



Country Pastoralism and Small-Scale Farming Profile – South Sudan



November 2022

ACKNOWLEDGEMENT

The Country Pastoralism and Small-Scale Farming Profile development exercise primary objective was to identify the current status of the governance landscape for pastoralist and small-scale farming in South Sudan.

The SLGA program supports the implementation of the AU Agenda on Land, in addition the program is part of the BMZ unique initiative **‘One World, No Hunger**. This programme will have immense contribution to the initiative under the Action Area “promoting responsible land use and improving access to land”. The SLGA aims to strengthen the human and institutional capacities required to realise sustainable land policies that recognise the rights of marginalised groups such as small scale farmers, pastoralists, youths and women across Africa. One of the main areas of action for SLGA is the establishment and coordination of the Network of Excellence on Land Governance in Africa (NELGA) under the leadership of the ALPC (African Land Policy Centre).

This study generated evidence to inform SLGA’s capacity to provide advisory support on such issues to decision makers and other stakeholders. This information will contribute to the body of literature available on the Land Governance Agenda of the AU to improve land governance in Africa.

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ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|--|
| AU | : | African Union |
| CAMP | : | Comprehensive Agriculture Master Plan |
| EAC | : | East African Community |
| FAO | : | Food and Agriculture Organisation |
| GDP | : | Gross Domestic Product |
| GIZ | : | Gesellschaft für Internationale Zusammenarbeit |
| GoSS | : | Government of South Sudan |
| IDDRSI | : | IGAD Drought Disaster Resilience and Sustainability |
| IDP | : | Internally Displaced Persons |
| IGAD | : | Inter Government Authority and Development |
| ILC | : | International Land Coalition |
| IMF | : | International Monetary Fund |
| OECD | : | Organisation for Economic Co-operation and Development |
| SSLA | : | South Sudan Land Alliance |
| SSP | : | South Sudanese Pound |
| UNDP | : | United Nations Development Programme |
| UNEP | : | United Nations Environment Programme |
| WB | : | World Bank |
| WFP | : | World Food Programme |

1. COUNTRY AND MACROECONOMY

General data

Following decades of civil war and the signing of the Comprehensive Peace Agreement with Sudan in 2005, South Sudan eventually attained its political independence in 2011, becoming the youngest African nation. It is a landlocked country located in the east-central region of Africa, with a total area size is 644,329 sq.km. Ethiopia borders it in the East, Kenya, Uganda and the Democratic Republic of Congo in the South, the Central African Republic in the West and Sudan in the north. According to estimates, its population was 12,778,250, its life expectancy was 58 years, and it comprises 65 ethnic groups and 70 languages (WB Group, 2016).

South Sudan is susceptible to climate change impacts, one of the highest in Africa. It witnesses a mixed pattern of semi-arid conditions and exceptionally heavy tropical rains in the south. It is covered in tropical forest, swamps and grassland, and is graced by the White Nile, that forms the Sudd swamp which covers anything from 30,000 - 130,000 sq.km during an extensive rainy season (Kaushik P., 2012). Temperatures range from 26°C - 38°C, and generally higher in the north.

Socio-economic indicators

South Sudan's economy is one of the most underdeveloped in the world (World Bank, 2022). It has an extensively rural population (79.8%), with a poverty rate of 82%. Only 14% of the 12 million South Sudanese live within 2 km of an all-season road. Up to 90% have no electricity access, while mobile networks are limited (20%) to major towns. In the recent past, the economy was hit hard by a series of adversities, including the global Covid-19 pandemic, locust invasions, falling oil prices and three consecutive years of extensive floods. However, after contracting by -6.6% in 2020, GDP growth rebounded to 5.3% in 2021, courtesy of higher oil prices. IMF estimates predicted the economic growth to hit 6.5% in 2022 before easing to 5.6% in 2023 (IMF, 2021).

Sources indicate that South Sudan's value for GDP per capita (current US\$) in 2015 was \$1,120. In 2018, its GDP amounted to 4.66 billion U.S. dollars (Aaron

O'Neill, 2022). Then there is rampant unemployment, with official total estimates (2021) putting it at 13.92%. Gross poverty rate at some point was 97.80% (2016). GDP constant prices are expected to reach 22972.00 million SSP by the end of 2022, and are projected to trend around 24259.00 million SSP in 2023.



Agriculture and livestock

South Sudan is endowed with unexploited natural and huge deposits of mineral resources. Over 90% of its vast fertile land is agriculturally productive, but with only 5% of the estimated 282,510 sq.km under cultivation. Livelihood is predominantly agro-pastoralism - up to 95% of South Sudanese depend on agriculture, pastoralism and fishing. Agriculture is the principal livelihood, and approximately 80% of South Sudanese are rural subsistence farmers (UNEP, 2018). They primarily grow cereal crops, courtesy of variable rainfall (WFP, 2014). Petroleum accounts for 98% of government revenue. It has large quantities of marble/dolomite, aluminium and iron ore, but remain hardly exploited because of the poor infrastructure and conflict. It has gold, but is largely mined informally and smuggled out of the country (Sophy Owour, 2019).

South Sudan's livestock population data is very limited. Even the estimates from a study commissioned by IGAD in 2009 to measure livestock GDP were considered inaccurate, although it was

recently estimated at 3 billion USD (Andy Catley, 2018). Cattle are the country's most economically important livestock, contributing 5.513 billion SSPs (1.869 billion US\$) in 2013, equivalent to 62% of the total gross value of livestock's contribution to the agricultural sector. A livestock population census done by FAO in 2015 estimated a total of 41,979,705 animals, with cattle alone constituting 40%. Approximately 74% of households own livestock – mostly cattle. Information on the contribution of livestock to foreign trade could not be readily established.

2. SMALL-SCALE FARMING

General characteristics

Small-scale farming, also known as small-scale agriculture, can be defined in broad terms as an alternative practice of farming with a low asset base and operating in less than 2 hectares of cropland (WB, 2003). Small-scale farming is considered a more sustainable agricultural method, with little land involved and often applied basic technologies. It operates under structural constraints, such as access to sub-optimal amounts of resources, technology and markets, and limited resource endowment compared to those of other farmers in the sector (Dixon et al., 2004).

A large majority (over 80%) of South Sudan's poor people derive their livelihood from agriculture through small-scale farming. It is a sub-sector considered crucial for rural communities in their quest for inclusive economic development. But while small-scale farming is the driver of the agricultural sector in South Sudan, it is characterised by unfavourable conditions, including lack of agricultural equipment, prohibitive costs on information, services and markets. The direct consequence reflects in the performance falling short of increased income expectations (Agrekon, 1998). Up to 95% of South Sudanese rely on farming, herding, or fishing; hence any disruption to this sector causes ripple effects, and has the potential to harm the country's overall economy (FAO, 2022).

Role and place of women

Suffice it to note outrightly that cultural norms in South Sudan discourage ownership of property by women, including land. However, they are the ones who provide the significant bulk of the labour force in food production at family farms, providing livelihood, and are key drivers in improving the quality of life of their families, communities and country. They are perennially at work all day, from tending to farms to provide food, collecting firewood and water, to managing other responsibilities such as children, the sick, the elderly and the disabled. While no data was explicitly found to small-scale farming, female contribution towards the total labour force in was 49.0% in 2020 (WB, 2020). But this leading role notwithstanding, it is unacceptable to note that in South Sudan, 28.5% and 40% of women of reproductive age suffer from acute malnutrition and are anemic respectively (FAO, 2022).

Role and place of youth

The United Nations, for statistical purposes, defines those persons between the ages of 15 and 24 as youth without prejudice to other definitions by Member States. But South Sudan places its youth age group between 18 – 35 years (Sudan Tribune, 2013). Constituting over 70%, the young people are the most vibrant age group, and have found themselves as dominant participants in the conflict, inevitably ending up as either perpetrators, victims or as Internally Displaced Person (IDP). Justifiably, this active role has earned them a place at the decision-making table. Usman Saeed (2015) argues that the youth is the heartbeat of society, whose views are fully sought and considered in a nation's political, social and economic development.

Various literatures reviewed reveal that South Sudanese youth are primarily employed by the rural-based agri-pastoral sub-sector, with the urban-based ones engaging more in non-farm business and a minor fraction having salaried jobs (Foust et al, 2015). Due to unfavourable conditions in farming, they are increasingly migrating to urban areas, driven by both pull and push factors, namely, hopes for better incomes, pursuing better education opportunities and the desire for a "modern" lifestyle on the one hand, and low-income levels and limited access to land on

the others respectively, among others. Official statistics put youth unemployment rate for 2021 at 20.97% (WB, 2022). However, this study encountered a scarcity of data on youth contribution to small-scale farming in specific terms, although it is stated as the main source of livelihood for the rural based. Indeed, minimal research has been conducted on rural youth livelihood strategies specific to South Sudan (Kristensen, 2013).

Assessment of available research on small-scale farming

It clearly emerges from the reviewed selected literature on small-scale farming in South Sudan, that despite its vast and fertile soils, the country is largely food insecure. It has been consistently blamed on the incapacitation caused the prolonged conflict, leading to disruption of agricultural value chains and displacement of people. The discrimination against women in the sector features in every research finding on agriculture and livelihood. The low productivity is in total contrast with the potential capacity, where one researcher argues that mere increasing the total land cultivated by only 6% (from 4-5%) would more than double the country's value of total agriculture production, calling for prioritisation infrastructure improvements (Sam Bramlett, 2018). Farmers in South Sudan still rely heavily on rainfed crop production, meaning erratic or delayed rains result in poor harvests, while heavy rains and flooding can waterlog fields and destroy stocks. Due to lack of quality seeds, most farmers use seeds saved from a previous season that may not be well preserved (FAO, 2022).

Public policy in support of small-scale farming

South Sudan has an array of legal and regulatory instruments that govern agriculture and climate issues management. These instruments are in the form of laws, policies and national strategic plans. For purposes of this profile, a selection of relevant instruments is hereby presented, thus: (1) The Constitution of the Republic of South Sudan, which is the supreme legal instrument of the land under which rights of every citizen are enshrined. The constitution stipulates that the government will "protect and ensure the sustainable management and

utilisation of natural resources including land, water, petroleum, minerals, fauna and flora for the benefit of the people;" (2) Comprehensive Agriculture Master Plan (CAMP), which is an investment plan covering five subsectors (crops, livestock, fishery, forestry and institutional development) for effective and efficient agricultural development by all stakeholders engaged in agricultural development in South Sudan; (3) Land Act 2009, which regulates land tenure and protects rights about land in South Sudan. It classifies land as public, community, or private land, and provides with respect to the registration of rights on land. The Act pays particular attention to (protection of) customary land rights; (4) National Environmental Policy (2012) which addresses climate change issues and provides policy guidance on how to tackle those issues; and, (5) Disaster Management Policy, whose objective is to build capacity for disaster risks reduction in South Sudan.

Others are: (6) Agricultural Sector Policy Framework (2012-2017), formulated to increase production and productivity on a sustainable basis by addressing key constraints in food and agricultural production, marketing, distribution and value addition. (7) South Sudan National Policy on Food Security (2012), which recognises threats to food security as natural disasters such as droughts, floods, pests and diseases; (8) National Seeds Policy which seeks to promote sustainable development, improved food security and poverty reduction and biodiversity, among others; (9) National Agriculture and Livestock Policy, which aims to "to transform agriculture and livestock from traditional/subsistence systems to achieve food security, wealth creation and national economic growth; (9) Fisheries Policy (2012 – 2017), whose objective on climate change is to respond appropriately to climate change and natural disasters; (10) The South Sudan Forestry Policy (2013), which recognises the critical role played by forests in providing critical environmental services, water catchment and in mitigating climate change and National Irrigation; (11) Drainage Policy and Strategy (NDPS) which supports, among other interventions, establishment of water users association where women are actively engaged in promotion of water harvesting techniques in arid and semi-arid areas for boosting irrigation agriculture (World Vision, South Sudan, 2021). South Sudan only needs the resources

and the resolve to implement these plans and policies to spike its development agenda.

Access to land and land governance

Land rights and land access are critical for development and are strategic for any government's strategy to fight poverty. In South Sudan, land is the most valued property and productive resource form. It is a wealth-creating and livelihood-sustaining asset. There are three key agencies in land governance: the Ministry of Housing, Physical Planning and Environment, which is the lead agency of the Government of Southern Sudan; the South Sudan Land Commission, responsible for arbitration of land claims, and coordination of land policies; and South Sudan Land Alliance (SSLA) whose role is the advocacy of access and ownership, particularly the marginalised. Estimates indicate that 80-90% of civil cases in the formal system were constituted by land and land-related disputes (Deng, 2017).

There are three types of land tenure systems in South Sudan: Public Land, Community Land and Private Land. Land governance is still predominantly customary, with traditional courts being the most accessible institutions of dispute resolution in rural areas (Bior, et, al., 2006). Women in South Sudan suffer inequality of access to productive assets, including land, and without secure rights to land, their ability and incentive to participate in income-expanding economic activities is impaired. Women don't own land independently of their husbands or male relatives. The National Women's Land Rights Agenda for South Sudan attempts to address gender and land governance challenges.

Land governance in the country's post-independence period is heavily wanting. There is an overlap, where the Land Act gives land administration authority in rural areas to community leaders (GoSS, 2009), yet the Local Government Act acknowledges chiefs as government officials and traditional leaders. There is limited legal infrastructure and protection for effective land administration, as the state government often unrecognised rights and ownership (Audrey Foo, 2019). Most of the land is unregistered yet the law provides that all unregistered land vests in the government (IGAD, 2022). Land authorities tasked with a reformation of land policies are non-existent or

ineffective, with some states in South Sudan not having an operational county land authority (Audrey Foo, 2019).

Land conflicts in South Sudan have impeded the development of the agricultural sector and directly impacted local and national food security. It commonly destroys crops, displaces farmers or dispossesses their lands. That notwithstanding, peaceful co-existence has been noted between pastoralists and sedentary farmers with mutually beneficial economic exchanges. Transhumance is a chance for the two parties to enjoy natural resources (African Union, 2010).

Climate change and small-scale farming

Climate change has increased the frequency of severe droughts, floods, storms and cyclones in various parts of the world. South Sudan is one of Africa's countries prone to climate change impacts. This study has found dependable information (Climate Change Vulnerability Index 2017), demonstrating that South Sudan ranks amongst the five worst performing in the world alongside the Democratic Republic of Congo, Central African Republic, Haiti and Liberia. Seasonal patterns have become erratic and rain-fed agricultural areas have decreased significantly. Projections indicate that in South Sudan, global warming will be felt over two times more than the global average (Jean-Luc Stalon, 2017). Climate change manifests through temperature and rainfall variability, which impact farmers - small-scale or not, reduced crop due to damages, loss of pasture, water scarcities, flooding and resource conflicts, among others. Consequently, these impacts come in the forms of frequent occurrences of severe meteorological droughts and flash floods.

South Sudanese (95%) depend on climate-sensitive sectors, namely, agriculture, forestry resources and fisheries for their livelihoods. Small-scale farmers are the most affected by climate change, and estimates are that small farms produce 80% of the food consumed in the world. The repercussions of negative climate change are, therefore, likely to cause destabilisation in food security, cause suffering to fishing communities, aggravate deforestation and fuel resource-based conflicts between the pastoralists and the farming communities over access to grazing land. Farmers'

perceptions resonate with scientific considerations, such as temperatures, variability in growing seasons and extreme climatic changes, which has defined their adaptation mechanism and process about climate change. Small-scale farmers are known to use ordinary but scientific mechanisms in the face of climate change, and these include conservation tillage to increase the amount of plant material returned to the ground, crop rotation to manages soil nutrients and improve soil quality, appropriate tools that don't cause erosion, manure to better their yields, and appropriate species for pasture management, among others (Brian Muchiri, 2019). South Sudan has a National Adaptation Plan that aims to strategise climate change adaptation and reduce community vulnerability and variability to climate change. It guides the implementation and policy from a national level to the communities and households.

International or regional cooperation in support of small-scale farming

In a recent international dialogue of experts, co-hosted by renowned SDSN, Foresight4Food, IFAD, and APRA to discuss the future of small-scale farming across continental regions (Foresight4Food, 2020), there was a resounding voice of international support. The dialogue explored and compared the dynamics of small-scale agriculture and food system change across Asia, Latin America, Africa and OECD country. Among the many resolutions, the commitment was made for farmers to be empowered to sustain food security, reduce poverty and unemployment, given that small-scale farms feed up to 85% of Africa's rural.

The International Land Coalition (ILC) has observed that small-scale farming, or family farming, faces increasing challenges, and is marginalised in favour of large-scale commercial farming which provides higher returns for private investors, even when the former continues to produce the majority of the world's food. Through its Family Farming process ILC has, since 2017, committed itself to supporting family farming system by improving the participation of farmers' organisations in land reform processes, ensuring fair and responsible investments for better living conditions for family farmers, and position family farming on the political agenda at the national, regional, and continental levels (ILC, 2022).

There are coordinated studies that suggest that small-scale farming is the future of the world. This is corroborated by a recent report, published by the Commission on Trade and Development, which stated that 'small-scale farming is the answer to feeding the World'. On the strength of this, FAO contends that agricultural production must increase by 60 per cent globally to meet the food demands required to feed the 9.2 billion people who inhabit the planet in 2050. To guarantee this, FAO proposes support to farmers, especially small rural and hinterland farmers, to have access to infrastructure, credit and functioning markets. It is accessibility by small farmers to science and technology, innovation and knowledge, which are essential for the development of the agricultural sector. The EU is also geared towards strengthening sustainable initiatives that focus on smallholder agriculture and rural livelihoods.

3. PASTORALISM

General characteristics

A broad definition of pastoralism entails keeping domesticated livestock and their movement onto large vegetated outdoor lands for grazing and water, attended to by nomadic people. Pastoralism is a way of life-based primarily on raising livestock, particularly small ruminants, cattle and camels. South Sudan stands out as one of the countries with wide pastoralism culture, which thrives on its vast arid and semi-arid nature. Africa is home to about 70% of the world's pastoralists, defining pastoral culture as a core part of Africa's culture and heritage. (AU, 2013).

Pastoralism defines the livelihood and socio-economic life of many ethnic groups in South Sudan, and is central to its economy. It is also very common practice for these communities to combine pastoralism with small-scale, rainfed cultivation of staple crops amidst the migratory character in pursuit of pasture and water. The livestock sector is strong and instrumental, a major foreign income earner, critical in its transport system, and is a large employer. The sector employs directly or indirectly about 40% of the country's population (Trevor R.W., 2016). The value of exports from the animal sector in South Sudan has performed slightly below half of all agricultural exports, and below 30% of non-oil

exports. When not disrupted by conflict, raids and property looting (2013,2016), the integration of crops and livestock has provided a lifeline for the people of South Sudan.

Amidst limited reliable statistics on the livestock population in the country, FAO's total estimates of 41,979,705 (2015) are approximately four times the number of human inhabitants. Documentary evidence (Behnke and Osman, 2012) suggests that a livestock census that involved an actual (aerial) count of livestock was last conducted in Sudan (North and South) in 1975-1977. Accordingly, livestock population estimates have since been based on a constant rate herd growth model, and incremental annual increases in population.

A typical rural household in South Sudan will hold its financial capital as livestock. Poorer households aim to build their herds, as this is their key and economically logical strategy for building their financial capital and fighting against poverty. For example, milk becomes critical when crop foods are scarce, and meat and eggs will provide direct or indirect income throughout the year. They are a buffer against low crop yields and crop failure. Livestock is also a traditional social support system for paying bride price, and instrumental in reciprocal assistance in times of hardship (Idris, 2018).

Role and place of women in pastoralism

There are practices traditionally characteristic of pastoralist societies, one of which is the responsibilities allocated to women and girls. In typical terms, this gender is confined to specific chores as dictated by cultural norms. They are responsible for bearing and raising children, food production and the full range of domestic tasks (Care, South Sudan, 2016). Typically, women and girls are divided into farming, food preparation, cleaning, childcare, and water and firewood collection. Their official engagement with livestock is where they take responsibility for looking after small ruminants, that is, sheep, goats and chickens. Pastoralist women do not own capital assets, such as land and cattle, have very limited say on matters finance, and don't participate in key decision-making.

Statistics on women in pastoralism is conspicuously lacking from the many documents consulted for this

study. On the contrary, pastoral men in South Sudan don't only exclusively own all the livestock, but remain with the enviable rights to sell them. They may also be charged with management and control of the production, distribution, disposal of livestock products in the household (Gebreyes, et.al, 2016).

Role and place of youth in pastoralism

Youth constitute 70% of the South Sudanese population, and are the principal caretakers of livestock, with the country boasting as one of the largest livestock-herding populations in Africa. Youth are active participants in the cattle camps, a place where South Sudan's nomads migrate to find pasture. The cattle camps are not only a cultural tradition, but provide a lifeline for millions in the world's youngest country, enabling them to trade and store their wealth (Stephanie Glinski, 2018). Suffice to note that, like in small-scale above, efforts to find especially statistical literature specific to youth and pastoralism in South Sudan was unsuccessful, implying minimal attention has been paid to it. In general terms, however, youth unemployment is high as there is insufficient demand for labour. The Government of South Sudan is accused of not addressing the socio-economic and political developments regarding youth, and has failed to include them in its agenda. Deliberate youth interventions would be instrumental in driving a disconnect from the sentiments of armed struggle (Denis M. A, Wani, 2018).

Assessment of available research on pastoralism

This profiling has observed from multiple literatures reviewed that although livestock is a vast resource and an important social and economic asset in South Sudan, there is minimal information on pastoralism specific to South Sudan. It is evident from the research that cattle are central in the lives of the South Sudanese, not only as a main source of livelihoods but also in terms of cultural identity and social status. That the prolonged conflict has been catastrophic to the livestock subsector, causing abnormal immigrations and heightening tensions between herders and settled farmers, in addition to increased armed raids that take large numbers of animals (Hannah W., 2018). Studies reveal the lack of data about the contribution and impact of livestock on food security and the local and

international markets, hence unable to exploit the economic potential of the livestock sector. There is a convergence by researchers that pastures and water sources are shrinking and getting degraded due to climate change and encroachment on pastoralist land, and that South Sudanese pastoralists have used transhumance to cope with scarce resources and to adapt to these climatic conditions. It is a unanimous finding that women are marginalised

and discriminated against, do not own cattle and are usually excluded from decision-making processes regarding cattle. From the international angle, support towards pastoralist livelihoods and stronger resilience to shocks is being enhanced, intact with a pastoralist Working Group established in Juba, a platform to share information and experience (Oxfam, 2018).

Public policy in support of pastoralism

Public policy supporting pastoralism in South Sudan has been well taken care of, as most of the legal and regulatory instruments that govern small-scale farming also incorporate pastoralism. A few selected instruments suffice: (1) The Constitution of the Republic of South Sudan is the supreme legal instrument of the land, and among others, protects and ensure the sustainable management and utilisation of natural resources including land and water; (2) Comprehensive Agriculture Master Plan, an investment plan covering livestock subsector, among others for effective and efficient agricultural development; (3) Land Act 2009 regulates land tenure and protects rights about land in South Sudan; (4) National Environmental Policy (2012) addresses climate change issues and provides policy guidance on how to tackle those issues; and, (5) Disaster Management Policy, whose objective is to build capacity for disaster risks reduction in South Sudan; and (6) National Agriculture and Livestock Policy, which aims to transform agriculture and livestock from traditional or subsistence systems to achieve food security, wealth creation and national economic growth.

Pastoralism and rangeland management

By definition, rangelands refer to areas, which by reason of low and erratic precipitation, rough topography, fragile soils and poor drainage, are

unsuitable for cropping but are a source of forage for free ranging wild and domestic animals. In IGAD region, rangelands are the livestock industry's backbone, providing various economic opportunities along the value chain, contributing significantly to the country's national GDP (IGAD, 2015). Communities involved also grow crops in a closely linked agro-pastoral production system. The rangelands have been managed using natural traditional-based wisdom, including planned herding and controlled burning. This cultured rhythm of seasonal mobility perfected over generations, has sustained a large number of animals in the South Sudan rangelands.

The literature reviewed was able to reveal several potential threats to rangelands, and these included, among others, overgrazing combined with poor land use practices; human population demands for food commodities and energy woody vegetation overexploitation; soil erosion and desertification; climate change due to temperature rise; and invasive plants that interfere with the growth of desirable plants, among several others. Also, some factors will inhibit better rangeland governance, two of which are changes in management and changes in the use pastures. Rangeland management and planning is a participatory process that starts with the communities themselves. Actors include national government ministries, local governments, non-governmental organisations, the civil society, traditional chiefs, community leaders, and the pastoralists themselves, all intact with their respective but sometimes overlapping functions. The rangelands are also governed by legislative and institutional frameworks, including National Agriculture and Livestock Policy.

Climate Change and pastoralism

Agriculture constitutes the lifeline of South Sudan. It follows that in times of climate adversity, there will be food scarcity and hunger, the fish volumes will decline and forest resources base is threatened. There is loss of pasture, there are water scarcities, and resource-based conflicts between the pastoralists and the farming communities over access to grazing land (UNDP, 2017). Once these factors come into play, they get to interact with and inevitably compound the effects of existing life problems and challenges facing people in the drylands, such as poverty, insecure property rights, the HIV pandemic, population

increase, state fragility and armed conflict and environmental degradation (Magda Nassef, et. al., 2009)

Studies have revealed that pastoralism functions better within the context of wide rainfall variability and unpredictability compared to other natural resource-based land uses in the drylands. Its advantage is that it has mobility and hence is more susceptible to climate changes, such as crop agriculture, intensive livestock production and tourism (Aaheim and Aasen, 2008). Pastoralism is important because climatic conditions are becoming more variable and other livelihoods are likely to fail (Kirkbride and Grahn, 2008). However, the recent three-year-long flooding has devastated South Sudan's response to climate change, where livestock was lost to water and diseases, and meat and milk were unavailable to fill the gaps in food shortage. The cumulative impact of the loss of cattle deaths and floods heavily impacted on traditional livelihoods (Susan Martinez, 2021).

What is the perception of pastoralists on climate change? Pastoralists, like farmers, have a natural understanding of their environment, and the South Sudanese are no exception. Study reports reviewed noted that pastoralists' perceptions of climate change were in close harmony with the climate trends for generations. Pastoralists know the area, terrain, ethnic groups, local tribes, tribal cultures, ecosystems, climate, vegetation, existence of risks and diseases, and water resources (Ogal Sabil, 2015). The pastoralists' understanding, appreciation and interpretation of the changes occurring in their environment and how they respond to it is the bedrock of their survival. In one study, for example, respondents were able to identify an increase in temperature and in the frequency of droughts and high winds, meaning are aware of their situations, and have response mechanisms (Deng, 2017).

International or regional cooperation in support of pastoralism

Department of Rural Economy and Agriculture at the African Union (AU) produced a detailed publication - Policy framework for Pastoralism in Africa, which is dubbed the AU's flagship policy document on

pastoralism. It is understood that the Framework is the first continent-wide policy initiative designed to secure, protect and improve African pastoralists' lives, livelihoods and rights. In addition, the AU has also formulated the Livestock Development Strategy for Africa 2015 – 2035, although its focus is commercialising livestock production and modernising the traditional livestock production system practiced by pastoralists (African Union, 2013).

Pastoralism-related policies developed by AU, IGAD and EAC aim to address challenges to pastoralism as a production and livelihoods system. They seek to promote and strengthen pastoralism by addressing the governance of land and natural resources, livestock disease control and trade, disaster risk management, climate change, and conflicts (AU 2017). There is the IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI) for managing disasters, and the EAC Livestock Policy mainly underpins modernisation. The policies recognise pastoralism and commit governments to address challenges that undermine pastoral livelihoods, and to develop pastoral areas. They provide entry points for engaging governments on development planning and action in pastoral areas.

These continental and regional policies are meant to catalyse the formulation and implementation of pro-pastoralist policies and laws in member countries. The Policy Framework for Pastoralism in Africa proposes steps governments need to take and even suggests the national-level arrangements needed to ensure that the process is well informed and draws on the knowledge and experiences of pastoralist groups, communities and their institutions. The policies also emphasise the need for civil society engagement in these processes. Meanwhile, the European Commission supports pastoralism as one of the most efficient and ecologically friendly ways to draw value from arid and semi-arid land. The World Bank (2022) approved financing of 375 million US\$ to support pastoral production systems in the Sahel through the implementation of the second Regional Sahel Pastoralism Support Project, known by its French acronym PRAPS-2 (Projet regional d'appui au pastoralisme au Sahel-Phase 2).

4. KEY CONCLUSIONS AND RECOMMENDATIONS

This profile report has been prepared to equip Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH with brief information on the state of small-scale farming and pastoralism in South Sudan. The profile has provided a broad context of the strategic importance of agro-pastoralism in the country from livelihoods perspectives. It highlights the contribution of smallholder farmers and livestock producers make to domestic, national and regional food security. It has stated that agro-pastoralism is an environmentally and socially sustainable livelihood system that must be jealously guarded, supported and developed.

It has underscored that smallholder livestock producers contribute significantly to the food security of the population, providing local markets with animal-sourced food produced in a sustainable way. It recognised that agriculture and livestock are strong complementarities in the livelihood of rural South Sudan, and are fundamental for food security. Integrated small-scale farms are by definition less dependent on external inputs and more resilient to climate variability. The paper has argued that in changing environments, small-scale livestock farming and mobility through pastoralism is a mitigating factor to climate change threats (Policy Brief, VSF). The study further appreciates the critical role of customary institutions, that possess a deep understanding of the highly variable and unpredictable climate.

The volumes of literature reviewed have demonstrated the significant economic contribution small-scale farmers and pastoralists to the national economic development. The few recommendations below will suffice for this profile:

- a) South Sudan is not short of laws, policies and plans strategic to the national advancement of the agricultural sector. Government should attempt a deliberate action to implement legislation that will upscale highly productive small-scale farming and better administered pastoralism.
- b) Small-scale farmers need to be protected in regard to their land rights, where the law provides that all unregistered land vests in the government. Women land and property rights should be top on the agenda of government.
- c) International and regional agencies intensify the efforts towards enhancement projects for small-scale farmers, and improved access to information, science and technology, innovation and knowledge, which are essential for the development of the agricultural sector.
- d) The conflict laden country requires a stern progressive community management strategy to stamp out the common disorders affecting grazing communities, especially cattle raiding inter-ethnic skirmishes in the rangelands.

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