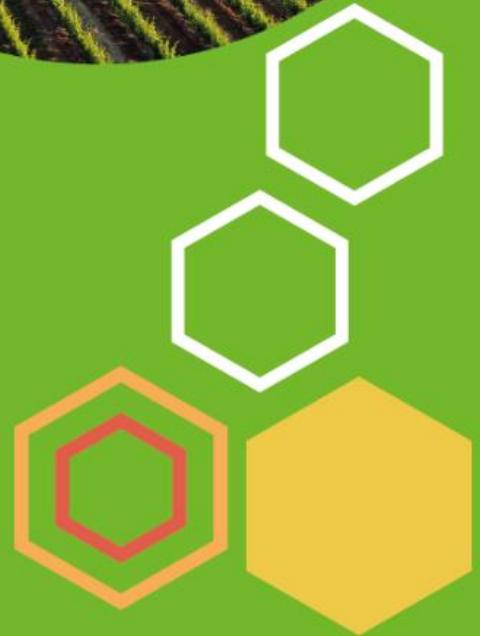




Country Pastoralism and Small-Scale Farming Profile – South Africa



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 Africa.

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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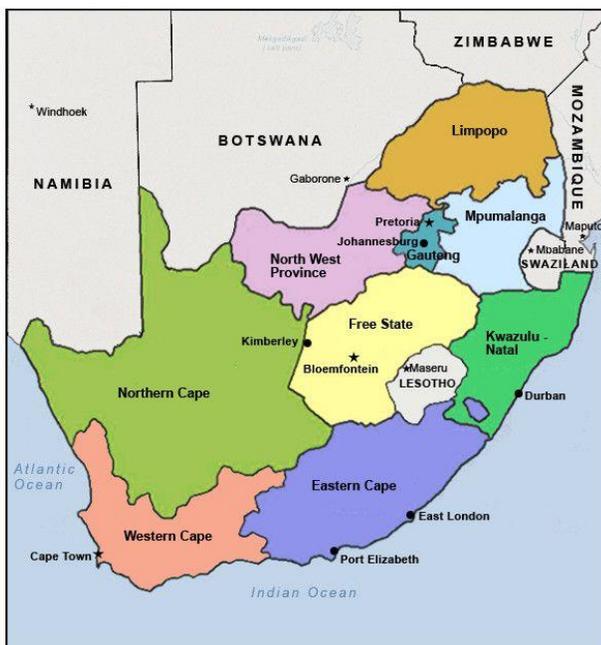
ACRONYMS AND ABBREVIATIONS

| | |
|-----------------|--|
| AD | : Anno Domini |
| ALPC | : African Land Policy Centre |
| AU | : African Union |
| BMZ | : Federal Ministry of Economic Cooperation and Development (Germany) |
| CAADP | : Comprehensive Africa Agriculture Development Programme |
| CASP | : Comprehensive Agricultural Support Program |
| FANRPAN | : Food, Agriculture and Natural Resources Policy Analysis Network |
| FAO | : Food and Agriculture Organisation |
| GDI | : Gender Development Index |
| GDP | : Gross Domestic Product |
| GIZ | : Deutsche Gesellschaft für Internationale Zusammenarbeit |
| HIV | : Human Immuno Virus |
| NAPAs | : National Adaptation Programmes of Action |
| NELGA | : Network of Excellence on Land Governance in Africa |
| NEPAD | : New Partnership for Africa's Development |
| NPC | : National Planning Commission |
| PKH | : Pastoralist Knowledge Hub |
| RAP | : Regional Agricultural Policy |
| SADC | : Southern African Development Community |
| SDGs | : Sustainable Development Goals |
| SLGA | : Strengthening Advisory Capacities for Land |
| Stats SA | : Statistics South Africa |
| UNDP | : United Nations Development Programme |
| WEF | : World Economic Forum |
| YARD | : Youth in Agriculture and Rural Development |

1. COUNTRY AND MACROECONOMY

General Data

South Africa occupies the Southern tip of Africa, stretching to about 3000km, with latitude from 22°S to 35°S and longitude 17° E to 33° E. The country covers a surface area of 1 219 602km². It has a Subtropical location with oceans on three sides of the country, an interior plateau and warm temperature conditions. South Africa is a dry country with an average annual rainfall of approximately 464mm. The western part of the country experiences winter rainfall, and the rest of the country experiences summer rainfall. The central city in the interior plateau is Johannesburg and is at an altitude of 1696m, with an average of temperatures below 30° in summer, whereas in winter, temperatures can drop to as low as 0°, especially during the night. The south coastal regions are relatively warm in winter, contrasting with the country's eastern and western regions (South Africa Government, 2022).



According to Statistics South Africa (Stats SA) in 2021 the population of South Africa was approximately 60.14 million people; approximately 51.1% (33.07million) female and 48.9% (29.39million) male. HIV prevalence rate is approximately 13.7% of the South African population with a total estimated figure of 18.2 million people in 2021 (South Africa Government, 2022). Life expectancy at birth is 59.3years for males and 64.6years for females.

Socio-economic indicators

In constant US\$, the GDP of South Africa is \$419.9 billion and the GDP Per Capita is US\$ 6994. 21 (Amra et al., 2022). The unemployment rate lies at 33.9% and the poverty rate at 56.9 %, but rural people and small-scale farmers constitute the poorest of the poor.

Agriculture and Livestock

The agricultural area was approximately 96.34million hectares in 2020, accounting for 74% of the country's total land area. The main agricultural products are major cereal grains (maize, wheat and rice), oil seeds, deciduous and Subtropical fruits, sugar, citrus, wine, and vegetables. Livestock numbers and composition consist of chickens (179million), sheep (21.6million), cattle (12.3million), and goats (5.2million). Agriculture's contribution to value added is 2.4%. Agriculture contributes 5% to national employment, generating 42% of the country's exports.

2. SMALL SCALE FARMING

General Characteristics

Small-scale farms in South Africa range between 1 and 5 hectares occupying an estimated 300 000 units of the total agricultural land use in the country (Mathinya, Franke and Gille, 2022). Small-scale farmers are said to be primarily seeking to augment food security in agriculture on small farms (Elleboudt, 2012) and selling excess through

informal trade (BFAP, 2020; Stats SA, 2020; Rusere et al., 2019; Zantsi et al., 2019; Thamaga-Chitja & Morojele, 2014). Although small-scale farmers outnumber large-scale farmers, they are regarded as insignificant contributors to national food production. This oddity is not unique to South Africa. It remains a common read in both scholarly and policy reports that small-scale farmers' productivity (production per unit of land) lags behind that of their large-scale counterparts (Cervantes-Godoy, 2015) although they remain key players in local food systems. The government of South Africa has recently promoted the significance of small-scale farmers as drivers of food security (Matechera and Scholes, 2022).

Role and place of women

Agriculture can be an important engine of growth and poverty reduction, especially if benefits reach women. Aggregate data show that women comprise about 43 per cent of the agricultural labour force globally and in developing countries. But the sector is underperforming in many countries in part because women, who are often a crucial resource in agriculture and the rural economy, face constraints that reduce their productivity. However, literature on women's situation in managing resources in small-scale agriculture in South Africa paints a contrasting picture regarding their constraints and opportunities for participation.

Results of a survey on the role of women in small-scale agriculture covering six countries in sub-Saharan Africa indicated that South Africa had the highest proportion of women's involvement in decision-making among farming households (Haug et al., 2021). Women dominated sole decisions regarding agricultural production. Such decisions included what crop varieties to grow (women – 43%; men – 26%); what type of pasture/fodder to grow for livestock feed (women – 10%; men – 9%); and what type/ breed of livestock to raise (women – 12%; men – 10%). Similar trends in female dominance were also observed in decisions related to using credit; use of income; joining farmers'

organisations/ groups; and participation in extension and training programmes.

Regarding the importance of female labour in small-scale farming, socio-economic research findings point to a higher workload being borne by women compared to men in South Africa. For example, the survey's results cited above exhibited a women-to-men crude work burden ratio of 62-to-38 across agricultural activities: land preparation, planting, harvesting, and selling. In addition to agricultural work, rural women are mainly responsible for domestic chores, including cooking, child care and fetching water and firewood. The total workload in South Africa's small-scale farming, including agricultural and domestic tasks, is therefore considerably higher for women than for men.

The creditable socio-economic status of women in South Africa (inclusive of women small-scale farmers) is endorsed by global rankings using macro-economic indicators such as those developed by the United Nations Development Programme (UNDP) (e.g. Gender Development Index – GDI) and the World Economic Forum (WEF) (Haug et al., 2021).

Role and place of youth

Agriculture is seen as a solution to many of the socio-economic challenges facing South Africa, particularly in the rural areas where farming is practiced (Ntshangase 2016). The importance of agriculture cannot be emphasised enough in a country such as South Africa, which is faced with rising levels of unemployment, poverty and inequality. Statistics South Africa (Stats SA 2020) shows that the unemployment rate in South Africa currently stands at 30.1%, with youth unemployment at 59.0%, in the first quarter of 2020. The rising unemployment rate harms rural livelihoods, and agriculture can play a pivotal role in alleviating this unemployment (Ntshangase 2016).

The South African National Planning Commission (NPC) has set the goals for enhancing rural development and improving employment (creating



more than a million jobs) through the agricultural sector by 2030 (NPC 2013). The South African government aims to encourage agricultural participation to address the challenges of economic growth, poverty reduction, unemployment and inequality (Zamxaka 2015). The efforts came through various support programmes and policy initiatives specifically focusing on women and youth. Youth-specific programmes that have been developed and initiated include Youth in Agriculture and Rural Development (YARD), Agriculture Youth Development Initiative for South Africa of 1998, the Rural Development and Land Reform Youth Empowerment Strategy of 2008 (FANRPAN 2012) and more recently, the National Policy for Beneficiary Selection and Land Allocation of 2020. The introduction of these initiatives (by government and organised agriculture) is aimed at promoting youth involvement in farming and agriculture-related activities as the sustainability and expansion of the sector does not only rely on their active participation, but also on their creative capacity, physical strength and effective comprehension

capabilities (Kimaro et al. 2015; Cheteni 2016; Giuliani et al. 2017). Youth involvement in agriculture has the potential to lessen the challenges of food security and youth unemployment (Bagson and Kuuder 2013). To this end, the need to attract youth to agriculture in rural agricultural societies remains vital (Man 2012).

Assessment of available research on small-scale farming

Research has been undertaken in the field of small-scale farming with consideration of youth and levels of youth participation in the sector. The literature on youth involvement in small-scale farming tends to focus largely on socio-demographic and economic factors that constrain youth involvement in agriculture (Nnadi and Akwizu 2008; Adekunle et al. 2009; Ahaibwe et al. 2013; Naamwintome and Bagson 2013; Kimaro et al. 2015; Akpan et al. 2015; Anania and Kimaro 2016). Some factors considered in the literature include, but are not limited to, poor livelihood assets endowments such as land, credit,

market access, extension support, limited access to production inputs and lack of government support. Literature suggests that the youth remain a highly diverse group of individuals (Giuliani et al. 2017), with different backgrounds, ideas, ambitions and aspirations (Leavy and Smith 2010; Giuliani et al. 2017). Anyidoho et al. (2012) and Tripathi et al. (2018) argued that youths' aspirations have direct effects on the choices they make regarding participation in agriculture.

The main conclusions are as follows. More recently, Magagula and Tsvakirai (2020) found that economic perceptions influence youth's intentions to participate in agri-preneurship. Although economic perceptions form part of how perceptions are formed, literature shows that other factors have an impact on perceptions towards the agricultural sector. Limited attention has been paid to factors such as aspirations and perceptions. These are therefore poorly understood as factors that influence youth participation in small-scale agriculture (Leavy and Smith 2010; Giuliani et al. 2017; Njeru 2017). Despite the initiatives taken by government and organised agriculture, the participation of youth in agriculture remains a challenge (Man 2012). Various reasons and constraints have been identified as the cause for the lack of youth participation in agriculture. This youth apathy includes non-competitive salaries, the physical nature of the work and lack of information on the diverse jobs within the industry (Kidido et al. 2017); while White (2012) and Tafere and Woldehanna (2012) observed that youth prefer and aspire to take up occupations outside agriculture since non-farming professions are perceived to be more economically rewarding, stable, and not "back-breaking".

Public policy in support of small-scale farming

One of the most common public policies implemented in South Africa and in many developing (and other) countries to support smallholder farmers has been rural microfinance.

These schemes have been highly successful in the Latin American region, supporting the integration of smallholders into domestic and international markets, especially through the production of high-value agricultural cash crops (Ella Era, nd).

One form of financial inclusion used, are equity share schemes were originally initiated by the private sector in 1990s. They were integrated into the South African land reform policy due to the low pace of wealth redistribution (Gray et al., 2004). Equity-share schemes have become a common method commercial farmers use to share their businesses with their farm workers. For example, are several case studies where such joint ventures are deemed more successful than the solely black ownership models (e.g. Oertle, 2017). However, not all of them are positive experiences. Vaca (2003) using a Peterson Wysocki Harsh Model, provides a detailed analysis of advantages and disadvantages of the equity sharing schemes in the fruit and wine industries and has argued that these largely benefit commercial farmers than the farm workers. His argument is based on the elements of opportunistic behaviour from commercial farmers.

The government of South Africa has introduced funding opportunities to support small-scale farming as they play an important role in food security and contribute to the country's economic stability through the Comprehensive Agricultural Support Program (CASP). (Western Cape Government, 2019).

Through the National Development Plan (NDP), the government has proposed integration of small-scale farmers into existing commercial value chains as a key objective in rural areas for achieving food and nutrition security. However, a closer look at recent policy initiatives by Chapman et al. (2021) paints a picture of ineffective policy interventions that result in fruitless expenditures. This is in sharp contrast to government investments to increase productivity, enhance sustainable agricultural resource use and facilitate economic growth and development of small-scale farmers. Yet, according to Okunlola et al. (2016), while government policies show some cognisance of emerging knowledge about small-scale farming such as the diverse nature

of this sector, this awareness has not always translated into practical programmes of support that take these differences into account in meaningful ways.

Access to land and land governance

Different forms of tenure systems and land ownership - tribal, state ownership, trust land, quitrent and freehold - are present among small-scale farmers in South Africa. The land tenure system in the former homelands is primarily dominated by communal land. In accordance with the recognised traditional communal system of land tenure, community members use most of the lands in the tribal communities (Romuld & Sandham, 1995; Mudau, 1997; Sweet, 1998; Makhura, 2001; Mpandeli, 2006).

The following key factors inhibit better land governance in South Africa, inclusive of the small-scale farming sub-sector: diversity of the land sector and its governance; tenure complexity and security; lack of clarity or affordability of tenurial arrangements; heavy reliance on non-documentary evidence; insecurity regarding long-term possession of land and other fixed assets; institutional, legal or policy gaps/ inadequacies; insufficient monitoring of policy objectives; shortage of resources for land policy implementation: inappropriate reporting mechanisms; absence of clear rural property references; lack of public involvement in land use planning; management ambiguities; budgetary constraints; restricted access to concessionary data; lack of compensation for land displacements; and challenges of dispute resolution in land conflicts.

Climate change and small-scale farming

Experts note that as the global climate continues to warm up, the impact of such warming as a result of increasing greenhouse gases in the atmosphere is likely to affect agriculture. The most commonly observed climatic changes in South Africa include increased temperatures, lower rainfall, rainfall variability, shifts in rainfall patterns, extended dry spells, excessive rainfall, and recurrence of drought

and floods. Some of the impacts affecting small-scale agriculture include crop damage, decreased yields and increased crop pests and diseases (Apraku et al., 2021). Farmers' perceptions on climate change have had an impact on their livelihoods, as most have consequently changed their farming practices in response to their perceptions. Farmers' perceived changes in their local climatic conditions is a significant driver in the implementation of various adaptive measures and livelihood strategies (Gandure et al. 2013).

Policymakers should encourage farming households in climate change adaptations, which have the potential to enhance farmers' productivity and efficiency in agriculture thereby contributing to two of the United Nations Sustainable Development Goals (SDGs) of eradicating hunger and poverty (SDG's target indicators 2.3). Since smallholder farmers (less than 2ha) account for more than 80% of all farms worldwide (FAO, 2014), sustainable development goals of no poverty (SDG 1) and zero hunger (SDG 2) can be achieved if appropriate policies are designed to support these farmers to become more efficient and productive. Therefore, additional investment is needed to promote farmers' adaptation practices and reduce the adverse impacts imposed by changes in the local climatic conditions. This needs to be demonstrated by conducting detailed studies and showing that existing adaptation practices are indeed contributing toward enhancing farmers' performance in agriculture production (Uttah et al., 2020).

International or regional cooperation in support of small-scale farming

International and regional organisations with known involvement in small-scale farming in South Africa include the Food and Agriculture Organization (FAO), African Union, Southern African Development Community (SADC), New Partnership for Africa's Development [NEPAD], Institute of Development Studies, and the United Nations, among others. International and regional cooperation regarding small-scale farming in South

Africa utilises policy documents that include: (i) African Youth Decade Plan of Action 2009–2018, (ii) African Agenda 2063, (iii) African Youth Charter, (iv) Comprehensive Africa Agriculture Development Programme (CAADP), (v) the Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods, and (vi) Regional Agricultural Policy (RAP).

3. PASTORALISM

General Characteristics

Pastoralism is a subsistence pattern in which people make a living by tending domestic animals (Leshan and Standlause, 2013, Department of Rural Economy and Agriculture, 2017). There are two forms of pastoralism: nomadism; and transhumance. Pastoral nomads do not have permanent settlements; they are seasonal migrants moving from place to place in search of water and fodder for their animals. The nomads live on temporary dwellings and move on when dry conditions set in (Leshan and Standlause, 2013). Transhumance pastoralists follow a cyclical pattern of migration, which is also a seasonal migration but have a regular settlement with permanent houses. The difference between nomadism and the transhumance pastoralist system is that the latter depends less on their animals and practices more small-scale farming than the former (Leshan and Standlause, 2013). Pastoralism is more in the Southern regions. It is practised in arid grassland, savanna, and semi-arid rangelands (Food and Agriculture Organisation, 2018). Pastoralism generates income and creates livelihoods in remote and harsh environments where commercial farming is little or impossible (International Fund for Agricultural Development, 2010).

Role and Place of Women

While men and boys are away tending the herd, pastoralist women are responsible for collecting

fodder to supplement the feed of that livestock kept close to the homestead. They look after the pregnant stock, tender their calves, kids and lambs, and care for sick animals that cannot keep up with the main herd (Gitungwa et al., 2021). Economically, pastoral women are involved in direct livestock production like cattle herding and indirect complementary livestock activities like milking, processing, and petty trading in the sale of dairy products (cheese, butter, and milk), skin/leather works, and extracting rangeland products like firewood and charcoal, among others. For instance, Waters-bayer (1985) observed that early scholars of pastoralism in Africa, namely, Hopen (1958), Stenning (1959), and Dupire (1962), reported their studies on women's involvement in extracting and selling of livestock products like milk, which is either consumed at home or exchanged for grain and is being the pastoralist's main source of subsistence.

The women were responsible for milking, processing, and marketing milk and obtaining grain for family consumption within the African pastoral societies (Onyima, 2019). Pastoralist women face enormous challenges, which are mainly linked to the complex gender relationships between pastoralist women and men. Inequality affects their roles and responsibilities, and plays a major part in traditional customs, property rights, decision-making, and the use and control of income, assets, resources and services. Such inequalities restrict women's development potential and limit the opportunities and economic growth of the entire family (Gitungwa et al., 2021).

Pastoral women are key agents in livelihood development. They engage in socio-economic and cultural activities, and in the conservation and management of natural resources. Despite their many challenges, pastoral women are resourceful in finding ways to ensure that their households' basic needs are met. However, their valuable role is only partially recognised. Pastoral women are particularly disadvantaged by their limitations within their own societies, for example in owning property or participating in decision-making processes.

Increasing awareness of women's concerns and the value of their specific inputs is a step towards strengthening women's role in pastoral communities, thus reducing their vulnerability to external shocks. (International Fund for Agricultural Development, 2010).

Role and Place of Youth

Young men are the community's warriors bestowed with the responsibility to protect and acquire property for the community. Young men in pastoralist societies usually acquire prestige by being brave and successful in predatory raids and accumulating large herds of animals. The individual livestock owner has a continuous incentive to increase the number of his own livestock even when this increase causes harm to communal grazing land, because the damage is communally shared. This supposed inherent contradiction between private and public interests and the consequential overgrazing has been termed the tragedy of the commons (Hardin, 1968). With the changes in the world, pastoralism as a way of life faces many challenges and leaves pastoralists at the risk of inability to cope with their harsh environments. Many pastoralists have a history of strained relations with central authorities, sometimes leading to outright hostilities. They have little political clout and influence since they inhabit remote areas and are widely dispersed. International borders have interfered with their traditional migration patterns. Government policies usually favor settled farming and crop production and are implemented at the expense of pastoral existences (International Fund for Agricultural Development, 2010).

Assessment of available research on Pastoralism

Available research on pastoralism in South Africa is limited to historical accounts. In southern Africa,

pastoralism has ceased to exist as a result of conflict with expansionist European empires and assimilation into colonial societies. Historically, there were two major groups of pastoralists in southern Africa; the 'Khoekhoen' and the Herero. The Khoekhoen (formerly called 'Hottentots') are known to have been spread over much of the western and southern portions of the subcontinent from East Africa which is the major region of pastoralism south of the Sahara.¹

Since the literature is largely historical, it will suffice to review only one ancient reference (in quotes) as follows: "The Khoikhoi were originally part of a pastoral culture and language group found across Southern Africa. Originated in the northern area of modern Botswana, the ethnic group steadily migrated south, reaching the Cape approximately 2,000 years ago. Khoikhoi subgroups include the Korana of mid-South Africa, the Namaqua to the west, and the Khoikhoi in the south. Husbandry of sheep, goats and cattle provided a stable, balanced diet and allowed the related Khoikhoi peoples to live in larger groups than the region's previous inhabitants, the San. Herds grazed in fertile valleys across the region until the 3rd century AD when the advancing Bantu encroached into their traditional homeland. The Khoikhoi were forced into a long retreat into more arid areas" (Hendrik Witbooi 1897).²

Public Policy in Support of Pastoralism

Pastoralism does not feature prominently in government policy and strategy documents of South Africa. A cursory mention of it is done in national policy debates and blueprints such as the National Development Plan where mixed crop and livestock farming (agropastoralism) is promoted partly for environmental and soil health benefits. The Agriculture and Agro-Processing Master Plan, "Social Compact" of South Africa, published in May

¹ [Pastoralists in Africa- A Case Study \(yourarticlelibrary.com\)](http://yourarticlelibrary.com)

² [the Khoikhoi \(Hottentots\): The First People Of South Africa \(kwekudee-tripdownmemorylane.blogspot.com\)](http://the Khoikhoi (Hottentots): The First People Of South Africa (kwekudee-tripdownmemorylane.blogspot.com))

2022³ articulates an ambitious combination of livestock sector growth and commercialization policy intents, but suffers from lack of disaggregation of the sector solutions and specificity of interventions targeting the smallholder farming sector. The policy measures pronounced in the document include the permission of sale of live goats and sheep in rural towns under a more regulated environment, tightening traceability of livestock, strengthening the control of stock theft, introduction of mobile kraals, reintroduction of dip tanks and grazing fences throughout all rural areas, and provision of comprehensive farmer assistance, development finance, research and development and extension services. Increasing access to feed for emerging farmers, and provision of support for expansion of commercial pastures are additional key pillars of current policy.

However, while to some extent influencing pastoralism, explicit policies that support pastoral mobility, genetic improvement, expansion and resilience are lacking⁴. This tends to reflect the relative insignificance of pastoralism to national development, in the eyes of policy makers and development practitioners in South Africa. Thus, more research needs to be conducted on the relevant contributory factors. Yet pastoralism is often mentioned as an environmentally sustainable production system that provides a range of ecosystem services, such as conserving and restoring biodiversity in the rangelands and the soil fertility in croplands, and providing markets with animal source food and by-products. The Pastoralists Knowledge Hub (PKH) supports research initiatives aimed at assessing pastoralism's contribution to the ecosystems. It covers a broad spectrum of regions including North, West, East

and Southern Africa. It highlights its key role for the future of the livestock sector and, more broadly, for world food systems.

Pastoralism has shown extensive capacities to adapt to variable climate conditions and overcome external shocks. Climate change consequences – rising temperature, extended drought periods or changes in seasonality – affect pasture availability and reduce water sources. The PKH seeks to contribute to the resilience of pastoralists through advocating for their right to mobility and showing their complementary contribution to other livelihood and production systems, such as rain-fed agriculture or agroforestry.

To increase pastoralism's recognition, data production is crucial for evidence-based policy-making. Data collection is essential to understand the importance of pastoralism, its contribution to local and national societies and to better inform policies. The PKH supports and leads field activities to assess the value of pastoral systems, such as its total economic tangible and intangible value.

Pastoralism is not simply a production system, but more broadly a livelihood and land-use system requiring a multidimensional approach (food, feed, environment, economic, social, etc.) within the policy setting. For this reason, the PKH encourages and leads dialogue with political institutions at different levels – local, national, regional, and international – to ensure that policies acknowledge pastoralism's specificities.

By its very nature, Pastoralism requires adaptable and flexible systems of governance and tenure in order to work optimally. While established laws may allow beneficiaries to secure pastoral tenure and exercise their rights to access natural resources, it is

³ https://www.dalrrd.gov.za/doaDev/sideMenu/AgroProcessingSupport/docs/AAMP_Final_12May2022.pdf (visited 29/11/2022 at 13:28 hours).

⁴ <https://www.google.com/search?q=Policy+support+for+pastoral+societies+in+South+Africa&sxsrf=ALiCzsYZi6Q1kYh6iw>

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often necessary to recognise and incorporate customary governance systems at the local level, and include informal systems of governance in the decision-making processes. For instance, the PKH supports countries in the implementation of the "Technical Guidelines on Improving Governance of Pastoral Lands" (Food and Agriculture Organisation, 2022).

Pastoralism and Rangeland Management

South Africa is known to have a vast and open rangeland. However, it has proven to be quite difficult to differentiate the portion for livestock farming. Using the data layer as published, it indicates long-term grazing capacity values for the total extent of South Africa (± 121 million hectares), but in reality about 13 million hectares are under cultivation and 2.6 million ha are transformed by some form of urban development (Avenant, 2019) some areas can become quite dense (e.g. *Albany thicket* vegetation or bush encroached areas, it still contributes a large portion of rangeland to the livestock industry, especially goats). In some areas the canopy cover may be as much as 75% but the grass sward is still adequate and accessible to sustain livestock. In many cases, game species are introduced into livestock farming systems to assist in opening dense vegetation and making it more accessible to livestock. Other areas consist of the *Grassland biome* as well as various other open and semi-open grassland areas in almost all of the other biomes. Farming enterprises include cattle, dairy and sheep. High rainfall provides a dense grass sward with good cover and high production (Avenant, 2019).

Furthermore, 70% of agricultural land in South Africa can only be utilised by livestock and game. Natural rangeland forms the basis of the extensive livestock industries, especially in semi-arid environments where the rainfall is low and unpredictable. Due to increasing climate variability and the threads of global warming, midsummer droughts became more the norm than the exception. Efficient rangeland management should ensure that

the quantity of forage during these times is sufficient for sustainable livestock production. As these mid-summer droughts coincide with the mating season, it can contribute to the low reproduction rate in beef herds. South Africa is still a net importer of beef, mainly due to the low levels of production. South Africa will be able to move to self-sufficiency if the average calving rate and the off-take are increased, especially in the communal and emerging sectors (Van der Westhuizen et al., 2020).

The risks that threaten rangelands include degradation, overexploitation, fires, pests, disease, drought, farming, overgrazing, invasive species, illegal hunting, climate change, erosion, water degradation, and habitat destruction. Factors that limit the access of pastors to rangelands include increased population and herd sizes; degradation and conversion loss of biodiversity and land degradation thanks to increased resource exploitation, infrastructural development and other types of human activities that create obstacles to livestock mobility and pasture use. Overgrazing has



gradually become a problem for pastoralists due to increased population and herd sizes and reduced land access (and other land use) due to degradation and conversion. Loss of access to water sources and conflict with other grazers tends to be most noticeable during periods of stress such as drought (Ambale, 2022).

Climate change and Pastoralism

Climate change is a threat to livelihoods and simultaneously affects pastoralists. Climatic factors directly affect natural resources, livestock yields, cause animal and human disease epidemics, and loss of animals in pastoral areas (Ayele et al., 2020). Kimaro et al. (2018) argue that population pressure and tree cutting as the major causes of climate change (Kimaro, More and Toribio, 2018). More erratic and reduced amounts of rainfall, rise in temperature and prolonged and frequent periods of drought lead to decreased livestock growth rates, decreased livestock weight, low milk production, poor reproduction rates, increased pest and disease occurrences, poor vegetation, livestock deaths, and loss of farm income/ earnings are the major impacts of climate change on their production activities (Popoola et al., 2019; Naidoo et al., 2013). Smallholder livestock farmers' perceptions include decreased livestock growth rate, decreased livestock weight, decreased milk production, decreased reproduction rates, increased pest and disease occurrences, increased poor vegetation and limited grazing land (veld), scarcity of water resources, increased livestock deaths, and loss of farm income earnings.

Practices implemented by pastors in the face of climate change include changing grazing routes, increasing grazing distances, destocking, water harvesting and storage, and increasing dependence on social welfare. An examination of farmers' perceptions of their adopted responses showed that none of the response measures were perceived as significantly effective. The lack of effective response to the climate change crisis is a cause for concern, as the livestock industry is endemic to the region and sustains families and entire communities. (Popoola et al., 2019; Kimaro et al., 2018).

Identified adaptation responses are mainly limited to changing grazing routes, increasing grazing distances, destocking, water harvesting and storage, and dependence on social welfare; all of which are perceived by the livestock farmers as insufficiently effective to deal with the current climatic stresses

(Popoola, Monde and Yusuf, 2019). Migrating to another location, diversifying livelihood, digging holes, and engaging in crop farming are other response options (Godson-Ibeji, Ibe, Chikaire, and Aminu, 2022).

National adaptation priorities, as identified in national adaptation programme of action (NAPAs) and national communications, include sustainable forest management and the sustainable use of resources; afforestation and reforestation programmes; the promotion of agroforestry, non-timber livelihoods, alternative energy sources and climate-resilient tree varieties; and capacity-building and the strengthening of institutional frameworks (Naidoo et al., 2013).

International or Regional Cooperation in support of Pastoralism

Pastoralism plays an important role in the national and regional economies of Africa. It supplies millions of animals to both domestic and international markets through substantial livestock trade networks that link local and cross-border markets to neighbouring countries and international markets. In general, pastoralism contributes 10 percent to 44 percent of the gross domestic product (GDP) of African countries (African Union, 2010).

Thus, international and regional cooperation in support of pastoralism should greatly benefit the host countries. However, for South Africa such benefits remain insignificant because of the minor role played by pastoralism (in both the traditional nomadic sense and the more current agro-pastoral context) in the economy of the country.

4. KEY CONCLUSIONS AND RECOMMENDATIONS

Conclusion

- *Socio-economic importance*

Small Scale Farming and Pastoralism

Small-Scale farming and pastoralism play a crucial role for growth and social cohesion. They create stronger bonds within and across different groups. They both help fight exclusion and marginalisation, create a sense of belonging, promote trust and offer their members the opportunity of upward mobility, long-term prosperity and competitiveness. The emergence of food insecurity in recent years has made both small-scale farming and pastoralism to be elevated especially in developing countries as a panacea to combat food insecurity and poverty. The link between small-scale and pastoralism is significant as transhumance pastoralist are rangers who practiced small-scale farming for food production and consumption. Both practices rely on human family labour. In farming the different members of the family are responsible for a specific task whereas in pastoralism the whole family play important economic, social and cultural roles that are closely intertwined (Coalition for European Lobbies on Eastern African Pastoralism, 2019).

- ***Risks and Constraints***

Economic

Small scale farming and Pastoralism

Small scale farming faces economic risks and constraints such as vulnerability to tough economic situations. Market information may be scarce or costly to obtain, and there may be restricted market access for products from small scale farms. Indeed, the flooding of most markets by products from the large-scale commercial farming sector is making it difficult or even impossible for smallholders to penetrate the same markets. In addition, most small-scale farming areas lack appropriate infrastructure such as roads, bridges, and input and output selling and buying points. Furthermore, the prohibitively high prices of inputs such as fertilisers and herbicides is a significant constraint to small-scale farmers. Similarly, unsustainable or inadequate farming skills can militate against increased yields and income from this farming subsector. These economic risks and constraints are further exacerbated by the high cost of transport to ferry

inputs to, and output from the farm (Mpandeli and Maponya, 2014; Harvest SA, 2019). Pastoralism is less adversely affected by economic risks and constraints. Much to the contrary, it possesses adequate potential to diversify food production can help reduce a country's reliance on imports (Food and Agriculture Organisation, 2021).

- ***Social***

Small scale farming and Pastoralism

Small-scale farming is exposed to social risks and constraints such as discriminatory railroad rates and monopoly prices charged for farm machinery and fertiliser; an oppressively high tariff and unfair tax structure; an inflexible banking system; political corruption; and corporations that bought up huge tracts of land (Digital History, 2021). Pastoralism faces the environmental constraints which leads to threats in the wellbeing of the people and animals such as unchecked livestock diseases, intercommunity livestock theft, relatively unconducive agricultural conditions, and lack of institutional support to pastoralism (Iyer, 2021).

- ***Institutional***

Small-scale farming and Pastoralism

Small scale farming may be subject to institutional risks when, for example, the government or other formal institutions implement unpredictable changes in policies and regulations. (Kahan, 2008). Pastoralism is also negatively affected through domination of political relationships by central states, and problems with financial and insurance services.

- ***Climatic***

Small-scale farming and Pastoralism

Climatic risks affecting small-scale farming include climate variability; high levels of farming skills; pest and disease attacks; crop failure; and unfavorable weather conditions such as drought/long spells (Mokhaukhou et al., 2020). Pastoralism is vulnerable

to GHG emissions, pasture land expansion through deforestation, soil erosion and degradation, and air and water quality (Uddin and Kebreab, 2020).

Recommendations

- **Public support policy**

Small-scale farming:

- In South Africa there is need for specific policies which deal solely with small-scale farming. A lot of policies deal with agriculture and the promotion of commercialised farming with little or no reference to small-scale farming.
- More research needs to be conducted with specific reference to women and the youth and their contribution to the development of small-scale farming.
- Under land governance, there is a need to re-distribute land so that small-scale farmers can access larger areas to farm. This initiative will benefit their households and contribute to national development through commercial farming.
- Skills training is required for small-scale farmers and pastoralists to attain more knowledge on issues that affect their produce, for example, climate change.
- The government should also avail loans which can assist farmers with inputs not only for production of crops for human consumption but supplementary feeding of livestock in smallholder mixed farming systems, thereby preventing poverty deaths of their animals during drought years. This will, in turn, strengthen the crop and livestock integration, and resilience which will benefit the community or the country at large.

- **International/regional cooperation**

Pastoralism

- Pastoralism is being practiced but not given full attention in terms of policy documents at national level. There is need for more attention by the government to recognize pastoralism and its contribution to the economy of the country.
- Policies that enhance mobility of pastoralists, genetic improvement, their systematic integration into commercial value chains and traceability of livestock resources of this subsector are needed.
- Participation of youth and women in pastoralism must be promoted as they play a crucial role towards its developments.
- In Africa, the concept of pastoralism is more effective in the Eastern and Western side of the continent; there is need for pastoralism to be given more attention in the Southern African region, especially as it affects specific segments of the population.

- **Rangeland governance**

Pastoralism

- Systematic removal of undesirable plant species (e.g., mechanical, chemical, and biological control methods) is recommended to promote pastoral economies.
- It is important to seed desirable plants that compete with undesirable species.
- Pastoral communities need to be capacitated with tools such as rotational grazing or prescribed fire to restore the soil.
- Rangeland mapping and management and institutional governance at the local level, need to be strengthened to minimise the adverse effects of pastoralism.

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