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## **Promotion of Agropastoralism**

Combating poverty and hunger through integrated rural development in Samburu, Kenya

**AVE Study 12b/2019**

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### **© Institute for Development and Peace**

Lotharstr. 53D - 47057 Duisburg, Germany

Phone +49 (203) 379 4420 Fax +49 (203) 379 4425

E-mail: [inef-sek@inef.uni-due.de](mailto:inef-sek@inef.uni-due.de)

Homepage: <http://inef.uni-due.de>

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*Anika Mahla*

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Combating poverty and hunger through integrated  
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**AVE Study 12b/2019**

**Ways out of extreme poverty, vulnerability and food insecurity**

Universität Duisburg-Essen  
University of Duisburg-Essen

Institut für Entwicklung und Frieden (INEF)  
Institute for Development and Peace

## **AUTHOR:**

**Anika Mahla** M.A. in International Relations and Development Policy, B.A. in Social Science and Philosophy with a major in Political Science; research associate at INEF, University of Duisburg-Essen, research focus: rural development, gender, food security and land governance.

E-mail: [amahla@inef.uni-due.de](mailto:amahla@inef.uni-due.de)

Project homepage [www.inef-reachthepoorest.de](http://www.inef-reachthepoorest.de)

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**List of abbreviations**

ASAL	Arid and Semi-Arid Lands
AU	African Union
CFS	Committee on World Food Security
EU	European Union
DC	Development Cooperation
FAO	Food and Agriculture Organization of the United Nations
FGD	Focus group discussion
FMNR	Farmer Managed Natural Regeneration
GASL	Global Agenda of Action for Sustainable Livestock
ha	Hectare
hh	Household
KES	Kenyan Shilling
KFSSG	Kenya Food Security Steering Group
km	Kilometre
KRDP	Kenya Rural Development Programme
m <sup>2</sup>	Square metre
NGO	Non-governmental organisation
NDMA	National Drought Management Authority
PRA	Participatory Rural Appraisal
SACOBA	Samburu County Breeding Association
SAPLIP	Samburu Pastoral Livelihood Improvement Project
SHG	Self-help Group
VC	Value chain
VGGT	Voluntary Guidelines on Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security
WFP	United Nations World Food Programme
WV	World Vision
WVK	World Vision Kenya

## Summary

Samburu is the sixth-poorest county in Kenya. Food insecurity is particularly pronounced in rural areas. A large proportion of households live off (semi)nomadic livestock farming (pastoralism), which is accompanied by arable farming in the rain-rich zones. On the one hand, the region suffers from repeated cattle rustling from neighbouring districts. On the other hand, the frequent droughts pose a threat to the livelihoods of many households. Pastoralists are particularly vulnerable in this context, as droughts repeatedly endanger access to water and food for humans and animals and often decimate livestock. The Samburu Livelihood Improvement Project (SAPLIP), funded by the European Union (EU), attempts to meet these challenges. World Vision Kenya (WVK) implements SAPLIP together with the National Drought Management Authority (NDMA).

Through a multisectoral approach (including contributions to livestock farming, crop farming, forestry, adaptation to climate change and water supply), the project makes an important contribution to strengthening the resilience to natural disasters of the 21,700 people involved in the project measures, improving their incomes and food security by promoting sustainable agriculture and defusing the conflicts surrounding livestock rustling. Concrete measures are the introduction of agriculture in greenhouses, the establishment of vegetable gardens and various training measures for the sustainable use of resources (including rainwater storage and controlled grazing). In addition, improved livestock breeds, drought-resistant and certified seeds, improved beehives and agricultural equipment were given to the SAPLIP group participants.

The present study is based on field research conducted in Samburu in spring 2017 to shed light on the project as an example of good practice for reducing extreme poverty and food insecurity. Household surveys were carried out, interviews were done with key persons, and separate focus group discussions for men and women were conducted. Participatory methods were also used, such as the compilation of an income and expenditure ranking.

The report starts with a brief presentation of agricultural and rural development policies in Kenya and background information on Samburu. The main part of the study presents and analyses the results of the household survey (n=405). The focus is on the question of how the affected people deal with the recurring droughts and what effects the projects have had.

Overall, 46% of the 203 project participants surveyed stated that they had seen a medium improvement in their living conditions and 47% said that they had even seen improvements on a large scale. Based on this self-assessment, it therefore makes sense to classify the project as an example of good practice. Finally, recommendations should be given for a possible follow-up project. This includes, for example, strengthening the organisational power of the groups involved in order both to facilitate access to markets and to achieve fair prices for farm products.

The great added value of SAPLIP lies in the fact that the project participants were able to acquire new agricultural skills (e.g. greenhouses) and that livestock breeding was supported (e.g. by improved breeds). This made it possible to reduce the previously heavy dependence on livestock farming and is also reflected in increased agricultural food production, especially in expanded milk production.

*Kenya, Samburu, poverty eradication, food insecurity, integrated development, drought resilience, agropastoralism, organic agriculture, livestock farming*



# 1. Agriculture and Rural Development in Kenya

Poverty is particularly pronounced in rural Kenya, at 50.5%. The national poverty line<sup>1</sup> there is 1,562 Kenya shillings (KES), which corresponds to about €14. The decisive factor here is whether a household has the stated sum available for expenditure on defined consumer goods, not whether it has an income of the stated amount (cf. KNBS 2015).

Kenya is a very heterogeneous country with a pronounced income and wealth inequality, as the Gini coefficient<sup>2</sup> of 48.5 shows. The persistently high population growth poses a specific challenge for agriculture in particular (see Chapter 2). In addition, more than one in four children (26%) under five years of age suffer from malnutrition and are too small compared to their peers (*stunting*) (cf. UNDP 2016a). This is also because an estimated 40 million people – almost one third of the total population – are considered "food and nutrition insecure" (Abebe 2013: 5).

The agricultural sector plays an important role for the Kenyan economy. Agriculture, including livestock farming, generates 65% of export revenues and accounts for 27% of gross national income. Important export goods are cash crops such as coffee, tea and horticultural products, with French beans and cut flowers being particularly noteworthy. In addition, the yields from farming secure at least part of the livelihoods and nutrition of more than 80% of the population. Agricultural income plays a particularly important role for smallholder households, especially for women and young people. This sector employs 70% of the Kenyan population. It should also be emphasised that in Kenya a large number of public, parastatal, non-governmental and private actors work together in the field of agriculture (cf. FAO 2018, EU-DK 2016).

Support for rural development is one of the main objectives of the Kenyan agricultural plan (see GoK 2007). This is linked to the fact that agriculture plays a decisive role, especially in poverty reduction (in rural areas). Agriculture also plays a key role in the national development strategy "Vision 2030". It is seen as crucial for the 10% annual economic growth target. In order to achieve this goal, the efficiency of land use is to be increased and both the economic power of the private sector and households strengthened. Particular priority will be given to promoting agricultural development in arid and semiarid lands (ASAL). To this end, major investments in infrastructure are being targeted (cf. GoK 2007.).

In addition, the government hopes that improved management of wildlife will improve species protection and increase income from tourism. Pastures are also considered potential areas for wind power generation. This is to supply remote areas with electricity in the future and make a contribution to irrigation farming (cf. *ibid.*). However, oil reserves were found in the north of the country (Turkana) whose exploitation threatens the pastoralists' lifestyles with their pasture farming and partially nomadic herding (cf. AU 2010).

As a result, the use of the existing areas involves many conflicts of objectives (additionally also through nature conservation). As in other African countries, it can be presumed that in Kenya too there might be a tendency in politics to evaluate pastoralism as antiquated and to advocate the settlement of nomads. However, this view fails to recognise the historical

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<sup>1</sup> The urban poverty line is almost twice as high at 2,913 KES (about €27). In the cities, "only" 33.5% of the population fall into this category (cf. KNBS 2015).

<sup>2</sup> The value zero represents an absolutely equal distribution of incomes in the country, the value 100 the exact opposite. Compared to Kenya, neighbouring countries such as Ethiopia (33.2), Tanzania (37.8) and Uganda (41.0) performed significantly better (UNDP 2016a: 208).

importance of livestock breeding and its potential to play an important role in combating hunger and poverty (cf. Da Silva 2018). Often the extensive livestock farming practiced by pastoralists is the only form of life and economy with which inhospitable areas such as the ASAL can be inhabited at all. Pastoralists are generally regarded as one of the poorest and most vulnerable population groups in East Africa (cf. Oxfam 2008).

The African Union (AU), however, emphasises Kenya's pastoral policy as progressive, since, for example, a policy document on nomadic education has been prepared (see AU 2010). Among other things, it calls for teachers to accompany some of the travelling families in order to teach their children.

Livestock farming is also relevant for food security in Kenya because it provides a considerable amount of meat for the domestic market. Particularly in the ASAL, the ownership of livestock is of crucial importance in times of crisis, because owners can survive thanks to animal products if food prices rise (cf. WFP 2016).

A particular challenge is the combination of high population growth<sup>3</sup> and the expansion of agriculture in the northern arid regions, leading to increased competition and conflicts over scarce natural resources. For example, over-exploited and depleted soils causes lower crop yields, which in turn can worsen food security for an increasing number of people.

Kenya's agricultural development is confronted with a multitude of problems. Due to the limited production potential, the agricultural sector is only growing slowly and unsteadily. This is partly due to the fact that in many places most (small) farmers lack access to credit, consulting and markets, access to land is<sup>4</sup> limited, soil quality is inadequate and there is no adequate infrastructure for irrigation and food storage. In addition, many farmers and livestock farmers are struggling with plant and animal diseases (cf. WFP 2016, EU-DK 2016).

In addition, there are climatic challenges: 80% of the country belongs to the ASAL, where there is only low precipitation, which fluctuates strongly from year to year. Droughts and flash floods occur again and again, leading to additional crop losses. In such crisis situations, many people depend on humanitarian aid to obtain food. This also applies to the study region in Samburu (see Chapter 2).

The long-term study conducted by the Kenya Food Security Steering Group (KFSSG)<sup>5</sup> in July 2017 found that 800,000 people in the Samburu area were in a vulnerable situation regarding access to food and that the situation was highly likely to turn into a crisis. In addition, 2.6 million people elsewhere in Kenya were already affected by a food crisis (KFSSG 2017: 5).

Overall, it can be stated that despite good intentions in the concepts, Kenya's food security policy has been crowned with only mediocre success. This is certainly due to many reasons, the increasing number of extreme weather events being only one of them.

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<sup>3</sup> In 2006, this amounted to 2.6% in Kenya (see World Bank 2018).

<sup>4</sup> Women in particular are severely disadvantaged by Kenyan land and inheritance legislation, as only one percent of all registered land titles are registered for women and only five to six percent of all titles are registered for men and women jointly (cf. Gaafar 2014).

<sup>5</sup> In 1998 the KFSSG developed a comprehensive and innovative early warning system for food insecurity in Kenya, involving all relevant actors. It is also a platform for overarching action between government, UN organisations, non-governmental organisations (NGOs) and donors (see Wheeler 2001).

## 2. Background information about Samburu

Samburu is a county in the north of the Rift Valley in Kenya. Maralal is the administrative capital. The project and thus the research area (see map) are located in Samburu Central. There SAPLIP was active in the sublocations Kirisia, Malasso and Lorroki, which have less than 10% of medium to high potential agricultural areas with an annual rainfall of 600 to 800 mm. Kirisia and Lorroki lie in the highlands, where it is a little cooler than in Malasso, more rain falls and also the soil quality is better. There, various types of vegetables can be cultivated in rain-fed agriculture. In the lowlands of Malasso there is more livestock farming and very little farming, since vegetable cultivation only works with irrigation. In the Poro-Longewan-Maralal triangle in particular, maize, beans, potatoes, wheat and barley are the main sources of income (c.f. Wamukuru 2016). In the mostly arid regions, the population lives mainly from pastoralism.

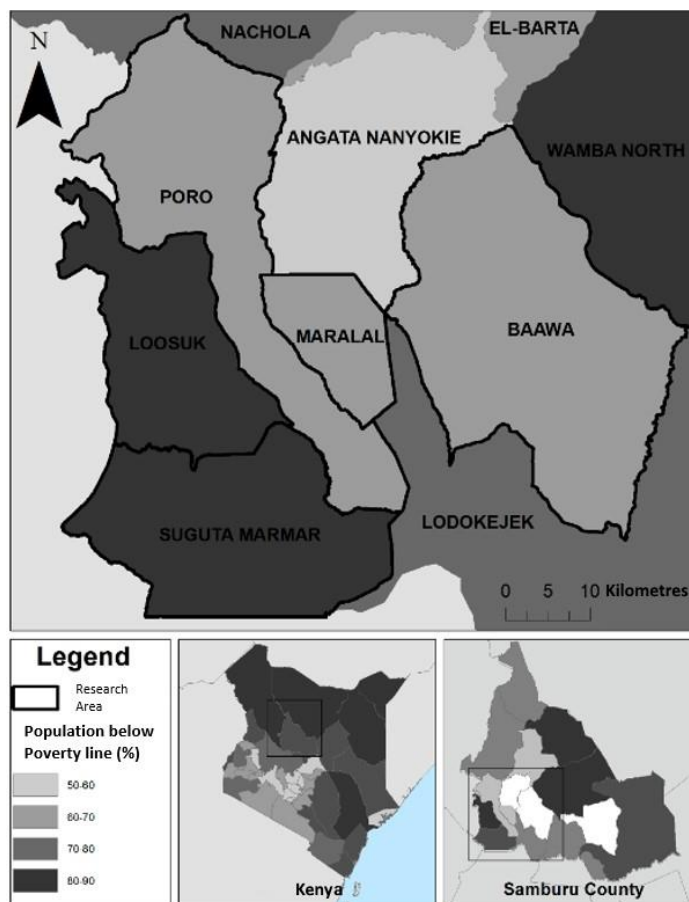


Figure 1: Study region in Samburu County (cartography: Fabio Pruß/ Fiona Schubert, data: KNBS 2015).

In Samburu, four different categories of land ownership exist in parallel (group, county councils, government and private). Most of the land is collectively owned and not registered. The new Kenyan Constitution of 2010 explicitly recognises the community land. There are hardly any landless people, but problems arise again and again when wealthier farming families fence in their land and these areas are no longer available for grazing to the pastoralists. However, it is a widespread practice that the grazing and watering of livestock is also permitted on privatised areas.

A departure from community ownership and the further allocation of land titles (registration) are conceivable in the future. Since the 1970s, group ranches have been introduced as a form of private ownership, whereby instead of individual titles, these have been assigned to groups. This process is led by a land commission. In general, the government prefers a permanent residence and propagates it as modern, since the pastoral way of life makes it difficult, for example, to provide services (cf. GoS 2013, Lesorogol 2017).

The project region belongs to the ASAL group, which is characterised by high temperatures and low and fluctuating rainfall. The soils are of poor quality, as there is insufficient vegetation due to overgrazing. They also have poor water storage capacity and are often severely eroded (cf. GoS 2013).

At 0.43, Samburu's value on the Human Development Index (HDI) for Kenya is clearly below the national value of 0.54 and, according to the criteria of the United Nations, therefore has a lower human development than the country's average (cf. HDX 2016, "Kenya Samburu").<sup>6</sup> Thus 73.5% of the population live below the national income threshold, which means that the poverty rate in Samburu – the fifth poorest county – is significantly higher than in Kenya as a whole (cf. KNBS 2015, Figure 1). The causes of poverty include low school enrolment rates, cultural practices such as early marriage, border insecurity, poor infrastructure and extreme weather events (cf. GoS 2013). Other factors for low incomes, food insecurity and high malnutrition<sup>7</sup> are food taboos and harsh climatic conditions (cf. WV Kenya / MPHSS 2013).

Additional problems are water scarcity, uncertainty due to livestock rustling by neighbouring communities and ecological degradation, especially of soil, and deforestation due to excessive livestock and overgrazing. In addition, the region is characterised by high population growth because the fertility rate of 6.3 per woman in Samburu is well above the national average of 3.9. Between 2012 and 2017 alone, the total population grew by almost a third.

In some areas there are also increasing conflicts with wild animals, especially zebras and elephants, which are in water and food competition with farm animals. The most serious problem is certainly the increasing frequency of droughts. Severe droughts occurred in 2004/05/06, 2008/09/10/11, 2014 and 2017 and are expected to continue. In particular, the 2010/11 drought is considered to have been the worst in 60 years (c.f. DHS 2015 Kinyanjui 2014, GoS 2013).

The majority of people in Samburu practice semi-nomadic pastoralism and are therefore not traditionally active in crop farming. Originally, the triad of milk, blood and meat determined its subsistence. Accordingly, cattle breeding is of great importance for the economy of the county<sup>8</sup>. However, the livestock herders' lifestyle has changed since group farms were set up in the 1970s with the aim of integrating the Samburu into the market economy. Nowadays, people live in settlements and mostly only move livestock (cf. Grillo 2012). There is a high dependency on accessibility and availability of natural resources such

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<sup>6</sup> "The HDI is a summary measure for assessing progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living" (UNDP 2016b: 2).

<sup>7</sup> Indicators include stunting, which affects almost every third child under the age of five, and underweight. At 29%, the latter in particular is far above the national average of 11% (cf. DHS 2015).

<sup>8</sup> Other sources of income are tourism and smallholder agriculture.

as pastures and water. In particular, in more unfavourable climatic conditions, overgrazing is a serious problem, displaying a “tragedy of the commons” situation.<sup>9</sup>

Many communities report increasing conflicts over scarce resources and livestock (see World Vision 2013). The number and distribution of farm animals has changed over time due to droughts, diseases and cattle rustling. Such rustling is a very great challenge in the region, and occur especially in Samburu North, East and also in Samburu Central on the western belt near the border crossing Pokot. The occurrence mainly increases after periods of drought, when people’s own animals have died. The conflicts over livestock are accompanied by an increasing number of families who are trying their hand at subsistence farming for small farmers. Nevertheless, for many, farm animals were and still are the pivotal point of their lives. Cattle in particular function like a bank account, as they can either be sold or slaughtered on special occasions such as a wedding, illness or school fees being due. Ultimately, livestock is a key asset because it is both a source of income and food and has additional social functions.

#### **Box 1: Everyday life in Lorian**

Between 4 am and 5 am, 40-year-old Jeniuna L. gets up and begins her day milking her goats. She then prepares tea or porridge for breakfast for her family. The family consists of her husband, her own nine children and four orphans of her brother. After she sends all the children to school and she goes to fetch water. In total she has to walk a distance of about 2.5 kilometres (km) from her hut (*Manyatta*) there and back. Before lunch she cleans the enclosures of the animals and earns something for the household income, for example by doing the laundry of neighbours or weeding in their fields.

Her husband also does casual work, such as digging trenches, but this usually only happens once a week. The rest of the time he takes care of the two cows the family owns. In the afternoon Jeniuna fetches firewood and sometimes she makes beads. After the animals come back from the pastures, they are milked again and given medication if necessary. Then all animals are counted and if any are missing, she has to go and look for them.

For dinner there is so-called *soft ugali* (made from corn flour). On good days, when they can afford it, *githeri* (corn and beans) is served. Her husband is generally responsible for making decisions. Their hope for the future is that their children can find work and support them.

In Samburu, as in many pastoral societies of sub-Saharan Africa, socio-political, demographic, economic and climatic pressure is increasing, leading to more and more pastoralists turning to strategies independent of livestock farming (cf. Ayantunde et al. 2011). For example, crop farming in combination with livestock farming is increasingly used to diversify sources of income, thereby justifying agropastoralism.<sup>10</sup> The Samburu Development Plan aims to improve crop farming, livestock and market access. Information, technology and other

<sup>9</sup> This means that without access restrictions, public goods and resources run the risk of not being used efficiently, and thus overuse can occur. See also Ostrom 1990.

<sup>10</sup> “Agropastoral systems are defined as those that, in addition to livestock production, involve some form of crop cultivation. These range from the transhumants who are opportunistic farmers (they plant a crop on their way north to wet season pastures, and harvest it on their way south), to sedentary farmers who raise only a few livestock, and do not transhume. And in between are many different degrees of transhumance, number of livestock raised, type of crops planted, etc.” (Niamir 1990 “1.2 Some definitions” para. 4).

resources, such as certified quality seed and fertilisers, will be made available for this purpose. The aim is to increase production by developing new arable land, particularly in the highlands (see Samburu County Government / WFP 2015). The problem here is that Samburu has been one of the economically most marginalised areas since colonial times and the economic infrastructure, health care system and educational institutions are in poor condition (cf. Samburu Council 2019).

Samburu society is characterised by a patriarchal culture in which a clear gender-based division of labour prevails (see Box 1). For example, only women are responsible for purchasing food and growing staple foods to feed the family and for post-harvest work. They often also process and sell products from the farm, fetch water and firewood, and take care of the children, the food preparation and the household.

Mpofu (2016: 31) also states with regard to (semi-)nomadic women: "pastoralist women's contribution in the form of herding (where social norms permit), rearing, milking, feeding, cleaning and more often has a layer of invisibility around it". The breeding of animals, in particular cattle, is a classical male area of responsibility. Further tasks of the men are above all the herding of the animals, the purchase and sale of larger animals, for chopping as well as the cultivation of field fruits for export. The high female illiteracy rate and cultural practices such as discrimination in land inheritance law undermine the role of women in decision-making processes in the family and political spheres. As a result, they can usually only participate to a limited extent in the country's development process (cf. GoS 2013, AfdB 2007).

### 3. Goals and activities of the Samburu Pastoral Livelihood Improvement Project (SAPLIP)

The Samburu Pastoral Livelihood Improvement Project (SAPLIP) was implemented between 2012 and 2016 by World Vision Kenya (WVK)<sup>11</sup> together with numerous national and local stakeholders. The project was financed by the European Union (EU) with a sum of USD 2.9 million<sup>12</sup> (see Wamukuru 2016). The integrated rural development approach, which takes a holistic view of rural living conditions,<sup>13</sup> is implemented. Accordingly, economic and social development should be planned together, which means that agricultural support is not isolated. SAPLIP has implemented concrete measures in crop farming, livestock, water, sanitation, public health, environment, forestry and climate change adaptation sectors.

Existing and active groups were selected to participate in SAPLIP in order to ensure sustainability beyond the duration of the project. Various organisations such as women's, self-help and youth groups, disaster preparedness committees, breeding associations and agricultural production groups were involved. A further requirement was that a piece of land had to be available for the construction of a demonstration field or garden.

A total of 21,700 rural residents took part in SAPLIP. The number of people who benefited indirectly from the project amounts to a further 63,500, because they can, for example, use the water infrastructure established by the project.



Figure 2: Improved cattle breeding (*sahiwal* bulls)



Figure 3: Tomatoes in a greenhouse, which was constructed by SAPLIP

<sup>11</sup> The NGO World Vision (WV) is a “global Christian relief, development and advocacy organization dedicated to working with children, families and communities to overcome poverty and injustice” (WV 2018).

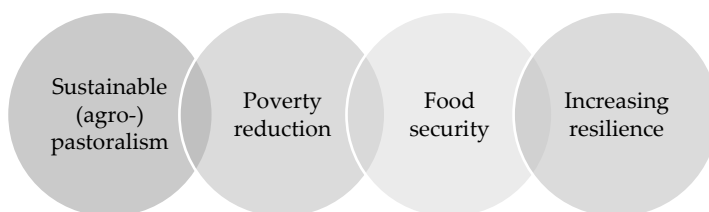
<sup>12</sup> The Kenya Rural Development Programme (KRDP) was responsible for financial management.

<sup>13</sup> Integrated rural development aims at poverty reduction in rural areas, mainly through agriculture to increase food production. At the same time, multisectoral measures to improve infrastructure, education and other services are also being implemented.

The starting point for the interventions was the vulnerability of the region to the effects of droughts, as described above. On the other hand, the construction of water pans, for example, should help to bridge the drought period with water. In particular, the construction of greenhouses, where tomatoes, for example, are grown, should counteract the excessive reliance on livestock as the only source of livelihood and income. In addition, water pumps for small-scale irrigation were also introduced.

The main objectives of SAPLIP were to contribute to the sustainable improvement of living conditions and to promote food security in Samburu. The aim was to increase food production at household level and make the communities involved more resilient in coping with natural disasters (especially droughts) and man-made disasters (cattle rustling) (see Figure 4). In concrete terms, this was to be achieved on the one hand by improving crop farming and livestock farming (cattle, cows, sheep, goats, chickens). On the other hand, peace and its safeguarding as well as sustainable resource management should be promoted.

**Figure 4: Main objectives of SAPLIP (author's own representation following Wamukuru 2016)**



In order to achieve these objectives, numerous training activities have been carried out in various areas. In many places, greenhouses were built together with model farmers, where the groups worked (and still work) together and were shown various cultivation techniques and ways of dealing with pest management. The creation of kitchen gardens was also encouraged. Unlike most conventional agricultural interventions, the project did not focus on chemical fertilisers and pesticides, but on organic farming. Accordingly, cow dung was mainly used. An important part of the agricultural training was also the exchange about the importance of the right time for preparing the fields, planting, weeding and harvesting. Further teaching units were offered for shifting cultivation, mulching, stone/earth terracing, composting, the use of drip irrigation, to avoid crop losses, for the storage and marketing of vegetables.

An important approach was to teach the reforestation technique "Farmer Managed Natural Regeneration" (FMNR).<sup>14</sup> In cooperation with the Samburu Forestry Authority, the introduction of so-called multipurpose trees was promoted. On the one hand they bear fruit for human consumption and on the other hand they provide animal feed. To this end, new tree nurseries were supported in the region, which grew and gave away tree seedlings.

<sup>14</sup> FMNR is a very cost-effective, fast and easy to replicate method of reviving tree stumps, roots, seeds and shrubs. The added value lies in the fact that degraded areas are recultivated, which has positive effects on harvesting and livestock farming. For example, the sprouting trees provide shade and protect the soil from drying out (see WV Australia 2013).





Figure 5: Improved beehives of a SAPLIP group

Further training sessions were offered to collect rainwater, which can be used for domestic use, animals and the cultivation of food. In view of increasing overgrazing, controlled grazing practices were presented, with fencing for a period of time to allow animals to graze in times of need. Further training was also offered on hygiene and eating habits, the work of self-help groups,<sup>15</sup> livestock breeding and landscape conservation. In addition, courses on group-internal accounting were offered in order to be able to display and manage yields from tomato cultivation, for example, for the first time.

In addition to the training, the SAPLIP groups received more efficient breeds (cattle, dairy cows and goats) and medicines to care for them. Information was also provided on how to deal with livestock epidemics. The distribution of poultry was primarily aimed at women who could earn an additional small income by selling eggs. For agriculture, water tanks (see Figure 6) and equipment such as drip irrigation sets, rakes and forks as well as high-quality drought-resistant seeds were distributed. In addition, improved beehives (see Figure 5) as well as the corresponding collection set for the honey were made available.

Conflict resolution meetings on cattle rustlings have been initiated. In addition, the development of Community Disaster Contingency Plans was initiated at local level in order to improve risk management. This was done in close cooperation with the NDMA, which originally also wrote the project proposal for the EU (cf. Sudoi/Kiprono 2013, Wamukuru 2016).



Figure 6: Water tank on SAPLIP demonstration field

<sup>15</sup> See a Kenyan case study by Mahla/Gaelsing 2017.

## 4. Methodology

The data collection in Samburu for the present study was carried out in March 2017 in close cooperation with the local consultant Dr Andrew Kiplagat from the University of Eldoret. The study combined quantitative and qualitative methods. Firstly, instruments of a *Participatory Rural Appraisal* (PRA) were used, including wealth, income and expenditure rankings, interviews with residents and key persons, and guideline-based focus group discussions (FGDs) with project participants and control groups (see Table 1). Moreover, a total of 405 households (hh) were interviewed by seven interviewers in Samburu. The questionnaire used for this purpose is attached. All locations<sup>16</sup> of the project accessible by vehicle (6 out of 7) were included. The household survey was conducted on demographic factors, the economic situation, coping strategies and experiences with SAPLIP if the respondent was a SAPLIP beneficiary.

**Table 1: FGDs and interviews carried out**

Method	Recipients	Location
FGD with wealth-Ranking	Male beneficiaries	Lpartuk
FGD with ranking of income and expenses	Female mixed group (majority beneficiaries and two non-beneficiaries)	Porro
	Female non-beneficiaries	Loosuk
	Male non-beneficiaries	
Intensive household interviews	Female non-beneficiaries	Lorian
	Female beneficiaries	Logorate
	Male beneficiaries	
	Female beneficiaries	Longewan
	Male beneficiaries	Angat Rongai
Interviews with key people	Chief	Logorate
	Samburu Agricultural Officer	Maralal
	Samburu Veterinary Officer of the Livestock Department	
	Samburu Nutrition Officer	
	NDMA County Drought Information Officer	
	Former SAPLIP Director	
	Monitoring & Evaluation Officer for WASH (Water, Sanitation and Hygiene) at WVK	

<sup>16</sup> The places visited were Loosuk, Poro, Maralal, Sirata, Suguta, Suguta Marmar, Amaya, Anguta Nanyukie, Ngari, Morijoi, Pino, Logorate, Longewan and Baawa.

A WVK employee played a decisive role in the selection of the villages and groups to be surveyed, which meant that no completely independent sample was taken. In addition, possible spill-over effects of the project on the neighbourhood can be assumed, so that the comparison between SAPLIP participants and the control group has only limited significance. Furthermore, the results do not fully reflect the very positive conclusion of the final report (see Wamukuru 2016) commissioned by World Vision (WV).

This may be due to the fact that the end of the project (November 2016) was prior to the final report mentioned above. However, the time of the investigation was certainly also decisive, because in March 2017 there was a drought in Samburu (classified by NDMA as an alarming situation), as there was no rainfall at all in most areas. As a result, some cattle (especially cattle and sheep) starved to death (cf. NDMA 2017). This tense situation certainly had an influence on the responses of the interviewees in the context of the present data collection. In addition, the sample has an above-average proportion of women (n=301, representing almost 75%), something which must be taken into account in the subsequent evaluation.

Hence opinions may have a female colouring, because the sample does not include enough male SAPLIP participants (see Table 2). This is due to the fact that women were far more frequently found at home than men during the survey, as the men were often away from home at the time of the survey (during the day) to supervise grazing or (in much rarer cases) to perform paid work.



Figure 7: Income and expenditure ranking during an FGD with women

## 5. Analysis

### 5.1 Profile of the sample

A total of 405 persons were interviewed in the Samburu Central District study area, with the strong predominance of women described above (74.3%). About half of the households interviewed (n=205) participated in SAPLIP activities. But here, too, there was a clear majority of women, as Table 2 shows.

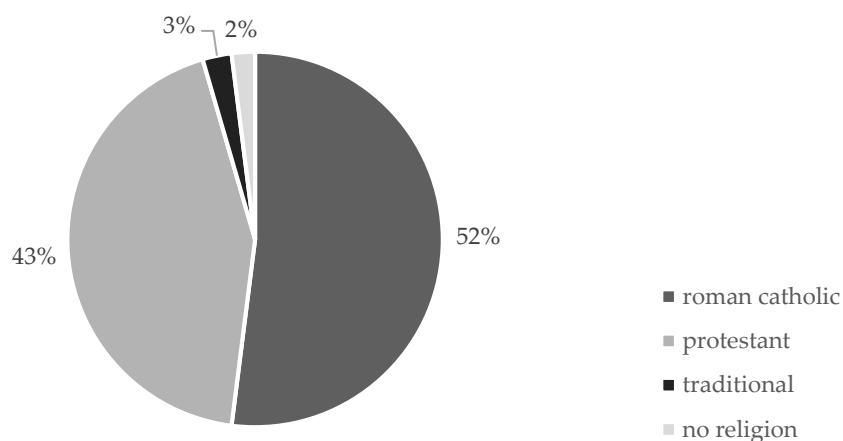
**Table 2: Gender of SAPLIP participants**

	N	%
Male	31	17.8
Female	125	71.8
Both together	18	10.4
n	174	

Source: Like all the graphs and tables below, these are our own surveys conducted in March 2017. 31 interviewees were not clearly identified with respect to gender.

The household survey showed that an average of 7.8 family members<sup>17</sup> live together in one household. In contrast, the national average is only 4.4 persons (cf. KIRA 2013). 97% of the interviewees are married, with about a quarter having a polygamous marriage, with men having two wives in the majority of such cases (75/103). The number of women can be seen as an indicator of a man's wealth. The highest number of wives among respondents was four (2/103 cases). In contrast to the national average of 29% (cf. DHS 2015), the proportion of female-headed households (17/383) surveyed in Samburu is only 4.4%. The ethnic homogeneity of the participants in the survey is very high, since almost all (400/405) belong to the Samburu, who are closely related to the Massai. Figure 8 shows that most respondents feel either Roman Catholic (52%) or Protestant (43%).

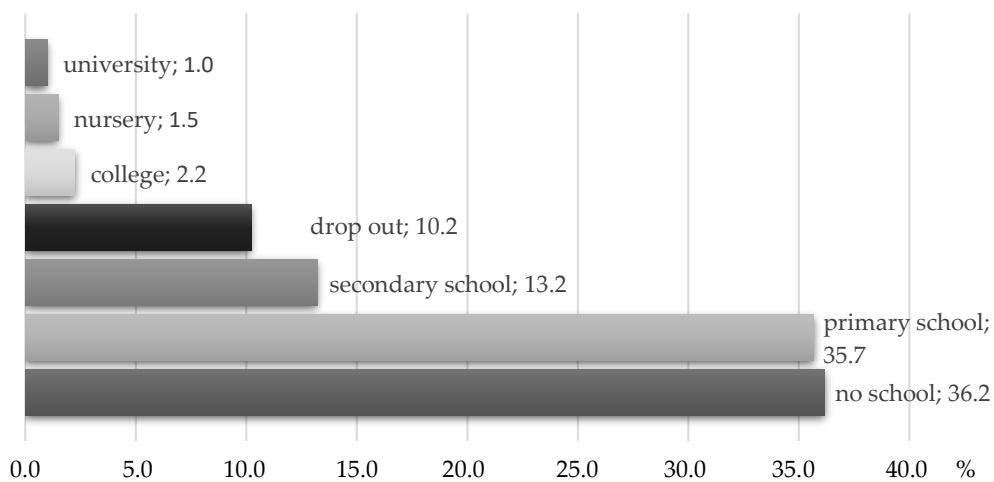
**Figure 8: Religion of the respondent (n=401)**



<sup>17</sup> Other surveys, on the other hand, conclude that the average household size in Samburu is only 4.7 (cf. KIRA 2013).

One cause of poverty is the lack of access to education. At the same time, this is also an essential factor for the perpetuation of poverty. Of those interviewed, 36% said they had never attended school, and 10% said they had dropped out (see also Figure 9). Slightly more than a third have at least a primary education and 13% have attended a secondary school (see Figure 9). This also explains the very low literacy rate of only 27% in Samburu (cf. GoS 2013). By comparison, the national average is 72% (see UNICEF 2013). It is particularly striking that almost every second girl in rural areas does not even finish primary school (cf. DHS 2015). One reason for this, among others, is that families take their daughters out of school, especially during periods of drought, to overcome the difficult time with the help of the bride price through marriage.

**Figure 9: Highest school leaving certificate of an adult household member (n=401)**



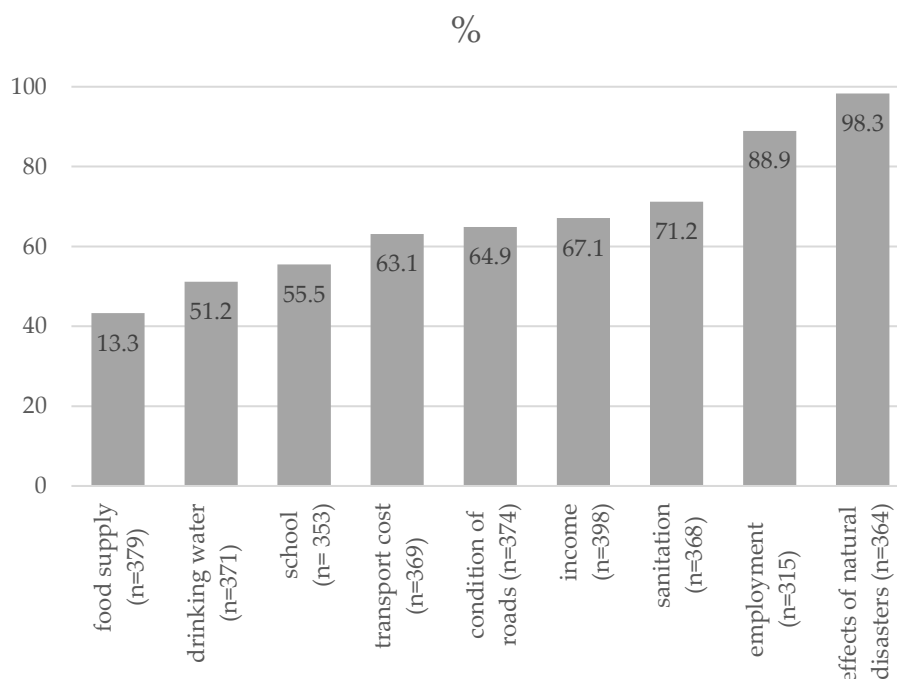
When asked about their satisfaction with their own living conditions, it became clear that for almost everyone (98%) the greatest and most serious challenge is the influence of natural disasters.<sup>18</sup> However, as already mentioned in the previous chapter, this answer was given at the time of an alarming drought. Further challenges such as insufficient employment opportunities, poor sanitation or low income are shown in Figure 10. However, it should be borne in mind that the individual aspects are often interrelated. Almost two-thirds of respondents said they had seasonal problems with access to food, payment of school fees and medical services, and 28% even complained about poor-quality food and general access difficulties to food, education and health-related services. When asked about the priorities for improving living conditions at household and community level, the ranking was as follows (Table 3):

<sup>18</sup> The study by Wamukuru (2016) showed that, in addition to drought, almost 20% also named flooding as a natural disaster.

**Table 3: Priorities for improving living conditions at different levels**

Household	Community
1. Business	1. Water
2. School fees	2. Aid to the poor
3. Food	3. Scholarships
4. Expansion of agricultural land	4. Food aid

It is striking that food was mentioned for both areas, albeit not as a top priority. The concern to receive food aid was mentioned in particular by SAPLIP members. In addition, the great importance of education is expressed by the desire for scholarships (school and bursary fees). The background is that in Kenya only primary education is free of charge. In addition, about half (179/353) of the respondents rated the school situation as poor.

**Figure 10: Everyday challenges (assessment of the situation as "bad" or "very bad")**

With regard to the economic situation of the households surveyed, it becomes clear that crop farming (58%) and only then livestock farming (31%) are the most important sources of income. In general, there is a trend towards a decreasing dependence on pastoralism, since the increasing cultivation of plants covers one's own consumption and the surplus can be sold. The main crops are maize, beans and cereals. The area under cultivation in the region is between 0.25 and 4 acres (about 0.1 to 1.6 hectares, ha) (see Wamukuru 2016).

As far as livestock is concerned, it is striking that 35% of SAPLIP households cite it as their main source of income, but only 25% in the control group. The primary farm animals are cattle, camels, goats and sheep. In addition, SAPLIP also provided poultry (e.g. chickens) and distributed them mainly to women. The majority of people live from independent agriculture. A further source of income is daily labour (4.5%), which is, however, carried out more



occasionally and especially during the rainy season. Only 2.5% of respondents have a permanent job. These are, for example, teachers, or employees of the state or NGOs.<sup>19</sup>

In general, the nature of the housing and the low ownership of assets point to poverty in the region. Almost two-thirds (65%) of the households surveyed have a mobile phone with credit, more than a quarter (26%) live in a dwelling with a corrugated iron roof and one in four (24%) uses solar energy. On the other hand, grid-connected power supply is a major problem, as only 1.2% have access to it. Firewood is still the main source of energy. Its procurement is the main source of income for 1.2% of the respondents, especially for women. One problem is the increasing deforestation on the one hand, and health problems caused by smoke on the other. Another difficulty, especially for extremely poor households, is access to water, and drinking water in particular (see Figure 10). The region is considered to be water poor and the main sources are dams and boreholes. The average distance to the nearest water source in rural Samburu is about five kilometres (cf. GoS 2013).

## 5.2 Dealing with drought

As already mentioned in the first two chapters, the climatic challenges in Samburu are of great importance. There are usually two rainy seasons: a short one in July and August and a long one in March and May. The amount of rain varies within the county. While the central basin is the driest, with an annual rainfall of only 250 to 500 mm p.a., the Lorroki Plateau, with 500 to 700 mm, has more favourable conditions for rain-fed agriculture. The average temperature in the region lies between 24 and 33 degrees Celsius and varies depending on the altitude of the terrain (cf. GoS 2013).

### Box 2: Poverty reduction through participation in SAPLIP

The 50-year-old widow Maria L. lives with her 8 children in Logorate. Although she herself never had access to formal education, today all her children attend school. However, one girl dropped out and is now taking care of the animals in the family. It has two goats, four cattle, eight chickens and ten sheep. Another important source of income for the household is her small shop, called "*Pamoja*", which means "together" in English.

With bright eyes, Maria tells us about her activities as a SAPLIP participant. These included further training in poultry and beekeeping as well as the creation of a kitchen garden on a quarter of an acre. There she grows spinach, carrots, chilli, onions, sukuma and tomatoes, which enrich the family's menu. In addition, as a member of a self-help group, she also cultivates crops together with the other women, who plant the seeds for maize and potatoes distributed by SAPLIP. In addition, the Group received training in the storage of maize, which has proved particularly effective in hard times.

The new and high-quality animals improve their selling prices in situations where money is needed, for example when school fees are due. In Maria's opinion, goats have contributed most to poverty reduction. She also stresses that SAPLIP has reduced food shortages. However, as the central coping strategy in times of drought, she stated that she worked hard and constantly looked for new sources of income.

<sup>19</sup> The unemployment rate in Samburu is 45% and particularly affects young adults between the ages of 18 and 35 (cf. GoS 2013).

Over the last 15 years, droughts have occurred more and more frequently. This poses a central threat to the livelihood of humans, as livestock, wildlife and agriculture are highly dependent on water. In the FGDs, for example, the irregularly distributed or insufficient amount of rain was mentioned again and again, as the consequences of this cause high price fluctuations in the sale of the animals and the purchase of food. Farm animals are often sold out of necessity during the drought period. However, prices are then at their lowest due to the increased supply and the poor nutritional status of the animals.

The Samburu have developed various coping strategies to deal with droughts during the hunger season (see Table 4):

**Table 4: Strategies for coping with drought in households that assess their food situation as "bad" or "very bad" (response categories were given)**

	%
Children eat first (i.e. before parents) (n=168)	96,4
Sale of farm animals (n=166)	78,9
Less consumption of porridge (n=166)	77,1
Older people eat less (n=169)	76,9
Consumption of diluted soft "Ugali" instead of normal "Ugali" (n=166)	76,5
Food relief (n=168)	75,0
Slaughter of young animals for the protection of the lactating mother (n=163)	74,2
Less or no consumption of milk (n=165)	66,7
Abstention from bleeding animals for own consumption (n=165)	62,4
Production of charcoal for sale (n=165)	47,9
Collecting wild berries (n=161)	21,7

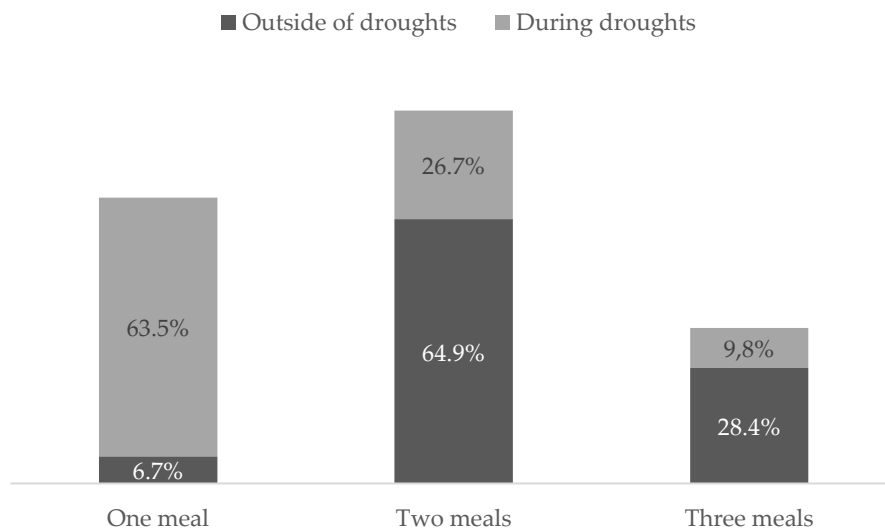
It is clear that drought has a massive impact on people's eating habits. Almost all households surveyed (96%) who have problems with access to food let the children eat first. In addition, less porridge<sup>20</sup> (77%) is consumed and milk consumption (67%) is also reduced. Not only do the elderly eat less (77%), but also significant changes in the frequency of food intake can be observed (see Figure 11). During the drought, respondents usually eat only one or two meals a day. It should be borne in mind that livestock keepers (primarily men) generally eat only two meals (morning and evening) during the day due to their absence for grazing. The survey explicitly showed that during periods of drought in 63% of cases people eat only once a day. Outside times of drought, this figure was just under 7%. Other food-specific strategies include collecting wild berries, choosing less preferred and cheaper foods (e.g. soft "Ugali"), and reducing the amount of meals.

<sup>20</sup> Porridge ("Uji" in Kiswahili) consists of corn or millet flour and is prepared with hot water. "Ugali" is a Kenyan national dish that resembles porridge but has a relatively firm consistency rather than a liquid consistency. The cereal porridge consists of maize flour. Soft "Ugali", on the other hand, is characterised by less maize flour.



Other studies (e.g. McKune et al. 2015) state that women are more at risk in droughts because their diet becomes less nutritious than that of men and its variety decreases.

**Figure 11: Change in the number of daily meals during and outside droughts (n=373)**



An important reason for selecting SAPLIP as *Good Practice* was WVK's reference to the fact that thanks to the interventions the dependence on food aid could be considerably reduced (cf. Wamalwa 2016). In the 2013 baseline study commissioned by WVK, almost half (49%) of all households stated that they were dependent on food aid during the drought. In the 2016 evaluation, this figure was only 16%, which indicates a considerable success (cf. Sudoi/Kiprono 2013, Wamukuru 2016). This 2017 study, on the other hand, concludes that food aid remains a coping strategy for 80% of SAPLIP households. For the control group, however, it is 9% less (n=126). Possible reasons could be the different number of cases in the surveys, a different framing of the question or also the survey period.

In addition, Table 4 shows that other Samburu drought coping strategies are the sale of their livestock (79%), the slaughter of young animals to protect the lactating mother (74%), the elimination of bleeding of animals for own consumption and the production of charcoal (48%) for sale. The latter in particular, however, contributes to ecological degradation. Another economically motivated strategy is lending money within the neighbourhood. In addition, the repeated livestock rustling between neighbouring communities in the region can also be seen in this context.

### 5.3 Project impacts

Instead of simply working with individuals, a large number of different existing and active groups were selected as project's target groups (see Chapter 3). From a gender perspective, it can be emphasised that women's groups were explicitly included. In total, the selection process of the 60 participating groups was described as community-driven, although the final decision was made by the local chiefs. Requirements for the groups were that they were registered as such, had an area available for a demonstration field and were not already involved in other NGO activities. However, the survey revealed that about one in five SAPLIP households were also involved in measures of another development project (e.g. the WV water dam project), which is why the effects cannot all be clearly attributed to SAPLIP. A further criterion was that a certain impact of their previous group activities was visible, so that

the groups did not need to be founded from scratch, and so could be considered to be reliable. Overall, targeting was therefore not only aimed at the poorest of the poor.

The above-mentioned importance of livestock farming as the most important source of income is greater among SAPLIP households (35%) than among the other households surveyed (25%). This can be attributed to the distribution of improved bulls and goats in the project. The introduction of the Galla goats is regarded as a success because they reproduce quickly and the offspring can be sold correspondingly faster (see Box 2).



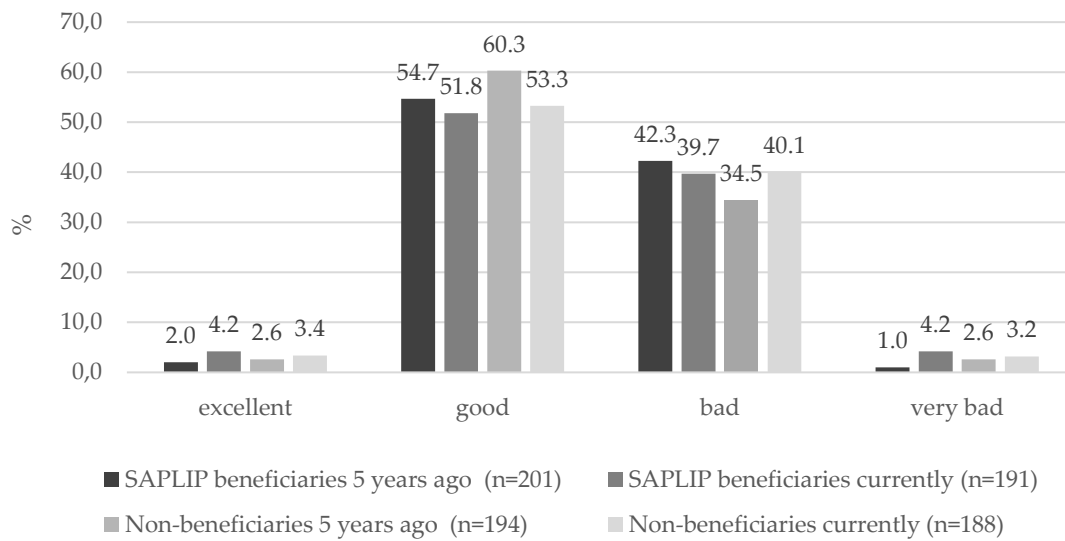
Figure 12: Drying corn belonging to SAPLIP participant David in front of his warehouse

However, the survey clearly shows that there are limits to the influence of the project, as the comparison of the income and nutrition situation of the household five years ago and today shows a deterioration for both groups. However, the figures for the nutritional situation of SAPLIP households showed less deterioration compared to the previous year, which could be attributed to increased resilience. Five years ago, only 2% rated the income situation as "excellent". At the time of the survey, this figure was already 4.2% (see Figure 14).



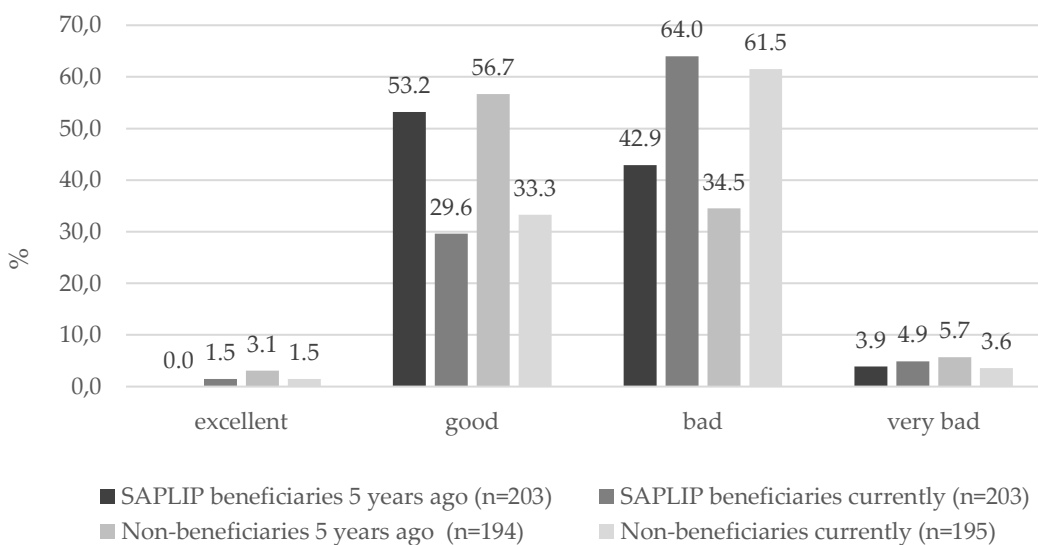
Figure 13: Greenhouse of a SAPLIP Group

**Figure 14: Comparison of the food situation between 2012 and 2017 (household level)**



However, there was a serious slump in income figures, as 53% of the households rated their household situation (SAPLIP) as "good" five years ago, whereas at present (2017) this is the case for only 30% of the households. At the same time, almost two out of three respondents in both survey groups stated that their income situation was "poor" at the time of the survey. This result contradicts the positive descriptions of the participants in the FGDs and in the interviews. In addition, the availability of feed for livestock was not surveyed, as this poses a serious challenge for all livestock farmers in the region, especially in drought episodes (as in the survey). Therefore, some of the former SAPLIP groups are also planning to start producing hay. The increase in household income due to arable sales is often used for education expenditure (see Box 3). Young girls in particular benefit from this as otherwise, especially in times of crisis, they are prematurely taken out of school and married off with above-average frequency. The families can then overcome financial bottlenecks thanks to the bride price.

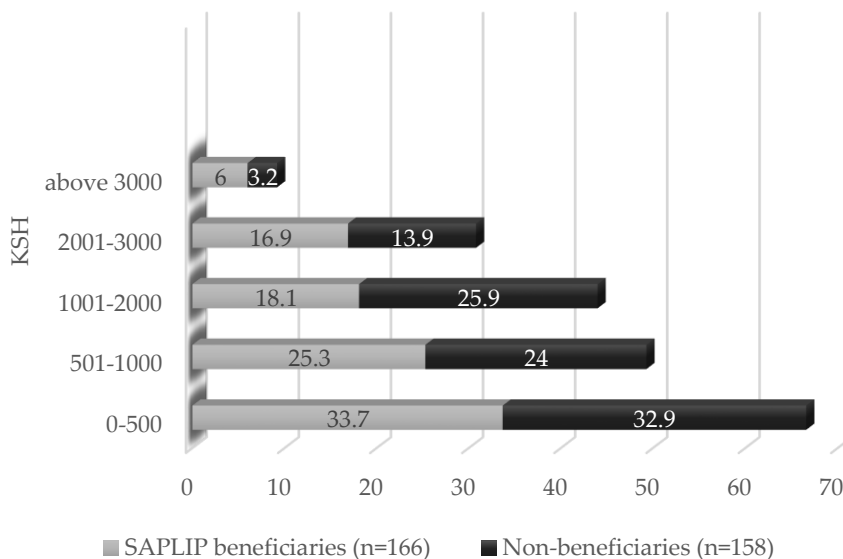
**Figure 15: Comparison of income situation between 2012 and 2017 (household level)**



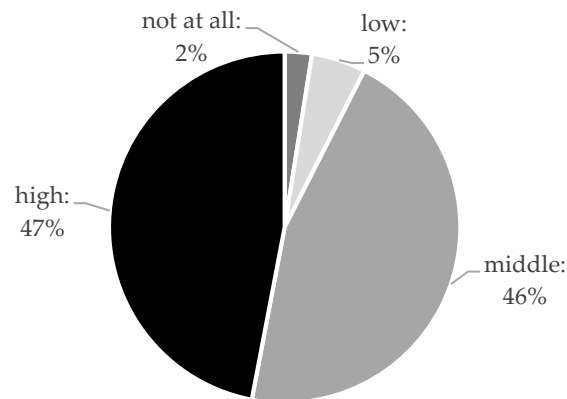
An economic improvement of the SAPLIP participants can be seen in the current weekly income (see Figure 16), because almost every fourth household (23%) earns more than 2.000 KSH (about €16). In the comparison group, on the other hand, it is only 17%. One reason for this could be that tomatoes grown by SAPLIP employees in greenhouses are sold at good prices in neighbouring cities. This revenues enriches the household income and is partly used to give loans to other group members.

The continued difficulty of the situation in general can also be seen in the fact that only 10% of those surveyed (n=201) stated that they had no seasonal problems because they had "enough food and money for education and medical treatment". However, only 4% of the control group share this view. The reason for this could also be that the SAPLIP participants have better basic prerequisites. In terms of the land area used, for example, they have an average of 4.1 acres of land, 0.4 more than the others.

**Figure 16: Comparison of weekly income between non-beneficiaries and SAPLIP beneficiaries in percent**



The final evaluation of SAPLIP commissioned by the project comes to the conclusion that the spread of poverty among the participants could be considerably reduced from 33% before the start of the project to 9.2% at the end of 2016 (cf. Wamukuru 2016). However, the fact that not all participants succeeded in this is illustrated by the finding that more than one in three households surveyed only have a weekly income of between 0 and 500 KSH (approx. €4) (see Figure 16). When classifying themselves into certain categories of prosperity, SAPLIP participants therefore predominantly locate themselves between "poor" and "middle".

**Figure 17: Improvement of living conditions through project participation (n=202)**

The participants' satisfaction with the effects of the project was extremely high. Almost all are either very satisfied ("high improvement", 47%) or satisfied ("middle improvement", 46%) with the extent to which their participation in SAPLIP improved their living conditions (see Figure 17). In concrete terms, the households involved cited the increased availability of food

### **Box 3: Thanks to irrigation and a tractor the harvest increases**

David lives alone in Logorate, but is married to four women with whom he has over 40 children. The Samburu County Government has donated a tractor with plough and harrow to SAPLIP to support the community in agriculture. David was given the task to drive the tractor, which is also on his property. As part of the project, he received a water pan with which he can irrigate his vegetables. With its sale he earned 10,000 KES (about €92) at the last harvest. He also grows corn and beans, of which he has already sold 30 bags. With the proceeds he paid the school fees for six of his children attending secondary schools. Since SAPLIP enabled him to significantly increase production, he has 20 more bags in the warehouse.

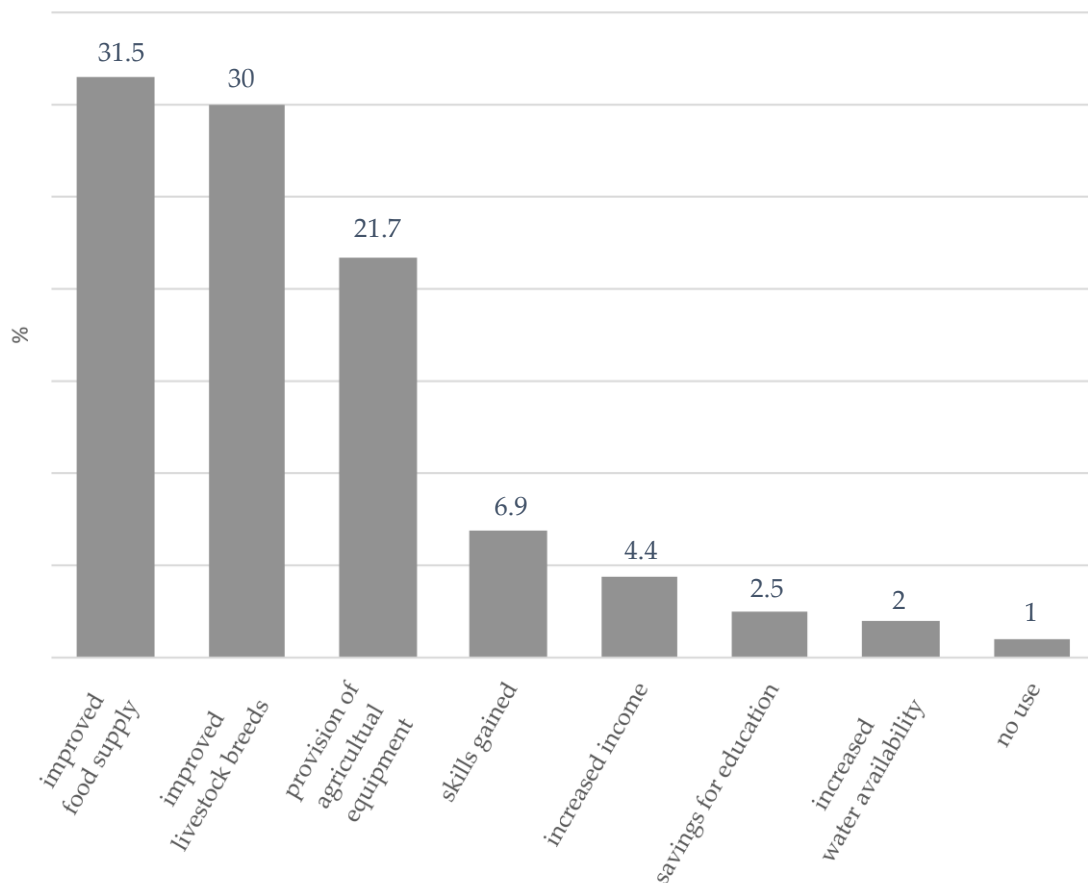
In his opinion, what was special about the project was that the village was actively involved and emphasis was placed not only on the transfer of knowledge, but also on the application of new agricultural skills. He is currently planning to start producing hay together with his group soon. David sums up with satisfaction that his life as a whole has improved enormously.

as one of the significant added benefits of SAPLIP. This is due to the increase in agricultural production (e.g. milk<sup>21</sup>) because of the distribution of improved animals and agricultural inputs (e.g. seeds, wheelbarrows). The last two aspects were also highlighted by the project participants as added value (see Figure 18). Accordingly, half of the respondents stated that agricultural activities (102/198) made the greatest contribution to improving their living conditions. Almost 10% reported that the water-related measures (collection and storage through the construction of water pans, the introduction of pumps and the construction of boreholes) had the decisive added value for them. The EU as project financier comes to the conclusion that within two years (2013-15) the average distance to the nearest water source

<sup>21</sup> The traditional dairy cow can give about half a litre of milk a day during the rainy season. With the new "improved breeds", on the other hand, the quantity increases three to fourfold.

has been reduced from 5 km to 3.4 km thanks to SAPLIP (cf. EU-DK 2016: 4). Improved access to water is of particular benefit to women, most of whom have to take care of water procurement.

**Figure 18: Concrete SAPLIP added value at household level (no predefined categories, multiple answers possible, n=203)**



In addition, respondents indicated that they had gained agricultural skills in particular and that their incomes had increased. Positive effects ("*middle*" to "*high*") could also be achieved in expanding the social network (96.6%), increasing self-confidence (91.5%), acquiring nutritional knowledge (82.7%), gaining business skills (81.1%) and improving health (73.7%).<sup>22</sup>

<sup>22</sup> The newly introduced vegetables, such as tomatoes, peas, carrots or cabbage, are sold on the one hand and consumed on the other, which contributes to better nutrition and thus health promotion through greater diversity.



A further result is increased environmental protection. Awareness has been raised of the significance of this issue, and concrete measures have been implemented. Examples of this are the FMNR mentioned at the beginning and the seasonally limited use of pastures (see Figure 19). Furthermore, the project propagated a largely organic form of agriculture, which among other things relies on non-hybrid seeds suitable for seed saving, thus making it possible to sow again, and recommends cow manure instead of chemical fertilisation.

More than half of all non-beneficiaries saw the greatest added value of SAPLIP from their external perspective in the improved livestock breeds provided. This could also be the main reason why 40% said they regretted not having participated in the project. The main reasons given were that they were either not selected (34.3%) or were not informed about SAPLIP (55%).

Only one out of nine project participants had negative experiences in the project context. However, these were only considered to be of "low" intensity. The topics addressed included family conflicts, and additional workload due to group activities, disappointment at the lack of effects and the early termination of the project.

With regard to the opportunities for participation, it becomes clear that these were rather limited with regard to the design of the project. Only 41.6% of respondents were able to decide for themselves which activity they wanted to participate in. The sovereignty over the decisions on this matter was mostly held by WVK (37.3%) or the other group members (22.3%).



Figure 19: Controlled grazing area with a fence which was constructed by a SAPLIP group



Figure 20: Growing vegetables for own consumption and sale

## 6. Conclusion

*“I do no longer only depend on livestock like I used to in the past.”*

This statement by a SAPLIP participant sums up the central added value of the project. This consists in diversifying livelihoods beyond livestock farming. Even though many residents had already cultivated crops before, a remarkable shift can be assumed overall from pasture farming to arable farming (maize and wheat cultivation, especially in the central Samburu). This additional activity has enabled a number of households to make the leap out of subsistence, diversify their sources of income and thus increase resilience to external shocks (such as droughts).

Various practices such as improved livestock breeds, easier access to water or the introduction of organic farming have led to a reduction of poverty. This is also reflected in partially improved food security, although seasonal fluctuations continue to exist. The introduction of new types of fruits and vegetables has encouraged a more balanced and varied diet. In addition, the introduction of a sustainable resource use approach and the reforestation technology FMNR made important contributions to environmental protection and raised awareness for the importance of the topic.

A lasting success of the project is the establishment of the Samburu County Breeding Association (SACOPA), which is composed of former members of SAPLIP groups and tries to preserve the success of the project. Specifically, SACOPA has set itself the goal of monitoring the crossbreeding of new animals. Together with other maize producers, a cooperative was also set up.

SAPLIP has not only improved the living conditions of participants at the household level (see Chapter 5.3), but the project activities also have positive long-term impacts for the neighbouring communities. Firstly, the improved water supply also makes it possible, for example, to irrigate the greenhouses. Secondly, all households were offered insemination with the high-quality new bulls for a small fee. Thirdly, new agricultural findings from the training measures were also passed on to the neighbours by the SAPLIP participants.

Overall, the results of the study cannot fully confirm the very positive evaluation by David Wamukuru (2016), as the present survey, for example, revealed that a significant proportion of both SAPLIP participants and non-participants continue to rely on food aid in times of need. The intensified cultivation of food is also associated with an additional workload.

In addition, it cannot always be assumed that livestock and crop farming coexist peacefully throughout, since land use conflicts can also arise, for example, in the event of land scarcity. A further land conflict results from the fact that despite the predominantly communal land use, fencing of areas occurs frequently, which particularly threatens livestock farming, which is dependent on the use of communal land areas (commons). In a follow-up project, it would therefore be advisable to incorporate a land issue component to ensure the legitimate land rights of all project stakeholders, including respect for nomadic rights of use. While a dialogue has been initiated to reduce conflicts over cattle rustling, such incidents continue to occur, particularly in drought periods.

As far as participation is concerned, at least in the course of the implementation of the project, serious efforts seem to have been made by the management to achieve intensive participation by the participants. For example, the SAPLIP groups themselves have determined how the inputs to be allocated (equipment, seeds, livestock etc.) should be compiled and distributed. As with many development cooperation (DC) projects, however,



exclusions occurred in the run-up to the selection of project participants. On the one hand, a prerequisite for participation was that the interested person was already organised in a group. On the other hand, some men complained that they could not be contacted when SAPLIP was announced because at that time they were far away grazing their animals.

Various points can be mentioned as success factors:

- (i.) Firstly, the project was demand-oriented, aimed at the central problems of the region and was well prepared with a baseline study.
- (ii.) Secondly, SAPLIP's work with existing groups and the involvement of a large number of local actors at different levels increased the chances of sustainable project impacts. Local government offices, for example, carried out the various training measures and are still available as contact persons.
- (iii.) Third, the integrated rural development approach was successfully applied, as SAPLIP was characterised by a high degree of multisectorality and sought to bring together the environmental, socio-economic and cultural dimensions. The fact that livestock is the central resource for pastoral wealth and that this has a long tradition was taken into account by SAPLIP by not trying, as happened in many places, to dissuade people from the supposedly pre-modern keeping of transhumance animals. Instead, new or improved breeds were made available in addition to the knowledge about improved crop farming techniques.

At the same time, however, it is noticeable that the political dimension has been rather neglected, although it is very important in view of the strong marginalisation of pastoral groups. For example, mobile livestock farming makes an important contribution to preserving the biodiversity of pastures and grasslands. A concrete approach would be to strengthen the participation of representatives of pastoral organisations in political decision-making in order to improve the rights of livestock farmers and to preserve traditional knowledge about livestock breeds. Such an approach must be applied locally, but it must also be applied to international animal husbandry processes, such as the Global Agenda of Action for Sustainable Livestock (GASL) initiative launched by the Food and Agriculture Organization (FAO) of the United Nations.

It would therefore have been advisable to promote collective organisational processes (including cooperatives) of pastoralists in order to counteract their long-standing exclusion and political marginalisation. In addition, state actors in particular should ensure that access rights are not curtailed in the construction of new irrigation systems or in the course of solar and wind energy projects, which could endanger the right to food of those affected. In this context, orientation towards the country guidelines developed by the Committee on World Food Security (CFS) (VGGT, Voluntary Guidelines on Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security) is recommended as a normative framework (cf. FAO 2012). The central adjustment mechanism of pastoral communities in droughts is their mobility, which should be secured at all costs. In order to take this mobility into account, a territorial approach should always be used in measures to increase resilience (cf. Gomasasca et al. 2016).

In a possible follow-up project, a stronger empowerment component could be integrated to strengthen the social position of women. Gender relations were indeed addressed in the project and included in the measures, for example through the integration of women's groups and the awarding of poultry to women. Nevertheless, this aspect could be further strengthened. In concrete terms, an educational component could be integrated that is mobile enough to reach pupils despite their seminomadic lifestyle. Investment in education in general

could make an important contribution to alleviating the tense security situation caused by cattle rustling. During some of the intensive household interviews, the wish was also expressed for a training measure that would focus on alternative sources of income.

Further recommendations can be derived from the present study, for example the improvement of value chains (VC) for agropastoral producers in order to strengthen their link to markets. An interesting approach could be direct marketing or the establishment of local farmers' markets. Cooperation with the United Nations World Food Programme (WFP), which offers training on VC and market access, would also be imaginable. The connection to a home grown school feeding programme as a very promising sales market for local products would also be conceivable. The processing and marketing of agricultural products, such as milk and honey, should also be encouraged. This could provide additional income options for women and young people in particular, as the most valuable herd animals are largely in the hands of men. In general, attention should be paid to a more precise differentiation within the target groups. Here different access to resources and markets is an important criterion (see Akilu/Catley 2009, Catley et al. 2013).

Other sources of income could offer an alternative to cattle rustling. In concrete terms, support could be offered, for example, in the form of training measures in trade (consumer goods, animal feed or cereals) and for local veterinary staff. In particular, the latter could be used to prevent animal diseases, *inter alia* by increasing vaccination. Since no seeds are produced in Samburu, the establishment of seed banks would also be advisable in order to strengthen farmers' autonomy and contribute to the preservation of biodiversity.

On the one hand, the enlargement of the flock can be used as a central strategy for pastoral poverty reduction. On the other hand, given the risk of overstocking that would be associated with overgrazing, an increase in value such as that achieved by SAPLIP through more productive livestock is certainly more promising, provided that it is possible to get the possibly more demanding animals through the droughts.

In general, context-specific integrated rural development approaches can be very successful and should be increasingly implemented. In the SAPLIP context, it would also be interesting to further expand irrigation and to set up an emergency fund for poorer livestock farmers (e.g. to be combined with self-help groups) in order to acquire new animals in drought situations and to expand the establishment of storage facilities for crops (including fodder). The latter in particular would be an important measure to strengthen the resilience of agropastoral households. This is of central importance, as the animals lose considerable value during the drought due to their poor physical condition and at the same time grain prices rise. Self-growing and stock-keeping are doubly important. On the one hand, less food has to be purchased. On the other hand, animals could be better cared for and higher sales prices could be achieved if more fodder was grown. In the future, the long-term success of the project innovations will only survive if the supply of the livestock with food and water can be ensured.

SAPLIP made a valuable contribution to climate protection by promoting organic farming and improved livestock, as otherwise the key strategy among pastoralists to reduce poverty is primarily to increase the size of their herds (see Akilu/Catley 2009). However, this results in the above-mentioned increasing pressure on resources such as water and pasture land, which are already limited and have become even scarcer due to the recurring droughts. Excess populations of livestock, especially cattle, are a dangerous driver of climate change, also as a result of methane emissions.

In order for livestock farming to make a better contribution to sustainable development, a holistic approach is needed that transcends sector boundaries by combining economic, ecological, health and nutritional measures (see Da Silva 2018). SAPLIP is a successful example of how the integration of crop and livestock farming, which has a long tradition elsewhere, can be implemented. The potential for synergy effects should also be emphasised if a high yield of biomass is promoted and nutrient cycles are optimally used, as the protein requirements of households are covered by milk products, eggs and poultry, among other things. Moreover, the sale of agricultural products on the market can generate additional income. This sustainable economy also reduces dependence on external inputs, which in turn saves money that can be used for other purposes such as nutrition, education or health.

Current projections predict that the number of food insecure people in Kenya will rise to 3.9 million by 2018, representing about 8% of the total population and linked to prolonged or increasing droughts (see Wakaya 2018). Against this background, the positive impact of DC interventions must be proven once again. The current drought forecasts in particular illustrate a country-wide high demand for multisectoral programs such as SAPLIP.

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# Appendix

## HOUSEHOLD QUESTIONNAIRE

No:  

### SAMBURU PASTORAL LIVELIHOOD IMPROVEMENT PROJECT (SAPLIP)

Date of Interview: \_\_\_\_\_ Interviewer: \_\_\_\_\_

County: SAMBURU CENTRAL Location: \_\_\_\_\_

Sub-Location: \_\_\_\_\_ Village: \_\_\_\_\_

**Introduction:** “My name is ..... and I am working for a German university which is conducting a survey about the living standard in your area. We are surveying some hundred households (HHs). We would like to get your permission to ask you some questions about the social and economic household situation. All information will be treated absolutely anonymously. The full confidentiality of this discussion is guaranteed. The questions usually take about 30 minutes.”

\*\*\*\*Ask each question and fill in each answer – always add 88 / DK = for ‘don’t know’ and 99 / RA = ‘refuse to answer’ wherever needed!!!\*\*\*\*

## PART A: DATA ON DEMOGRAPHICS AND EDUCATION

### 1. INTERVIEW PARTNER(S) & HOUSEHOLD PROFILES:

#### 1.1 Interviewed person(s)

Male:[ ] Female:[ ] Male & female together:[ ]  
 Married: yes [ ] no [ ] Polygamous yes [ ] no [ ]  
 Number of wives:....  
 Head of hh: male [ ] female [ ] child [ ]

1.2 Ethnic group: .....

1.3 Religion: Roman Catholic [ ] Protestant/other Christian [ ]  
 Muslim [ ] Traditional [ ]  
 No religion [ ] Other ..... [ ]

1.4 Age group of interview partner/s: male ..... female .....

1.5 Number of household (hh) members: male ..... female .....

1.6 Number of children below 3 years: .....

1.7 Number of children in school age 3-18 years: .....

1.8 Number of children in school age attending school: .....

1.9 Number of economically active hh members: ..... *means contributing to income*

1.10 Number of hh members below 18 years who are economically active: .....

1.11 Highest degree of school education of adult hh member: ..... (No school, drop out, nursery, primary, secondary, vocational training, college, university)

1.12 Number of elders over 55 years: .....

1.13 Number of hh members with disabilities: .....

2. Which of the following items does your hh have? tick all, mark DK=88, RA=99

No	Yes	Solar	No	Yes	More than one bedroom
No	Yes	Electricity	No	Yes	Pipe water
No	Yes	Motorbike	No	Yes	Plastered walls
No	Yes	TV	No	Yes	Cemented floor
No	Yes	Phone with airtime	No	Yes	Iron sheet roof

## PART B: ECONOMIC SITUATION

Enumerator, tell respondents: "Please allow us to ask some questions about the economic situation of the hh. Remember, this questionnaire will be treated anonymously!"

3. What are your major sources of household incomes? Read slowly twice

up to four statements: enter 1= most important source, 2=second important, 3=third important, 4=fourth important, mark DK=88, RA=99

Farming [ ] → How much land do you use? ..... acres

Livestock [ ] No. of cattle ..... No. of goats .....  
No. of chickens .... No. of donkeys ....

Firewood [ ] No. of sheep ..... No. of camels .....

Charcoal [ ]

Remittances [ ] Please explain! financial support from family abroad

Daily Labour [ ] e.g. fetching water

handicraft [ ] Other ..... [ ]

Fixed employment [ ] e.g. government, teacher, health worker, private

Public transfer [ ] e.g. elderly, cash/food for work, seed voucher

petty trade [ ]

Income per week ..... KSH
---------------------------

4.	<b>How do you assess your personal situation?</b> First read everything out and then ask if something is missing, tick all and write DK= 88 or RA= 99 if that is the reply				
		excellent	good	bad	very bad
4.1	<b>Food supply</b>				



4.2	Health care				
4.3	School (fees, is far, ...)				
4.4	Transport cost				
4.5	Natural disasters (e.g. droughts)				
4.6	Electricity supply(if applicable)				
4.7	Drinking water supply				
4.8	Toilets, waste water conditions				
4.9	Employment				
4.10	Condition of roads				
4.11	Agricultural inputs				
4.12	Happiness about life				
4.13	Security situation				
4.14	Other				

5. If you had additional money from any source, what would you spend it for to improve the situation of your household? e.g. desirable items or assets

Priority 1 \_\_\_\_\_

Priority 2 \_\_\_\_\_

Priority 3 \_\_\_\_\_

6. If you had the possibility to improve the situation of your community, what would be your priorities? Ask for the most urgent problems to be solved and possible solutions.

Priority 1 \_\_\_\_\_

Priority 2 \_\_\_\_\_

Priority 3 \_\_\_\_\_

7. How many meals per day? ..... in times of drought? .....

Why?

8. How was your food situation five years ago? Ask e.g. for dependency on relief aid during drought

excellent	good	bad	Very bad

Why?

9. (for those who replied bad or very bad in question 4 for food situation)

What are current coping strategies and dietary changes in your hh during hunger season and droughts?

	Yes	No
Children eat first		
Elderly eat less/remaining food		
Food relief		
Wildlife coaching		
Start charcoal burning		
Slaughtering animals to save lactating mother		
Selling livestock		
Collect wild berries		
Less or no milk consumption		
No bleeding of animals		
Less consumption of porridge		
Soft <i>ugali</i> instead of normal <i>ugali</i>		
Other .....		

10. How would you assess the current income situation of your hh?

excellent	good	bath	Very bath

11. How was the income situation of your household five years ago?

excellent	good	bath	Very bath

Why?

12. How would you assess your livelihood in general?

Low food quality, difficulties to access food, lack of access to school & medical treatment [ ]

Seasonal problems with food, education and medical treatment [ ]

Enough food and money for education and medical treatment [ ]

## PART C: PROJECT INVOLVEMENT

13. Does any of your household members participate in SAPLIP?

No [ ] Yes [ ] → male [ ] female [ ] both [ ]

→For how long have you been participating?..... ..

14. Does any of your hh members participate in another development project?

No [ ] Yes [ ] → male [ ] female [ ] both [ ]

**In which one?**

*If the involved person is available, please let him/her answer the following questions; otherwise the interviewed person can continue.*

**→ If no hh member participates in the SAPLIP project immediately jump to PART D! (question 24 on page 6)**

**BACKGROUND ON ACTIVITIES OF SAPLIP:**

Crop production, organic farming, livestock breeding, tree planting and multi-purpose trees, peace clubs, kitchen gardening, improved seeds, hermetic bags for storing, greenhouse farming, community disaster contingency plans

15.	Which are the activities or trainings of the SAPLIP project that you are involved in? <i>Ask for concrete title of the workshop! e.g. farming practices, livestock breeding, sustainable resource management</i>	male	female	both	When was the training? <i>Ask for month and year</i>	age <i>e.g. school child, adult or elder</i>
15.1	<b>Activity 1</b>					
15.2	<b>Activity 2</b>					
15.3	<b>Activity 3</b>					
15.4	<b>Activity 4</b>					
15.4	<b>Other..... ..</b>					

16. Could you choose which activity to be involved in? No [ ] Yes [ ]

17. **Who decided which activity to be involved in? Why?** e.g. your husband/wife or grandmother

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18. **Are there other activities offered by the SAPLIP** If yes, why did you not participate?

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19.1 **How do your hh members benefit from the SAPLIP project?**

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19.2 **What have you yourself achieved with the help of the SAPLIP project?** *Ask for examples.*

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20. **(If yes) Which activity in the SAPLIP project helped you most to improve your life?**  
*Ask for added value and to explain the benefits.*

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21. **Did participation in the SAPLIP project support your household members to improve...**

	Not at all	low	middle	high
<b>Self-confidence</b>				
<b>New social network/ friends</b>				

<b>Knowledge of agriculture</b>				
<b>Knowledge of nutrition</b>				
<b>Health</b>				
<b>Business skills</b>				
<b>Other</b>				
..				

22. **Did you experience any negative impact due to your participation in the SAPLIP project?** e.g. additional work burden, family conflict etc.

No  Yes  → *Please explain.*

Negative impacts	low	severe

*Notes for details:*

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23. **Since you became a member of the SAPLIP project, has your life improved?**

Not at all	low	middle	high

*Notes for details*

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**→ If you are speaking to a member of the SAPLIP project please thank the interview partner for their time and cooperation!!!**

**PART D: FOR THOSE WHO ARE NOT INVOLVED IN THE  
SAPLIP PROJECT**

**24. Why did you not participate in the SAPLIP project?**

- No time [ ]      No interest [ ]  
Not selected [ ]      Family refused [ ]  
Already engaged in other project [ ]      Not aware [ ]  
Other (*specify!*)

**25. Do you regret not having joined the project?**

- No [ ]      Yes [ ] → **Why?**

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**26. Did you notice others benefiting since they participated in the project?**

- No [ ]      Yes [ ] → **How?** *Please explain.*

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*Enumerator, please thank the interview partner for their time and cooperation!!!*

Additional comments (*e.g. ask if they are involved in water use association, women peace club or disaster preparedness committee*)

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Institute for Development and Peace (INEF)  
Lotharstr. 53 D - 47057 Duisburg  
Telephone +49 (203) 379 4420  
Fax +49 (203) 379 4425  
E-Mail: [inef-sek@inef.uni-due.de](mailto:inef-sek@inef.uni-due.de)  
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