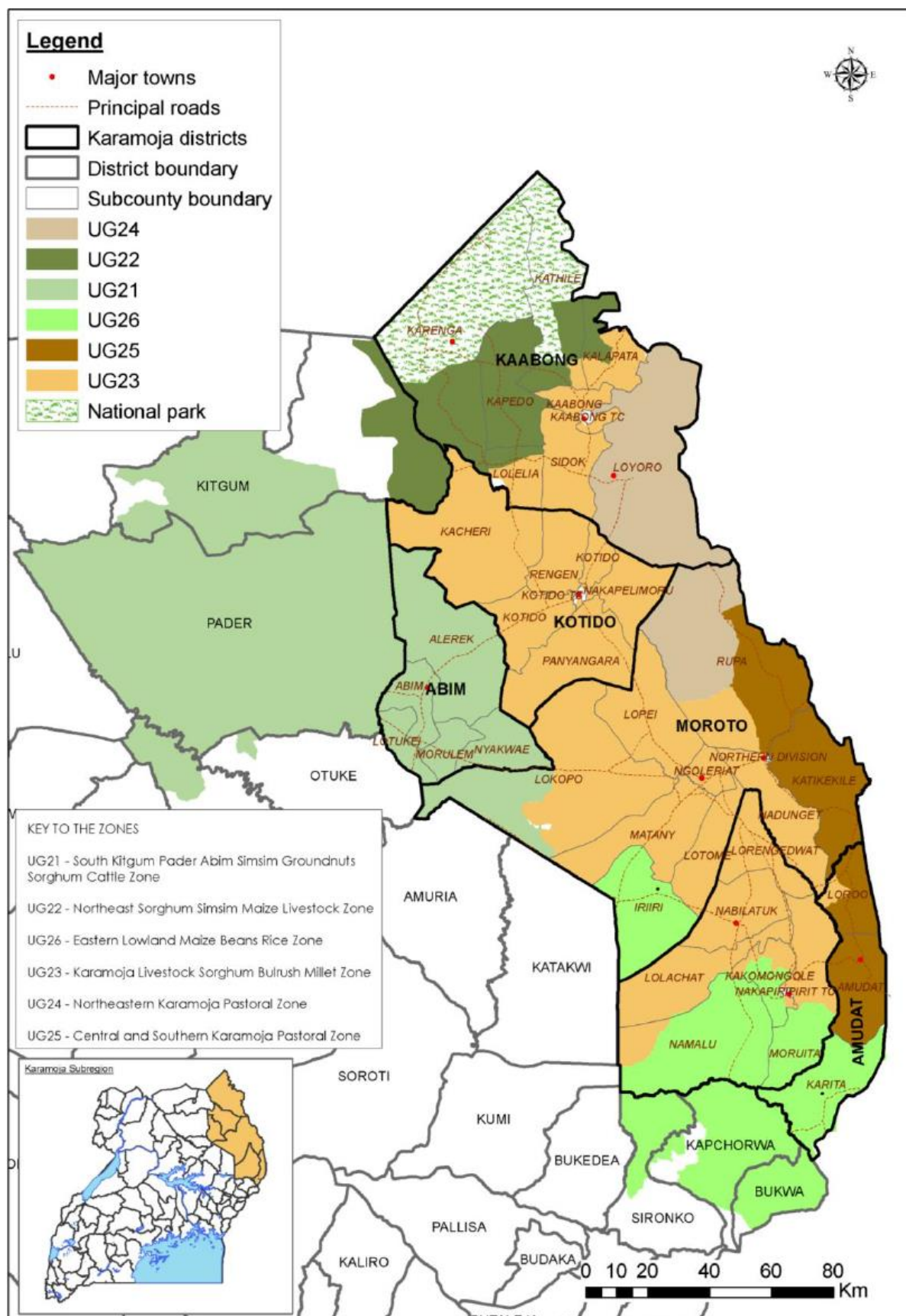


Figure 3: Livelihood zones of Karamoja [FEG and FAO, 2010]

The majority of the population combines livestock management with cultivation along with a diversity of occupations including foraging, casual labor and seasonal migration. According to McKinney the main Karamojong livelihood activities are:

Table 1: Karamojong livelihood activities [McKinney, 2009]

Livelihood activity	% of household	% National average
Agriculture	60,9	78,1
Unskilled wage labour	40,2	33,8
Livestock management	25,6	16,4
Brewing	18,9	6,1
Commercial activity	3,9	5,6
Petty trading	3,3	11,6
Wage labor	3,2	7,2
Skilled labor	0,3	4,7

Gelsdorf et al. describe a change in livelihoods. They claim that more people, especially women, work outside home and participate in the labor market. Many of them have become the main earners in their family. Reasons for the changes are decades of insecurity and the reduction of livestock [Gelsdorf et al., 2012d]. Compared to women, male earners are more associated with a household driven to poverty. Ssewanyana found out, that an increased number of adult male earners in a household is associated with a higher rate of poverty. One explanation for this is that they tend to spend a greater proportion of their income on goods such as alcoholic beverages and tobacco [Ssewanyana, 2009]. A survey of Walter and Ullerich measured the main income sources in the study area (Lotome, Sub-County). According to their survey the most important income sources for the poor majority are firewood and charcoal. 82% of the households are involved in trade for these resources. Other important sources are local brewage and livestock sales. The majority of livestock sales is limited to chicken and only occasionally a goat or sheep is sold. Only few wealthier households are able to sell big animals such as cattle. The survey took place in September, just before harvest. During this period no sales of agricultural products, which are

important income sources, take place [Walter and Ullerich, 2011a]. The seasonal calendar in Figure 4 shows the peak periods for different activities.

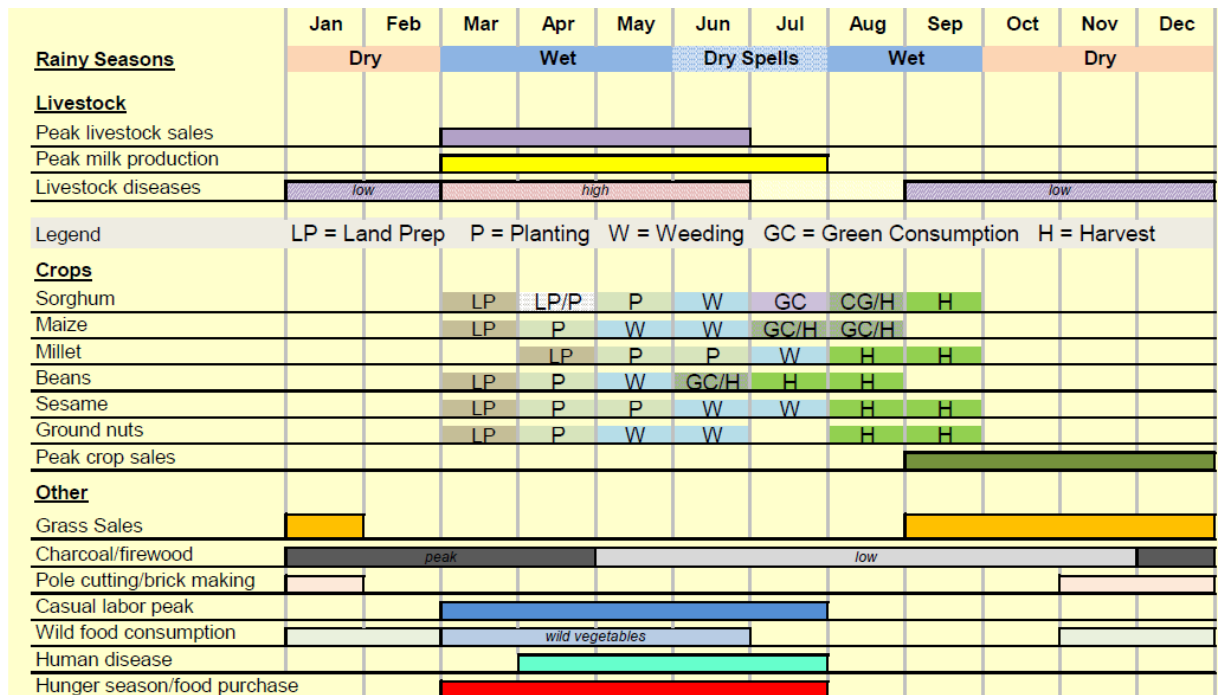


Figure 4: seasonal calendar of livestock, crops and livelihoods for Karamoja [FEG and FAO, 2010]

Economic surveys conclude that a poor income is high in Karamoja. According to Levine this might also reflect a cultural lifestyle. He claims that a poor income does not mean that the Karamojong are not wealthy or do not generate wealth, and that a different definition of household income would lead to other figures. Levine argues that if the yield of herds were to increase, the total household money income would be able to compete with the money income of “middle income” households in other rural parts of the country [Levine, 2010a]. This suggests the importance of successful livestock ownership for the poor people of the region. Regarding Levine’s statement, a reason for the difference of 82 percent of the people living under the poverty line in Karamoja compared to 31 percent nationally, is the way poverty and income is defined. Nevertheless, there are other indicators demonstrating a different situation in Karamoja: Corruption, graft and nepotism hampers free market exchange and discourages outside investors. Additionally investments and economic development interferes with the lack of infrastructure, problems of physical access, low levels of human

capital and a general lack of financial services [Sites et al. 2007d]. Furthermore, due to Karamoja being the most food-insecure region in Uganda, the maternal mortality rate lies at 750 deaths per 100,000 childbirths. In Comparison, 435 deaths were recorded nationwide in 2011. The literacy rate is 11 percent only, compared to 73 percent nationwide [World Bank, 2011]. A few causes for poverty in Karamoja are: Political and social isolation, flawed security measures, poor harvests, Illiteracy, insecurity, raiding, environmental factors, individual causes, illness, unemployment and alcoholism [Irish aid, 2008b]. Another factor for poverty may be the household size; the 2002/03 Uganda National Household Budget Survey demonstrated that an addition of one person per household increased the likelihood of becoming poor by up to 17 percent [Uganda Bureau of Statistics, 2003]. The causes of poverty suggest that interventions need to deal with many different issues. Among these interventions the support of family planning or policies, which help increase the livestock production and productivity, may be an option [OPM, 2009]. A district officer in a local meeting argued: “While the fertility rate in the poor families should be reduced, livestock is used for the bride price and for marriage. This could mean the two interventions interfere with each other”. In contrary, the Karamoja action plan for food security 2009-2014 by the Government of Uganda and the FAO Plan of Action for Northern Uganda 2009 both see strengthened livestock productivity as an important element against food insecurity for the region. They see a big opportunity in the expansion of marketing schemes for locally produced livestock and agricultural goods [FAO, 2007]. According to the discussion on the sustainability of pastoralist livelihood, Levine describes pastoral and agro-pastoral livelihood strategies as capable to meet the basic minimum needs, even in times of poor rainfall [Levine, 2010b]. The world food program Emergency Food Security Assessment (EFSA) data demonstrates that agro-pastoral households have the highest levels of food security [WFP, 2007]. The Office for the Coordination of Humanitarian Affairs states that Ugandan pastoralists own 55% of the country’s livestock. They suggest that support to the pastoralist way

of life may benefit the entire country [OCHA, 2008]. Other authors see the support of alternative forms of livelihoods as a more peaceful and prosperous model for the development of Karamoja. These interventions could be a way to reduce raids and diversify economic actions in the region [CEWARN, 2007] [OPM, 2008]. An increase in development, educational opportunities beyond primary school and economic investments could strengthen alternative livelihood forms [Sites et al., 2007e]. A constant monitoring of interventions and their comparison may help find arguments for or against livestock interventions in the region. During the time of the survey, changes in livelihood took place, which should be taken into perspective. One of these changes in the pastoralist livelihood describes high rates of destocking in many households. The destocking is induced by many different factors; two of them are distress sales and slaughter. Traditionally the Karamojong don't sell animals except in cases of emergency [Watson and Catley, 2008]. Nowadays the money from livestock sales is the second biggest income source for the people of the region [Walter and Ullerich, 2011a]. But Watson and Catley found out, that more and more households move away from livestock-based production systems. Reasons are the combination of droughts, widespread diseases, the military's protected kraal system, insecurity, selling and slaughtering, poorly-planned new water points, increase of land devoted to agriculture etc. [Watson and Catley, 2008]. An effect of these multiple shocks is the handicapped community system. Many households characterize their safety net as much smaller compared to the past. A boosted resilience exists due to the systems of reciprocity and exchange. Today, neighbors and relatives are no longer able to assist in times of hardship [Carlson et al., 2012]. Another trend for this region is a high level of migration. Sites and Akabwai analyzed the migration to urban areas in a survey. Reasons for migration are: loss of livestock, insecurity, encouragement and invitation by relatives, food insecurity in rural areas, family problems, weariness of carrying firewood and the inability to support children or parents in rural areas. Nevertheless, most migrants in the survey prefer their lives and livelihoods in the

rural areas to those in the cities. The respondents complain about their lost herds and talk about the benefits of not relying on outsiders for basic needs [Sites and Akabwai, 2012]. Another source on migration shows that 90% of street children under five years of age in Kampala are originally from Karamoja [Kaduuli, 2008]. Walter and Ullerich discovered a strong commitment among young people to their region. Only 12% of the respondents in their survey see their future in Kampala or outside of the country [Walter and Ullerich, 2011b]. The support of the pastoralist livelihood could prevent some of the migration reasons and help the people live their preferred lifestyle.

2.2.3 Life of the Karamojong



Figure 5: Children in a manyatta in Lotome Photographer: Mertzlufft

Manyattas and Kraals: Traditionally the Karamojong split their time and population into villages called Manyattas and mobile cattle camps called Kraals. During a regular dry season the population of a Manyatta decreases by as much as a third. Some kraals exist on a more permanent basis. The majority of adolescent and adult males within the kraals stay the entire year. They only come to the Manyattas to bring goods or visit relatives for a night before they head back [Sites et al., 2007f]. Kraals are inhabited by more males than females, but children and women are also present at all times. Females have specific roles in the kraals and many stay for longer periods with their husbands. Others go to kraals with their children when they are malnourished. Because of the presence of animals, the kraals provide much better access to protein than the Manyattas

during the dry season [Sites and Akabwai, 2009a]. Nowadays the traditional Kraal system has all but disappeared in most parts of Karamoja. Sites and Akabawi mention the following reasons for this trend: The effects of disarmament, insecurity, animal disease, restricted mobility and prolonged drought. Today, most of the remaining animals are in kraals next to barracks. One reason for keeping the animals in these protected kraals is the pressure from the military. In the survey of Sites and Akabawi a district official was interviewed. He claims that substantial numbers of animals outside of kraals at barracks raise suspicion of gun ownership. Due to the changes in the placement of livestock, the owners lose a lot of their decision making power. The soldiers decide if and when kraals move to a new area. The daily movement depends on times set by each barrack, and very often the animals do not have sufficient grazing times. In order to acquire more decision-making power again, nowadays herders generally only take their animals for protection at night [Sites and Akabwai, 2009b]. In some barracks soldiers consume milk of the animals. The only people with access to milk are those with soldiers as family members within the barracks [Sites and Mitchard, 2011a].

Household size: The connection between the household size and poverty has already been mentioned in the chapter on livelihoods. Sites argues with a different aspect. She mentions that the availability of human capital at household level is an important factor in livelihood strategies. To be able to own their production, casual labor and the sale of natural resources or other goods, smaller households may be at a disadvantage. Because of the extensive manual labor work the traditional agro pastoral livelihood require, a huge amount of household members are of need [Sites et al., 2007g]. In 2011 a household had an average of 8, 75 members in the study area [Walter and Ullerich, 2011c].

Gender: Traditionally boys receive shepherd duties as their primary role within a household at a young age. Families without boys hire shepherds or send their

animals out with those from other households. Men are responsible for activities like the herd composition, production management, slaughtering and sales. An exception is when the woman is widowed. Normally women take care of the young and sick animals close to home. They are primarily responsible for agriculture and the controlling of food including its access and utilization [Tushemerirwe et al., 2013a]. Sites interviewed a group of Matheniko youths, and they explained that a woman had the right to sell a goat (but not a cow) without notifying her husband in case the husband was away and the family was very hungry [Sites et al., 2007g].

The gender ratio in a household may have an effect on the livelihood strategy. If there are more girls in a household there might be a shift to different livelihood strategies than pastoralism [Sites et al., 2007g]. In a conference of the Agency for Technical Cooperation and Development women were recognized as a potential focus for alternative livelihoods interventions [Knaute and Kagan, 2008].

According to Oluka et al. women also play an important role as keepers of small stock. Their survey demonstrates the control over the use of benefits of livestock and livestock products for consumption in male and female lead households in the Teso farming system region of Uganda (see Table 2).

Table 2: Control over the use of benefits of livestock and livestock products [Oluka et al., 2003]

Male lead households %				Female lead households%		
	Men	Women	Joint	Men	Women	Joint
Cattle	52	4	44	23	55	23
Goats	42	9	48	17	52	19
Poultry	35	11	51	5	65	15
Pigs	33	15	45	4	59	30
Milk	34	14	51	6	61	22
Eggs	30	23	46	6	76	12
Meat	54	5	41	13	73	7
Hides/Skins	50	3	46	12	69	13
Draught power	54	6	40	33	57	0

Oluka et al. describes small stock like goats and chicken as the major livestock resource for women, children and landless livestock keepers. Understanding and integrating the gender issues into livestock projects and programs could improve their outcomes and effectiveness [Oluka et. al., 2003].

Generations: The age system plays an important role for the social organization among the Karamojong. Two age groups divide the male adults into a senior and a junior generation set. By nature the father always belongs to a generation set that is senior to that of the son. The initiation to enter the senior generation is based on a complex system taking the generation set of the father into consideration. Only the sons of the reigning senior generation set are able to receive the initiation. The sons of the men within the junior generation set are not initiated. They belong to a group called “ngidooi” which meant rats. They have no proper voice in the community and have a status similar to that of women. These groups form the majority of the male population in Karamoja [CEWARN, 2004]. Sites claims that the last time power passed from one generation set to the next was in 1956-1958. This delay in handing over power was unprecedented. It resulted in a large number of men who can’t be initiated. The men in the senior age set are older than 70 years and the men in the junior generation set are around 40 years old. But because men cannot be in the same generation set as their father, none of the children of the junior generation set has been initiated into an age class. The uninitiated are frustrated which undermines their respect for traditional authority and has led to an increase in raiding [Sites et al., 2007a]. At the same time this frustration has led to a new type of youth criminality, which is also linked to the lack of sustainable livelihoods. These youths carry out attacks on homesteads to steal any imaginable moveable asset, including food, cooking utensils, clothes, etc. The crimes occur without the consent or knowledge of their elders [Carlson et al., 2012]. The CERWARN study came to the conclusion that the traditional age set

system is inadequate to handling the security situation in the region [CEWARN, 2004].

2.2.4 Pastoralism

What is Pastoralism? “Pastoralism is the finely honed symbiotic relationship between local ecology, domesticated livestock and people in resource scarce, climatically marginal and highly variable conditions. It represents a complex form of natural resource management, involving a continuous ecological balance between pastures, livestock and people [Nori and Davies, 2007]”. Furthermore it is a combination of livestock husbandry, economic activities, and strong social, environmental and cultural objectives [Fratkin and Mearns, 2003]. Pastoralism can be classified to the three categories of nomadic, transhumance and agro-pastoralism [Fuller and Turner, 1999]. Nomadic pastoralists usually cover great distances with their livestock, following pasture availability throughout the season. Their livelihood is based on livestock and their products [Aemun, 2006]. Transhumance pastoralists are characterized by regular seasonal movement between set areas. Typically they use pastures at high altitudes in summer and pastures in the lowlands during winter [Degen, 2006]. Agro-pastoralists prosecute agriculture with animal husbandry as an integral part of the household economy. This system can be described as “settled pastoralists”. Their animals mostly graze around their villages within reach of a day. Their herds are a smaller size than other pastoral systems [Degen, 2006]. Worldwide there are around 20 million households with approximately 180 to 200 million people who live the pastoralist lifestyle. They administer about 25% of the earth’s land surface and the percentage of pastoralists of the African population is 12 to 16% with the largest variety and number in East Africa [Omosa, 2005]. Stobel summarizes the benefits and products derived from livestock:

Table 3: Summary of benefits and products derived from livestock [Stroebe, 2004]

Food	Milk; meat; eggs; blood; fish; honey, processed products
Clothing	Wool; hides; skins; leather
Work	Draft power cultivation; transport of goods and people; threshing; milling; pumping water
Monetary	Capital wealth; investment; savings accounts; income from hiring animals; sale of products; sale of animals
Social	Lobola (bride wealth); ceremonial; companionship; recreational; status
Manure	Fertiliser (soil amendment); fuel; flooring
Other benefits	Feathers; bone meal; soap production

Pastoralists in Karamoja: As noted in table 1, livestock management adds up to around 25% of the Karamojong livelihood activities. Most of them practice the so called agro-pastoralism.

As already discussed in chapter 2.2.2 Livelihoods, some authors consider livestock-based livelihoods as the best economic mainstay for households in Karamoja. Others support new livelihood opportunities as the more sustainable way. The main challenges for keeping livestock in Karamoja are:

- The misguided narratives, policies and development. Pastoralism has suffered more from biased language and narratives than any other livelihood system in the region [Little, 2013].
- The misappropriation of pastoral rangelands for dry season grazing, in favor of sedentary crop production, commercial agriculture, irrigation, wildlife conservation etc. [African Union, 2010].
- Restricted mobility caused by insecurity, leading to limited access to pasture and water with an associated increase in morbidity and a decrease in production. After improvements in security, mobility is still severely restricted caused by the protected Kraal system. And in spite of improvements, insecurity and raiding still have an impact on livestock production [Burns et al., 2013].

- Livestock diseases due to the lack of animal health services and veterinary drugs. In this context Levine criticizes that during the Karamoja Action Plan for Food over twenty million dollars were spent for crop based agricultural interventions compared to half a million dollars for supporting animal health [Levine, 2010c].
- The lack of water, especially during the dry season and its impact on animal health and production [Burns et al., 2013].

In spite of these challenges, Burns found out that there was an increasing trend in total livestock numbers until 2008.

Table 4: Estimated changes in livestock units since 1959 [Burns et al., 2013]

Year	Population				TLU/Capita
	Human	Cattle	Sheep	Goats	
1959	170000	600000	210000	160000	2.69
1969	260000	670000	275000	240000	2.00
1980	350000	300000	170000	330000	0.74
1995	409909	595000	(213000)	(213000)	1.12
2008	1200000	2253960	1685502	2025293	1.62

The statement of this table is restricted because it was put together by different sources. Simultaneously, livestock census data for Karamoja is unreliable. Changes in geographical and administrative boundaries can also be added to the margin of error. Nevertheless there seems to have been an increasing trend in absolute livestock numbers and livestock per capita until 2008. It could be possible that a decrease took place between 2008 and 2013 but there is no available data. The results of table 4 are surprising because most of the literature about livelihoods in Karamoja supposes a decrease of livestock numbers. These authors argue that the combination of raiding with rapid slaughter and the sale of stolen animals might have led to a decrease of livestock numbers [Sites et al., 2007] [Carlson and Mazurana, 2008] [Gelsdorf et al., 2012d]. Burns et al. 2013 counter that there is not enough evidence for these arguments to support an absolute decline in livestock numbers. In matters of large scale raids there may only be changes for the owners of livestock without any influence on the total livestock numbers [Knighton, 2006]. Equally, in the case of an increase or

decrease in livestock numbers, livestock based livelihoods would still be important to the region.

Pro and contra for Pastoralism: As already discussed in chapter 2.2.2

Livelihoods, there are many arguments for and against Pastoralism in Karamoja.

The following table summarizes a few of these arguments:

Table 5: Pro and contra for Pastoralism (different sources)

Pro	Contra
Especially agro-pastoralism combined with other livelihood activities is a risk-spreading strategy and minimum herd/flock size does not exist for this strategy [Devereux and Scoones, 2006].	The livestock quantities in pastoralist households are non-viable amounts for sustainable production [Devereux and Scoones, 2006].
Improved income and urbanization may shift diets towards high value commodities such as meat and milk. This could lead to an increased demand and prices of these products [Zijpp <i>et al.</i> , 2010]	Real prices of livestock products have not increased to compensate for lower numbers of animals per household [Devereux and Scoones, 2006].
Agro-pastoralists could use stubbles and crop residues for feeding. At the same time animal manure increases soil fertility, soil structure and water-holding capacity [Coop, 1986].	Sales remain focused on immediate cash needs rather than “commercial” off take [Devereux and Scoones, 2006].
Livestock-based livelihoods remain the best economic mainstay in Karamoja. They are viable and the most resilient to natural shocks [Levine, 2010a].	Pastoral economies remain poor, associated with limited circulation of cash, and therefore have little opportunity for growth through linkages to other income making activities [Devereux and Scoones, 2006].
Pro	Contra
In Karamoja large areas of potential grazing land remain, which are currently not being exploited for livestock [Levine, 2010c].	Land for grazing and livestock production continues to be removed for cropping [Devereux and Scoones, 2006].
Pastoralism promises a much more secure future in the threat of climate change [Levine, 2010c].	Different livelihood activities could be a way to reduce raids and diversify economic activities in the region [CEWARN, 2007].
Livestock deals are insurance policies and bank accounts in many parts of the	

developing world (Pell <i>et al.</i> , 2010).	
etc.	etc.

Opportunities for livestock production: Burns et al. 2013 summarized opportunities to support pastoralism and agro-pastoralism. According to them, attention should be given to the following issues:

- **Commercialization:** The growth of urban markets in Uganda and other parts of East Africa could be a big opportunity for pastoralism in Karamoja.
- **Local knowledge and capacity:** The people of Karamoja have remarkable knowledge and capacity for livestock production. The exchange of knowledge with external experts could improve livestock productivity.
- **Improved animal health:** To prevent an avoidable loss of livestock, the provision of primary veterinary services is an important point. It may include refresher courses for existing Community Animal Health Workers and providing them with starter kits or loans. Another opportunity could be the support of private drug providers in urban centers.
- **Promotion of herd growth:** Herd growth could be promoted by the provision of livestock credit or loans and restocking projects.
- **Promotion of livestock marketing:** On the production side, animal health services, herd growth promotion and livestock credit have already been mentioned. On the regarding demand, access to Karamoja during the wet season for external livestock traders should be ensured.
- **Promotion of Peace Building:** Continued security could increase the possibility of creating new commercial opportunities around livestock. These in combination with services like transport/water/animal health could also create employment opportunities for people exiting pastoralism.

[Burns et al., 2013]

The role of goats: Worldwide there are approximately 200 different goat breeds that provide products like milk, meat and hide. 94% of these goats are found in developing countries [Stroebel, 2004]. The population of goats in East Africa has been estimated to 48 million. Most of them are kept by small-scale farmers in flocks of less than 10 animals [Degen, 2006]. The meat produced by small stock farmers accounts for 30% of the meat consumed in Africa [Heffernan et al., 2001]. Goats are the main sources for milk and meat during the dry season in semi-arid India, which is comparable to the study area [Mtenga et al., 2002]. The purchase price of goats is relatively low and they reproduce at a faster rate than larger herbivores. This means that goats generate a quicker return on invested capital, which can be used for saving/raising cash. In cases of economic or food crisis, goats are easily sold because they are affordable to many people. Goats are resistant to drought and adapt to a wide variety of climatic conditions [Smith et al., 2002]. They provide food and income to buy food and compared to cows they are a more reliable source for money. Imana found out that the Turkana in North West Kenya (which are quite similar to the Karamojong) spend their income made by goats to 93% on food; medical, school fees and dowry account for 80%, 71% and 29% of the expenses [Imana, 2008].

Goats in Karamoja: Traditionally goats and sheep of different households are kept together in large flocks. A shepherd, sometimes not older than six years of age, takes care of the animals. Even at night the flock stays together, either in a protected kraal close to a barrack, or in the village guarded by a single soldier [Ullerich, 2010].

Livestock diseases: One of the most important risks related to the reliance on livestock are livestock diseases. Due to the limited access to drugs and the poor physical condition of the animals, disease outbreaks occur often. The Peste des Petits Ruminantes, for example, killed fifty thousand sheep and goats within the region in 2007.

At the same time the foot and mouth disease infiltrated the region from Western Kenya and spread throughout the Moroto and Nakapiripirit districts

[FAO, 2007b]. While monitoring, a small outbreak of brucellosis took place in the study area. It brought a risk to the people drinking milk and to the animals themselves. The veterinarians of Welthungerhilfe intervened with a wide spread vaccination program for the animals in the villages. Another example for a livestock disease, which could put the people of the region in danger, is the “Rinderpest”. The border countries Sudan, Kenya and Somalia are considered to be the last remaining foci of Rinderpest in the world [Simpkin, 2005a]. Due to cattle trade, the infection could also spread to Karamoja. To sum it up: Livestock diseases reduce herds and flocks dramatically. This may be a risk to food security; they are a health risk to the people who consume the animal products; they are capable to cause trade barriers with trading partners trying to protect their own countries from infection; they are a deterrent to sustained livestock production etc. [Paskin, 1999].

2.3 Food Security

At the world food summit in 1996, the Rome Declaration on World Food Security defined food security as a situation “when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life [FAO, 2014].”

According to this declaration there are four pillars that determine food security:

- **Availability:** Food availability depends on production, distribution and exchange. Uganda was characterized as self-sufficient in food production in 2010. Nevertheless the prevalence of high food insecurity in the region of Karamoja was at about 20% and in Moroto it scored 30% in 2010 [Fanta2, 2010]. The poor infrastructure in regarding distribution was one reason for trouble [Nationmaster, 2014]. A high dependency on markets also existed, which was evaluated in 2011. According to the Karamoja Nutrition Surveillance, 66% of the households in the Moroto district (the

area of study) rely on markets and are no significant self-supporters in food production [ACF, 2011]. In addition, the traditional system of exchange does not work in times of hardship [Carlson et al., 2012].

- Access: Food access depends on affordability, the allocation of food, and preferences of individuals and households [Georgy et. al., 2005]. As described above, 66% of the households rely on markets and the people in Moroto spend 81% of their income on food [DHO-ACF and UNICEF, 2012]. In this context, high and rising food prices could be an additional reason for vulnerability for the region. The “cost of diet” study of the Non-Governmental Organisation (NGO) “CONCERN” calculated the annual household income of the poor to be 550.000 Ugandan shillings, and a diet only focusing on energy demand costs 650.000 Ugandan shillings per year [CONCERN, 2013a]. If a household relied on purchased food to 100%, there would be a gap of 100.000 shillings per year. Simultaneously, Uganda experienced dramatic consumer price inflation between 2005 and 2013 as showed in Figure 6.

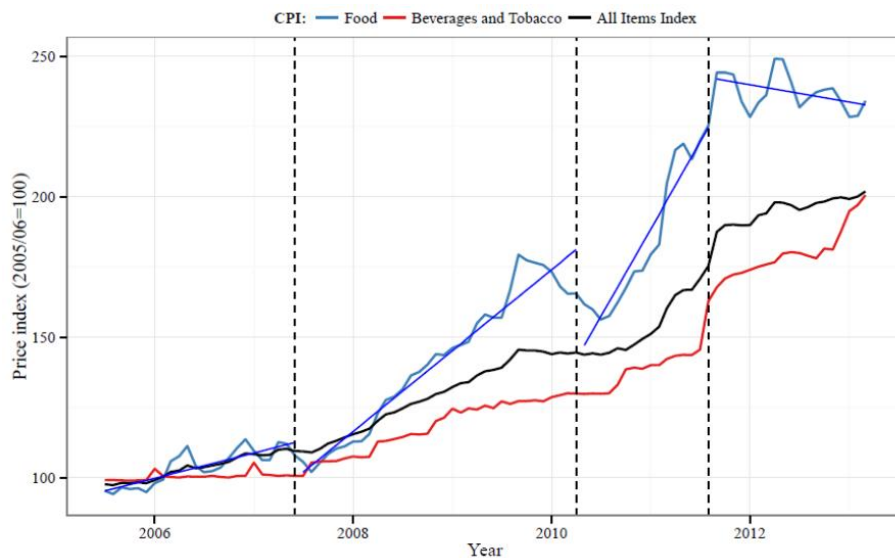


Figure 6: Food prices in Uganda from 2005 to 2013 [Boysen, 2013]

- Utilization: If food is available and accessible it must be safe and an adequate amount to meet the physiological requirements of each

individual [Ecker and Breisinger 2012]. The Karamoja Nutrition Surveillance in 2011 stated that 70% of the households in the study region had a Household Diet Diversity Score (HDDS) lower than three. It also surveyed how frequent some certain food groups were consumed in perspective to the last seven days. There were still 55% of the households on a critically low level [ACF, 2011]. The HDDS and the Household Food Consumption Score (HFCS) are good indicators for the quality of the diet. At times of the surveillance the majority of the households in the region reached the energy demand mainly through cereal consumption. But food containing protein and essential vitamins and minerals were limited [ACF, 2011].

- **Stability:** Food insecurity occurs at seasonal periods. Consequently food security is the ability to obtain food over a length of time. According to an Irish aid study every five out of six cropping seasons in Karamoja are at risk [Irish aid, 2008a]. Consequently most of the households may not be able to obtain food over time.

The FAO has modified a list of indicators to measure the food security of a region. Table 6 shows the different indicators, with data for Uganda or when available for Karamoja or Moroto.

Table 6: The suite of food security indicators modified after [FAO, 2013]

Food security indicators	Situation in Uganda when mentioned in Karamoja or Moroto	Dimensions	
Average dietary energy supply adequacy	108% (2010) [FAO,2013]	AVAILA- BILIY	STATI C and
Average value of food production	150\$ per capita(2010) [FAO, 2013]		
Share of dietary energy supplies derived from cereals, roots and tubers	/		
Average protein supply	Average food protein consumption: 33,2g person/day (low income group Uganda 2006)[Ramasawmy, 2006]		

Average supply of protein of animal origin	/		DYNAMIC DETECTANTS
Percentage of paved roads over total roads	23% in 2003 (world average 49%) [Nationmaster, 2014]	PHYSICAL ACCESS	
Road and road line density	29km road per 100km² land area in 2003 (world average 31km/100km²) [indexmundi, 2014]		
Domestic food price index	See Figure 6	ECONOMIC ACCESS	
Access to improved water sources and sanitation facilities	Improve water supply 63%/ improved sanitation 64% for 2008 [AMCOW, 2011]	UTILISATION	
Cereal import dependency ratio	/	VULNERABILITY	
Value of food imports over total merchandise exports	/		
Percentage of arable land equipped for irrigation	33,8% in 2012 cf. compared to the top5 in the world 56% [Knoema, 2014]		
Political stability and absence of violence/terrorism	Internal conflicts in Karamoja [Gelsdorf et al., 2012a].	SHOCKS	
Domestic food price volatility	See Figure 6		
Per capita food production variability	2% (2010) [FAO, 2013]		
Per capita food supply variability	/		
Food security indicators	Situation in Uganda when mentioned in Karamoja or Moroto	Dimensions	
Prevalence of undernourishment	30%(2012) [FAO, 2013]	ACCESS	OUTCOMES
Share of food expenditure of the poor	Engel ratio 81% in 2012 for Moroto [DHO-ACF AND UNICEF, 2012].		
Depth of the food deficit	/		
Prevalence of food inadequacy	/		
Percentage of children under 5 years of age affected by wasting	Karamoja 7% (2011) [UBOS, 2012]		
Percentage of children under 5 years of age	33,4%(2011) [FAO, 2013]		

who are stunted		UTILI- ZATION	
Percentage of children under 5 years of age who are underweight	32% in Karamoja (2011) [FAO, 2013]		
Percentage of adults who are underweight	BMI>17 woman 7%; man 11% in Karamoja (2011) [UBOS, 2012]		
Prevalence of anaemia among pregnant women	43% all woman in Karamoja (2011) [UBOS, 2012]		
Prevalence of anaemia among children under 5 years of age	70% in Karamoja (2011) [UBOS, 2012]		
Prevalence of vitamin A deficiency (forthcoming)	6% of children/ 7% women in Karamoja (2006) [FANTA-2, 2010]		
Prevalence of iodine deficiency (forthcoming)	96% of households in Uganda use iodized salt [FANTA-2, 2010]		

Other data about food insecurity in the region:

- Household Food Insecurity Access Scale (HFIAS) – In the Karamoja Nutrition Surveillance Report, nine questions regarding the issue of access of household food insecurity were asked. The aim was to distinguish food insecure from food secure households between April and May 2012. 80.9% of the households in Moroto were evaluated as to having severe food access insecurity [DHO-ACF and UNICEF, 2012].
- Household Dietary Diversity Scale (HDDS) – In the Karamoja Nutrition Surveillance Report the number of different food groups consumed in the previous 24hrs before the survey, which took part in May 2012, was measured. The mean HDDS for Moroto had declined from 5.2 food groups in Dec 2011 to 3.0 food groups in May 2012. 72.8% of the households were in the low category (< 3) compared to 34.5% in Dec 2011. The main food sources were cereals [DHO-ACF and UNICEF, 2012].
- Coping Strategies Index (CSI) – The CSI is a series of questions about how households manage to cope with a shortfall in food. It is based on the question: “What do you do when you don’t have adequate food and don’t have the money to buy food?” [Maxwell and Calswell, 2008]. Mercy Crops calculated a CSI for the Kotido district, where the same livelihood

zone as in Moroto is predominant. The index is based on 11 types of investigated behavior. Kotido scored an index of 58 compared to Kaabong, which scored one of 60. The higher the index, the higher the food insecurity [Mercy Crops, 2012]. A CSI for Moroto is not available.

General data about the nutritional situation:

The Karamoja Nutrition Surveillance Report, as mentioned above, measured anthropometric indicators of 2,919 children at the age of 6 to 59 months between April and May 2012. There was an overall acute malnutrition (GAM) in the Karamoja region of 11.7% and a severe acute malnutrition (SAM) of 3.1%. In Moroto/Napak the GAM prevalence laid at 11.0% and the SAM prevalence at 4.0%, which was the regions' highest. The prevalence of stunting in Moroto/Napak scored 43.4% and underweight scored 33.9% [DHO, 2012].

Table 7: Wasting Stunting and Underweight in Karamoja 2012 [DHO-ACF and UNICEF, 2012]

Indicator	Abim	Amudat	Kaabong	Kotido	Moroto/Napak	Nakapiripirit	Karamoja
Wasting	Poor	Serious	Serious	Serious	Serious	Serious	Serious
Stunting	Medium	Medium	Medium	High	Very High	High	High
Underweight	Medium	Medium	High	Very High	Very High	High	High

As described above, the four pillars of food security of the study area stand on rocky grounds. This situation of food insecurity has had a lot of negative consequences for the society and the individuals in the affected area. Some of these consequences are described in the outcomes. Other examples are: The societal impacts, like the increasing mortality; disease and disability rates (Malnutrition accounts for 40% of all child deaths in Uganda [Shively and Hao, 2012]; and the life expectancy which was 53,45 years in 2011 [indexmundi, 2014]). This leads to direct economic costs, induced by coping with the health impacts. The loss of human potential (economic productivity and education are inhibited when workers and students have no adequate food) leads to indirect costs [UNDP, 2012]. In Uganda 700,000 children were expected to be born with mild to severe mental or physical disabilities in 2010. Anemia only is calculated to be responsible for a loss of 34 million \$ per year in adult workforce by 2015 [Fanta3, 2010]. The reduction of anemia, iodine deficiency, low birth weight and

stunting would be able to improve the physical productivity and cognitive ability of the current and future workforce. The Fanta3 project calculated that this could result in an estimated total economic gain of 640 million US\$ by 2015. This link between human development and food security is also reflected by data, which shows that the countries having the highest food insecurity are those with the lowest human development index. The 15 countries with the lowest human development index are in sub-Saharan Africa. Compared to these countries, the index for Uganda was slightly higher in 2012 (161 out of 186 countries) [UNDP, 2012].

2.3.1 Food sources

The main actions to attain food in the project region are agriculture, animal husbandry and markets. Other options are hunting wild animals, collecting plants and food aid [FEG and FAO, 2010]. The baseline economic assessment of Karamoja analyzed the main food sources in the Agro-Pastoral part of Karamoja in 2008 (Figure 7).

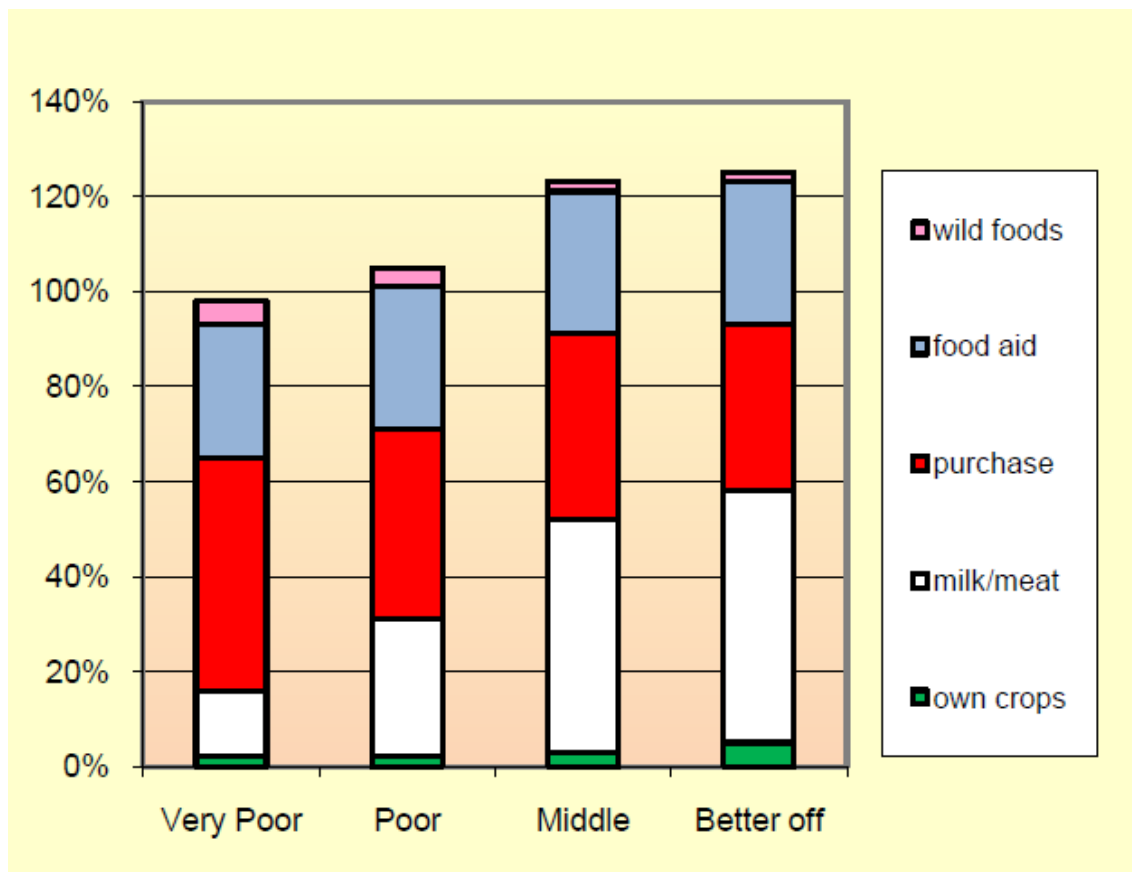


Figure 7: Food sources Agro-Pastoral zone 2008 [FEG and FAO, 2010]

2008 was a year of bad harvest, which is likely to happen every five to six years. This is the reason for the very low percentage of private/own crops in Figure 7. In better years crops can add up to around 10% of the food sources in the Agro-Pastoral zone [CONCERN, 2013b]. Other self-cultivated products besides crops are restricted because of the dry climate [Sites and Mitchard, 2011a]. Even in good years the amount of sources from purchase and food aid can be as high as the private food production [CONCERN, 2013b].

2.3.2 Diet

As described above, the life of the Karamajong has changed over the last decades. Induced by climate changes, insecurity, politics etc. the diet had shifted from one based on livestock products to a diet based on cereals [Sites and Mitchard, 2011a]. Figure 8 illustrates this switch, which was measured by the

Milk Matters study. They conducted nine focus group discussions and twelve individual interviews per livelihood zone between September 2010 and February 2011. By making research about recent events, timelines of past and present periods were created. In the interviews some women complained they didn't have enough milk and their children would not eat their porridge without milk. This led to them flavoring the porridge with tamarind or by mixing it with other wild fruits to increase tastiness. By doing this too much, the children experienced disruption to the stomach. [Sites and Mitchard, 2011c]. Another critical point in the children's diet was the residue of sorghum and maize beer. Especially in the dry season this is able to make up to 20 and 30 percent of the children's diet. The residue contains around 2% alcohol and is very low in nutrients, but it contains a lot of fiber what abates hunger and prevents the consumption of more nutrient rich food [Concern, 2013c].

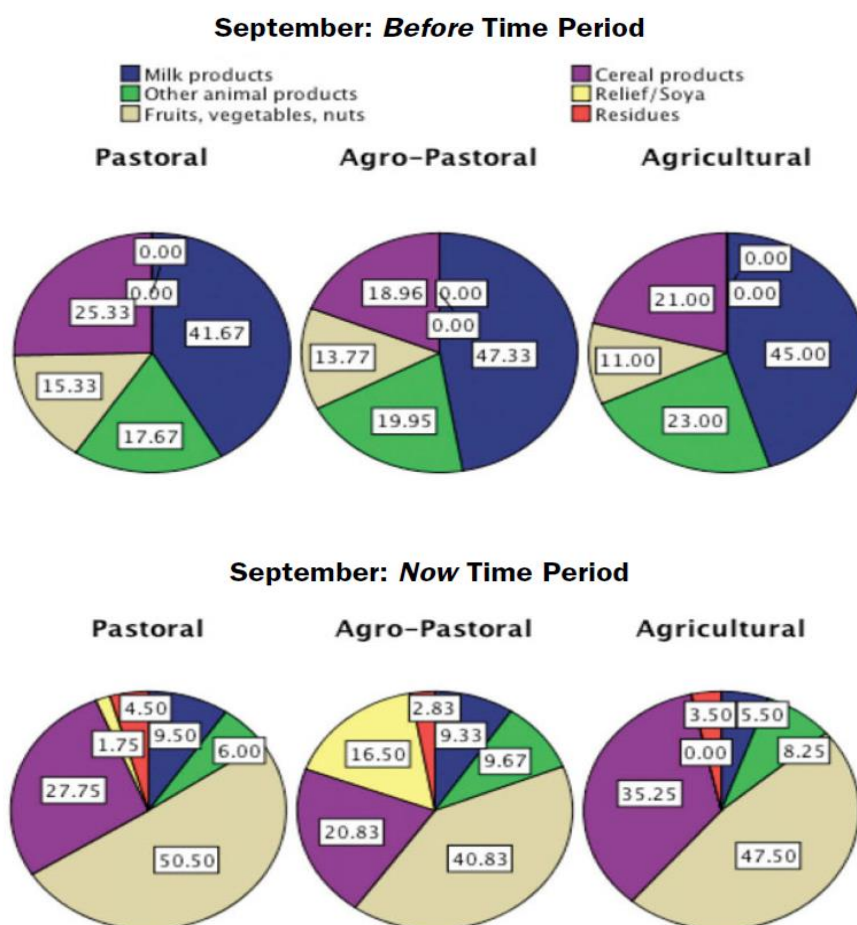


Figure 8: Shift in the diet of the Karamajong [Sites and Mitchard, 2011c]

Figure 8 shows a dramatic change in the diet. While in the “before-time” period, milk and other animal products make up for more than half of the diet for children between 6-23 months. Whereas in the “now time” period, cereals, fruit and vegetables make up 60 to 80% of the diet. This leads to a critical supply of protein. In the Karamoja Nutrition Surveillance study the main source of protein came from beans scoring 43%, only 29% of the children consumed milk and 12% had consumed meat in the last 24 hours of the study.

The “Cost of diet Study” lists the most commonly consumed foods:

- Stables: Sorghum, maize and beans with cassava, sweet potatoes, groundnuts, pumpkin seeds, and sunflower seeds.
- Vegetables: Amaranth, cabbage, calabash, cowpea leaves, cucumber, mushrooms, onions, pumpkin leaves, and tomatoes.
- Fruits: Figs, tamarind, pawpaws, and mangos.

- Wild foods: wild greens like aboi aikenyit, acumdi, akeo, akiliton, alilot, athuguru, ekadolia, ekamongo, ekorete, eliario, lolarin, losigiria, nabutachue, ngakalio, ngalam, ngaponga, and ngimongo.
- Meat: Bone marrow, beef, chicken, diki-diki (game), eggs, white ants, mutton, offals (sheep, cow, goat), hooves (cow), blood (cow and goat), rabbit, rat, and silverfish.
- Dairy: Milk, sour milk and butter.
- Fats and oils: Bacon fat, groundnut paste, hemp fat, mutton fat, offal fat, sesame oil and sunflower paste.
- Purchased snacks and manufactured goods: Biscuits, chapatti, mandasi, samosa, and dried sweet potato pieces.
- Others: Adakai (the dregs from sorghum and maize brew) are also consumed frequently.

[CONCERN, 2013c]

In the GAM study some inquiries about child feeding practices and nutrition taboos were made. As an example, the respondents defined poor child nourishment as feeding poor quality foods such as local brewage residues. Feeding babies mostly greens was also understood as a poor quality nourishment by some focus groups. On the other hand, feeding exclusive foods, breast feeding and feeding the babies sufficient foods were characterized as good feeding practices. Some sample responses to taboos were: “Culturally, young children (infants) are not supposed to take (eat) eggs yolk otherwise they will fall sick”; “Children are not to eat wild meat that when eaten the skin turns into brown like albino, with spotted skins” [Tushemerirwe et al., 2013b]. These taboos can be dangerous, since the avoided food in child feeding practices are mostly protein rich foods. Otherwise it can be noted that most of the community members were able to tell the difference between good and bad child feeding practices [Tushemerirwe et al., 2013b].

2.4 Policies to support vulnerable people in Karamoja

2.4.1 Welthungerhilfe goat program

Idea: The previous chapters show that there is need for action in the project region. The aim of the Welthungerhilfe project in Moroto is to contribute to a peaceful and sustainable development in the region. These actions are arranged by two projects: “Conflict Sensitive Transitional Aid to Stabilize Sustainable Livelihoods in Karamoja” (UGA 1035) and “Sustainable Livelihoods Karamoja 2” (UGA 1041). Both are financed by the German Federal Ministry for Co-operation and Development (BMZ) and private donations to “Welthungerhilfe” and will run till May 2014. In addition, Welthungerhilfe takes part in a US-AID financed project called “RWANU”. The three projects are based on the livelihood issue, which means that they support the people in fundamental parts of life like: Agriculture and animal husbandry, water and hygiene and environmental protection. The support with goats of the most vulnerable people is part of all three projects. One reason for the focus on livestock is the decreasing number of animals causing malnutrition for many children in Karamoja [Sites, 2011]. In the “RWANU” project the target groups are only pregnant mothers or mothers with children under five years of age. The target groups of the other two projects apply to all kinds of vulnerable people like: The old or handicapped, orphans managing households, single mothers and the elderly. Every beneficiary household is given up to five female animals. In the first step they get three and if they perform well they are given two more. Furthermore, some bucks are distributed as well. The selection for the buck beneficiaries assumes higher requirements (writing and reading skills), because the owners should be able to register every mating in order to arrange a flock book. These households are selected by the village community.

Cross breeding: The Welthungerhilfe project supports the beneficiaries with bucks of which are 50% local buck and 50 % toggenburg. The goats are 100% local. The “Toggenburger” goat is predominantly a dairy goat, but the meat is

also useful. The aim of cross breeding is to improve the milk and meat production of the local breeds, because they do not promise high yields. The advantage of the local breed is its adaption to the conditions in Karamoja after a long adaption time. Cross breeding interventions must respect climate, altitude, topography, management (small shepherd groups or flocks of thousands), nutritional level and the exposure to diseases [Turner, 1985]. That's the reason why the cross-breeding program proceeds very carefully and only supplies 50% toggenburg bucks.

Realization: At first the beneficiaries were selected. As described above, every kind of vulnerable person could be selected. The only criterion for exclusion was when they already benefited from other programs or when they already owned goats. To find out which households were already receiving support, Welthungerhilfe worked with the district offices of the government who hold a list with the beneficiaries of other projects. When new goats arrived, at first they stayed in a stall next to the project office for a few days. They received basic vaccination by the Welthungerhilfe veterinarians and after a few days they were distributed to the beneficiaries. Within the first three months the veterinarians visited each village once to check on the animals' health. To ensure a more independent animal health care system in the villages, Welthungerhilfe has trained some animal health workers who live in the villages and are able to conduct basic treatment.

2.4.2 Other livestock interventions

The regional livestock study book gives a summary of some types of livestock interventions in the greater Horn of Africa.

- *Livestock drought marketing:* In colonial times, national agencies purchased tens of thousands of livestock and sent them to abattoirs for slaughtering, then canning or drying. In modern times it has shifted from compulsory purchase to the provision of market transport subsidies.

Livestock drought marketing may be an option regarding market transport subsidies or destocking/emergency slaughter [Simpkin, 2005b].

- *Destocking (Emergency Slaughter)*: This type of intervention purchases animals (or exchanges them for food), and slaughters them immediately. The resulting meat is distributed to local beneficiaries or institutions. In 1984 Oxfam initiated a large scale slaughtering in Kenya and Ethiopia of the weakest animals. Destocking can reduce overgrazing, utilises local protein sources, reduces the number of weak animals, helps families in times of need and creates employment. Otherwise it can reduce the pastoralist asset base and it may undermine future livestock marketing initiatives if pastoralists came to expect regular destocking during difficult periods. [Simpkin, 2005b]
- *Purchase for Slaughter*: This is the same type of intervention as destocking, but targets animals in good condition. The use of local protein sources for emergency food aid is probably cheaper than imported beans and pulses, and the cash generated by animal purchase stimulates the local economy. [Simpkin, 2005b]
- *Restocking*: Like the Welthungerhilfe interventions in Karamoja, the aim of restocking is to re-establish pastoralists in livestock rearing. In the past it was normal to provide one or two animals for a large number of families. Now more and more agencies have changed to donating larger flocks or herds of sheep or goats (because of the higher reproductive rate and easier logistics) to fewer families. In Uganda it is still common to give out only one goat per household. The Welthungerhilfe project giving five goats per family is an exception for this region. The optimum number of donated animals varies according to livelihood, area and need, but in theory it counts about 24 sheep and goats, or 4 cows, per adult equivalent. This kind of intervention is able to support livestock owners in returning to a familiar livelihood; in some areas this may be the only available livelihood, and it maintains dignity and respect. On the other

hand it may also undermine traditional practices and create dependency, it could be detrimental to the environment in the already overstocked area and it may provoke tension or conflict. [Simpkin, 2005b]

- *Animal health interventions:* This can either be an emergency or a development intervention. Largely carried out livestock vaccinations for example. In countries with stable governments, governmental veterinarians conduct this. Nonetheless, community based animal health workers are becoming more and more involved. The training of these animal health workers is an important part of independent animal health control in the villages. A lesson from older interventions includes avoiding a free provision of drugs or drug subsidies. It is preferable to introduce a veterinary voucher system instead. [Simpkin, 2005b]

A combination of these single interventions like the Welthungerhilfe project could be the optimal way to support the pastoralism livelihood. Livestock interventions also belong to a small part of the Karamoja action plan for food security. The budget for livestock interventions is at around 1.800.000 US\$ compared to crop agriculture of 20.000.000 US\$. The aim is to improve livestock production and productivity. The other parts of the action plan include: Increasing crop production and productivity, increasing the functionality of existing water facilities for production, restoring and revitalising degraded areas for food production and management of natural resources, reducing post-harvest losses by providing Manyatta level storage facilities, improving markets and value addition, strengthening the capacity of various actors/ stakeholders for effective and efficient utilisation of resources, strength monitoring of weather and climate in the region, promoting the utilisation of weather and climate information in all planning processes and providing health and nutrition support to vulnerable members of the community [OPM, 2009]. These example show that interventions in the region are not all focused on livestock. There are and have been many small NGO interventions in the region, which have not been mentioned in this text. Some big livelihood interventions in Karamoja are:

- The Karamoja Integrated Development Plan (KIDDP) and the Peace, Recovery and Development Plan 2 (PRDP). Both are framework requirements for interventions in Karamoja by the Ugandan government [KIDDP, 2014].
- The Karamoja livelihoods programme (KALIP), which is an EU founded project. It contributes to the implementation of (KIDDP) and (PRDP) [Cardno, 2013].
- The Second Northern Uganda Social Action Fund Project (NUSAF2) is financed by the World Bank. The project consists of the three components: livelihood investment support, community infrastructure rehabilitation, and institutional development [World Bank, 2014]
- The National Agricultural Advisory Services (NAADS) is a semi - autonomous public agency within the Ministry of Agriculture Animal Industry and Fisheries of Uganda. The project has the vision of a decentralized farmer owned/controlled agricultural advisory service system with increasing participation of the private sector [NAADS, 2014].

3 Methodologies

3.1 Research design and model

In order to analyze the influence of the goats on the life of the beneficiaries, a descriptive cross- sectional study design was chosen. This study design is used to collect all required information at once or over a short period of time. It is suitable for raising basic data, but not for evaluating causal connections. This is why it is a tool for generating hypotheses, but not for testing them [Levin, 2006]. In order to make a statement about the influence of the goats on the life of the beneficiaries, it is necessary to compare the situation of the beneficiaries with a group of people living the same life but owning no goats. Though after the initial

breakdown of the situation, these plans were canceled. Finding a control group comparable to the beneficiaries was not possible in this case. The group of the beneficiaries for example, was a very inhomogeneous group (widows, elders, orphans...), making it more difficult to find a comparable group. Another problem was finding people who owned between 0-10 goats like the beneficiaries. Most of the villagers didn't want to give honest details about their wealth. When they saw the Welthungerhilfe car, or when they talked to a white European, they hoped to get some help. This is one reason why they claimed owning no goats, although in reality they actually did. Due to these difficulties a different reference group was surveyed. This group consisted of other goat owners. The criterion for this group required owning more than five goats. In the following text this group is called "reference group". The reference group was asked the same questions like the beneficiaries, only some questions were left out. The study only concentrates on statements about the group of the beneficiaries, but in order to identify possible trends for the future of the beneficiaries regarding successful rearing, the reference group was analyzed as well. Quantitative and qualitative instruments were chosen for collecting data as described in the chapter "data collection instruments".

The research model is comparable to the classical linear research model by to Flick. Flick describes the following steps for "qualitative social research" in his book: Theory- Hypothesis- Operationalization- Sampling Procedure- Data Acquisition- Data analysis- Revision [Flick, 2007a]

The following steps organized this study:

1. **Theory accumulation:** Literature review/ Key person interviews/ guided interviews/ Focus Group Discussions
2. **Generating research questions:** Evaluation of step one
3. **Operationalization:** Construction of a standardized questionnaire/ Pretest
4. **Sampling Procedure:** Data collection in the Manyattas
5. **Data analysis:** With IBM Statistics Spss21

6. **Revision:** Finding possible connections between the results and the generated hypothesis

7. **Discussion:** Discussion of the results with literature

Aim of the first step was to get an idea of the situation in the project region. A detailed literature review helped get a theoretical idea of the situation. During key person interviews with Welthungerhilfe experts, some important issues about the goat project were discussed. Some trips into the project region were organized additionally and the first interviews with villagers were conducted. These interviews were held with beneficiaries and some other villagers. All in all, 13 people were interviewed in form of personal interviews and with open questions. To get a better overview of the situation in the Manyattas, seven focus group discussions with arbitrarily selected villagers were also held in different Manyattas. The experiences with the first contacts helped plan the next steps: They gave an idea how the respondents may react and what kinds of measurements are possible. The information of the focus group discussions was also used for the discussion. The second step didn't conform to the model of Flick, because testing hypothesis with this study design is not possible. In this case two research questions were set: What impact does the goat program have on the life of the people? Are there any problems within the program? With these questions and the information of the first steps, two standardized questionnaires were constructed (see the annexes for the entire questionnaires). These questionnaires were tested in three different pretests with 15 respondents. The interviews with the final questionnaires were held in the Manyattas. The questionnaire was separated into one larger questionnaire for the beneficiaries and in one questionnaire with the same but fewer questions for the others. All in all, 72 people were asked in this step. The data of these questionnaires was analyzed using the statistics program IBM statistics SPSS21. After the data analysis, the results were tested for possible connections. This information made it possible to generate some hypotheses. The last step consisted of the discussion of the results using of literature.

3.2 Research questions

As described in the introduction, the main research questions were:

1. What impact does the goat program have on the life of the people?
2. Are there any problems within the program?

Combining quantitative and qualitative data, the study aimed to find possible connections and generate hypotheses.

To assess the first question, the influence of the goats on the income, the general success in flock growth after one year, the influence on the nutritional situation and some general benefits were measured. The study also tried to rate impacts on household size and conflicts.

To evaluate the influence on nutrition, the respondents were asked about the food groups they and their children consumed within the last 24 hours. This information helped measure the influence of the goat products on the food diversity. A score for food diversity was created, which is described in the next chapter. The access to milk was surveyed as well and whether their nutritional situation had improved since they received goats. The indirect influence on food diversity was measured by the effect of the goats on income and in comparison to how important purchased food is to the respondents.

There were also some general questions regarding the life of the people:

- Questions about their livelihood
- Questions about the household situation

To get an idea of problems within the program, the following questions were asked:

- The impact on conflicts within the village
- How the beneficiaries deal with the security situation
- Whether there are problems to get drugs for the goats
- The reasons for decreasing numbers of goats
- Whether the beneficiaries accept the cross breeding program
- If other household members enrich themselves by the goats.

In the focus group discussion, the interviewers also tried to get information on possible problems. The respondents were asked about the security situation, about what they do when animals get ill, whether there are conflicts because of unfair distribution, and which household members really benefit from goats. For the other research question, the focus group discussion revealed information on the connection between goats and food security. Furthermore, questions about the role of milk in their lives, necessary changes for an increase in food security, and questions about the most important food sources were asked. Some general questions regarding the role of animals in the life of the people, the changes in life when having goats and the most important livelihoods were asked as well. With this information, the focus group discussions are therefore also useful for the main discussion.

3.3 Data collection instruments

This study includes four data collection instruments (Key Person Interviews, Guided Interviews, Focus Group Discussions and a standardized Questionnaire). According to Giddens, the combination of these methods can be used as crosscheck information to compare one method with the others [Giddens, 2004]. The key person interviews and the guided interviews in this study were basically used to develop the standardized questionnaire. The focus group discussion was used for the development of the questionnaire and also to support and complement the statements of the quantitative part.

Key Person interviews: According to Flick, key person Interviews are able to give an orientation about the experimental field and can help generate hypotheses. A guideline can be useful to direct the interview towards the topic of interest [Flick, 2007b]. Three veterinarians and the project manager of the Welthungerhilfe office were interviewed for this study. They were the main responsible persons for the goat project and the best informants for an instruction in the project. The respondents were able to talk freely about the project and the challenges within. They were also able to propose possible questions for the standardized

questionnaire. The interviews took place between 13.07.2013 and 16.07.2013. A single interview lasted about an hour, but everybody was able to add more information during the entire preparation phase.

Guided Interviews: This form of interview follows a determined structure, but there are no preset answers. The open questions can help create hypothesis or can be useful for developing a questionnaire [Flick, 2007b]. For this study 13 villagers were interviewed. Eight of them were beneficiaries of the goat program. They were selected in proportions and were asked about what they think of the goat program, whether there are problems and whether they think there are better options to help the people. They were able to answer freely and to bring in other ideas during the interview. The extremely different answers helped get an idea, what kinds of effects goats can have in the villages and helped develop the questionnaire.

Focus group discussion: Morgan describes the focus group discussion as useful for an orientation in the field, for generating hypothesis and for developing questionnaires [Flick, 2007c]. For the conduction of focus group discussions some issues should be respected: The optimal group size is 6 to 12 people. It is hard to achieve a good discussion in smaller groups but bigger groups sometimes cause not everybody being able to to get a word in edgeways. It is also useful for people in the group not to know each other well, since many issues are self-evident for friends and therefore a discussion would not need to be approached [Flick, 2007c]. A script can be useful to structure the discussions and make them comparable. The process should be divided into the following steps: Warm-up Phase; Main discussion Phase; Reflection Phase [Webb and Kevern, 2001]. Seven focus group discussions with randomly selected villagers (separated into male and female groups) were held. In all discussions, besides the first one, the group size of 6-12 people was reached. A group of 31 women was asked in the first discussion. The experience from this discussion helped identify critical points for the other discussions. One discovery showed that the men bear down the women. During the first discussion two men intervened. That is why the

interviewers took care to keep the other discussions in separate groups. Before the discussions, the chairman was informed that men and women need to be in separate groups and he was asked to tell the villagers to respect this measure for sakes of the discussion. Another experience showed that too much attention created too big groups. To keep the size of the group small, the interviewer and translator were not dropped off directly in the villages by the Welthungerhilfe car. Whenever they arrived by foot and not by car, the attention was a lot smaller. After the arrival, the chairman was asked for permission and some villagers were asked arbitrarily to take part in the discussion. The respondents were not informed about the true background of the discussion and that the interviewer and translator worked for Welthungerhilfe. This was necessary to prevent a false statement bias. The respondents were simply told that the discussion was organized to analyze their life for a study by a European university. The interviewer hoped to receive more authentic answers using this strategy. He wanted to prevent a direct connection to the support of the NGOs and especially to the Welthungerhilfe goat program. The discussions themselves were conducted and directly translated by a translator. Sometimes the interviewer asked additional questions, supervised the procedure, recorded the interviews on a mobile phone and made notes. The translator and the interviewer paid attention to the more quiet people, trying to get them involved in the discussion and slowed down the more dominant people. One discussion took about an hour. During the warm-up phase the respondents were informed that the discussion helps analyze their life and that only correct answers are useful for a good study on the Karamojong. As described above, they were not informed that the interviewer worked for Welthungerhilfe. The interviewers took great care making everyone part of the discussion. The main discussion phase went by the following structure of eleven questions:

- What is the most important livelihood for you and why?
- What roles do animals play in your live (do they have impact on your nutrition, income etc.)?

- How would/did your live change if/had you owned 5 goats?
- What is the role of goats compared to cattle?
- What role does milk play in your live?
- Which changes must take place for your food security to increase?
- What is the most important food source for you?
- Who profits from the animals within the household?
- What do the people do if animals get ill?
- What about insecurity, is it a problem for you?
- What kind of people should be selected for goat distribution (elder, women, men...)?

In the reflection phase everybody had time to talk freely about issues that had not been brought up in the discussion.



Figure 9: Focus group discussion in Lokitelaingolejek. Photographer: Tobias Mertzluft

Standardized questionnaire for beneficiaries: The standardized questionnaire is a quantitative method of empirical social research and describes circumstances numerically. It is a typical tool for a cross- sectional- study design [Levin, 2006]. As already mentioned, the other three tools were used to develop the questionnaire. There are many rules for developing a questionnaire, which should be respected. For this study the instructions of the book “The questionnaire” [Kirchhoff et. al., 2010] were used. Many rules for the operation

of interviews should be considered as well. The study used the instructions of Prüfer and Stiegler, 2002. Some particular circumstances such as the different languages and cultures between the interviewer and the respondents, created more critical points than the instructions described. The detailed planning and four pretests helped deal with these critical points. The critical points were described in the limitation capture in detail and were also part of the discussion. This information could be useful for the organization of future studies. The selection of the beneficiaries is described in the next chapter. The interviews were conducted in the following way: When a beneficiary was found, he or she was informed about what the interviewers were doing and asked if he or she agreed to answer some questions. When he or she agreed, the interview was held based on the standardized questionnaire. Putan Rihard translated the questions for the respondents, and translated the answers back to Tobias Mertzluft, who transferred the answers to the answer sheet. An interview took about half an hour. Before the interview started, the interviewers introduced themselves. Then they informed the respondents about the background of their work. In this case it was not possible to keep it a secret that they worked for Welthungerhilfe. Because of a tight schedule the interviewers arrived in the Manyattas by the Welthungerhilfe car and the interview was deeply connected to the goat program. Consequently it was obvious, that the interviewers worked for Welthungerhilfe. Though regarding these interviews, the risk of a false statement bias was assessed smaller than in the focus group discussions. The questions were very concrete and if the respondent didn't give a precise answer, it was possible to ask further questions.



Figure 10: Proud women during the interview. Photographer: Tobias Mertzlufft

Standardized questionnaire for the others: For this group, the same questionnaire as for the beneficiaries was used. Some questions were eliminated, since they made no sense to ask. The entire questionnaire is found in the annexes. The answers of these groups were used for statistical tests described in the chapter of the data analysis.

3.4 Sampling procedure

The data collection was conducted between the 10th of July 2013 and the 30th of August 2013. The main unit of the study consisted of the 124 beneficiaries of the Welthungerhilfe goat program in the Lotome sub country. The two supporting methods of focus group discussions and the standardized questionnaire aimed to reach the entire group. All discussions and interviews were guided by Tobias Mertzlufft and two different translators. Putan Riuhard translated the survey for

the beneficiaries and the others. Sagal Inok translated the focus group discussion. To avoid a bias the translators were not replaced or switched during the entire period of a data collection instrument.

Key person interview: No selection was necessary for the key person interviews. Initially, some guided interviews with randomly selected villagers were held between the 13th and the 16th of July 2013. The first person to be met in the Manyatta was asked if he or she agreed to answer some questions. The aim was to ask a minimum of five beneficiaries and five others. In the end, eight beneficiaries and five others were asked in four different Manyattas.

Focus group discussion: Preceding the focus group discussions, a pretest with 31 persons was conducted on July 17th. The focus group discussions were held between 17th and 23th of July 2013. The people were selected arbitrarily, meaning that not every villager had the same chance to be part of the group. In an arbitrary selection method there is always a big risk for bias [Schnell et. al., 1999]. Another sampling procedure for this study was not possible. To gather the entire Manyatta and select people randomly or making bigger groups to reach everyone, were options. Unfortunately not everybody would be able to have a say in larger groups. Gathering the whole Manyatta and then selecting only few people could create conflicts. This motivated the interviewers to select arbitrarily. During the recruitment, the interviewers always kept in mind to get an equal proportion in age and gender. When a sample is not selected randomly, it is better selecting people by sticking to proportions. [Schnell et. al., 1999]. The aim was recruiting the same amount of women and men with a balanced distribution of age. As described above, the interviewers tried arousing as little attention as possible to prevent a big accumulation of people. They arrived in the Manyattas by foot. First they requested permission by the chairman, and then they would ask people they came across, whether they would like to take part in the discussion. The discussions were held in five different Manyattas.

Surveying the beneficiaries: A census of the entire main unit was planned, but there were problems reaching all of the beneficiaries. The selection was

conducted in the following way: The Welthungerhilfe office had a list with all beneficiaries in Lotome, who had received goats in January 2013. 124 persons from 25 different Manyattas were on the list. The aim was to reach every single person on this list. In the end, only 51 beneficiaries from 13 Manyattas were reached. The survey period took place in the rainy season. This fact made it impossible to reach every targeted Manyatta using a systematic logistic plan. Every morning before the interviewers set off, they chose one or two Manyattas depending on the street and weather situation. When they reached the Manyattas, they asked for the people on the list. If they were not available, they asked neighbors to arrange a meeting for the next day. In some cases, after visiting a Manyatta and arranging appointments, the same Manyatta was not accessible the next day due to bad road conditions. This made it even more complicated to reach every person on the list. Another problem was the availability of the beneficiaries. It was not possible to arrange appointments by telephone and when the interviewer and translator arrived in the Manyattas they were not always present. Consequently neighbors were asked to arrange appointments for the next day. This was a very time consuming method, but most of the time it worked. The team set off every morning at nine o'clock from the project office in Moroto town and reached the Manyattas about an hour later. The survey procedure took place between 10 a.m. and 15 p.m. During this time the beneficiaries normally worked in their gardens or went to markets etc. This was another challenge, but holding the interviews earlier or later was not possible, since the project car needed sunlight for the trip into the Manyattas. These challenges were the reason for a mixture of proportion selection methods and cluster selection methods. The interviewers had the task to find a group of respondents with a similar distribution of gender as in the Welthungerhilfe list of all beneficiaries. On the Welthungerhilfe list 65% were female and 35% were male. The gender distribution in the sample consisted of 37% males and 63% females. They also tried to get hold of every person in the Manyattas who they had asked in the first place. To prevent a selection bias it was preferred to ignore

some Manyattas rather than ignoring people in a Manyatta, which could not be reached directly. With this selection method the selection bias is smaller than that of an arbitrarily selection [Schnell et. al., 1999].

Table 8: Number of respondents per manyatta (own data)

Manyatta	Beneficiaries found	Beneficiaries on list	Percent reached
Narage	9	9	100%
Nakuka	5	5	100%
Kaingoleyek	5	5	100%
Koititi	5	5	100%
Loluk	4	4	100%
Loro	4	5	80%
Naoyaminit	4	6	67%
Nataparapalemu	4	6	67%
Adwaramukuny	4	6	67%
Lolim	1	2	50%
Lobei	1	3	33%
Naitakakawae	2	4	50%
Lopuu	2	6	33%

The Manyattas marked in red didn't reach the critical amount of 100% of the beneficiaries on the list. However, it is possible that a bias indeed emerged since not every cluster achieved the complete inventory count. On the other side, more than half of the interviewed people belonged to Manyattas where everyone was reached, whereas the amount of beneficiaries in the other Manyattas was very small. Reasons for not getting hold of all beneficiaries in one Manyatta were: Beneficiaries had moved to other villages, they were not findable, and the logistic problem as described above.

Surveying the reference group: The requirement for this group was that the respondents report owning more than five goats. The idea of asking a group of people, who owned more goats than the beneficiaries, was to analyze possible future developments for the beneficiaries. At first this group had more requirements, such as reaching a larger amount of people. Furthermore the dispersion of gender and age in the group was planned to be similar to the group of the beneficiaries. Since it was already hard to find people admitting they

owned goats, all of these requirements were left aside. In this case, the sampling was entirely arbitrary. The interviewers went to Manyattas and asked passing people whether they own goats. In case of a yes they were asked whether they would like to answer some questions. In the end, 21 people from five different Manyattas were asked.

Table 9: sampling procedure

Data collection Instrument	time	Target group	Sample size	comments
Key person interview	10-13. 07. 2013	Veterinarians and project manager of Welthungerhilfe office	4	/
Guided interview	13-16. 07.2013	Villagers (beneficiaries and other people in the manyattas)	13	/
Focus group discussion (villagers)	17-23. 07.2013	Villagers (beneficiaries and other people in the manyattas)	91	Seven discussions planned, every discussion besides one had the optimal group size of 6-12 persons
Pre-test questionnaire	23-30. 07.2013	beneficiaries	15	/
Standardized questionnaire for beneficiaries	31.07- 30.08.2013	beneficiaries	51	Main unit 124 persons
questionnaire for the reference group	31.07- 30.08.2013	People in manyattas, who had more than five goats	21	/

3.5 Data analysis

The hand written notes and recordings of the focus group discussions were analyzed using excel 2010. After every discussion, the interviewer listened to the recording and tried completing the hand written notes. Every question of the focus group discussion received a chapter within the excel document and all notes to the questions of every discussion were added to the chapter. After

developing this transcription, the answers of the different discussions were examined for specific answer patterns. Furthermore, the transcription was scanned for some unexpected answers. On the one side, this information was used to develop the standardized questionnaire, on the other side they were used for cross checking information from the standardized questionnaire. Data analysis for the standardized questionnaire was conducted with the statistical program IBM SpSS 21. For checking connections between certain data, linear regression models and a logistic regression model were used. Before developing the models, scatter plots were made to identify outliers within the models. Other models were not necessary for analyzing this data. The following variables were calculated using the information collected in the survey.

Income: To obtain information about income, the respondents were asked about their household income sources. They were able to state three different sources. Then they were asked about how many people take part in the particular activity and how often they do it per month. The last question concerned how much money one person was able to earn within one day of the particular activity. The calculation of the monthly income was made using the following formula:

$(\text{amount of persons}) * (\text{working days per month}) * (\text{money per day})$

This calculation was used for every particular income source and a sum was made for every household.

Food diversity: In order to calculate the food diversity, the respondents were asked about the food groups they had consumed over the last 24 hours. The food diversity questionnaire of the Food and Nutrition Technical Assistance Project (FANTA) was used for this evaluation [FANTA-2, 2010]. 14 different food groups were given with typical local food and the respondents were asked about every single food group, whether they had eaten them the day before the interview. To create a score, a sum of all consumed food groups was made. To measure the impact of the goats on nutrition, the group's milk or milk products and meat attained from the goats were added additionally.

3.6 Limitations

Study design: As already described in the chapter “research design”, a cross-sectional study has its limitations. It is not possible to get a strong statement and it’s only useful to generate hypotheses without testing them [Levin, 2006]. Since there were no comparable studies available, it made sense to use this study design. Nevertheless, a control group for a better analysis of the effects of the goats on the life of the people would be very helpful. In this case it was not possible to find a comparable control group. One problem, as described in “selection for the group of the others”, was that most of the villagers didn’t want to admit that they owned goats or other animals. Finding a group owning no animals at all and comparing their answers to those of the beneficiaries would cause a large bias. It is possible that a big number of people owning unreported animals might sneak into the group of people not owning any. This is the reason for a non-existent control group in the study design. The alternative was to find a group of people, who own animals. These people were to trust more. Due to challenges as described in the selections chapter, this group was not big enough to be a control group. Nonetheless it was used to analyze possible future trends and developments.

Selection of the beneficiaries: As described in the chapter “sampling procedure”, while selecting the beneficiaries some limitations for the statement of this study existed. One problem was the weather, the rainy season making the streets not accessible at times. Another challenge was the reachability of the beneficiaries. They were not always nearby when the interviewers arrived to the Manyattas. For this reason a mixture of a proportion selection method and a cluster selection method was chosen. These two methods have a bigger risk creating a selection bias [Schnell et. al., 1999], but simply were the best selection method of choice.

During the interviews: The beneficiaries were the poorest people of the region and most of them probably associated white people as people coming to help

them with their lives. This fact was linked to the situation, that many NGO's were present in the region. This situation possibly tempted the respondents to describe their situation as worse than it really was. If they indeed described their situation as far worse than it actually was, a bias could be expected for the answers. Though in most cases the respondents commit the same overstatement. For this, cross connections between some variables could be tested [Schnell et. al., 1999]. Another challenge was speaking to the respondents alone. A white person in a Manyatta creates attention and curiosity, sometimes leading to accumulations during the interviews. The interviewers tried to conduct the interviews in separate places to speak to the respondents alone. Unfortunately, sometimes it was unavoidable to conduct the entire interview without other respondents. However, they never intervened anyway. This caused a critical situation though, since giving attention to only one person could create conflicts between the villagers.



Figure 11: Accumulation of children during an interview. Photographer: Tobias Mertzluft

4 Results

4.1 Characteristics of the study population

Focus Group discussion: Characteristics were not measured for the respondents within the focus group discussions. The only available data regards the distribution of genders. Four discussions included 34 men and 47 women were part of three discussions.

Questionnaires for the beneficiaries and the reference group:

Type of respondents: The second question evaluates the kind of person who answers the questionnaire. Like described in the methodologies chapter there was a group of persons who got goats from the Welthungerhilfe project and additionally there was a group of other persons who already owned a bigger amount of goats. This group had the same questions like the beneficiaries, only some questions were leave out in their questionnaire. As described in the part about animal ownership there were four persons in the group of the others who owned more than 50 goats. These persons were leave out of the analysis.

Table 10: Who answered the questions? (Own data)

Who answered the questions?	Frequency	Percent
Beneficiaries	51	70,8
Reference Group	21	29,2
total	72	100

Age groups: The age groups of the beneficiaries were unequally distributed. The group of 31-60 year olds was the biggest group with 39,2%. The second biggest group consisted of people over 60< years with 35,3%, followed by the group of 16-30 year olds with 21,6%. Two under 15 year old respondents also took part making up 3,9% of the study population. Figure 12 shows the age groups of the

beneficiaries and the age of the reference group. The distribution of age groups was unequal between the two groups.

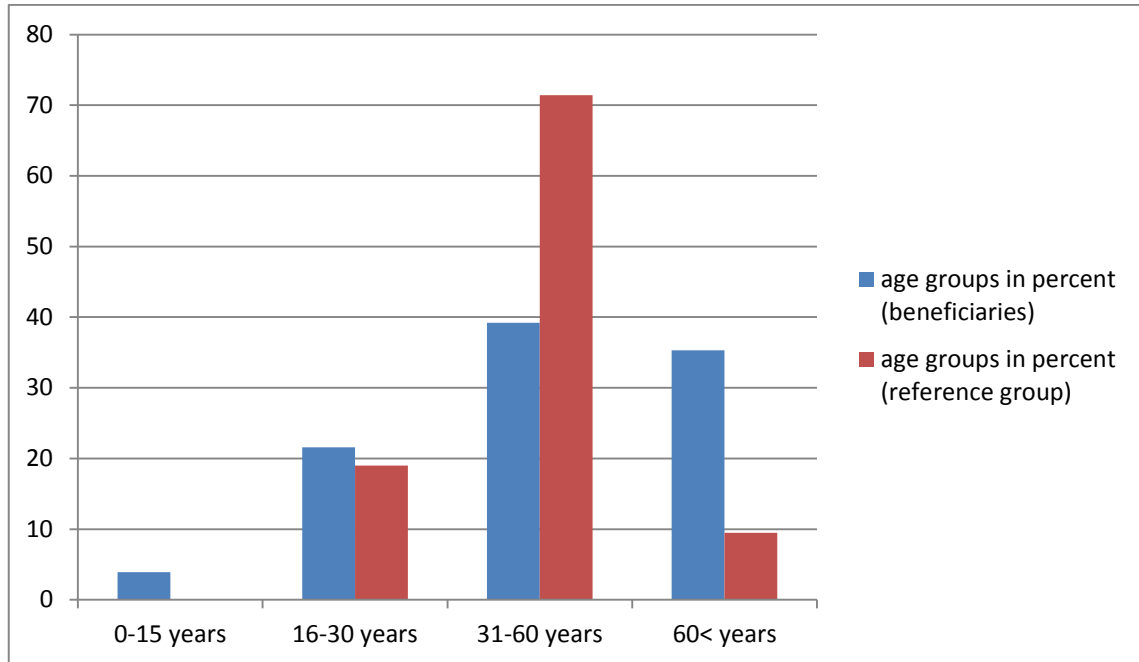


Figure 12: Age groups (own data)

Gender: An unequal distribution also existed for the gender when comparing the beneficiaries and the reference group. The beneficiaries were to 72,5% female and 27,5% male while the other group consisted of 61,9% male and 38,1% female individuals as shown in Figure 13.

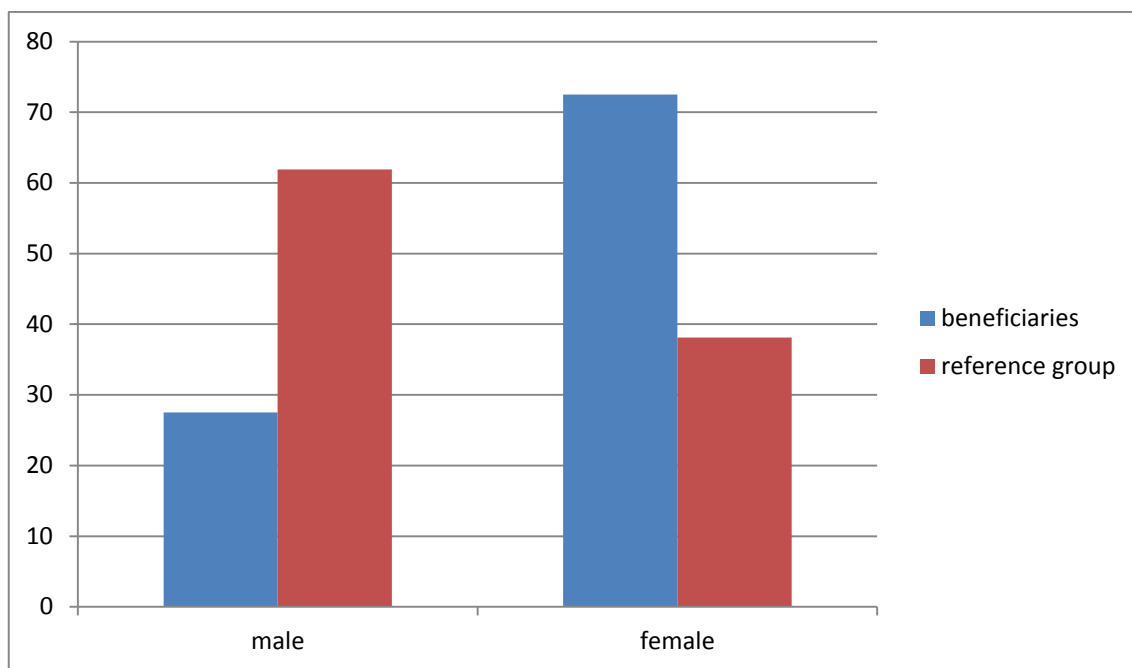


Figure 13: gender distribution (own data)

Household head, marital status and household size: In order to characterize and describe the respondents' household situation, they were asked about their household head, their marital status and their household size.

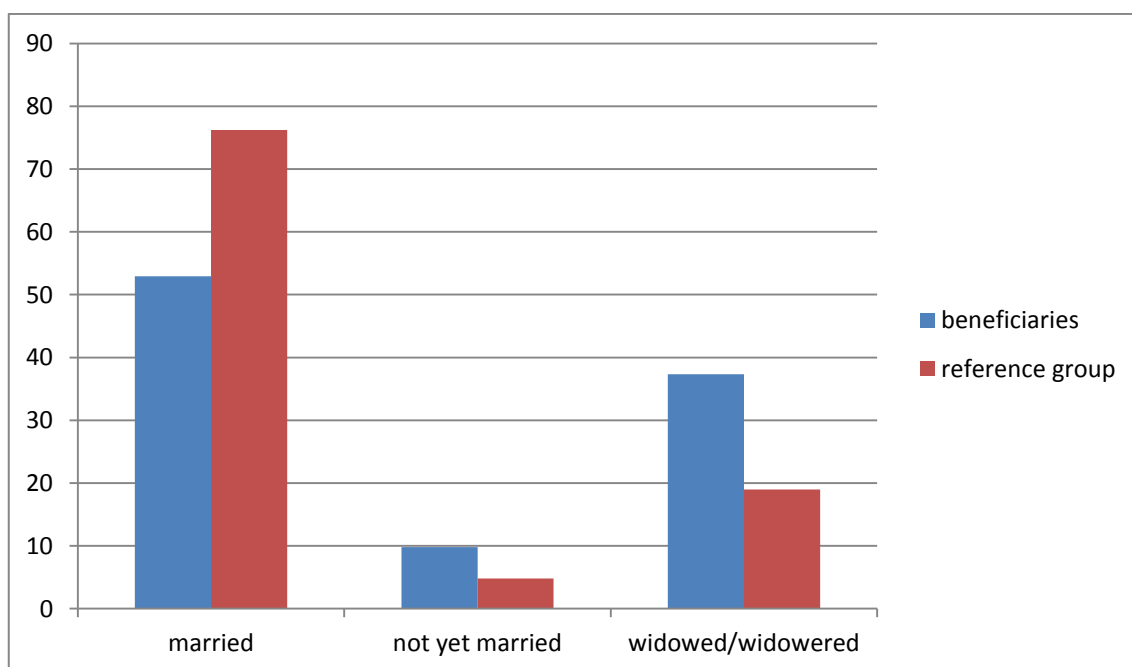


Figure 14: Marital status (own data)

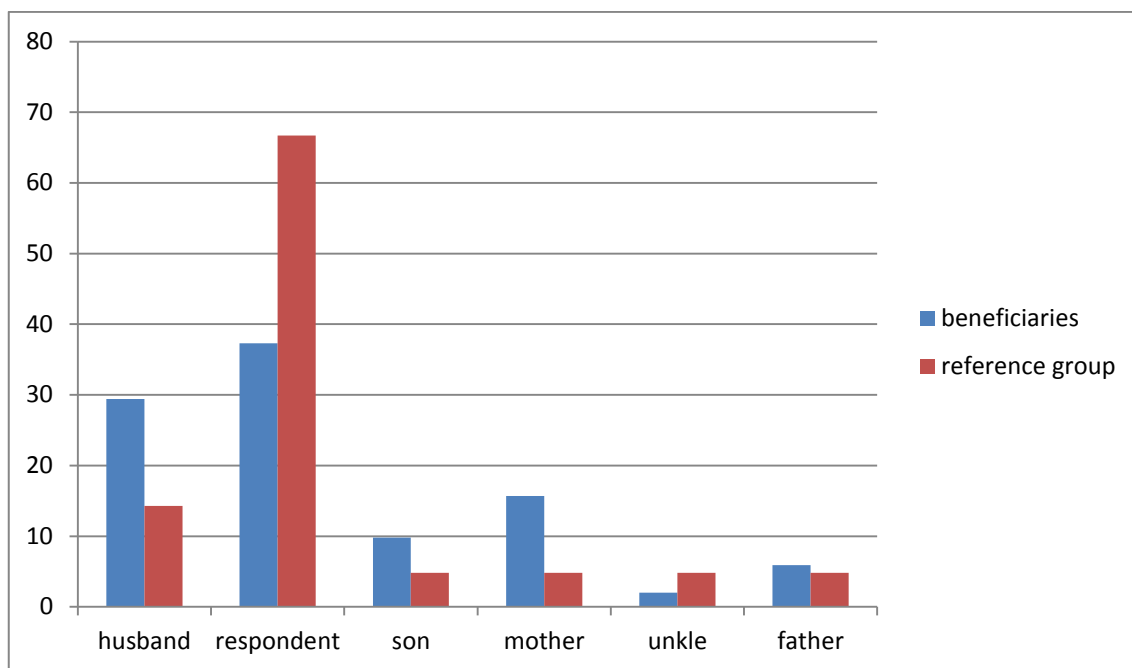


Figure 15: Household head (own data)

The households size for the group of the beneficiaries averaged 9,29 people per household. In the reference group average households size counted 10,33 people.

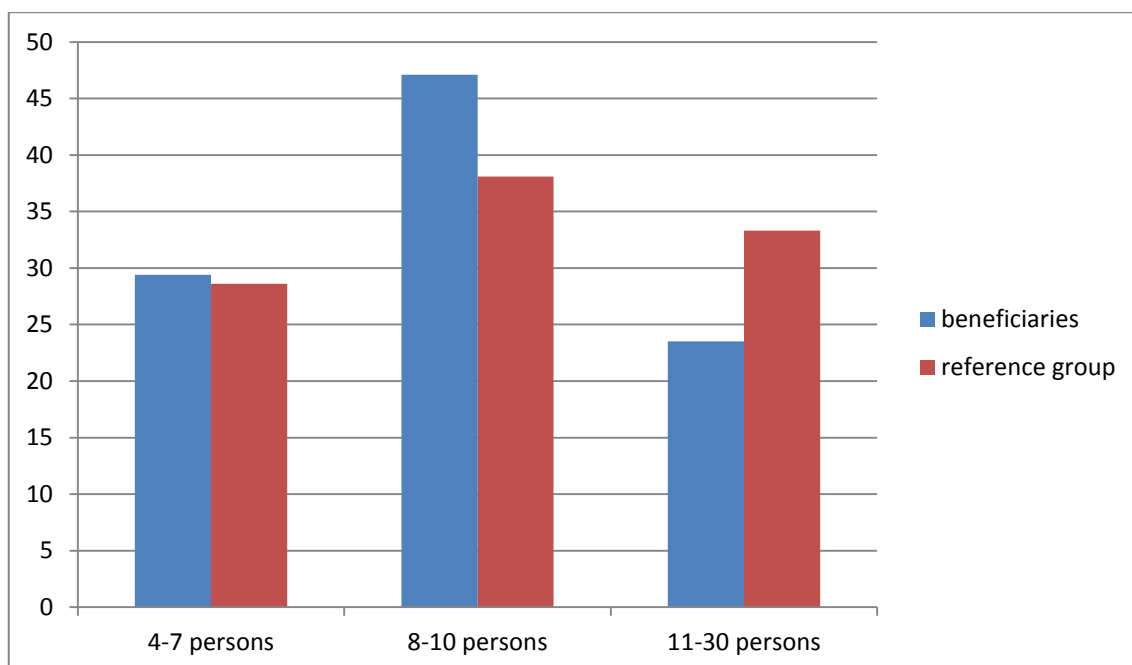


Figure 16: Household size (own data)

In the “Baseline household economy assessment of Karamoja” of the FAO, wealth groups for Karamoja were defined by the amount of animals they owned, the size of land owned and the size of the household [FEG and FAO, 2010].

		Wealth Group Information				
		HH size	Wives per man	Land area cultivated	Livestock (per wife)	Oxen
Very Poor		5-7	1	0.25-1 acres	cattle: 2-5; goats: 3-8; sheep: 2-5	0
Poor		5-8	1-2	1-2.5 acres	cattle: 5-10; goats: 8-15; sheep: 5-17	0-1
Middle		7-8	2-3	2-3 acres	cattle: 15-40; goats: 10-35; sheep: 15-35	1-2
Better-off		7-9	3-5	2-4 acres	cattle: 25-55; goats: 20-60; sheep: 20-55	1-2

Figure 17: Wealth group information [FEG and FAO, 2010]

According to this breakdown the study population consisted of very poor or poor people. In the reference group three people could be characterized as part of the medium wealth group, the rest of the group also consisted of poor or very poor people. Since no data on the amount of wives is available, this is not part of the classification.

4.2 General information about the goat program

Cause of selection: In the first question regarding the goat program, the beneficiaries were asked, why they think they were selected to benefit from the goat-restocking program. Some answers were provided for this question, but there was also the option to give other reasons, when needed. Some specific reasons like, “I’m an orphan”, “I’m an ex prisoner” or “my first born is a girl”, were mentioned. The most frequent answer was, „I’m helpless” with 44,4% and the second frequent was that they are a widow or widower with 16,7%. Furthermore 5,7% answered, that they have too many children.

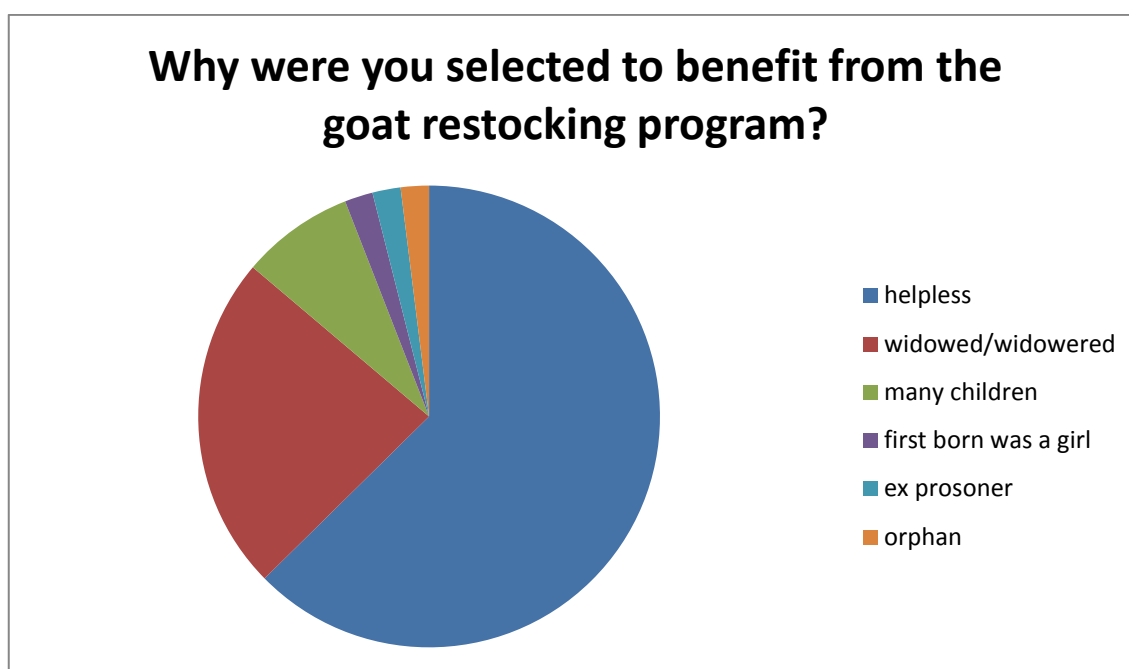


Figure 18: Why were you selected to benefit from the goat restocking program? (own data)

Changes in the number of goats: The following nine questions gave detailed information on the reasons for changing numbers of the goat population within the households of the beneficiaries. The total number of goats, which were distributed in the summer of 2012, was 186. One year later the total number had decreased to 183 goats. The average number of goats per beneficiary was 3,65 goats in the beginning and 3,59 goats in the end. Table 10 demonstrates the reasons for these changes.

Table 11: Goat distribution and events in the period between January 2013 and August 2013 (own data)

Question	Respon- dents	total	average	median	Standar d error of the average	min	max	Percen tile 25
Number of goats received	51	186	3,65	4	0,078	2	5	3
Number of goats died	51	37	0,73	0	0,140	0	4	0
Number of goats lost	51	5	0,10	0	0,042	0	1	0
Number of goats	51	22	0,43	0	0,149	0	4	0

stolen								
Number of goats born	51	76	1,49	1	0,205	0	6	0
Number of goats born and alive	51	62	1,22	1	0,184	0	5	0
Number of goats sold	51	2	0,04	0	0,039	0	2	0
Number of goats slaughtered	51	0	0	0	0,000	0	0	0
Total number of goats	51	183	3,59	4	0,365	0	10	1

In the questions illustrated in table 10, only one person admitted, that he sold a goat and nobody admitted slaughtering some. This is why nobody was able to answer the following three questions: If applicable, why were some goats, including fawn, sold? If applicable, why were some goats, including fawn, slaughtered? If applicable, who profits from sales or slaughter? Some contradictory statements were made by the focus group discussions. One woman from Naorit declared: *"I sold the goats and the money really helps me now."* Another woman from Naorit stated: *"We had to kill them to survive."* A man from Lopu made a similar statement.

In the next question "Who decides about selling or slaughtering?", 51,4% answered with the head of the household, 33,3% indicated themselves being able to decide about selling or slaughtering, in 5,6% of the cases the whole household decided as a whole and in 8,3% of the cases other household members had the power making these decisions.

Insecurity: To characterize the security situation, the respondents were asked whether they are afraid of goat theft. 80,4% answered no and only 19,6% answered yes. The reference group also answered this question: 42,9% answered no and 57,1% yes. The respondents saying "yes" gave some reasons for their fear, as illustrated in Figure 19.

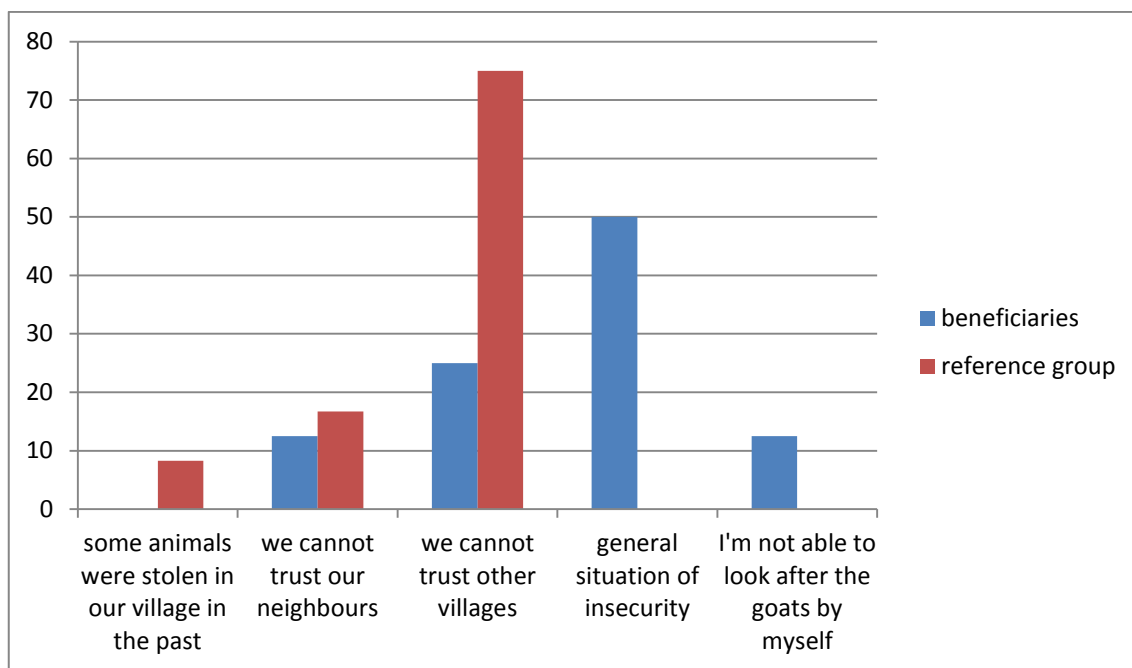


Figure 19: Why are you afraid of theft of the goats? (own data)

The group answering “no” also provided some reasons as showed in Figure 20.

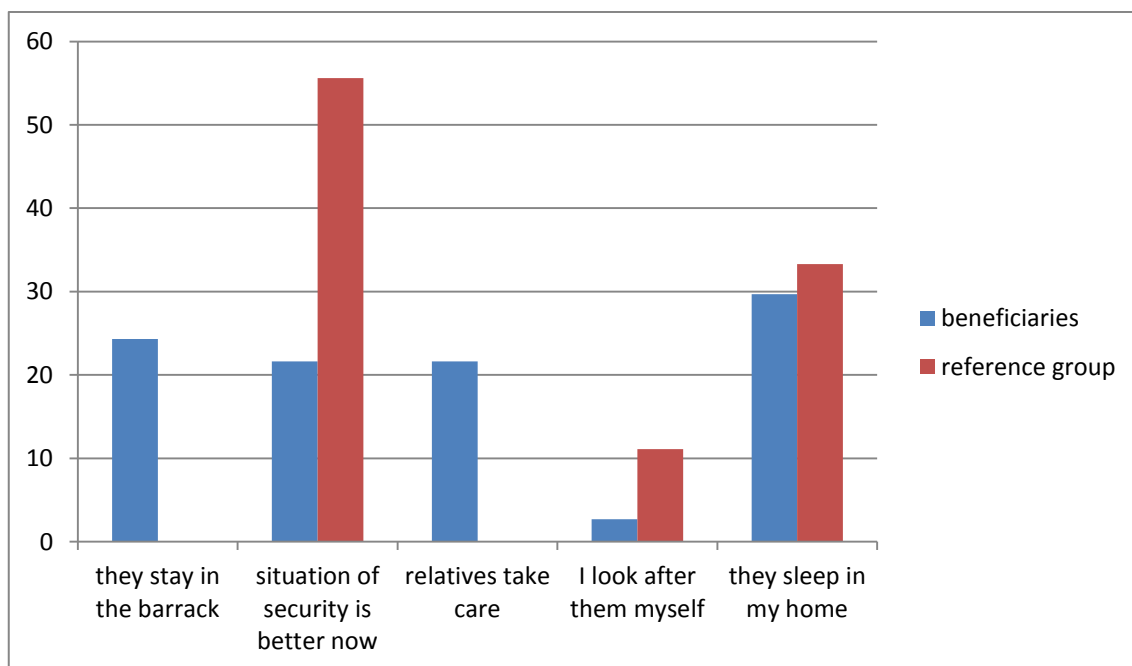


Figure 20: Why are you not afraid of theft of the goats? (own data)

The respondents were also asked if they have to give milk to the army. None of the respondents answered that they have to give milk to the army.

To make sure whether the beneficiaries always had access to their animals, they were asked where their goats were staying at the time of the interview. In the

group of the beneficiaries, seven people were missing. These people had lost their goats and were not able to answer this question.

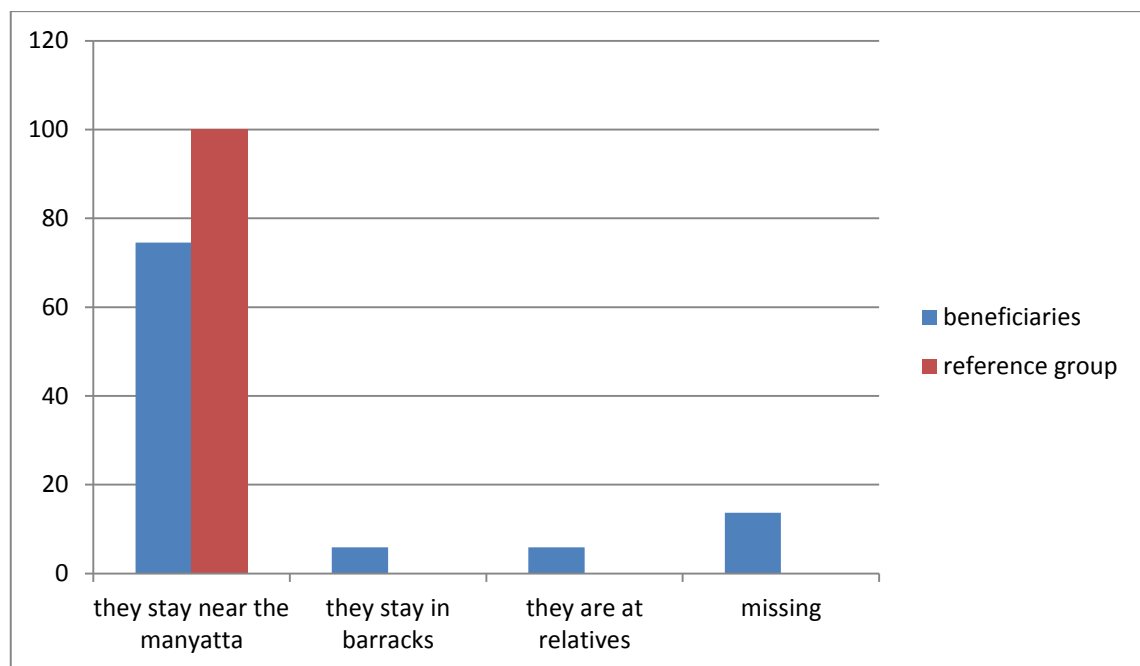


Figure 21: Where do the goat stay? (own data)

Conflicts: In the individual interviews and in the focus group discussions, a potential for conflicts was suspected because of the goat distribution. To verify this, the respondents were asked within the questionnaire, whether conflicts arose because of the goats. 82% answered with no and 18% answered, that they indeed had conflicts with their neighbours. Within these 18%, 77,8% specified jealousy as a reason for the conflicts; the rest explained that neighbours had tried to steal their goats.

Cross breeding: To find out whether the cross breeding intervention within the Welthungerhilfe goat program was accepted, they asked the respondents of their opinion of the cross breeding program. 14% or seven people had a negative attitude towards the cross breeding. 4% were sceptic and 82% or 41 people assessed it as positive. In the focus group discussion, one statement by a man from Naronit represented the opinion of the group with a negative attitude.

“Diseases are a big problem for the animals. The breed of Welthungerhilfe is not

good for these climate conditions. That's the reason why the goats give less milk."

Shepherds: The respondents were asked if they had a shepherd who looked after their goats. Five beneficiaries were not able to answer this question, because they had lost their goats. 72,5% indicated that they had a shepherd, 3,9% or two respondents answered, that they look after their goats themselves and 13,7% said that other people look after them.

Social/ Economical Status: The respondents evaluated their social and economic status before they received the goats and during the interview on the following Scala:

low				ordinary					high
1	2	3	4	5	6	7	8	9	10

Figure 22: Scala for economic and social status (own data)

Regarding the social and economic status, the medians for both show an increase of two points. The average increase for the social status scored 2,3 points and the economic status scored 2,2 points. Two respondents described a decrease of one point for the social status. The most negative answer for the economic status was neither a decrease nor an increase. The maximum increase in the social status was seven (two respondents reported this increase) and for the economic status as well, though only one respondent reported this increase.

Drugs for the goats: In the preparation phase before the questionnaire, drugs were a big issue for the beneficiaries. In the interviews they were asked whether acquiring drugs for the goats caused problems.

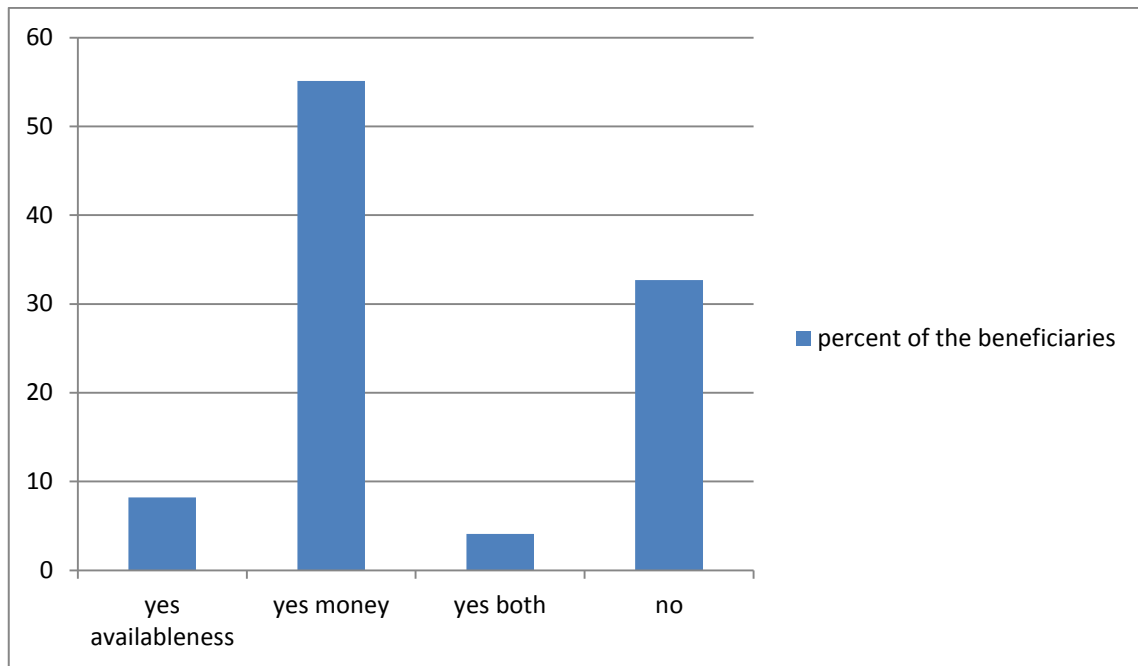


Figure 23: Is getting drugs for the goats a big problem? (own data)

Benefits from the goats: The respondents were asked about the benefits they experienced from their goats. This was a question of multiple possible answers. The most frequent answer with 68,8% within the group of the beneficiaries was “pride”. The second frequent answer was “milk” with 37,5% and the third most frequent reply was “no benefits” with 16,7%. The other answers are illustrated in figure 23. Within the reference group, 81% replied that goats/milk provide money and in each case “meat” and “pride” was stated by 28,6% of the respondents.

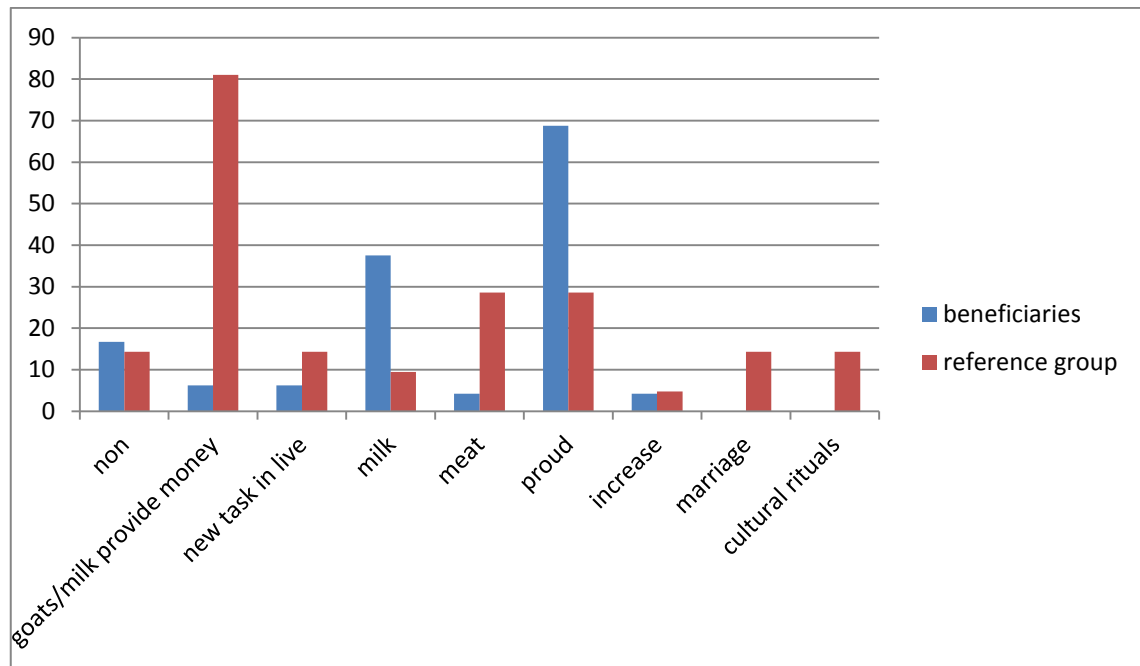


Figure 24: Benefits from the goats (own data)

In the question about the benefits, some respondents answered that the goats provide money. Within the group of the beneficiaries four people provided this statement. These people were asked for what they use the money. Two beneficiaries replied that they use it for school fees; in each case one beneficiary stated “for marriage” and “medicine”. Within the reference group, 20 respondents answered that the goats provide money. The question about how they use the money was a question of multiple answers, for which reason more answers than respondents were counted.

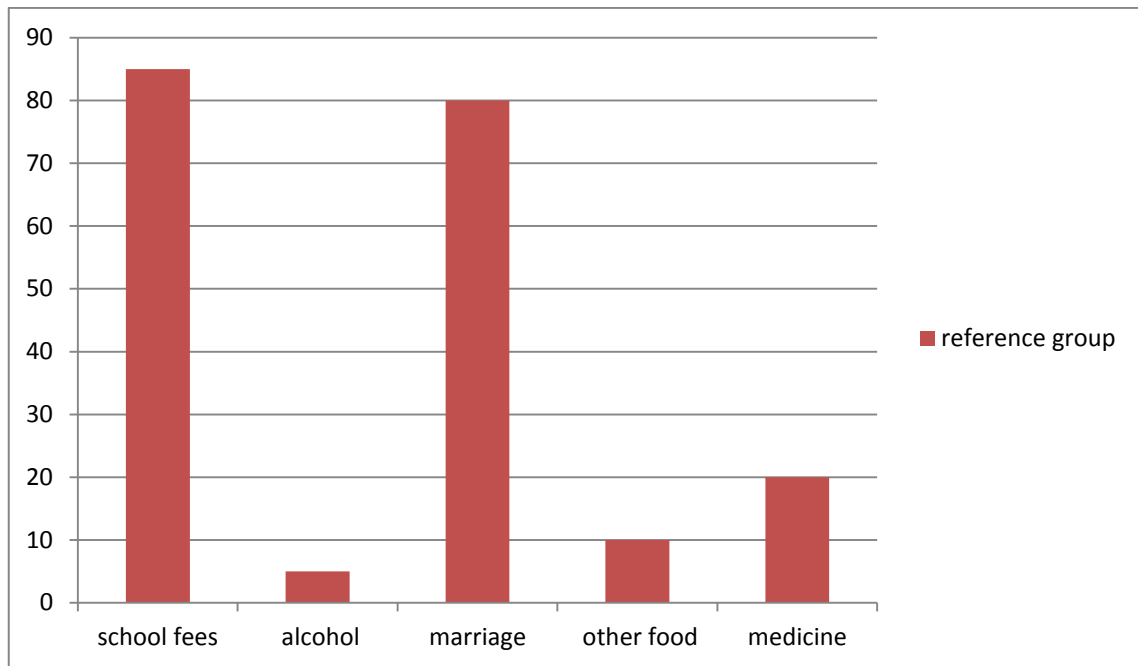


Figure 25: Use of money from the goats (own data)

Milk: The respondents were asked how much milk they obtain from all their goats per day. In order to receive representative answers, the interviewers used a plastic bottle for the respondents to demonstrate the amount milk they got from all their goats per day.



Figure 26: Putan Riuard asked for dimensions of milk per day (photographer, T. Mertzluft)

The beneficiaries stated their goats were giving between zero and one litre per day. The average was 0,24 litres and the median was zero litres for 28 respondents or 54% of the respondents. Within the reference group the amount

spread between zero and ten litres. The average counted 1,5 litres per day and the median was 0,5 litres for seven people or 33,3%.

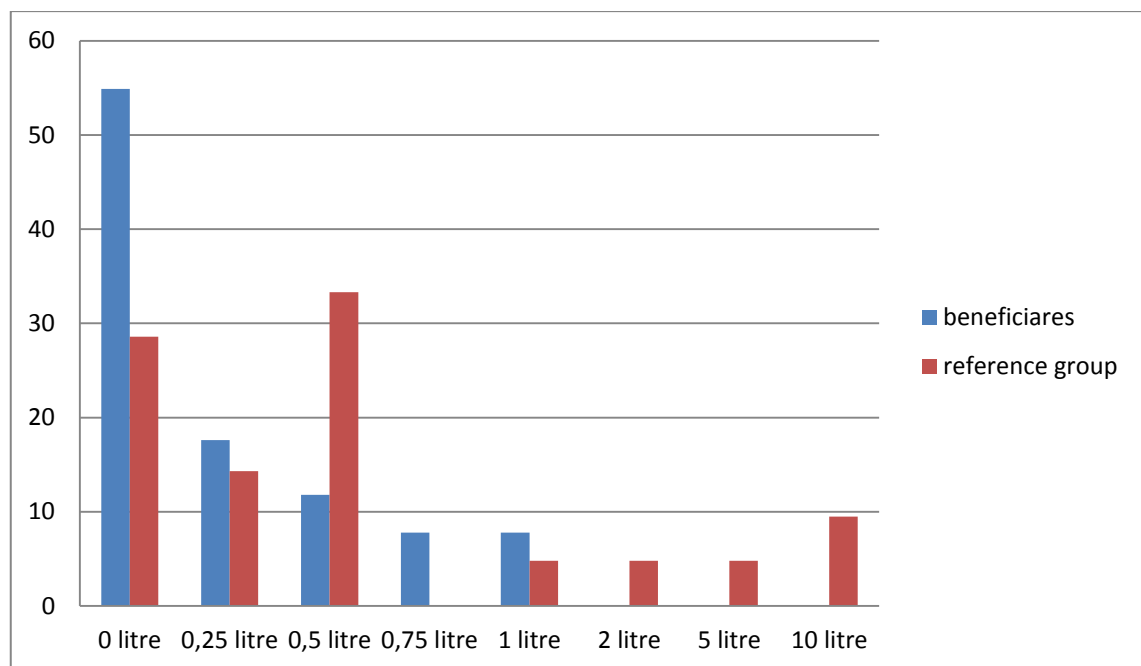


Figure 27: Milk of the goats per day (own data)

The respondents were asked about what they do with their milk.

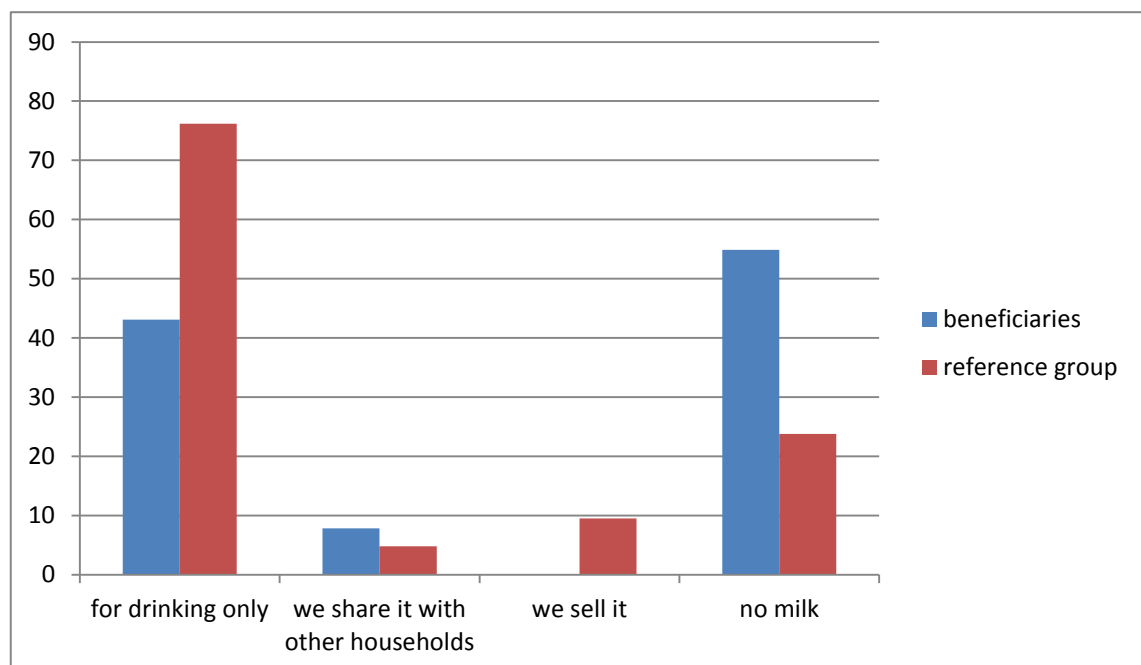


Figure 28: Use of milk from the goats. (own data)

They were also asked between how many people the milk was shared within the household. For the beneficiaries, the most frequent number was five people with

5,9%. The average was 5,35 people and the maximum was nine people. Within the reference group the average counted 7,63 people, the most frequent number of persons was eight with 14,3% and the maximum was 21 people. The respondents were also asked about the kind of people who obtained the milk.

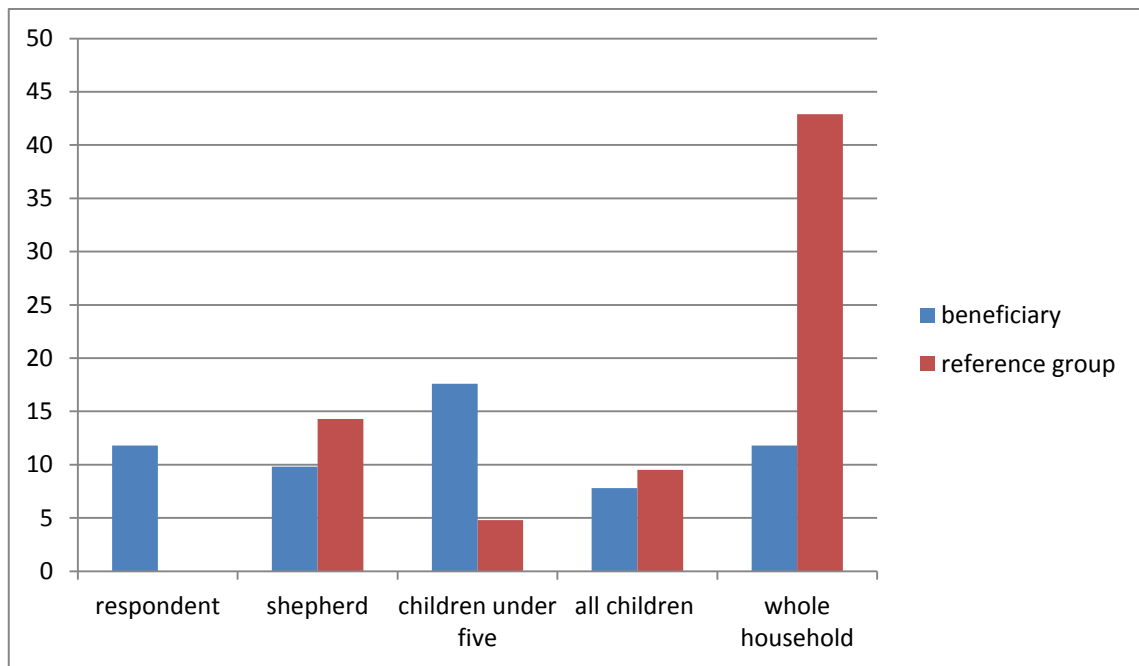


Figure 29: Who shares the milk (own data)

Twelve people or 57% of the reference group responded that the mother of the household made the decisions about sharing milk. The head of the household was named in two cases. The respondent himself or other household members were named, in each case, by one respondent. In the reference group, 23,8% did not answer this question. In the group of the beneficiaries, 31,4% of the respondents said they themselves had the power of decision-making regarding milk. 13,7% answered “the head of the household”, 3,9% with “the mother” and 2% said “other household members”. 49% of the beneficiaries couldn’t answer the question because they didn’t receive any milk from their goats.

4.3 General information about livelihoods

This part of the questionnaire aimed to get information about the livelihoods of the respondents. In the focus group discussion, the respondents were asked about their most important livelihood. They mentioned many different livelihood strategies, though firewood or burning charcoal were the most frequent answers. A characteristic answer for most of the respondents was: "Firewood is the only option because sorghum doesn't do well". The following results were collected in the survey:

Amount of animals:

Table 12: Animals in the households of the respondents (own data)

Kind of animal/ per group	average	median	spread	Percentile 25
Goats (reference group)	6,82	5	13	5
Goats (beneficiaries)	3,9	4	10	1
Cattle (reference group)	1,47	1	6	0
Cattle (beneficiaries)	0,04	0	1	0
Sheep (reference group)	2,59	2	10	0,5
Sheep (beneficiaries)	0,24	0	10	0
Pigs (reference group)	0	0	0	0
Pigs (beneficiaries)	0	0	0	0
Chicken (reference group)	1,59	0	15	0
Chicken (beneficiaries)	0,1	0	2	0
Ducks	0,53	0	4	0

(reference group)				
Kind of animal/ per group	average	median	spread	Percentile 25
Ducks (beneficiaries)	0,02	0	1	0
Pigeon (reference group)	0,47	0	8	0
Pigeon (beneficiaries)	0	0	0	0
Other (reference group)	0	0	0	0
Other (beneficiaries)	0	0	0	0
Total (reference group)	12,87	10	26	7
Total (beneficiaries)	4,35	5	19	1

Field or garden: Two of the beneficiaries stated, they neither own a field nor a garden. 25 beneficiaries, or 49%, answered, that they own a small one next to their shelter (less than one acre) and 24 people, or 47,1% answered that they own a big one (more than one acre). Within the reference group, two respondents stated to own neither a field nor a garden as well. 38% answered that they own a small one and 52% answered that they own a big one.

Household income: The respondents had the option to state three different sources of their household income. Within the group of the beneficiaries, three missing people didn't answer this question. Within the reference group, everybody answered this question.

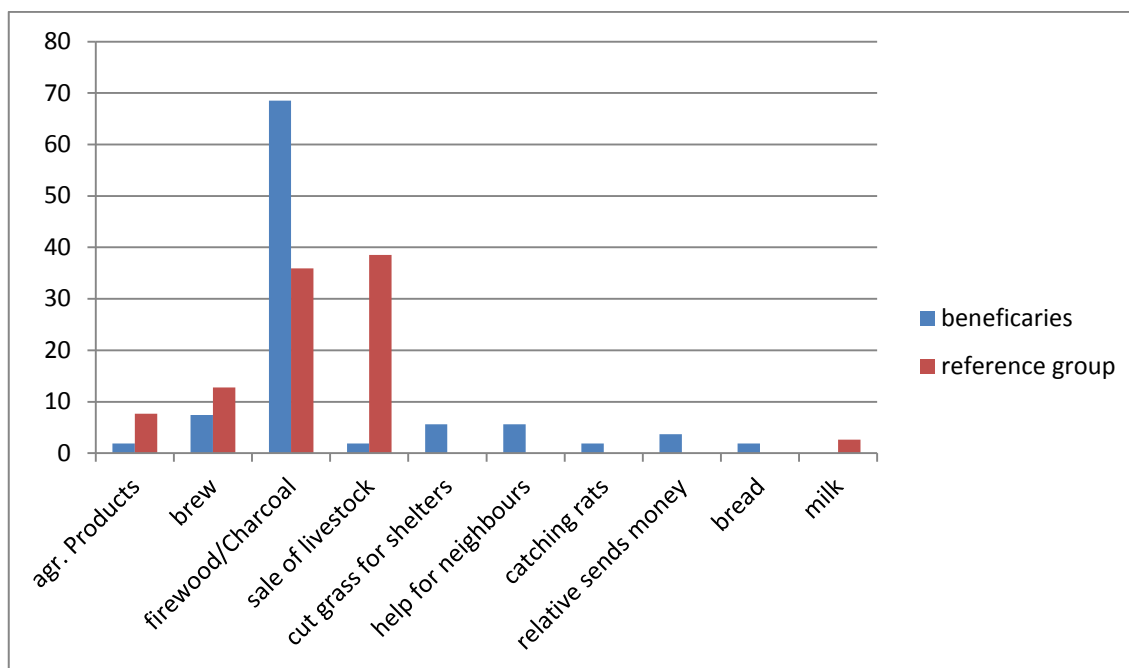


Figure 30: Livelihoods (own data)

In order to calculate the monthly income they were also asked, how often and how many household members did these jobs and how much they earned with it.

Having this information, the average monthly income of the beneficiaries was calculated. It added up 74.281 Ugandan shillings per month. According to the currency translation of the website ONADA, this is equivalent to 20,70€ as of the 25th of march 2014. For three beneficiaries it was not possible to calculate a monthly income, because of missing data. The average income of the reference group was 141.785 Ugandan shillings or 39,50€. Because this group owned more animals it was not surprising that they almost earned the double amount of money.

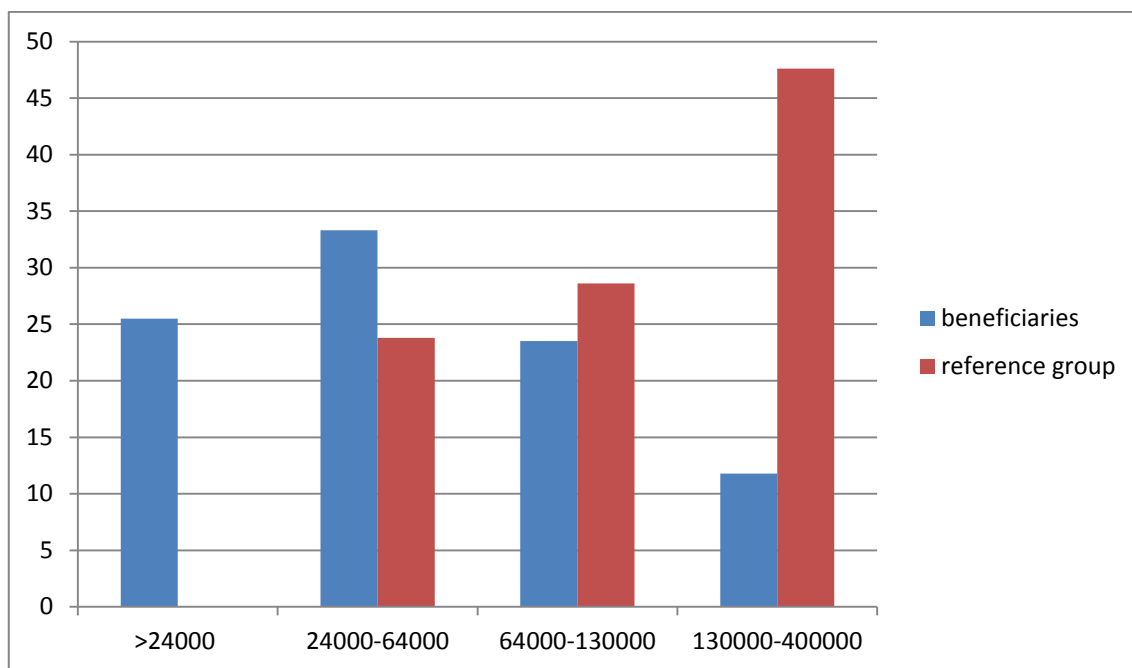


Figure 31: Household income (own data)

Other support: To verify whether the respondents received support from other interventions they were simply asked, if they get any other support.

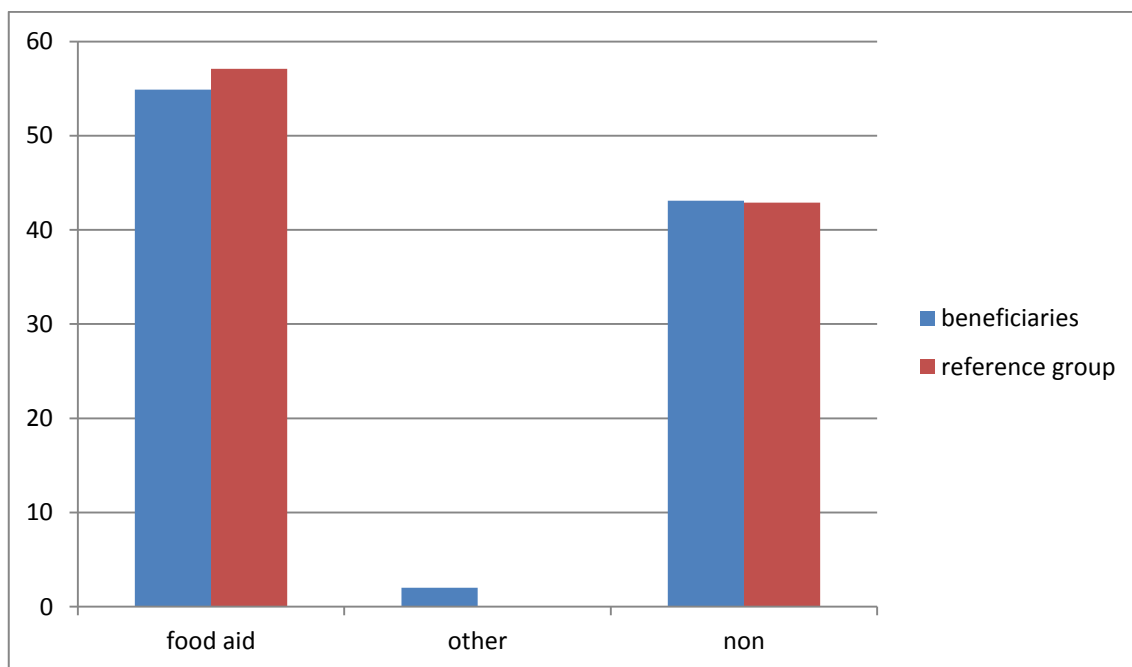


Figure 32: Do you get support from other interventions? (own data)

4.4. Information on nutrition

Providing goats to the most vulnerable people in the Manyattas, had among other ambitions the goal to improve the food security situation for these people is. In the questionnaire the general nutritional situation was monitored by a food diversity score and some more questions. With these information a possible connection between goats and nutrition was analyzed.

More food thanks to the goats: In the first question, the beneficiaries were asked if they had more food since they had received the goats. 98% or 50 out of 51 answered “no”. Only one person answered that they have more milk now compared to before.

Access to milk: The beneficiaries were also asked whether they had access to milk before they had received the goats. 62,7% of the respondents said yes and 37,3% responded the opposite. The group of the beneficiaries, who answered with yes, was additionally asked about how they had had access to milk. This was a question with multiple possible answers. 80% of the group said they were given it by neighbors, 7%, or three people, claimed they already had some animals, everyone answered that they were able to buy it on the market and one respondent, or 2%, stated other sources.

Most important food: According to the literature, the nutritional habits of the Karamojong have changed radically in the last years. Tamarind juice for example has replaced milk; vegetable oil has been replaced by ghee in very poor households. Meat is also rarely consumed among the poor. Compensatory, the consumption of “wild greens” (leaves of different plants) has increased [CONCERN, 2013c]. In order to verify whether this also applied for the beneficiaries, they were asked about their most important food.

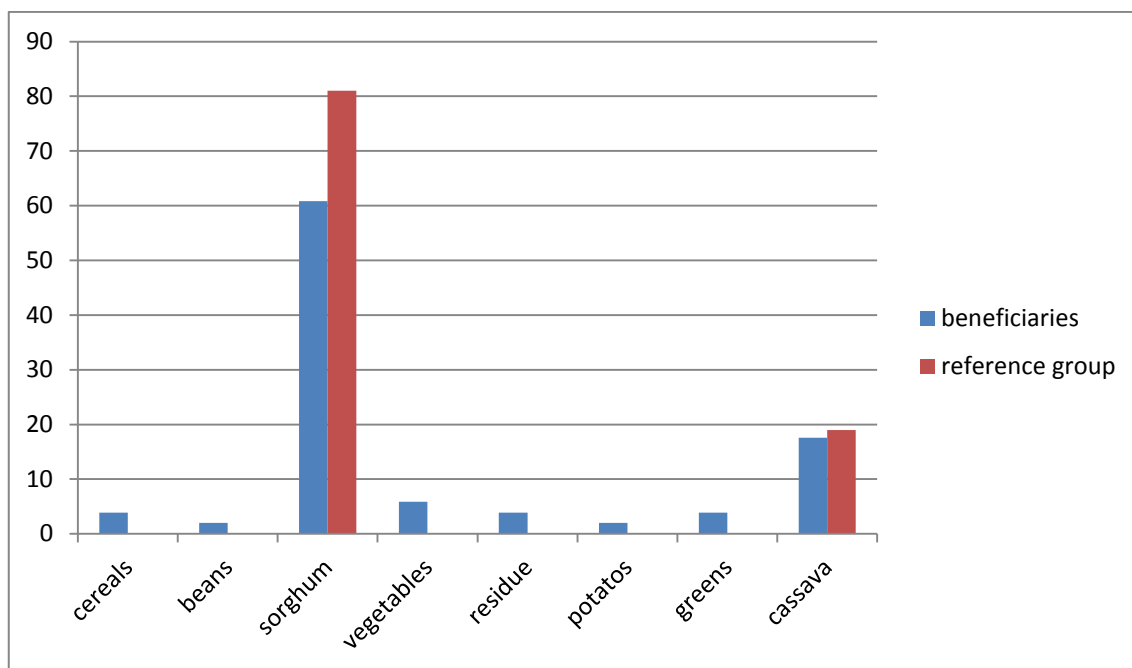


Figure 33: What is the most important food for you (own data)

In both groups sorghum and cassava were indicated to be the most important food. Nobody replied milk, meat or blood.

Food sources: The respondents were asked about their food sources; this was a multiple answer question.

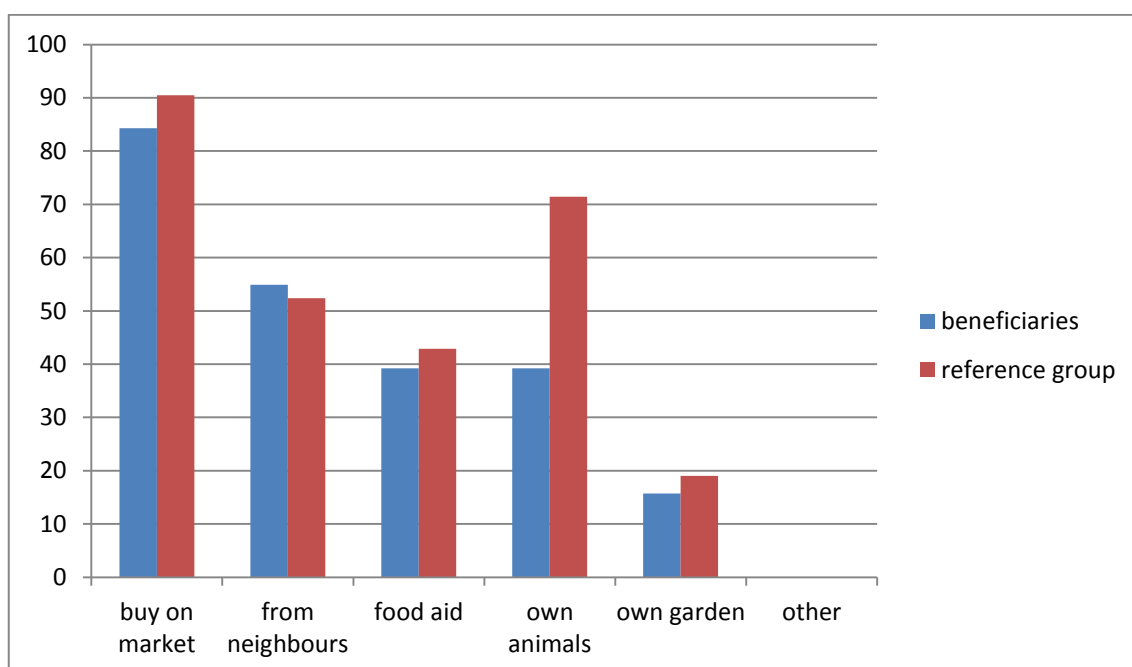


Figure 34: How do you get your food? (own data)

It is important to keep in mind, that the survey took part in August at a time when food produced at home runs out due to the long period since the last harvest. The Cost of Diet Report analysed the food sources in May 2013. During this time, the markets are the most important sources for most food types. Nevertheless, home-produced goods play an important role for about 70% of the consumed cereals, roots, tubers and pulses. Food aid scoring 5% only, applying to wild food sources as well, is of no major relevance. [Concern, 2013c].

Meal frequency: The meal frequency of the Karamojong is characterized as very low by literature [CONCERN, 2013c]. In this study the respondents were asked how many meals they had eaten the day before the interview. The average number of meals in the group of the beneficiaries counted 1,27 and 1,88 for their children. In the reference group 1,43 meals were eaten and 2,00 for their children.

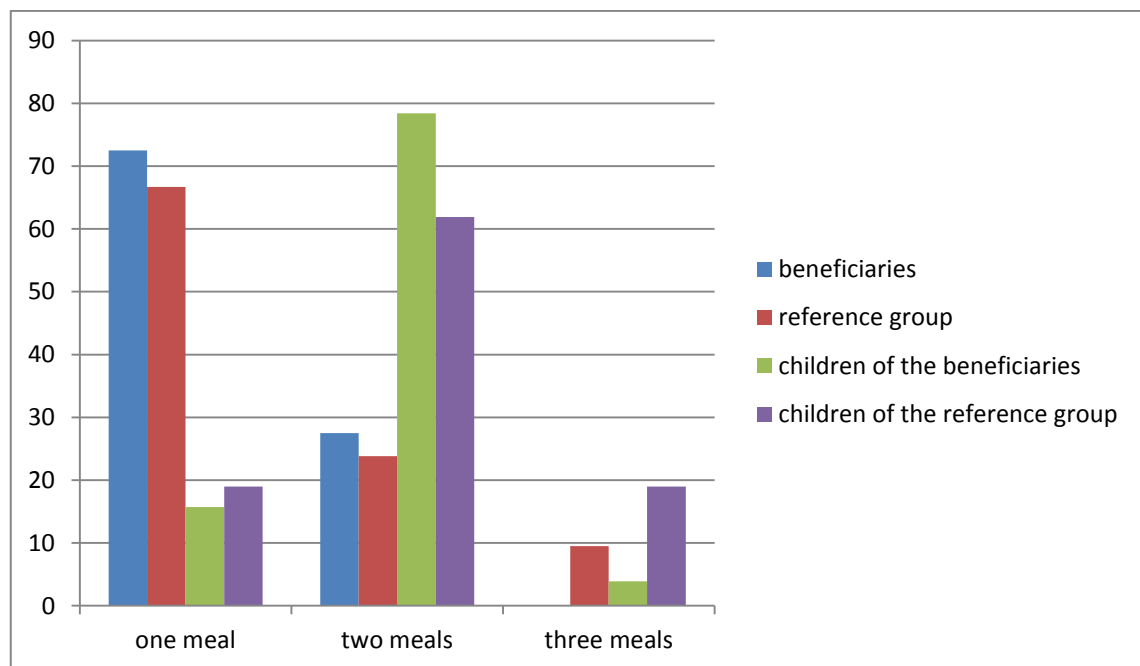


Figure 35: How many meals did you eat yesterday? (own data)

Food diversity: The last questions aimed to monitor the food diversity of the nutrition of the respondents and for their children. The average food diversity of the beneficiaries was 3,33 and 3,80 for their children. The average food diversity for the others scored 3,66 and 5,1 for their children. Figure 36 shows the box plots for these four groups with the median, the 25% percentiles and the bolters.

The figure indicated, that the food diversity of the reference group was higher than the food diversity of the beneficiaries and that the food diversity of the children was higher than the food diversity of the adults.

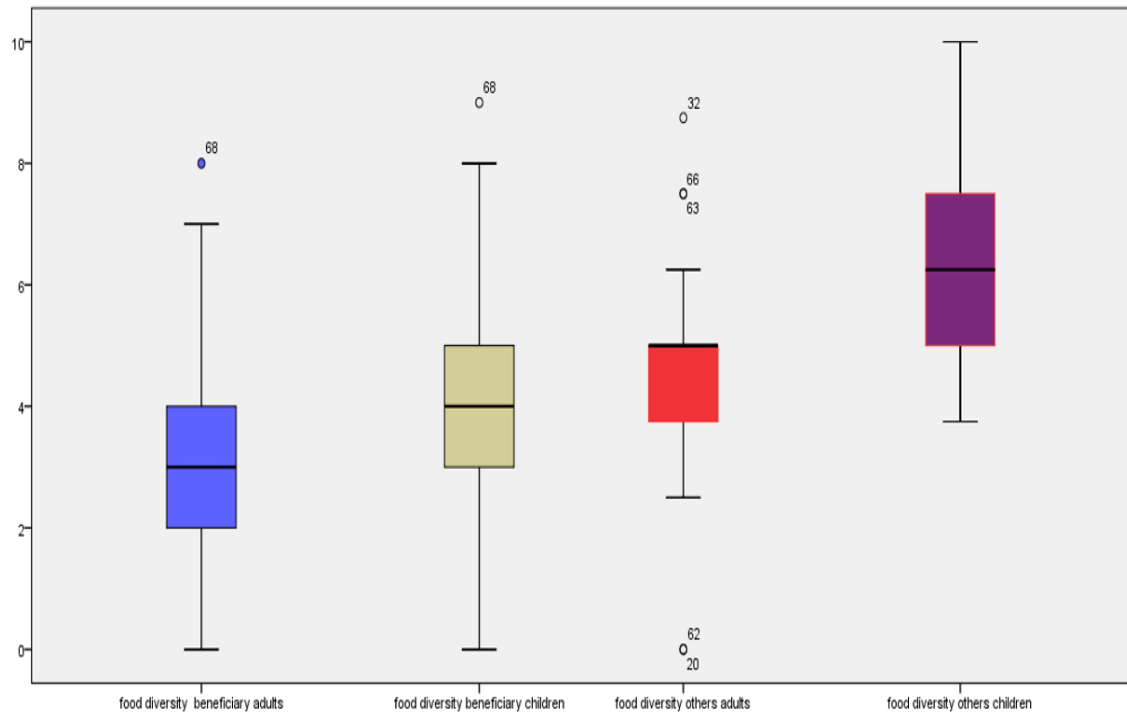


Figure 36: Box plots food diversity (own data)

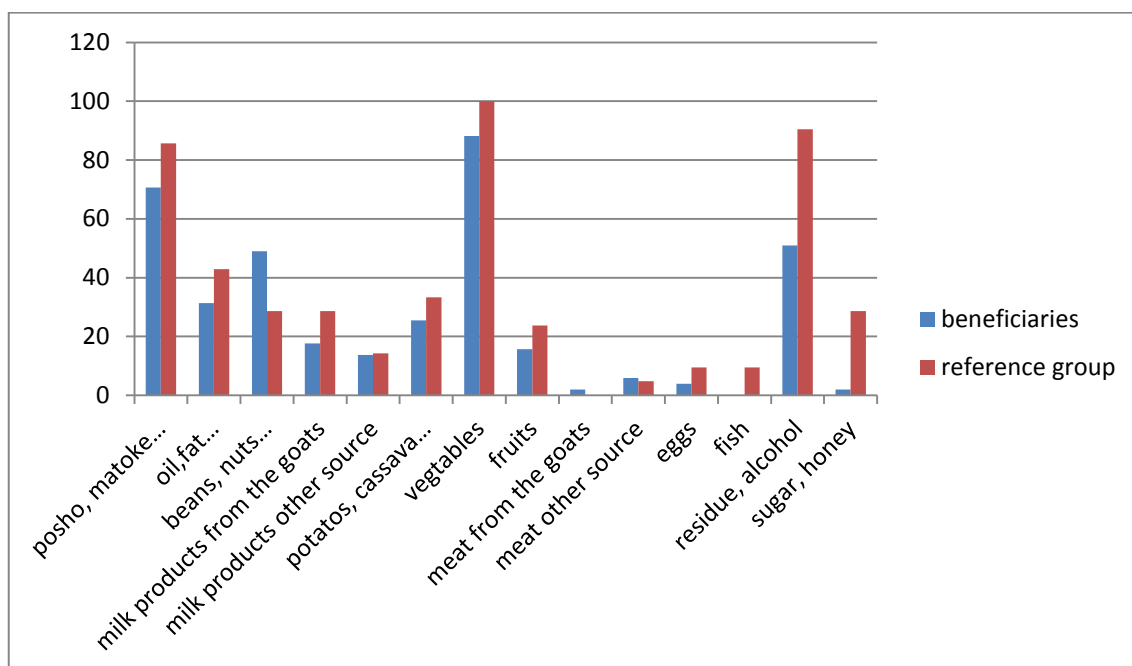


Figure 37: Food groups respondents (own data)

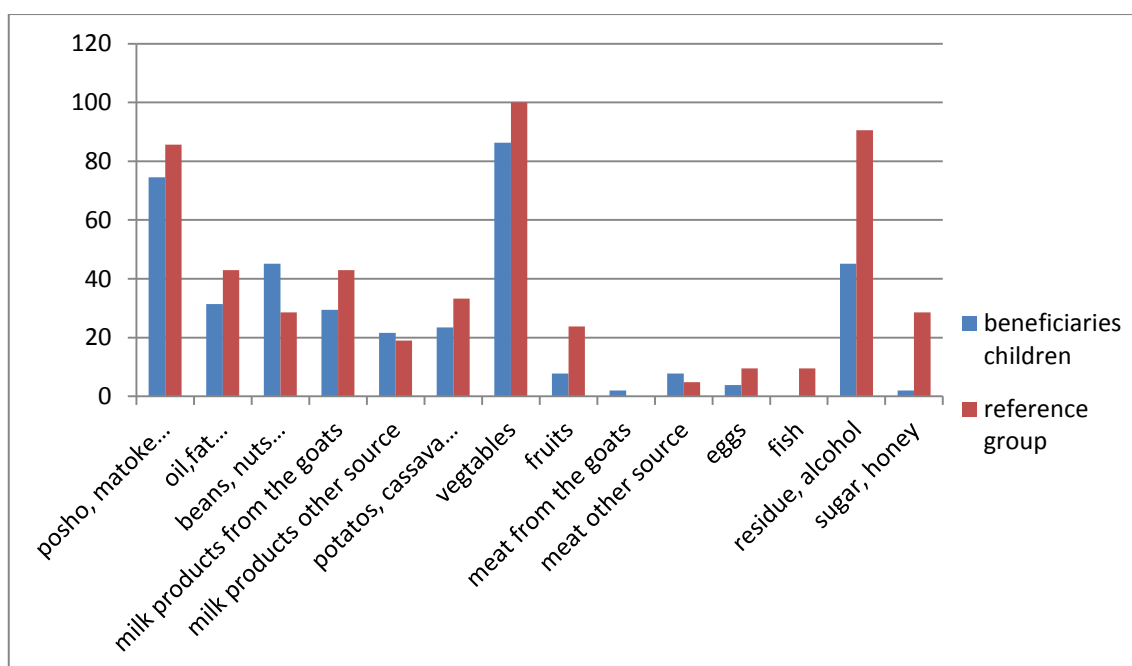


Figure 38: Food group's children of the respondents (own data)

5 Discussion

5.1 General impacts of the goat program

Household size:

A statement of a district officer is mentioned within the literature review.

Providing people with goats may encourage more weddings, leading to more children, he argues. Since high birth rates are linked to poverty and Uganda had the second highest birth rates in the world in 2012(47,38children/1000residents), it is of importance to keep this issue in mind. [Lappe et. al., 1998], [Indexmundi, 2012]. In the survey the respondents were asked about their marital status. Within the group of the beneficiaries, only 9% reported to be unmarried. This indicates that most of the people receiving goats were already married. This does not exclude the fact that weddings nonetheless may additionally be stimulated among the households of the beneficiaries.

Regarding the question about the benefits of the goats, only a small group of three respondents mentioned, that goats could be used for marriage.

Furthermore, the link between the amount of animals per household and the household size of all respondents (the reference group included) was analyzed using a linear regression model. Because the beneficiaries got there goats only one year ago no influence on their household size should be expected in their group. That was the reason, why a connection between animals and household size was only analyzed for the reference group. Since the amount of animals and household size are possibly confounded by the household income, the model was enlarged by the income. Using this model, no connection between animals or income and the household size was found. The p value for animals was $p=0,066$ and $p=0,751$ for the income. These results indicate that the number of animals has a higher influence on the household size than the income. In order

to make a statement of high evidence on the link between the ownership of animals and the household size, a larger amount of households bigger in size should have been taken into occupation. For future projects, this issue ought to be analyzed in more detail.

Flock growth:

Before the survey, the respondents always asked for cows during their individual interviews. This is why the respondents of the focus group discussion were asked about the role of goats in comparison to cattle. One specific answer for most of the statements was: *“Goats give birth to a very good number of children while a cow only gives birth to one once a year”*. This shows, that the reputation of goats was not that bad as suspected in the villages after the individual interviews had taken place. The beneficiaries were well aware of the fast reproduction rate of goats. In table 10, the changes of goat population within the households, is illustrated. After one year, an average decrease of 0,06 goats per household was measured. Nevertheless, 76 litters had been reported. According to the results one litter out of three goats was to be expected. The maximum yield per litter counted 6 children out of three. According to Jansen and Burg, one litter for a goat per year is regarded as normal for goats in the tropics. They can even have up to three [Jansen and Burg, 2004].

One challenge in measuring these changes has already been mentioned in the chapter on limitations. Perhaps the respondents hadn't always told the truth about their approach with the goats. Since they knew the interviewers worked for Welthungerhilfe and they were not allowed to sell or slaughter the goats, the respondents may have been afraid to report such to the Welthungerhilfe staff. This could be a reason for the contradicting results between the focus group discussion and the questionnaire. During the focus group discussion, the respondents were unaware of the interviewers working for Welthungerhilfe. Three beneficiaries in total admitted selling or slaughtering some goats. Three people are a small number, but they were not directly asked and not only beneficiaries were part of the sample. There was only one person in the survey

who indicated he had sold goats, but this issue is part of the questionnaire anyway. The results of the focus group discussion show, that there is a possibility a few beneficiaries sold or slaughtered goats during the survey without reporting it. Nevertheless, there didn't seem to be a trend in the beneficiaries wanting to sell their animals. All three people who admitted that they sold or slaughtered animals gave reasons such as: A household member got sick, they needed medicine or that they were starving and needed the meat.

Insecurity:

In the focus group discussion a lot of statements like: *"Insecurity is getting done"* were made. Compared to these statements, eight beneficiaries indicated that a total of 22 goats had been stolen. Nevertheless 80,4% answered not being afraid of theft, only 19,6% answered that they were. In the reference group 42,9% answered that they were not afraid and 57,1% answered "yes". Because of these differences, a possible connection between the amount of goats owned per household and the fear of thefts was analyzed. After analysis per logistic regressions model no connection between fear of thefts and amount of goats (p-value 0,419), income (p-value 0,807) and gender (p-value 0,848) was found. In question number 27, the respondents were asked why they were not afraid. The most frequent answer was that the goats sleep in their home. This demonstrated that the respondents felt safer when the goats stayed close to their homes. Some respondents answered that their goats stay in barracks. In the Milk Matters report of Sites and Mitchard, some respondents reported *"we have to buy milk (from our own animals) from the security personnel or have to give a proportion of milk to the soldiers in exchange for them taking care of the animals"* [Sites and Mitchard, 2011d]. Regarding these statements, it was an interesting question whether they had to give milk to the army. In this survey, none of the respondents reported having to give milk to the army. The Milk Matters report was conducted in 2011, so perhaps these results indicate that the situation has got better.

The Milk Matters report also describes, that the Karamojong put all their animals into kraals at or near Military barracks because of insecurity, leading to an increased distance to the animals [Sites and Mitchard, 2011d]. To cross check this information derived from literature, the respondents were asked where their animals were staying at the time of the interview. As showed in figure 20, the beneficiaries only stated in three cases, that their goats stay in barracks. The remaining said that their animals stay near their home. These facts indicate, that people of this region are able to look after their animals mostly without the problems described by literature.

Conflicts:

Another potential negative impact of the goat program could have been conflicts within the villagers due to jealousy or an unfair distribution etc. 82% answered that there were no conflicts. During the individual interviews in the beginning of the study, a potential for conflicts because of the distribution was suspected. Relating to the question “Were there any problems?” answers like: *“Many people were angry that I got some goats!”* or *“The neighbors were angry that the old woman got some goats and others didn’t!”* were made. In the focus group discussion, there was a statement from a woman from Naorit: *“Welthungerhilfe is not consistent. They do not provide for everyone”*. These answers show that the potentials for conflicts should be considered for the planning of other studies. In case of the Welthungerhilfe project, conflicts should be taken into account as the project continues. During the time of the survey, conflicts could be estimated as a possibility; though since most people had not reported conflicts, it shouldn’t be considered a problem. Nevertheless, it should be noted, that the question is a very sensitive one and not everybody may have dared to say the truth.

Drugs:

In the individual interviews, having difficulties acquiring drugs was a big issue. All respondents complained that being able to afford drugs is a big problem. In the survey, one third stated that the availability of drugs isn’t the problem. The lack

of money to buy them simply caused the problem. The aim of the project is making it possible for beneficiaries to look after the goats independently. Since one-third indicated drugs as no problem, the aim seemed to be realistic. Furthermore, being aware of speaking to Welthungerhilfe staff may have stimulated the beneficiaries to say that they did have problems in getting drugs, for the sake of receiving more aid. In the focus group discussion, they were asked about what they did when goats became ill. A typical answer was, *“before I see it dying I sell it off”*. This indicated it might be dangerous not to give the beneficiaries support for starters, leading them to sell or lose some animals, therefore causing a stop to flock growth.

Pride:

General positive impacts of the goat program were also measured by the question about the benefits from goats. Within the group of the beneficiaries, pride was the most frequent answer. In order to get further information about possible impacts, the reference group owning more goats was also asked. In this group, the impact of goats on the income, was the most frequent stated benefit, mentioned by 81% of the respondents. Nevertheless, pride was the second most frequent answer, as was meat. There is the theory saying the social prestige within the village would increase with an increasing number of animals per household. According to the GAM study of the FEG and FAO, wealth groups within the Karamojong are characterized by the amount of animals the people owned [FEG and FAO, 2010]. This therefore means that increasing numbers of animals causes the people to have a higher wealth and possibly a higher self-esteem. A linear regression model was used to analyze the change of self-estimated social status (question 32 and 33) before and after being provided goats (and for the success of breeding the goats). In this model, no significant connection was found with $p=0,454$. One reason could be that the amount of animals within the group of beneficiaries was too small to make them feel changes in their social status. In the GAM study, the ownership of about 30 animals was necessary to enter a higher wealth group [FEG and FAO, 2010].

None of the beneficiaries had such a big amount of animals. The same model was used to look at a connection of the self-estimated economic status. There was also no significant connection with $p=0,070$.

New task in life:

Regarding the benefits, three respondents mentioned, that they have a new task in their life now. These people were young men looking after the goats by their self. While planning other projects, keeping this fact in mind may be an important point. As already described in chapter 2.3.3, the passing on of power within the generations didn't work anymore and the junior generation was not able to be initiated into the social system. This had led to frustration and a new type of youth criminality [Sites et. al., 2007a]. Giving these people a task in life could help prevent this trend.

Income:

In the survey of Walter and Ullerich, which was conducted in the same study region as this study, 16% of income sources were livestock sales being the third important income source within the lower income group of their study population. Firewood and charcoal were the most important sources with 46%. 65% of their study population earned less than 100.000 Ugandan Shillings in six months [Walter and Ullerich, 2011a]. In the Cost of Diet-Report of the NGO CONCERN, the annual income of the poor was 384.000 Ugandan Shillings [CONCERN, 2013]. In this study, firewood and charcoal were with 68,5% nearly the only income source for the beneficiaries. Like in Walter and Ullerichs study, the second biggest income source for the poor was local brewage. Only one beneficiary indicated earning money by selling livestock. Within the reference group, sales of livestock and selling firewood and charcoal were the most important income sources with in each case ~36%. The average monthly income of the beneficiaries was 74.281 Ugandan Shillings. This is calculated to be higher than in the group of the poor within the survey of Walter and Ullerich and higher than in the CONCERN study. The different approach in measuring it may be a reason for the difference. The study outcomes of the other two studies are also

different. This demonstrates the difficulty in measuring the income for these people. To calculate the potential of livestock on the income, a linear regression model with the total household income as the dependent variable and the total number of animals and the household size as the describing variables, was generated. The household size was integrated in the model, because the more people live in a household the more workforce was available. Consequently it could be a confounder. For this model it is not important to know the exact annual income, but it is important that the income of every respondent is measured in the same way. For the whole study population a significant correlation with a p-value of 0,037 was found. The p-value for household size was 0,283. Per one animal more an increase of 2160 Uganda Shilling or around 0,70€ per month was prospected [oanda, 16.05.2014]. As showed in Figure39 the model was influenced by the reference group.

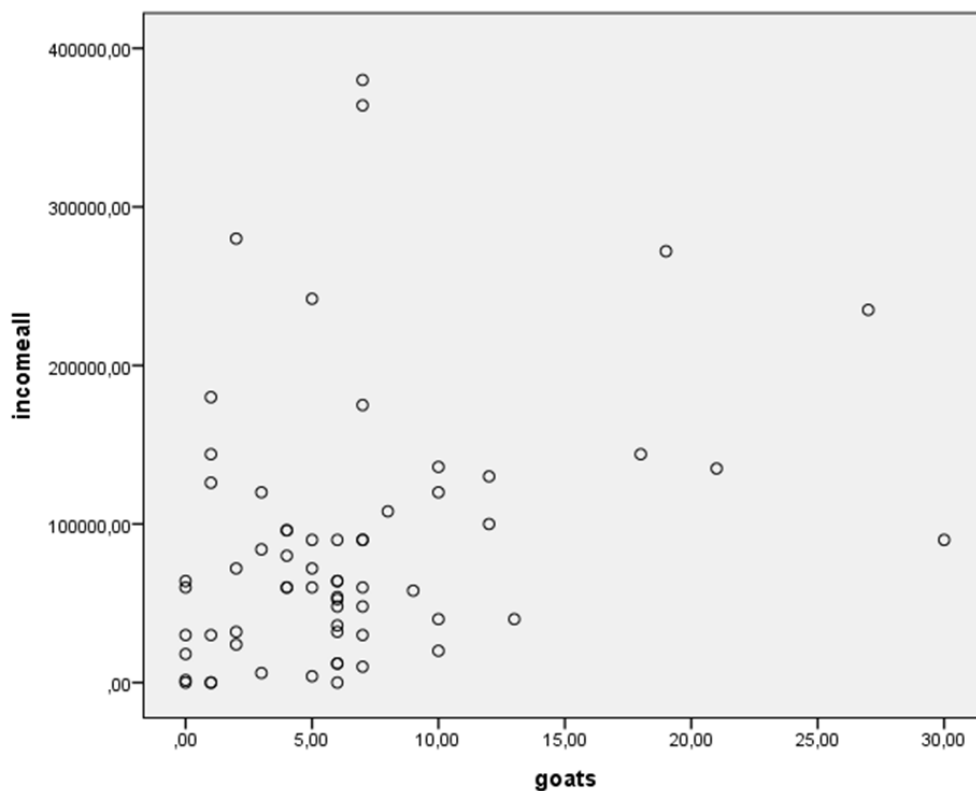


Figure 39: Scatterplott incomeall/ animalstotal (own data)

The same model only using the group of the beneficiaries could not find a significant correlation with $p=0,116$. These findings demonstrate the potential of livestock to improve the income situation of the poor. A sustainable livelihood including livestock sales is only possible with a larger amount of animals than in the group of beneficiaries. The reference group was also asked how they used the money from the animals. 85% use it for school fees. This shows that an increasing income could improve the educational situation in the region. 80% answered, that they use it for marriage, meaning a possible influence on the fertility rate within the region. This issue has already been discussed above. According to Walter and Ullerich the decision on income distribution from livestock sales is made by the head of the household (mostly a man), who keeps most of it to himself [Walter and Ullerich, 2011a]. In the survey, the beneficiaries were asked, "Who profits from the goats"? In 81% of the answers they stated, that the whole household profits. Within the group of the beneficiaries, in 43% of the cases the head of the household decides about the sales and in 45% of the cases the beneficiary said they decide themselves. 65% of the beneficiaries saying they themselves have the power about decision were woman. 60% of these women were widows, the rest was married. These findings show that small stock is a good resource for women, as already described in the literature [Oluka et. al., 2003].

Milk:

In the focus group discussion, two specific statements about milk were made: *"Milk helps keeping the people healthy", "Milk was main food but now there are not enough goats"*. These statements match the findings in the literature. In the Milk Matters- report, milk is described as an important ingredient for rituals or as food that is shared with visitors. They also describe that the use of milk has changed and that in the present period milk is mostly used to feed little children [Sites and Mitchard, 2011a]. A better supply with milk could be ensured by the support of goats. In the question on the benefits of the goats, milk was the

second most stated benefit. This is an interesting outcome, since having three goats for a year did not promise a huge amount of milk or litter. The respondents possibly saw milk as general benefit from goats, without referring to their actual situation. Only the half of the respondents within the beneficiaries reported receiving milk from their goats. The people getting milk received between 0,25l and one liter only per day. These amounts are not sufficient, but increasing herds could be a potential for improving the situation. A linear regression model was used to test the correlation between the total amount of goats and the milk yield per day. A significant connection of $p=0,005$ was found. Per additional goat an increase of 0,02l per day can be expected. To verify the trend described in the Milk Matters report, the respondents were asked for what they use their milk. None of the respondents said they use it for rituals and only around 5% said they share it with visitors. A possible explanation is that the amount of milk available in the household is not enough for traditional use. The milk is generally consumed by the whole household if enough is available. Otherwise it is used to feed the children or is directly consumed by the shepherd or the respondent. These findings show the potential of milk to improve the nutritional situation for little children. As described in the literature, GAM rates for children between 6 and 59 month are 11% and SAM rates are 4% in Moroto/Napak [DHO, 2012]. To sum it up, income and milk are possible benefits from the goats, provided the flock really grows. In the focus group discussion the respondents were asked about which role animals play in their lives. Interestingly many of them started to talk about the Welthungerhilfe goat program. One answer by a women from Naronit was: *“Under controlled conditions (no disease, stealing) there would be some benefits after 2-3 years”*. This shows that they were aware that benefits would follow successful breeding.

5.2 Goat program and nutrition

A man from Naronit declared: *“Since the goats were distributed the rate of hunger reduced.”* It was not easy to measure a real connection between the

distribution of goats and the nutritional situation. Nevertheless some possible connections were analyzed in this study. The two direct impacts of the goat distribution on nutrition (meat and milk) were measured with different questions. The most meaningful method was the Food Diversity questionnaire. 30% of the beneficiaries and 50% of their children consume milk or milk products. And 42% of the others and 60% of their children consumed milk or milk products in the last 24 hours before the survey. In more than half of the cases the milk or milk products comes from the goats. Only one beneficiary and none of the others said they had meat from their goats. The median of the Food Diversity Score of the beneficiaries scored three food groups. Their children had consumed four food groups in the last 24 hours before the questionnaire. The others had a median of four food groups and their children a median of five. These findings demonstrate that milk from the goats may be a very important part of nutrition for the beneficiaries and especially for their children. As already discussed above, a possible correlation between the amounts of animals and the yield of milk was found. This may also be a sign that an increasing number of goats increased food diversity. The connection between food diversity and the amount of goats and income was tested with a linear regression model. No significant connection between the food diversity and the amount of animals was found for the adults (entire study population) with $p=0,240$ and for their children with $p=0,159$. Though it was the case for a significant connection between the food diversity and the income for the adults (whole study population) with $p=0,04$ and for their children with $p=0,04$. Figure 40 demonstrates the dispersal of food diversity of the children belonging to the owners of 0-5 goats, 6-10 goats, 11-20 goats and 21-50 goats. It seemingly also shows that there is no connection.

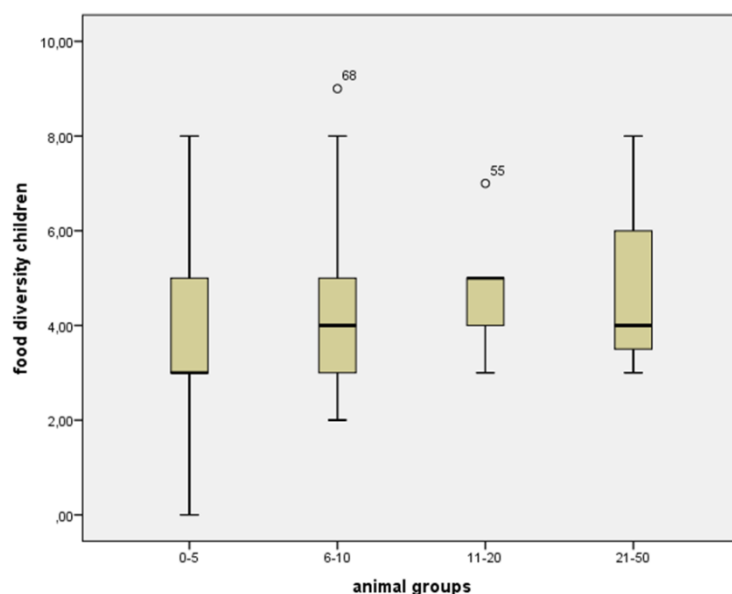


Figure 40: Box plot food diversity children/ animal groups (own data)

The milk from the goats seems to have no direct influence on the food diversity of the study population. Though there is a possibility that the money earned by the animals is invested in the diet. One reason why there is no connection between animal ownership and food diversity could be the very small amount of milk the goats provided. The difficulty rating income, as the most important source for a better food supply was, that even the richest group of the study is not able to afford a better diet. According to CONCERN the cost of a diet only reaching the energy requirements of a typical household is 650.000 Ugandan Shillings per year. This diet would mostly contain the following three food groups: Cereals (22%), different fats (32%) and Vegetables (21%). This diet reaches the daily energy needs but not the daily needs for calcium, iron and Vit. B12. This means that this diet calculated by CONCERN is a poor diet. Contemporaneously, the poor households of the CONCERN study only earn 570.000 Ugandan Shillings per year [CONCERN, 2013]. The figures of this study are a bit better; the yearly average income for the beneficiaries was calculated with 871.000 Ugandan Schillings. This means that they are generally able to afford this diet mainly consisting of three food groups. For the reference group with an average of 1.701.000 Ugandan Shillings per year, this diet is easily

affordable. In addition, the CONCERN study calculated an optimal diet which would reach all requirements and having a much higher food diversity. This diet would cost around 3.900.000 Ugandan Shillings per year [CONCERN, 2013]. Compared to the income of all the respondents in the study, this diet is not affordable by far. This study also calculated the price and portions of different food groups. Milk makes up only 15% of the diet but 38% of the cost [CONCERN, 2013]. This indicates the benefit of self-produced milk for the beneficiaries. This result goes with the finding of CONCERN that markets are the most important food source for the people in the region compared to self-production [CONCERN, 2013]. A question in the focus group discussion regarded the most important food source. A typical answer was: "Selling firewood and then buy food with the money". This supports the argument, that the market was the most important food source. Nevertheless, the respondents in the focus group discussion saw as most important change or improving their food security as an improved agriculture and not more animals or jobs to earn money instead. Characteristic statements included that they need ox plows or farm tools. Nevertheless, according to these outcomes, improving the nutritional situation could work with every kind of intervention for generating a higher income.

Another indicator used to analyze the nutritional situation, was the meal frequency. According to CONCERN, two meals per day in the dry season and one meal per day in the wet season are normal for poor households in the region [CONCERN, 2013]. This study took part in the dry season and the median of meals for adults was one meal and for their children it was two meals per day. The value of this indicator is controversial, because every respondent defined a meal in a different way. The interviewers tried to get consistent definitions, but it was not always certain if the respondents understood the explanations. Another linear regression model was used to check the connection between meal frequency the amount of goats and income. There was no significant connection for the amount of goats with $p=0,444$ for the children (entire study population) and no connection with $p=0,450$ for the adults (entire study population). But

there was a connection between income and meal frequency with $p=0,004$ for the children and $p=0,004$ for the adults.

There may also be indirect connections between the goat support and the improvement of the nutritional situation. One important point was the respondents answering, that they used the money from selling the goats for school fees. The influence of the goats on the school attendance was not measured, but would be interesting to analyze in other studies. In the focus group discussion, many statements like *“animals play a big role to get children in school, to pay school fees and books”* were mentioned. Better education could possibly lead to higher income and a better nutrition also.

6 Final Statement

Aim of the study was to generate a hypothesis in context to the following two questions:

- What impact has the goat program had on the life of the people?
- Which challenges exist within the program?

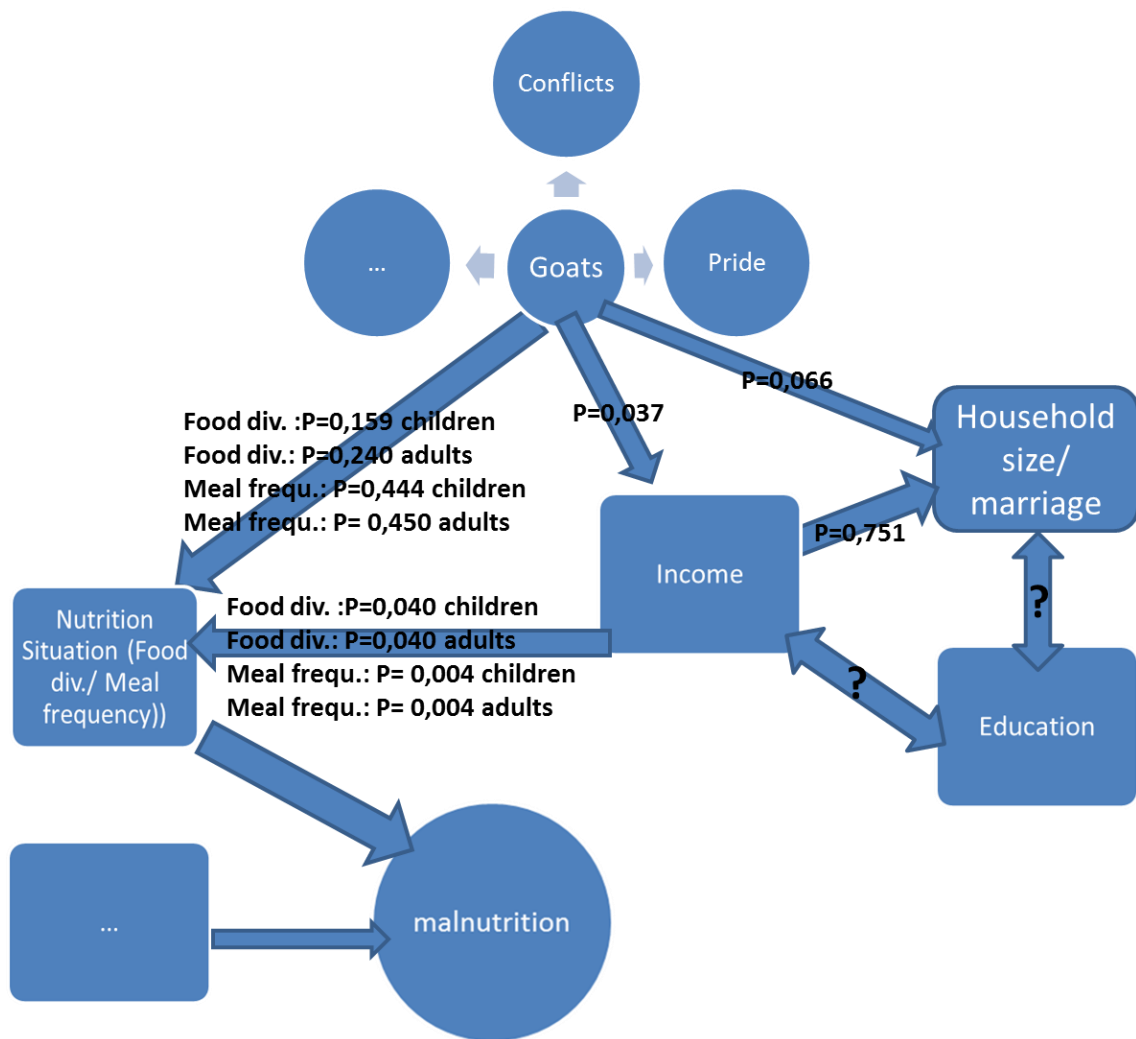


Figure 41: Possible impacts of the goat program [Mertzlufft, 2014]

Figure 41 illustrates the possible impacts of the goat program. On the one side, the goat program may have some negative impacts. One may be causing conflicts, because only a few people in the village were selected to receive goats. The distribution could lead to conflicts between the people. The findings of this study only describe a potential for conflicts but there didn't seem to be any current conflicts. Another more or less negative impact could regard the influence on the household size (because it was associated with poverty) [Uganda Bureau of Statistics, 2003]. In this study no connection between the amount of goats and the household size was found. Though due to the small sample size it is not proven whether there is a connection in reality. On the other side, positive impacts may include an influence on the nutrition and the income.

According to the results of this study, there is only a connection between goats and income. The higher income has a connection on the meal frequency and food diversity and a higher income may lead to higher education, which was not analysed. To sum it up, the impacts of the goat program seem to have no negative influences on the lives of the people. Since the goats were able to be evaluated as a potential for generating a higher income, this may finally be the positive aspect of the project. Either way, generating a higher income could also be achieved through other livelihood interventions. This matter should always be part of planning programs as such, since every intervention in a dynamic system can lead to positive and negative effects. The problem of planning outcomes is due to a dynamic system making it impossible to foresee results. [Bossel, 2004]. Some challenges like the support with drugs and insecurity were also an issue in the interviews. The supply with drugs for the animals seems to be a current problem for the people. Programs should have the goal to help beneficiaries become independent from the help of the NGO in the future. This was not the current situation during the survey, but it could be achieved in the future. Insecurity seemed to be no current problem during the survey, but should also always be kept in mind. Furthermore, the beneficiaries' cooperation in attendance was another challenge. They always agreed to answer the questions without complaint, but it was not always easy to get honest answers. As already described in the methods part, the study design is not able to give a general explanation of the impacts of the goat program. The finding can be used for generating hypotheses which could be tested in detail in other studies.

7 Abstract

In 2013, 842 million people were chronically undernourished [FAO, 2013]. Many NGOs have been fighting against this inequity using different interventions. Since not every intervention has positive impacts they, should be monitored. This study investigates the impact of a Welthungerhilfe goat program in Karamoja/ Uganda. One year before the study started, Welthungerhilfe provided the poorest people in the Manyattas of the

region with goats. After one year of living with three goats, this study tries to describe and identify the impacts of this intervention.

This study was conducted by the following steps: Literature review, key person interviews, guided interviews, Focus Group Discussions, survey with a standardized questionnaire. The study took place between the 10th of July 2013 and the 30th of August 2013. The main unit of the study was 124 beneficiaries of the Welthungerhilfe goat program in the Lotome sub country. 51 beneficiaries took part in the survey. To complete the data with people who owned more than five goats, another group of people, which were no beneficiaries, was asked. This group consisted of 21 people. The results of this survey and the information of the focus group discussion were used for the discussion. Statistical analysis was conducted using IBM Spss 21. For analyzing connections, linear regression models and logistic regression models were used. The average age of the study population was 49,11 years. There were 37,5% male and 62,5% female participants and the average household size consisted of 9,6 people. After one year the total number of goats decreased from 186 to 183. The reasons for these little changes in the number of goats were difficult to measure. Due to cooperative problems an explanation for the reasons why the number of goats had not increased is not given. 80% of the beneficiaries were not afraid of goat thefts and insecurity was evaluated as no serious problem for the region. Regarding the distribution of goats, a potential for conflicts was suspected. 82% of the respondents answered that there were no conflicts and by comparing results of the focus group discussion, conflicts were evaluated as no actual problem. Coming by drugs was also a reported problem for the beneficiaries. Since 32% answered acquiring drugs was no problem, it seems realistic that a big amount of beneficiaries are able to look after their goats independently in the future. A connection between the household size and the amount of animals in the household was suspected. Though no significant connection with $p=0,066$ was found. The confounding income was also tested with $p=0,751$. The goats are also able to increase the income. For this a connection with $p=0,005$ was found. Only 46% of the beneficiaries reported, that they got some milk from their goats. The food diversity of the beneficiaries scored 3,3 food groups and for their children it consisted of 3,80 food groups. A connection between the amount of animals and food diversity was surveyed. No connection was found with $p=0,240$ for the adults and $p=0,159$ for the children.

There was only a connection between income and food diversity with $p=0,04$ and $p=0,04$ for the children.

The two analyzed negative impacts (conflicts and increase of household size) of the goat program were evaluated as no actual problem. Nevertheless, other studies should analyze them in more detail. The increase of income and the improvement of the nutritional situation were evaluated as positive impacts of the goat program. In this study the goats only improved the income situation of the respondents. These impacts should also be observed in other studies more closely. The final statement of this study is that the goat program has only influence on the income what could also be accomplished by other interventions. Nevertheless, other studies should be conducted to review this statement.

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9 Annexes

9.1 Definition of key words

Agro-pastoral household: Agro-pastoral households obtain their annual food and income needs roughly from equal parts of livestock and crop production [Browne and Glaeser, 2010a].

Animal Health Worker: Animal health workers are people in the villages with some basic qualities like: literacy, knowledge of the area, availability etc. They

are trained by veterinarians and offer some basic veterinary services to the villages. When formal veterinary services do not reach the remote areas “Community Based Animal Health Workers” are able to fill this gap.

Household: The Karamojong traditionally live in extended families. Men sometimes live in polygamous relationships. One male can be the household head over more than one household, because his wives live in separate households. The study uses the definition of Stroebel who defines a household as people who share the residence, eat together and share all livelihood resources [Stroebel, 2004].

Beneficiaries: The people who received goats from the “Welthungerhilfe” goat program.

The others: The group of people who were interviewed in the survey, not part of the beneficiaries.

Vulnerable people: The Welthungerhilfe goat project have no exact definition for the vulnerable people they support. Vulnerable, in the case of this study, stands for: old people, widows, pregnant women or women with children under five, ex-prisoners and orphans etc.

Manyatta: Traditional villages of the Karamojong. It is the permanent settlement or homestead (*ere*) where most of the family members (mainly women, children and the elderly) stay [Sites et al., 2007a].

Kraal: Temporary settlements or grazing camps (*nawii*), which are the dwelling places for herd-boys and warriors. The kraals are established in grazing areas – often located in quite some distance from the Manyatta. It is the place where the livestock is kept [CEWARN, 2004].

Karamojong: The different ethnic and territorial groups in the region of Karamoja are collectively called the Karamojong [Powel, 2010].

9.2 Questionnaire

Questionnaire social aspects and nutrition									
social part									
1	Village: _____								
2	Who answers the questions?								
		fit beneficialist	1		carer	3			
		fragile beneficialist	2						
3	age of beneficialist: _____								
4	gender of beneficialist: male: 1								
		female:	2						
5	How many people live in your household? (People who take their meal together)								
		male adults (>12 years)	6	male children (<12 years)	8				
		female adults (>12year)	7	female children (<12 years)	9				
10	Marital status:								
		Married	1	Divorced	4				
		Never married	2	widowed/widowed	5				
		Not yet married	3						
11	Who is the head of the household?								
		husband:	1						
		Wife	2						
		Older brother/ sister	3						
		Beneficialist	4						
		son	5						
		mother	6						
		other:	7						
12	Why were you selected to benefit from the goat restocking program?								
		disease	1	widowed/widowed	4				
		helpless	2	many children	5				
		they told me I'm vulner	3	no animals	6				
				other	7				
13-21	Number of goats you received...?								
Nr:	Received	Dead	Lost	Stolen	Born	/alive	sold	slaughtered	
	13	14	15	16	17	18		19	20
22	If yes why were some goats including children already sold?								
		school fees	1	we can not afford them	4				
		buy something to eat	2	other reson	5				
		marriage of family member	3						
23	If yes why were some goats including children already slaughtered?								
		we eat them	1	we sold them	3				
		rituals	2	other	4				
24	If yes who profits from selling or slaughtering?								
		head of the household	1	beneficialist	2				
				other	3				

39	How much milk do you get from all your goats?							
			None	☐	if yes (how many litres per day)			
40-44	Which use do you have for the milk?							
		40	we only drink it	☐				
		41	we share it with visitors	☐	we share it with other households	☐	43	
		42	given to the army	☐	we sell it	☐	44	
45	How many people share the milk of the goats?							
46-51	Who are this people?							
		beneficiary:	45	all children		48		
		who share:	46	whole household		49		
		children under five:	47	other:		50		
52	Who decides about sharing the milk?							
		head of the household	1	beneficialist		3		
		mother	2	other		4		
53	Is getting drugs for the goats a big problem?							
		yes available	1	yes both		3		
		yes money	2	other		4		
				no		5		
54-56	Which benefits do you have from the goats? (max 3 answers)							
		non	1	milk		5		
		goats/milk provide money	2	blood		6		
		can used for cultural rituals	3	meat		7		
		new task (my life is not so boring)	4	proud		8		
				other		9		
57-59	If they provide money, for what do you use the money? (max 3 answers)							
		school fees	1	buy some other food		4		
		buy alcohol	2	other		5		
		marriage	3					
60-67	Which animals does your household own?							
		Goats	no	59	yes (Number)			
		Cattle	no	60	yes (Number)			
		sheep	no	61	yes (Number)			
		Pigs	no	62	yes (Number)			
		Chicken	no	63	yes (Number)			
		Ducks	no	64	yes (Number)			
		Pigeon	no	65	yes (Number)			
		other	no	66	yes (Number)			
68	Does your household own a field/garden?							
		no	1	yes (a bigger one next to the manyatta)		3		
		yes (a small one next to shelter)	2	yes both		4		
69-71	Sources of household income? (max 3 answers)							
		agric. Products	1	sale of livestock		5		
		brew	2	sale of eggs		6		
		Cash for work	3	milk		7		
		Firewood/Charcoal	4	other income		8		
72-74	How many persons follow this activities?							

[illegible]

9.3 Zusammenfassung

Im Jahr 2013 waren 842 Millionen Menschen chronisch unterernährt [FAO, 2013]. Um diese Ungerechtigkeit zu bekämpfen, wurden von einer großen Anzahl NGOs verschiedenste Interventionen durchgeführt. Da nicht jede der Interventionen automatisch positive Auswirkungen hat, sollten diese überprüft werden. In diesem Zusammenhang wurde von dieser Studie der Einfluss eines Ziegen Projekts der NGO Organisation „Welthungerhilfe“ untersucht. Ein Jahr vor Studienbeginn wurden die Ärmsten der Armen in der Region Karamoja/ Uganda mit 3-5 Ziegen unterstützt. Ein Jahr nach der Intervention wurden die Auswirkungen auf das Leben der Dorfbewohner untersucht.

Die Studie wurde in den folgenden Schritten durchgeführt: Literatur Recherche, Experten Interviews, offene Interviews mit Dorfbewohnern, Focus Group Diskussionen, Befragungen mit einem standardisierten Fragebogen. Die Studie wurde in dem Zeitraum zwischen zehntem Juli 2013 und dem dreißigsten August 2013 durchgeführt. Die Grundgesamtheit der Studie waren 124 begünstigte des Welthungerhilfe Ziegenprojekts im Landkreis Lotome. Aus dieser Gruppe wurden 51 Personen befragt. Ergänzt wurde die Gruppe mit 21 Personen welche mehr als fünf Ziegen besaßen. Die Ergebnisse der Befragung und die Ergebnisse aus den Fokus Gruppen Diskussionen (welche ebenfalls mit Dorfbewohnern durchgeführt wurden) wurden für die Diskussion verwendet. Zur statistischen Auswertung wurde das Programm SPSS verwendet. Um mögliche Zusammenhänge herauszufinden, wurden lineare Regressionsmodelle und logistische Regressionsmodelle erstellt.

Das durchschnittliche Alter der Befragten war 49,11 Jahre. Darunter waren 37,5% männlich und 62,5% weiblich und sie wohnten in einer durchschnittlichen Haushaltsgröße von 9,6 Personen. Nachdem ein Jahr vor der Erhebung 186 Ziegen verteilt wurden, waren noch 183 übrig. Die Gründe für den Rückgang waren schwer zu erfassen. Aufgrund von mangelnder Bereitschaft wahrheitsgemäße Angaben über Veränderungen der Population anzugeben konnte keine Begründung für den Rückgang gegeben werden. 80% der Befragten hatten keine Angst vor Diebstählen oder Bedenken mit der Sicherheitslage, somit wurde die Sicherheitssituation nicht als aktuelles Problem bewertet. Es wurde befürchtet, dass die ungleichmäßige Verteilung von Ziegen in den Dörfern zu Konflikten führen könnte. In der Befragung antworteten 82%, dass keine

Konflikte aufgekommen sind. Zusammen mit den Antworten in den Fokus Gruppen Diskussionen wurden Konflikte als keine aktuelle Problematik angesehen. 32% der Begünstigten gaben an, dass die Beschaffung von Medikamenten für ihre Ziegen kein Problem sei. Diese relativ hohe Zahl gibt Hoffnungen, dass einige Dorfbewohner in Zukunft sich unabhängig von der Unterstützung von NGOs um ihre Ziegen kümmern könnten. Ein möglicher Zusammenhang mit der Anzahl an Ziegen und der Haushaltsgröße wurde diskutiert. Unter der Kontrollgruppe (Personen >5 Ziegen) wurde jedoch kein Sign. Zusammenhang mit einem P-Wert von 0,066 gefunden. Für den Einfluss der Ziegen auf das Haushaltseinkommen wurde ein P-Wert von 0,005 gemessen. Nur 46% der Begünstigten gaben an Milch von ihren Ziegen zu bekommen. Die „Food diversity“ der Begünstigten betrug 3,3 Lebensmittelgruppen und die ihrer Kinder betrug 3,8. Aufgrund dieser niedrigen Zahlen wurde ein Zusammenhang des Ziegenbesitzes mit der „Food diversity“ erhofft. Es wurde jedoch kein Zusammenhang mit den P-Werten von 0,240 für die Erwachsenen und 0,159 für die Kinder gefunden. Es wurde nur ein Zusammenhang zwischen dem Einkommen und der „Food diversity“ mit 0,004 für Kinder und Erwachsene gefunden.

Die zwei untersuchten und möglichen negativen Auswirkungen des Ziegenprojekts (Konflikte und steigende Geburtenrate) wurden als keine aktuellen Probleme bewertet. Trotzdem sollten beide Aspekte von den Projektleitern weiter überprüft werden und um allgemeinere Aussagen zu treffen, könnten andere Studien die Phänomene detaillierter untersuchen. Die Verbesserung der Ernährungssituation und des Einkommens wurden als positive Auswirkungen des Ziegenprojekts analysiert. Diese Studie konnte nur einen Zusammenhang zwischen den Ziegen und dem Einkommen feststellen. Trotzdem sollten auch diese Aspekte von anderen Studien genauer untersucht werden.

Anhand der beschriebenen Ergebnisse kommt die Studie zu dem Schluss, dass die Ziegen die Einkommenssituation verbessern, was jedoch möglicherweise durch andere Interventionen effektiver erreicht werden könnte. Aufgrund der geringen Evidenz dieser Aussage sollte die Thematik von weiteren Studien überprüft werden.

9.4 Curriculum Vitae

Education:

Since 10/2012	Master Studies in Nutrition Science (University of Vienna)
02/2012	Bachelor of Science in Nutrition and Supply Management (Fh) (Mark 1, 8) University Weihenstephan- Triesdorf Title of Bachelor Thesis: “Study about the design of grazing land milk and the value for the commercialisation “(Mark 1)
10/2008-02/2012	Bachelor Studies Nutrition and Supply Management University Weihenstephan- Triesdorf Focal point nutrition and health
2004 – 2006	Städt. Robert-Bosch-Fachoberschule for economics, administration and judicature Degree: Fachabitur

Related Skills

07/2013-10/2013	Internship at Welthungerhilfe (project region Moroto/Uganda) • Planning and enforcement of a goat project monitoring • Planning and evaluation of a block farm monitoring • Training for colleges in SPSS • Measuring and planning of new Manyattas
08/2010-12/2010	Internship at Herbaria Kräuterparadies GmbH • Product development of herb tees • Purchasing • Quality assurance
08/2008 – 09/2008	Internship at butcher Böltl/Heimstetten • Organisation of catering services

02/2008 - 07/2008	• quality assurance Caregiver assistant at the Pfennigparade in München-Trudering
09/2006 – 05/2007	• Care and medical care • Handling and control of the medical and technical additives Civilian services at the school for physically handicapped (Munich) as caregiver
06/2007 – 07/2007	Caregiver assistant at the school for physically handicapped (Munich)
08/2007 – 09/2007	Kitchen aid at butcher Börtl/Heimstetten

Languages and stay abroad

10/2007 – 01/2008	Stay abroad: Central Amerika, Uganda • Englisch: fluent • Spanisch: Basic knowledge
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EDV-Knowledge

IBM SPSS Statistics: Basic knowledge
 Microsoft Office: very good

Vienna the 17.06.2014

Tobias Mertzlufft