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FOOD SYSTEMS PROFILE - ESWATINI

Catalysing the sustainable and inclusive transformation of food systems

Eswatini


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Catalysing the sustainable and inclusive transformation of food systems

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Foreword

This Food Systems Assessment is the result of a collaboration among the Government of Eswatini, the Food and Agriculture Organization of the United Nations (FAO), the European Union, and European Commission Joint Research Center (EC-JRC), in close collaboration with FAO Investment Centre experts and national consultants. The assessment was carried out during the months of November 2021 to February 2022.

This study is very timely and it reminds us that Eswatini is on course to meet four of the six targets for maternal, infant and young child nutrition established by the World Health Assembly – stunting, wasting, overweight and exclusive breastfeeding. The study also takes stock of the challenges of the food system, while proposing systemic levers for transforming the food system in a resilient, inclusive and sustainable way.

It is therefore an important tool for capitalizing on experiences and further facilitating consultations between actors with a view to prioritizing courses of action resulting from the World Summit on Food Systems and in particular actions from the related national dialogues organized by the Eswatini government with sector stakeholders between May and September 2021.

Indeed, Eswatini must now anticipate the main sustainability challenges of food systems, such as reliance on food imports; pressure on land and the degradation of natural resources, drought and water scarcity; the triple burden of malnutrition; unemployment and job creation; and diversifying the food supply to ensure the nutrition and health of the population, in addition to the needs for territorial and social equity among the actors of the food systems, including for family farming, women and youth.

These challenges are at the same time investment opportunities given the importance – and impact – the development of a sustainable food system can generate in terms of reducing poverty, creating wealth and jobs, and strengthening food security and nutrition.

I welcome this Food Systems brief and would encourage continued and constructive dialogues and partnerships between the Government of Eswatini, the United Nations System and technical and financial partners in this process of transforming our food system in cooperation with our local communities, civil society, the private sector and other stakeholders. Together, let's invest and act for the sustainability, including the performance, resilience and inclusiveness of our food system.

G. P. Shabangu,
Acting Principal Secretary
Ministry of Agriculture, Eswatini

FOOD SYSTEMS PROFILE
ESWATINI

Key messages

Eswatini (formerly Swaziland) is a small, landlocked country in Southern Africa bordered by South Africa to the south, west and north, and Mozambique to the east. The largely mountainous country has a land area of 17 364 km^2 and a population of less than 1.2 million people.

Agricultural production is a combination of **commercial, export-oriented farming** dominated by **sugar cane**, and **subsistence-based** smallholder farming on customary land, characterized by low production volumes and productivity, mainly focused on maize, in combination with traditional livestock practices.

- **On a positive note, Eswatini is one of only two countries in Africa and among a handful worldwide that are on course to meet four of the six targets for maternal, infant and young child nutrition** of the World Health Assembly – stunting, wasting, overweight and exclusive breastfeeding (Global Nutrition Report, 2021).

Despite these strides, the food systems of Eswatini face **challenges of rural poverty, food insecurity, malnutrition, urbanization, environmental degradation, and increasing vulnerability to climate change and weather shocks**.

Ongoing dynamics that need urgent attention:

- **High dependence on imports** to feed its people. National production (with low maize yields) is constrained by **frequent and prolonged droughts, erratic rainfall**, inadequate farming technologies, low investment in seeds, fertilizers and equipment, and structural barriers preventing access to formal markets.

- **Value chain development and the commercialization** of smallholder agriculture are notable challenges and important elements of the country's strategy to increase economic growth in rural areas and improve food security and nutrition outcomes.

- Food systems are characterized **by substantial socioeconomic, spatial and geographical inequalities**. Such disparities show contrasts between areas with access to resources and infrastructure, and those without, given that the current development model appears to favour export-oriented investment in freehold or "title deed land" (TDL) as opposed to subsistence farming on customary or "Swazi Nation lands" (SNL).

- **Women** head approximately one-third of rural households, but have unequal access to assets, especially land. They also have fewer rights than men, and have limited protection against gender-based violence. This lack of an enabling environment reduces opportunities and incentives for transforming food systems and contributing to socioeconomic development.

- Food systems in their current forms are **contributing to land degradation and depletion of renewable and non-renewable natural resources. Concerns include high water withdrawal and depletion (particularly through irrigation of sugar cane)**, soil degradation by erosion and salinization, forests diminished by deforestation, encroachment and uncontrolled settlements. These dynamics directly threaten productive resources, increasing food insecurity and poverty and affecting the quality of life of the population. Moreover, they **jeopardize the future sustainability of food systems**, which may increase vulnerability to climate change and further challenge socioeconomic stability.
- A main challenge centres on the **apparently conflicting interests** between those on freehold (**TDL**) lands and those living and working on customary (**SNL**) lands – including the matters of land rights and access to and use of water resources.

- Difficulty in **reconciling multiple food systems goals**, which encompass the issues of higher production for export (encouraging sugar cane output and seeking foreign exchange earnings) and food security for the rural population, which could be pursued by diversifying production systems for a positive impact on nutrition, creating rural jobs, value addition and a possible reduction in food imports.

- A consequence of these apparent differences is that few public and private investments are made, and **there is a need to increase institutional support for sustainable transformation**, coupled with more inclusive governance and improved policy coherence.

Recognizing the complexity of the food systems of Eswatini, **several opportunities** can be identified:

- As a net importer of almost all food products, there may be opportunities to increase production and processing of food commodities. These could include commercialization and inclusive and **sustainable value-addition activities** in specific value chains across food systems.

- **Farming needs to be made more attractive and profitable**, for example, by improving processing and infrastructure, as well as facilitating market access through supporting and strengthening the participation of private sector actors in value chains.

- **Enhancing public and private sector investments (including in customary SNL lands) could help to improve agricultural infrastructure and basic services, such as health care and education**, and to reduce territorial and socioeconomic disparities.

- In this context, it is essential to **address the aspirations and potential of the country's young people** to sustain rural life, ensure equal opportunities for women and reduce inequalities, including by promoting, implementing and enforcing appropriate **legislation, policies and actions**.

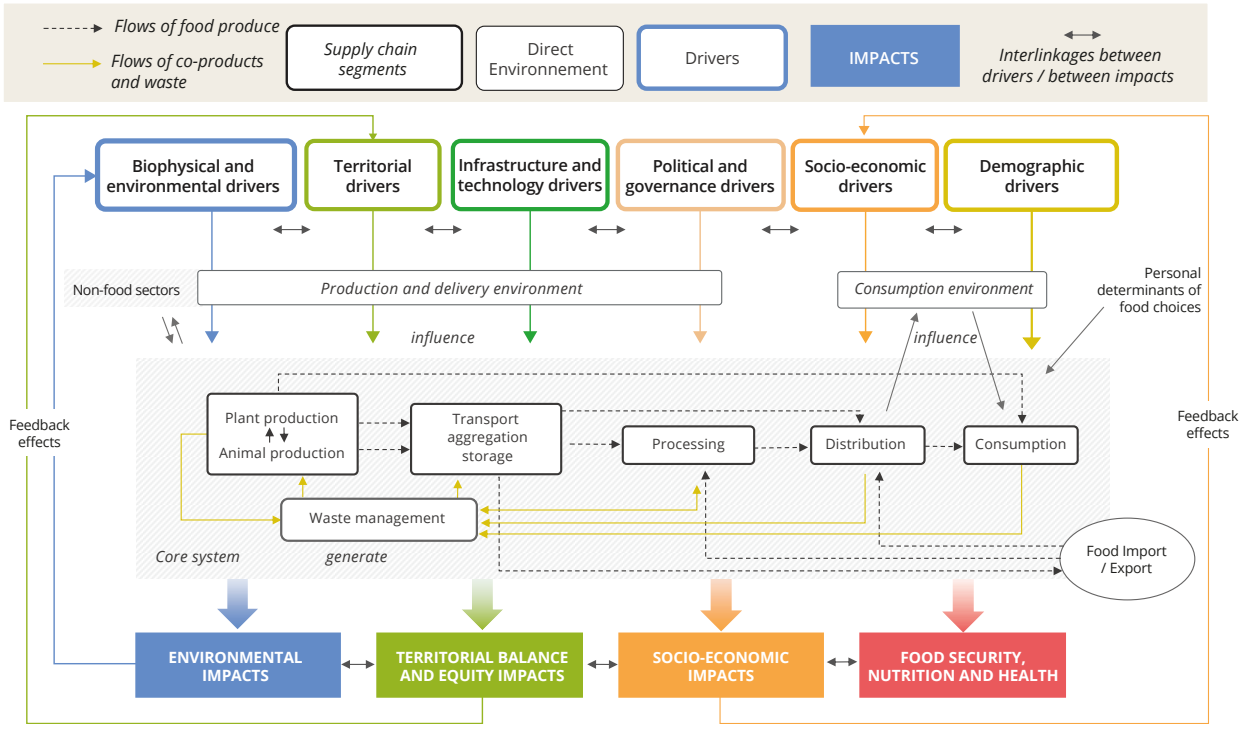
- **In line with the development ambitions of Eswatini**, embracing policies **promoting sustainable land and water use and management** are urgently needed to halt environmental degradation. In addition, **policies that embrace healthy and diverse food diets** could contribute towards addressing the triple burden of malnutrition.

Summary of methodology and process at the national level

This brief is the result of a collaboration among the Government of Eswatini, the Food and Agriculture Organization of the United Nations (FAO), the European Union and the European Commission Joint Research Center (EC-JRC) in close collaboration with FAO Investment Centre experts. The assessment was carried out over the period November 2021–February 2022. The methodology used for preparing this brief is the result of a global initiative of the European Union, FAO and CIRAD to support the sustainable and inclusive transformation of food systems. This assessment methodology is described in detail in the 2021 joint publication entitled *Catalysing the sustainable and inclusive transformation of food systems: conceptual framework and method for national and territorial assessment* (David-Benz *et al.*, 2022).

The assessment integrates qualitative and quantitative data analysis with participatory processes by mobilizing public, private and civil society stakeholders. The approach includes interviews with key stakeholders and a consultation workshop to refine systemic understanding of the food system and discuss potential systemic levers to improve its sustainability. The assessment process thus initiates participatory analysis and stakeholder discussion on the strategic opportunities and constraints to sustainable transformation of food systems. The approach assesses the actors and their activities at the core of the system, together

Figure 1: Analytical representation of the food system



Source: **David-Benz, H., Sirdey, N., Deshons, A., Orbell C. & Herlant, P**. 2022. *Catalysing the sustainable and inclusive transformation of food systems: conceptual framework and method for national and territorial assessment*. Rome, Brussels and Montpellier, France, FAO, European Union and CIRAD.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with their interactions along the food chain as well as the environments directly influencing their behaviour. Conditioned by long-term drivers, these actors generate impacts in different dimensions that in turn influence drivers via a number of feedback loops (see Figure 1).

The approach involves a detailed understanding of the key challenges along the four dimensions of sustainable and inclusive food systems: (i) food security, nutrition and health; (ii) inclusive economic growth, jobs and livelihoods; (iii) sustainable natural resource use and environment; and (iv) territorial balance and equity. Aimed at identifying critical issues affecting the sustainability and inclusivity of food systems, the assessment is both qualitative and quantitative in nature. Critical challenges and key food systems dynamics are specified in the form of **Key Sustainability Questions** (KSQs), whose answers (see schematic representations for all KSQs) help identify **systemic levers** and areas of action that are essential to bring about desired transformations in food systems.

This approach is designed as a preliminary rapid assessment for food systems and can be implemented over a period of 8–12 weeks. The


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methodology has been applied in more than 50 countries as a first step to support the transition towards sustainable food systems.

The assessment draws on food systems research undertaken by a team of national and international consultants. An on-line stakeholder consultation workshop was held on 15 and 16 December 2021 in Eswatini to share and refine the results and identify the main systemic levers that could be put into action to improve the system's sustainability.

National context: key figures

Eswatini is classified as a lower-middle-income country – a majority of the population is living below the national poverty line and food insecurity is a persistent problem. In 2019, agriculture accounted for 12.2 percent of employment (World Bank, n.d.b.), but contributed 8.5 percent (World Bank, n.d.a). to gross domestic product (GDP) (8.4 percent in 2020), with substantial contrasts between those producing commercial crops on freehold land and those making a livelihood on small plots of customary land. In 2016, TDL contributed approximately 80 percent to the agricultural sector, while approximately 10 percent came from SNL, with the remaining contribution was from livestock and forestry (Eswatini, Ministry of Agriculture, 2016).

For a lower-middle-income country, Eswatini has a relatively high gross domestic product (GDP), USD 3 415 per capita in 2020, according to the World Bank (Table 1) and high levels of poverty – approximately 58.9 percent of the population is living below the national poverty line (Table 1). Combined with low farm output and high food prices, this is contributing to persistent food insecurity, which affected 14 percent of the population in 2018.

Poverty is largely in the rural areas, and the urban-rural poverty divide is widening. In 2017, the rural poverty rate was 70.2 percent, against 19.6 percent in urban areas (Eswatini, Ministry of Economic Planning and Development, 2019a). (The national average was 52.7 percent in 2020, according to the World Bank). Rural poverty also tends to be deeper and more severe. More than 90 percent of poor people live in rural areas, suggesting that agriculture – most of which is subsistence – is still associated with higher poverty. Consistent with the rural nature of poverty, the poorest areas in Eswatini are rural regions lacing sizeable towns: Lubombo and Shiselweni (World Bank, 2021c).

According to World Bank (2020d), the COVID-19 pandemic unfolded in a context of multidimensional poverty, with overlapping deprivation in education, health and access to basic public services. This increases vulnerability to the economic shocks due to the pandemic. Furthermore, the pandemic has caused company closures, increased unemployment and restricted activity, especially in the informal sector in which most of the poor are employed. As a result, poverty levels are projected to increase.

The main sources of income in rural households are formal labour (18 percent), remittances (17 percent), small business contributions (14 percent), food-crop production (12 percent), social grants (11 percent) and casual labour (11 percent) (UNICEF, 2017). The difficulty in making ends meet for some rural dwellers may have contributed to a rise in the rate of urban population growth –from 0.56 percent in 2000 to 1.8 percent in 2020 – as job-seekers moved to urban areas and peripheries (Table 1). In 2020, total population growth was 1.04 percent (World Bank, 2022).

Eswatini has close economic links to neighbouring South Africa, which it relies on for approximately 70 percent of imports and is the destination for approximately 65 percent of exports. As a member of the Common Monetary Area (CMA) with Lesotho, Namibi, and South Africa, the Eswatini lilangeni currency is pegged at par to the South African rand, which is also a legal tender. Fiscal revenues largely depend on the highly volatile Southern African Customs Union (SACU) revenues, which are shaped by developments in South Africa (World Bank, 2021d).

Table 1. Key figures

Indicators	2000	2010	2020	Comments
Poverty – national poverty rate (%)*	69	63 (2009)	58.9 (2016)	Country-specific poverty rate trending lower.
Poverty – population below the international poverty line (% less than USD 1.90 per capita, daily (2011 PPP)**	48.9	43 (2009)	29.2 (2016)	Notable decrease in proportion of population living under international poverty line.
Population growth rate (%)***	1.13	0.69	1.04	Steady increase, as compared to 2010.
Percent rural population***	77	77.2	76	Slow decline of rural population.
Urban population growth rate (%)*** Urban population	0.56	1.67	1.8 24	Growth rate of urban population seems relatively high due to employment seekers in cities.
Gini index	53.1	53	54 (2016)	High Gini index.
Unemployment rate (%)***	24.4	26.92	23.4	Stagnant economic growth.
GDP/capita (USD)	1 522	4 496	3 415	Sharp rise between 2000 and 2010 but sharp decrease in 2020 most likely due to economic and political instability, COVID-19, etc. (Large differences between data sources).
Agriculture's contribution to GDP (%)***	12.3	10.2	8.4	Slow but significant decline, partly due to drought (Eswatini, Ministry of Agriculture).
Employment in agriculture (%)***	21	15.8	12.2 (2019)	Steady decline, most likely due to factors such as urbanization, limited investments, etc.
Access to electricity (%)***	25.8	45.5	77.2	Significant increase over the past 20 years, but still almost 1 in 4 households lack access to electricity.
People having access to basic drinking water services (% of population)*** [1]	53.2	62.2	70.7	Substantial increases since 2000.
Annual freshwater withdrawal: agriculture (%)***	95	94	96	Sugar industry consumes significant quantities of water.

Sources: * World Bank, Data. In: *Poverty headcount ratios at national poverty levels (% of population)* [online]. Washington, DC. https://data.worldbank.org/indicator/SI.POV.NAHC?locations=SZ; ** World Bank, Data. In: *Eswatini* [online] Washington, DC. https://data.worldbank.org/country/SZ; *** World Bank. Indicators. In: *Agriculture and Rural Development* [online] Washington, DC. https://data.worldbank.org/indicator

[1] Access to basic drinking water services refers to drinking water available from an improved source with a collection time of no more than 30 minutes for a round trip, including queuing.

Key figures and trends in food production, consumption and trade

Food production is steadily declining and the country has increasingly been reliant on imports, including processed foods, especially from South Africa. Sugar production and exports are also under pressure due to drought, water scarcity and uncertainty about world market prices, among other factors. Dietary patterns indicate high reliance on maize and other starches and low consumption of fruits and vegetables. Food consumption habits increasingly include packaged and processed foods, especially in urban areas.

There are two basic forms of land tenure. freehold or title deed land (TDL) comprises about 40 percent of the total arable land area; the other 60 percent is customary Swazi Nation Land (SNL), which is held in trust by the King for the country. TDL is mainly used for commercial farming in which significant areas are under irrigation. Approximately 79 percent of this land is planted and title deed land contributes approximately 80 percent of overall agriculture production (Eswatini, Ministry of Economic Planning and Development, 2018). SNL is mainly used for rainfed cropping and grazing, with approximately 55 percent of these lands under crops. These crop lands are allocated by the local chiefs to individual households and SNL grazing lands are communal.

Only 11 percent of the total land area is used for crops, while approximately 48 percent is used for communal grazing, 19 percent for commercial ranching and 6 percent for commercial forests. The rest is used for residential purposes, natural reserves, reservoirs and orchards (Eswatini, Ministry of Agriculture, 2015).

The total area of crop land in Eswatini entails 195 000 ha, of which 60 percent is SNL and 40 percent is TDL.

Agricultural production is dominated by two crops: rainfed maize and irrigated sugar. In the rainfed farming systems, maize occupies 84 percent of the crop area (more in the higher rainfall areas), while cotton accounts for 7 percent (mainly in the Lowveld). Groundnuts are grown on 6 percent (Middleveld/SNL). Other


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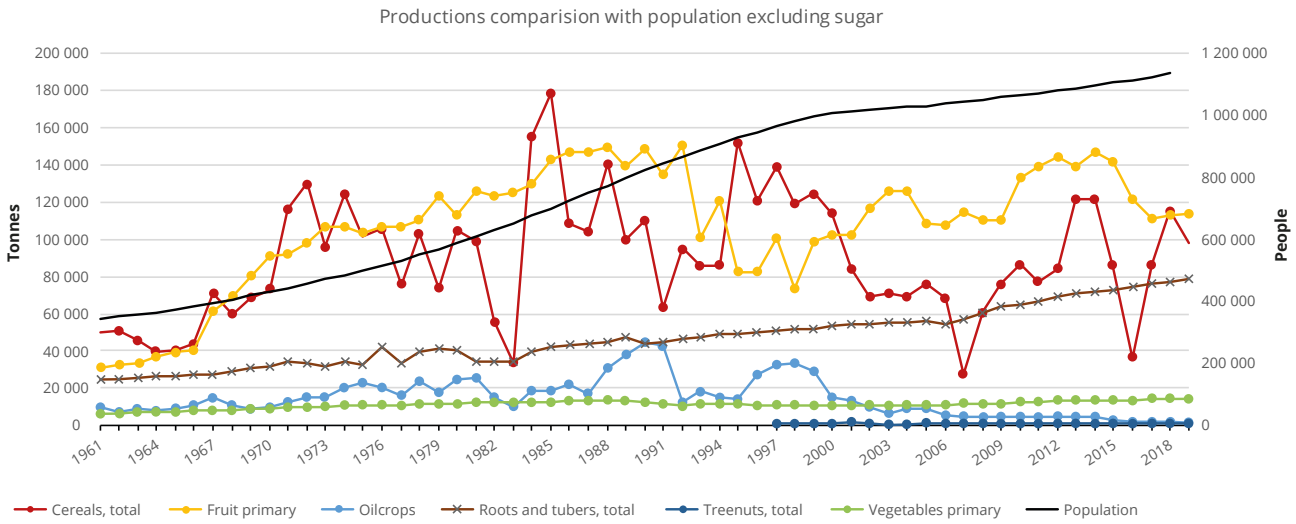
crops are legumes, root crops (mainly sweet potato) and sorghum. Average maize yields fluctuate according to rainfall and average about 1.1 tonnes/ha, well below the estimated potential of 4–6 tonnes/ha (Eswatini, Ministry of Economic Planning and Development, 2018) (see Figure 2.4). Consequently there is an annual shortfall in maize production of about 30 000 tonnes, which is made up through imports. Approximately 70 337 ha of maize and 58 523 ha of sugar cane were harvested in 2019 (KNOEMA, 2020).

The agricultural sector has been stagnant with high fluctuations in production over the last two decades. Crop and fruit production peaked in the late 1980s, but declined sharply in the

early 1990s after the end of apartheid racial segregation in South Africa removed economic sanctions and reopened the country to international agricultural trade again (see Figure 2.1), undermining its ability to compete in the regional and world markets.

Figure 2.1 depicts the evolution of production of the main agricultural commodities excluding the sugar industry, while Figure 2.2 shows the overwhelming dominance of the sugar industry in the agricultural complex.

Figure 2.1. Evolution of main agriculture products (volume in tonnes, index) - FAOSTAT



Source: FAO. FAOSTAT. In: *Production Database*. [online] Rome. www.fao.org/faostat/en/#data/QC

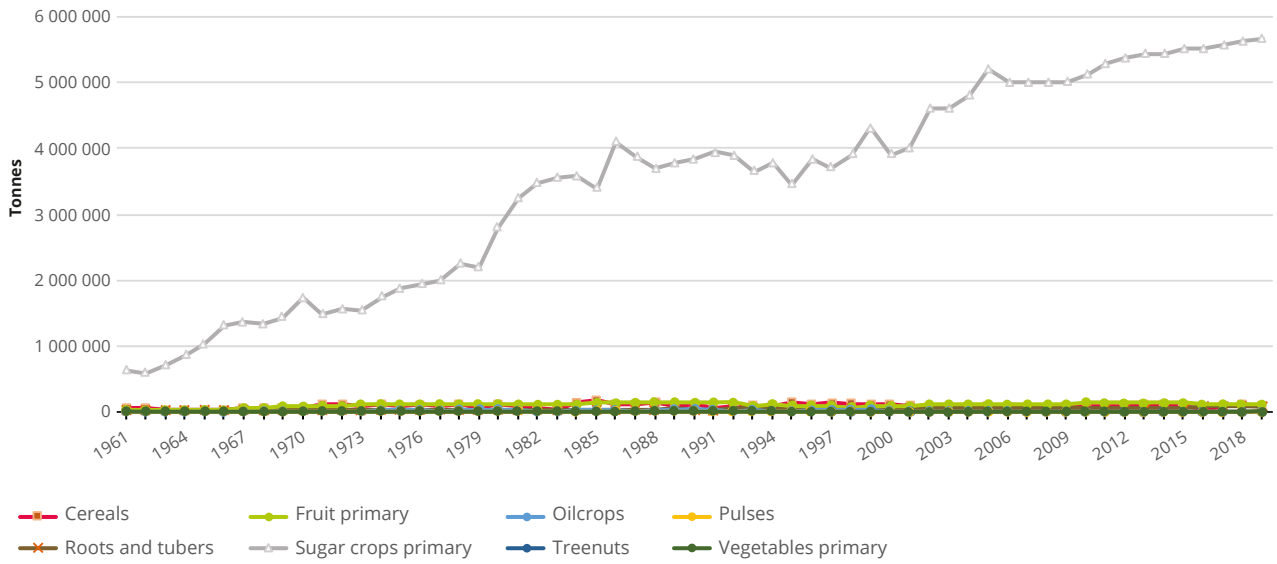
Figure 2.1 suggests that the production trend of cereals and oil crops has been very volatile and remained significantly below the population growth rate, especially over past two decades. Fruit production trended higher initially and then declined sharply after 1993. It then kept fluctuating but remained below the population growth rate. The decline may have been caused by a combination of factors, including, among others, increased world supply and depressed demand, and stiff competition from exporters from South Africa and South America (Magagula and Faki, 1999). The production of roots and tubers fluctuated, but was higher in 2019 than in 1961, whereas for vegetables, it remained low and stagnant. Despite government attempts to develop vegetable value chains to compete with imported produce, many vegetable farmers struggle with access to water and financial services and being compliant with market standards. They also face high post-harvest losses – estimated to be 30 percent – adding to the difficulties of attracting new producers to the vegetable sector (Eswatini, Ministry of Agriculture, 2015).

Since independence in 1968, the primary goal of the Government of Eswatini has been to increase homestead productivity throughout the country in livestock and maize production. **The aim was to achieve national self-sufficiency in maize by 1980 (Booth, 1985), during the Third National Development Plan 1978/79-1982/83. However, by 1987, the goal had not been achieved and it actually appeared more remote than ever as maize acreage was declining, in spite of a**

positive response by SNL farmers to improved technology (Sithole and Apedaile, 1987). As data suggest, the maize acreage steadily declined from 84 371 ha in 1990 to about 70 337 ha in 2019 (Eswatini, Ministry of Agriculture, 2021).

A sharp decline in maize production between 2014 and 2016 (see Figure 2.1) was attributed to severe drought and an invasion of fall armyworm (Phungwayo, Kushitor and Koornhof, 2021).

Figure 2.2. Agricultural production, including sugar



Source: FAO. FAOSTAT. In: *Production Database*. [online] Rome. www.fao.org/faostat/en/#data/QC

Sugar accounts for more than 70 percent of the value of agricultural production (see Figure 2.2). The area under sugar cane has grown steadily from approximately 36 000 ha in the 1980s and 40 000 ha in the 1990s to reach 53 500 ha in 2012 and more than 70 000 ha in 2019 (see Figure 2.3). Initially sugar production was entirely on TDL, but small-scale farmers on SNL started to produce sugar in the late 1980s. The increase in production volume may be partly due to a change in the input support extended to farmers on SNL lands by the Government, supported by milling companies, the Eswatini Canegrowers Association and development funding from the European Union. Smallholder sugar cane production is seen as a crucial means of overcoming rural poverty in the poorest region, the semi-arid Lowveld.


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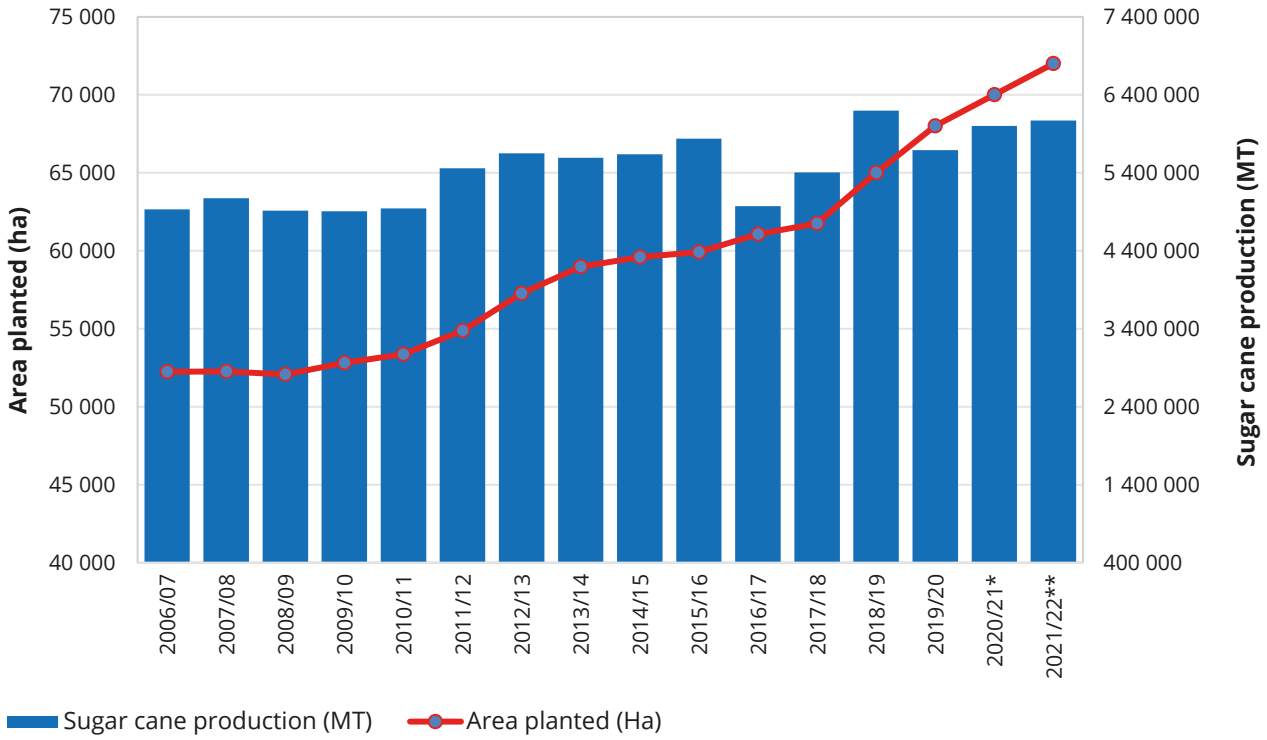
Figure 2.3. Sugar cane production and area planted in Eswatini



*Estimate; **Forecast

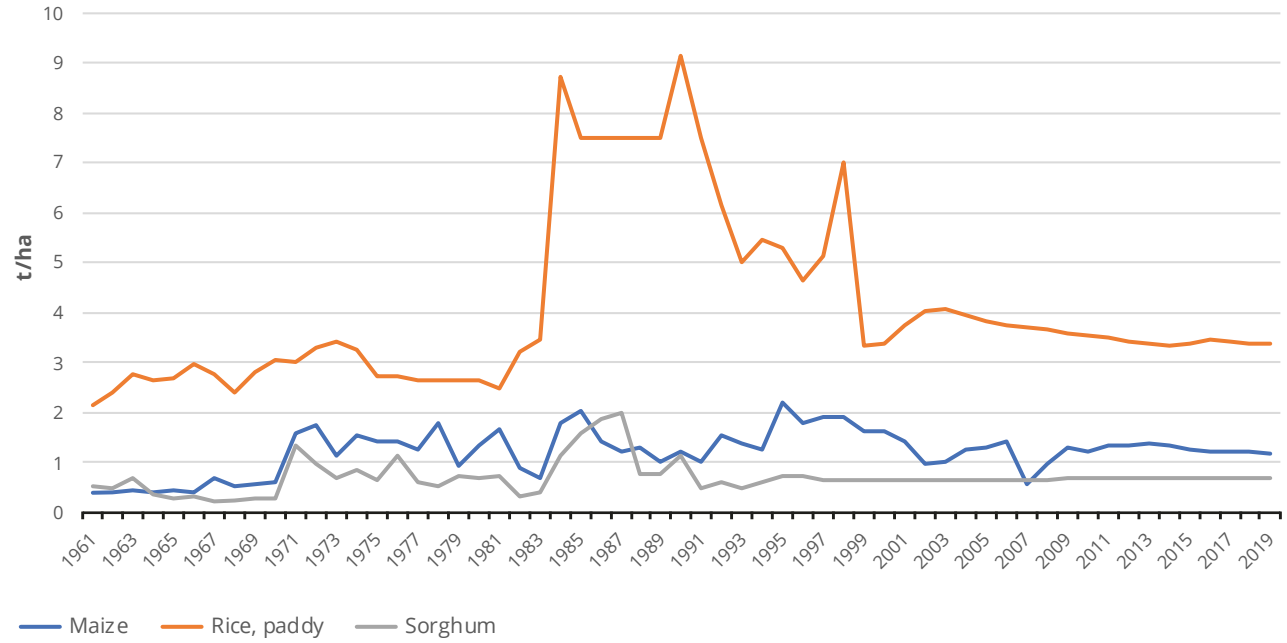
Source: United States Department of Agriculture (USDA). 2021. *Sugar Annual: Eswatini.* Project report. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Sugar%20Annual_Pretoria_Eswatini_04-15-2021.pdf

Figure 2.4 shows the variable yields over the past 60 years of three crops (staple maize, rice and sorghum). For rice, there was a significant increase in rice productivity from 1982 until 1991 before it tended lower, due in part to drought. Maize productivity has remained roughly in a range of one to two tonnes/ha, compared to an average yield of four to six tonnes/ha in neighbouring South Africa. Sorghum productivity has been largely stable, most likely because the crop is drought-resistant. The increase in rice yields (as of 1983) may be partly attributed to assistance in production projects given by Taiwan Province of China, which included seasonal loans, cropping recommendations and marketing support to approximately 4 800 producers on SNL lands, especially in the north (Levin, 1987).

Eswatini is highly dependent on food imports to feed its people, as national production is constrained by frequent droughts, erratic rainfall, prolonged dry spells, rudimentary farming technology, low investment in seeds, fertilizers and equipment, and structural barriers preventing access to formal markets. This situation appears set to continue, with imports likely to increase further. Figure 2.5 shows sharp increases in the import of cereals from almost zero in 1961 to approximately 250 000 tonnes in 2019, **suggesting a cereal import dependency of about 72 percent in that year**.

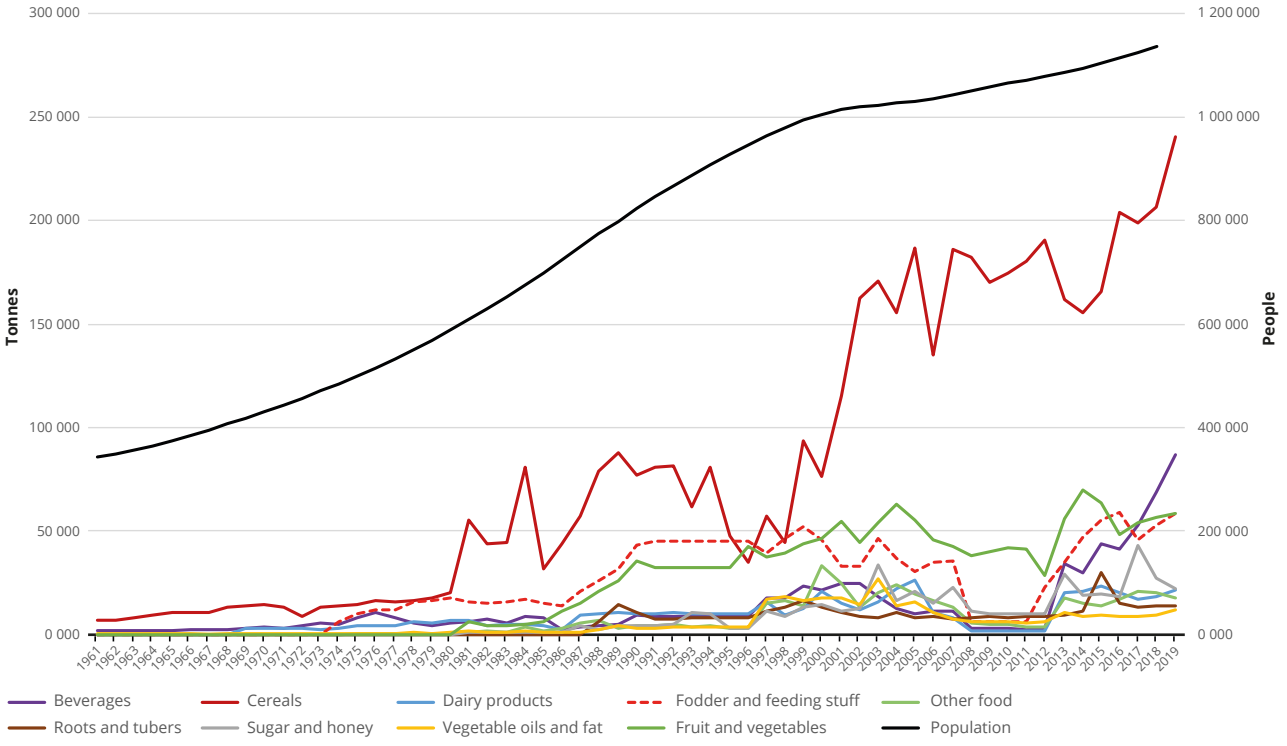
The country's major imports are wheat, yellow maize, rice and whole maize. Imports of fruits and vegetables are also substantial and have steadily increased over the past three decades. Also of note, in recent years, imports of beverages, both alcoholic and non-alcoholic, have been on the rise.

Figure 2.4. Trends in yields in main staple crops



Source: FAO. FAOSTAT. In: *Production Database*. [online] Rome. www.fao.org/faostat/en/#data/QC

Figure 2.5. Evolution of main products imported (volume), with population (1961–2019)

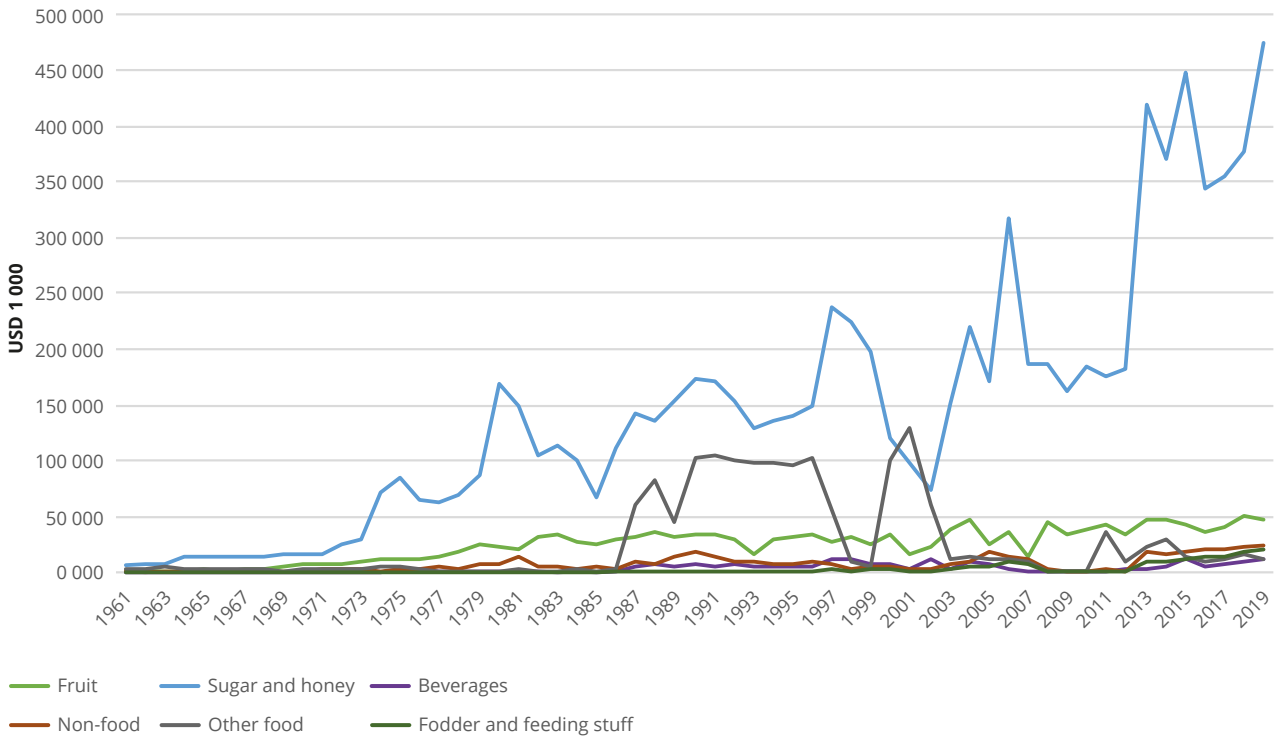


Source: FAO. FAOSTAT. In: *Production Database*. [online] Rome. www.fao.org/faostat/en/#data/QC

Among exports from Eswatini, sugar is by far the biggest, by volume and by value (see Figure 2.6), which reached USD 421.8 million in 2018, a surge of 36.3 percent from total sugar exports of USD 309.5 million in 2006.[2] Next are fruit exports, especially pineapples. Plantation production of pineapples and other fruit faces competition from the expansion of sugar production, especially in the Malkerns valley (Middleveld), where there is also increasing competition from human settlement. For several years, the fruit canning industry had found it difficult to put more land under pineapple production (Eswatini, Ministry of Agriculture, 2018).

In the case of the sugar industry, the Eswatini Sugar Association is responsible for exporting all the raw sugar produced. The Southern African Customs Union (SACU) is the most important market for this, accounting for 45 to 70 percent of sugar exports. The European Union, historically an important market for the Eswatini sugar industry, is the main market for bulk sugar, with small volumes of bagged light brown, very high polarity sugar (VHP) also sold into this market (Eswatini Sugar Association, 2021; USDA, 2021) Sales to European Union Member States benefit from duty-free, quota-free access under the Economic Partnership Agreement (EPA) between the European Union and the Southern African Development Community (SADC). SADC-EPA States are Eswatini, Botswana, Lesotho, Namibia, Mozambique and South Africa (Eswatini Sugar Association, 2021).

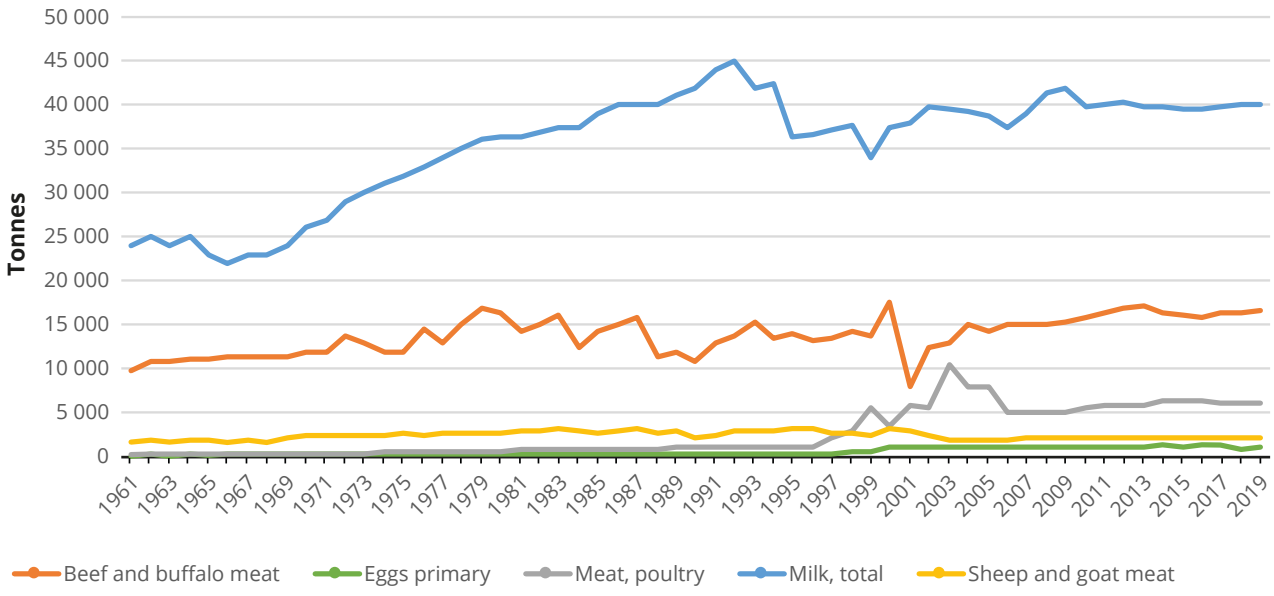
Figure 2.6: Value of main export products



Source: FAO. FAOSTAT. In: *Production Database*. [online] Rome. www.fao.org/faostat/en/#data/QC

[2] There is a slight difference in the data in Figure 2.6 because honey is included in these statistics. The figures in the text exclude honey and refer only to sugar.

Figure 2.7. Evolution of animal production in tonnes (1961–2019)



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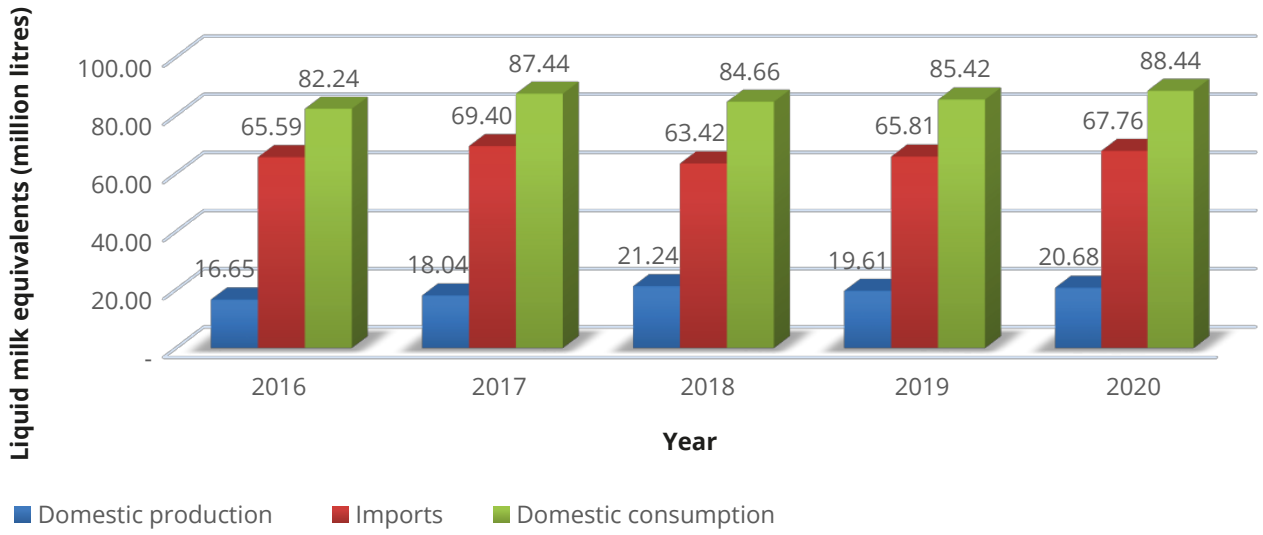
Livestock subsector

Livestock constitutes an important subsector within the Eswatini agricultural sector and an integral part of the food security and sustainable livelihood of close to 80 percent of the Swazi population. Livestock provides draft power, is a source of food and income, and manure for crops and grazing lands, and play a prominent sociocultural role. During difficult times, households often sell animals, especially cattle, to satisfy basic needs. The livestock sector is, however, characterized by low productivity, mainly due to overgrazing, poor nutrition and poor management practices (Eswatini, Ministry of Agriculture, 2015). Three animal production systems predominate: (i) traditional smallholder system on SNL with minimal inputs, high stocking rates and uncontrolled mating, which accounts for approximately 82 percent of grazing livestock; (ii) commercial ranching on TDL; and (iii) modern industrial-scale pig and poultry production. Due to low productivity and largely stagnant production (see Figure 2.7), Eswatini remains heavily dependent on imported animal products, especially meat and dairy products.

Dairy production is an important agricultural activity in Eswatini. It has increased steadily since 1961, although in some years, it has been adversely affected by drought and diseases (see Figure 2.7). Dairy production is a source of employment and income for small and marginal farmers. Swazis traditionally consume substantial quantities of sour milk (emasi), which is an important segment in the milk market, along with UHT milk, yoghurt, cheese, fresh milk, dairy juices and baby formula.

The dairy industry makes a large and growing contribution to the economy of Eswatini. Notably, the country is among the highest in Africa in terms of consumption of dairy products per capita at (an annual 90 litres/capita). But domestic production continues to fall short of demand. Despite increasing to 20.68 million litres in 2020, domestic dairy production only represented 23.4 percent of total consumption, which was estimated to at 88.44 million litres (liquid milk equivalent, LME) (see Figure 2.8). Dairy imports in 2020 totalled 67.76 million litres (LME), up from 65.81 million litres in 2019 (SDB, 2020), with the bulk of imports coming from South Africa. This presents substantial opportunities for domestic and foreign investments.

Figure 2.8. Annual consumption of milk in Eswatini (2016–2020)



Source: Eswatini Dairy Board. 2020. *Overview of the dairy industry 2020*. www.dairyboard.co.sz/download/Overview%20of%20Eswatini%20Dairy%20Industry%202020.pdf

As a result of continued low livestock productivity, Eswatini remains heavily dependent on imported animal products, especially meat and dairy products. However, the country's foot-and-mouth disease-free status enables it to export 600 to 700 tonnes of boneless beef to the European Union, South Africa, Mozambique, Reunion and Mayotte (Eswatini, Ministry of Agriculture, 2018).

The demand for quality meat, including beef, is relatively high in Eswatini and in the export markets of the European Union and Norway. **Beef exports declined sharply in 2017 and 2018 due to losses in the herd following the severe drought in 2015/16, but recovered slightly in 2019** (Finmark Trust, 2021) (see Table 1). Eswatini has a relatively limited number of cattle annually slaughtered for the domestic and export markets, on average 50 000 annually. In addition to the potential for export of higher quality meat, there is also a shortfall of beef to meet the strong local demand, which is currently met by imports of lower-grade beef, particularly from South Africa and Mozambique.

The beef value chain accounts for 2 percent of national GDP and 32 percent of agricultural GDP. Despite the exports of high-value beef – mainly to Norway – the beef value chain accounts for a net deficit in the balance of trade of EUR 23 million (about USD 25 million, based on 2019 average dollar/euro exchange rates), given the imports from its neighbours (Wane *et al.*, 2018).

Consumption

Eswatini is experiencing a dietary transition. Between 1800 and 1871, meals typically comprised indigenous plants, fruits, seeds and vegetables, as farming and hunting were the dominant modes of attaining food. After 1871, colonization by what is today the United Kingdom of Great Britain and Northern Ireland introduced new food items into the Swazi diet. These included processed foods, such as baked wheat-flour products, rice, fish and chips, canned foods and fruits, vegetables and sugar products. This led to a change in eating patterns and cooking methods. The development of industry and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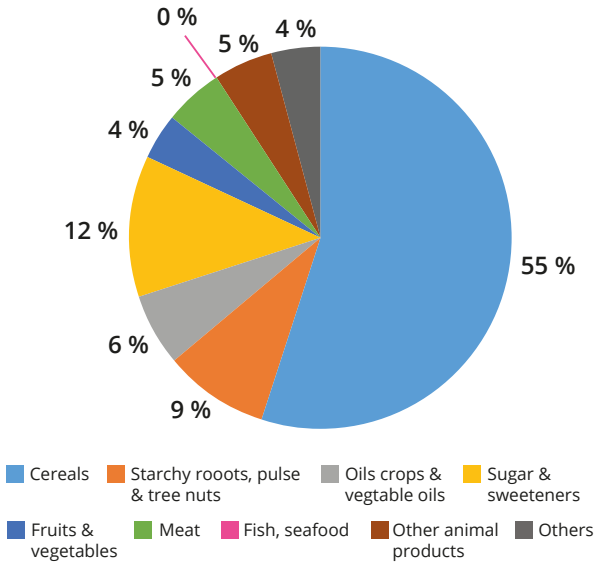
services contributed to the rural-urban migration and in recent years, reliance on convenience foods and eating outside the home has become a regular practice for the urbanized population (Phungwayo, Kushitor and Koornhof, 2021).

The 2019 Annual Vulnerability Assessment and Analysis Report (Eswatini Vulnerability Assessment Committee, 2019), suggests that household dietary diversity has worsened. Contemporary dietary patterns reflect a high dependence on maize and other starches, and low consumption of fruit, vegetables, milk and meat (see also Figure 2.9). More than 90 percent of Swazis do not meet the daily recommended intake of fruits and vegetables; the report found that 23 percent of the population perceived that they do not have acceptable diets.

Based on a food consumption scale, the report indicates that 15 percent of rural households have a poor consumption pattern, with 27 percent on the borderline, indicating that 42 percent are vulnerable to being unable to meet their food needs (IPC Phase 2).[3] The Lubombo region has the highest proportion of households with poor consumption, at 30 percent, and 45 percent of the households there have borderline consumption levels. On the other hand, the Manzini region has the highest proportion (71 percent) of households with acceptable consumption levels, although 14 percent of those households are reported to have poor consumption.

Figure. 2.9. Food availability by commodity group (calories)



Source: FAO. FAOSTAT. In: *FAO Food Balances Database* [online]. Rome. www.fao.org/faostat/en/#data/FBS

[3] The Integrated Food Security Phase Classification (IPC) is a set of standardized tools designed to provide a "common currency" for classifying the severity and magnitude of food insecurity. The approach uses international standards, which allow comparability of situations across countries and over time. (FAO, 2021).

Characterization of the dominant actors of the food system

Food production, transportation, processing and marketing in Eswatini is carried out by individual small actors and very small and often informal enterprises that mainly work with food crops, vegetables and some livestock. There are, however, many commercial actors, such as large-scale farmers, mills and packaging industries, especially for sugar, beef and citrus fruit.

Crop Sector

- **Small-scale (subsistence) farmers:** Approximately 61 percent of SNL farm holdings are less than one hectare (IFAD, 2015) and are used for **subsistence-type** production. These farmers tend to have low output and productivity, use traditional tools and apply few improved inputs, such as fertilizers, have little capital expenditure and be focused on maize production in combination with traditional livestock-keeping practices.

- **Agribusiness sector is dominated by sugar**. The sugar industry comprises three sugar cane millers, four sugar estates (large-scale sugar cane producers holding land that exceeds 1 000 ha each), 38 medium-scale sugar-cane farmers (holding land between 50 and1 000 ha), and more than 2 500 small-scale farmers (less than 50 ha of land, as classified by the Eswatini Sugar Association (Eswatini Sugar Association, 2021). All sugar is produced under irrigation in the Lowveld agroecological zone (Eswatini, Ministry of Agriculture, 2015).

- An estimated **1 000–1 200 farmers produce fruits and vegetables**, with smallholders dominating the vegetable sector. Some of these farmers are also included in irrigated sugar-cane schemes under which vegetable production is carried out by adjoining the cultivation of sugar cane. Farmers in this scheme benefit from free irrigation and other services. They have been organized into 15 groups operating as companies and control land that exceeds 50 hectares. Other smallholders operate as individual producers, dispersed through the rural areas and on plots of less than one ha each.

- **Most vegetables produced by small-scale farmers** are sold informally through open-air markets in rural areas, town markets and farm-gate sales to informal vendors or roadside farm stalls. **Vendors purchasing at farm gates typically sell fresh produce directly at their own stalls to other traders**, at wholesale markets or to the catering industry (hotels and restaurants) in Mbabane, Manzini and other towns. Smallholder farmers also sell horticultural produce to the National Agricultural Marketing Board and supermarkets.

- **Commercial fruit farms** dominate the export markets for fruit, but some of their produce is sold nationally, such as citrus, pineapples and bananas. All of these fruits are grown for local and regional sale, including to South Africa.

- **Eswatini Fruit Canners,** which is part of the Rhodes Food Group of South Africa, dominates the processing and export of processed fruits, vegetables and nuts. It produces a wide range of products, including, among them, pineapple rings and pieces, juice and citrus segments.

- **Informal small-scale operators** are engaged in such activities as transportation, storage and distribution. Ngwane Mills is engaged in milling wheat and maize and the production of animal feeds. Maize is purchased locally from the National Maize Corporation, private farmers or from other countries in the region. All wheat is imported.

- **There are 579 registered cooperatives (International Cooperative Alliance, n.d.) with 64 591 members** – The Eswatini Farmers' Agricultural Union is an umbrella grouping,

representing 84 cooperative organizations and 2 500 members engaged in aggregation, transportation, storage and distribution. [4]

- **There are 49 large-chain supermarket stores** in Eswatini, strategically located in the Manzini-Mbabane corridor. Most of them are South African retail chains (Dlamini-Mazibuko, 2020; Central Bank of Eswatini, 2020; Department of Veterinary and Livestock Services, 2018).

Livestock Sector

- T**he livestock sector in** Eswatini has contrasting "commercial" and "communal" livestock or "modern" and "traditional" systems. In 2017, a total of 446 013 (90 percent) head of cattle were raised by **48 595 (99 percent) smallholder SNL farmers. That compares to 731 commercial farmers raising cattle on TDL** (ibid). **Beef production** can be classified by three broad categories of actors: small-scale farmers managing between 1 and 11 animals – predominantly the traditional Nguni breed, which is low in terms of productivity; medium-scale farmers managing between 11 and 49 animals; and larger-scale farmers, managing a least 50 animals.

- **Small-scale livestock producers** face difficulties in improving their livelihoods, as they lack access to sales channels, supply channels and credit sources. Among the reasons cited for this are limited bankable projects to attract investment, imperfect information about small and medium enterprises and lack of collateral and documentation that would enable lenders to assess credit risks for each project (IFAD, 2015, Eswatini, Ministry of Agriculture, 2020).

- **Swaziland Meat Industries** slaughters and processes cattle and pigs, and operates a pig farm. It is the major supplier for meat for the local market and also exports beef to the Indian Ocean islands of Reunion and Mayotte, and to neighbouring Mozambique.

- **Milk production** in Eswatini is made up primarily of a few large-scale commercial farmers rearing 50 or more dairy cows on TDL, medium-scale farmers rearing 11 to 49 dairy cows and numerous smallholder farmers rearing up to 11 cows on SNL. There are about 700 small-scale dairy farmers in total, comprising 86.5 percent of the dairy producers. The **dominant milk processor**, Parmalat, buys milk from medium- and large-scale farmers or cooperatives/groups, for processing into products, such as yoghurt, ice cream, emasi (sour milk) and dairy juice.

- **Poultry:** the broiler industry is dominated by a single producer and processor (Umbuluzi Farm Chickens), which also engages outside producers with flocks of more than 4 000 birds per batch. Two commercial egg producers, with 50 000 to 60 000 layers each, supply more than 90 percent of the domestic market and also exports eggs to Mozambique.

- Some other important actors in the livestock sector are the following: government Institutions, including ministries and parastatals; the National Maize Corporation; the National Marketing and Agricultural Board Eswatini Dairy Board; community chiefs; farmers' organizations, such as the Eswatini National Agricultural Union, the Eswatini Cane Growers Association; and financial institutions such as Eswatini Bank and Eswatini Development Finance Corporation.

[4] See https://www.facebook.com/www.snau.co.sz/.

Key challenges to the achievement of core sustainable food systems goals

Eswatini faces four challenges in transforming its food systems: improving nutrition and food security; transitioning to more sustainable agricultural and food production processes and livelihoods; addressing gender and regional disparities across the food system; and improving food system sustainability and resilience.

Improving nutrition and food security

Key Sustainability Question 1: Why does Eswatini still have a high incidence of malnutrition and countrywide food security challenges?

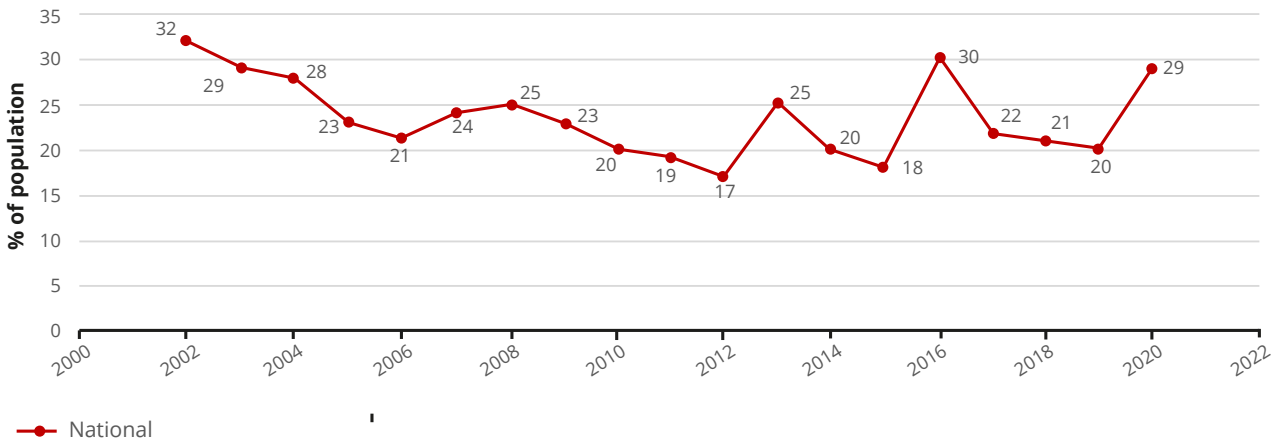
Agriculture in Eswatini is generally either focused on commercial production of sugar cane and fruit for export or on smallholder farming of maize and livestock. Smallholder crop volumes and yields are low and of poor nutritional value. The lack of crop diversity is a further challenge to producing sufficient nutritious food. The result is that Eswatini shoulders the triple burden of malnutrition, pervasive undernutrition micronutrient deficiency and high rates of anaemia, even as overweight and obesity are increasing due to changing lifestyles and consumption habits.

In 2019, **more than 20 percent of the population of Eswatini experienced severe acute food insecurity. This figure rose to almost 30 percent in 2020** (see Figure 4.1).

According to Eswatini Vulnerability Assessment Committee (2021) 14.2 percent of Swazis indicated that in the past months they had faced moderate hunger and 8.5 percent said they had faced severe hunger and were unable meet national dietary requirements for grains or protein.

Data in Figure 4.1 show that from **2002, the number of food insecure people declined steadily until 2006**. Food insecurity then

Figure 4.1: Percentage of the population classified as acute food insecure



Source: Eswatini Vulnerability Assessment Committee. 2021. *Annual Vulnerability Assessment & Analysis Report 2019*. Mbabane.

increased in 2007 and 2008, which was attributed in part to drought that had worsened significantly in 2007. This combined with a high prevalence of HIV/AIDS, which took a major toll among adult farmers and heads of household, as the resulting illness and deaths reduced food production (OCHA, 2007). In 2020, approximately 29 percent of the population was classified as food insecure, up from 20 percent in the previous year (partly due to the COVID-19 pandemic) (Eswatini Vulnerability Assessment Committee, 2021).

Most recently, according to the Integrated Food Security Phase Classification (2021), between January and March 2021, **more than 347 000 people (31 percent of the population) experienced high levels of acute food insecurity (IPC Phase 3 or above)** and required urgent humanitarian assistance.

Eswatini has made progress against malnutrition at the national level, setting it on course for four out of the six maternal, infant and young child nutrition targets – childhood overweight, stunting, wasting, and exclusive breastfeeding (Global Nutrition Report, 2021).

Figure 4.2 shows that the prevalence of stunting decreased from 40 percent in 2008 to bottom out at 23 percent in 2017, but rose again to 29.4 percent in 2021. This increase may partly be attributed to disruptions in safety net programmes and increased food insecurity at the household level, particularly in rural areas, where stunting is more common (30 percent prevalence) than among children in urban areas (23 percent). The underweight data also show an upturn in recent years; wasting was more than double in 2020 than what it had been 20 years earlier – but it remains below the average for the Africa region (6.0 percent) (Global Nutrition Report, 2021).

Eswatini has made limited progress towards achieving the diet-related non-communicable disease targets. Its rates of obesity, which are estimated to be 29.2 percent among women aged 18 years and over, and 6.6 percent among men is higher than the regional average of 20.7 percent

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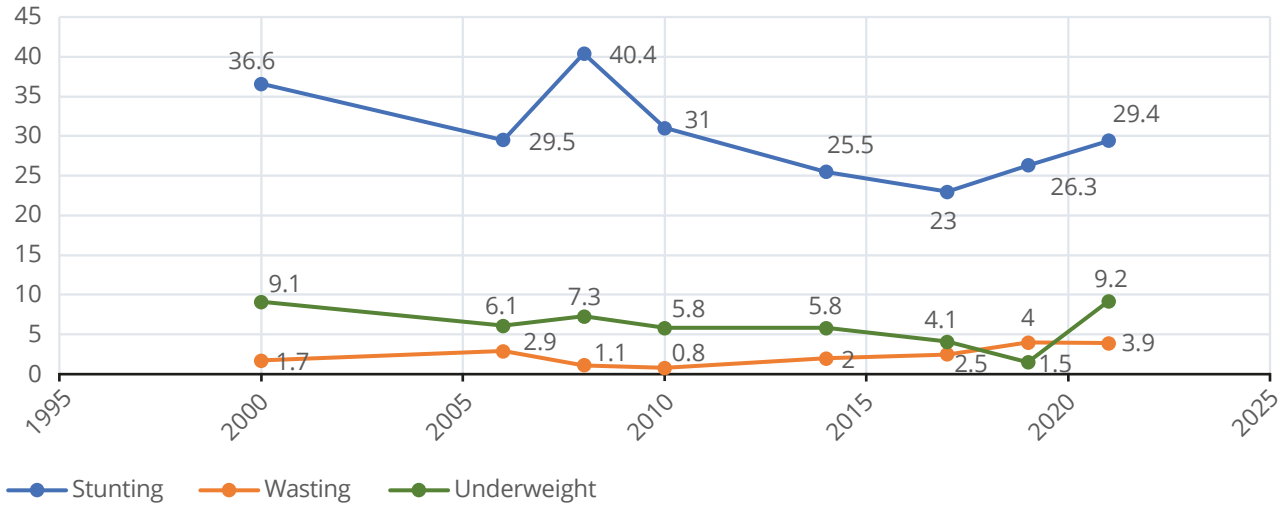
for women, but lower than the 9.2 percent regional average for men. (Global Nutrition Report, 2021). **The incidence of overweight and obesity is higher in the urban population than in rural areas**, according to the World Obesity Organization, with rates of **8 percent obese and 27 percent overweight in urban areas, and approximately 3 percent obese and 14 percent overweight in rural areas** (Central Statistical Office and Macro International, 2008). Overweight and obesity rates in children under five are slightly higher in urban areas (11.6 percent) than in rural areas (8.2 percent), with Hhohho being the region with the highest prevalence (UNICEF, 2017).

Meanwhile, diabetes is estimated to affect 12.8 percent of adult women and 9.4 percent of adult men (Global Nutrition Report, 2021).

Figure 4.2: Trends in nutritional status of children under five years



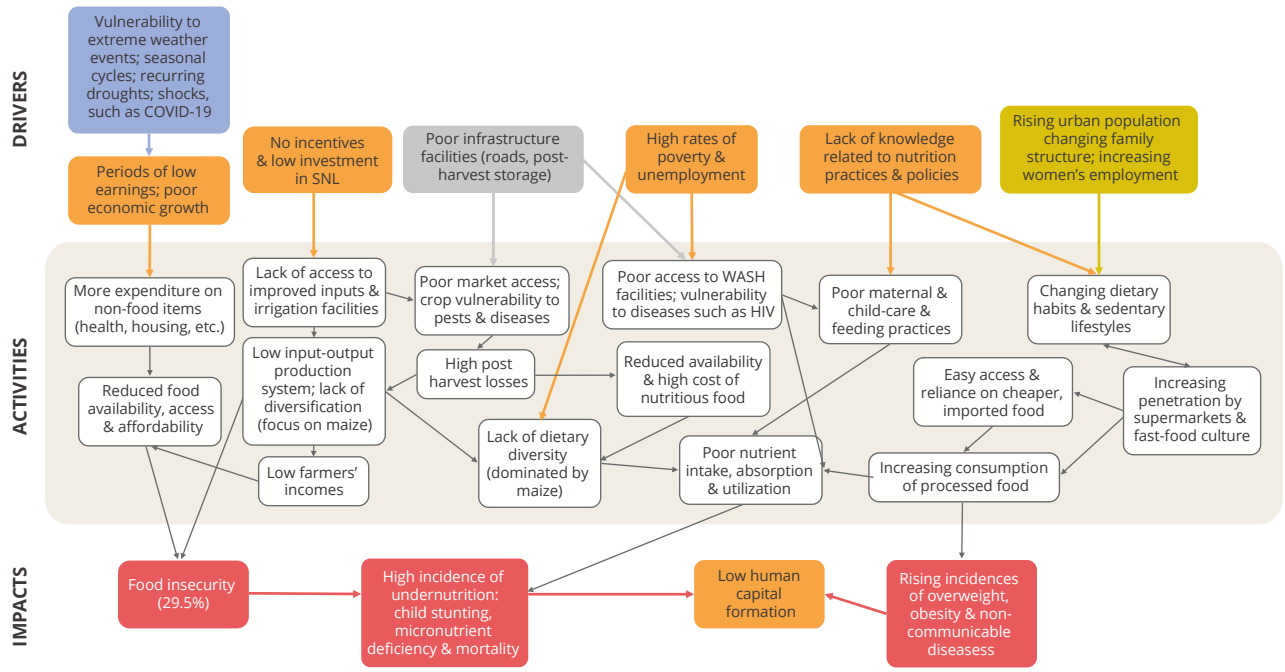
Sources:

Global Nutrition Report 2014. *Actions and Accountability to Accelerate the World's Progress on Nutrition*. Washington, DC, International Food Policy Research Institute;

Eswatini Vulnerability Assessment Committee. 2021. *Annual Vulnerability Assessment & Analysis Report 2019*. Mbabane.

Figure 4.3 shows the drivers that contribute to the high incidence of malnutrition and challenges of food insecurity, how they influence actors in the food systems and their overall impact on food systems sustainability.

Figure 4.3: Why does Eswatini still have high incidence of malnutrition and food security challenges?



Source: Authors, 2022.

Key drivers

Vulnerability to extreme weather events and other shocks

Eswatini faces weather shocks and disasters, which primarily affect the agricultural sector through seasonal flooding and drought. The country experiences violent storms, epidemic diseases and forest fires, which can take large tolls. Persistent drought, in particular, is exacerbating challenges of food insecurity and the country's ability to attain the Sustainable Development Goals. Consequences of severe, recent droughts for the country have resulted in 25 percent of the population being vulnerable and food and water insecure, making many households reliant on welfare and social safety nets. The regions with the highest prevalence of food insecurity are Lubombo and Shiselweni, the areas most affected by drought (World Bank, 2021c).

Nationally, recurrent **droughts, such as those induced by the El Niño climate phenomenon, have caused substantial reductions** in the production of the staple maize – as much as 40 percent in the 2015/16 season – and affected livestock production (Eswatini Vulnerability Assessment Committee, 2017). In addition, Eswatini Vulnerability Assessment Committee (2019) reported that low and erratic rainfall from 2000 to 2019 disrupted agricultural activities and the cropping calendar, as planting of maize only started in December instead of the previously normal September. **The late growing of crops resulted in most farmers having low or no yields and consequently a major reduction in their earnings.**

Since 2020, the economic shocks of COVID-19 and responses to the pandemic have also had a major impact on livelihoods. Related prevention measures reduced incomes for approximately 37 percent of households; 26.9 percent reported

loss of employment, which further eroded their ability to purchase food and farm inputs, resulting in high acute food insecurity (29.5 percent of the population) (Integrated Food Security Phase Classification, 2021).

Limited investments in SNL land

Approximately 70 percent of the population involved in agriculture are smallholder farmers (Eswatini, Ministry of Agriculture, 2015). These farmers contribute only 11 percent of total agricultural output, with a low average maize yield of 1.1 tonnes/ha (Eswatini Ministry of Agriculture, 2015). One of the r**easons for low productivity in SNL is low investment opportunities, as farmers cannot use the land as collateral to acquire credit**. The large majority (89 percent) of the farmers have small land parcels **with unsecured tenure**. They indicate that this insecurity has held back investment in farm infrastructure and undervalued their land as an asset (Simelane, Terblanche and Masarirambi, 2019).

Consequently, SNL smallholders, who mainly depend on rainfed subsistence agriculture and/or livestock herding, cannot access improved inputs (such as improved seeds or fertilizers) or invest in irrigation equipment, which is a significant contributing factor to food insecurity in Eswatini (Simelane, Terblanche and Masarirambi, 2019).

Government agricultural spending is well below the Malabo Declaration on upholding commitments to allocate at least 10 percent of public budgets on agriculture, and to ensure its efficiency and effectiveness. Over the period 2013−2018, the country's overall agricultural sector expenditure averaged SZL 470 million (USD 30 million) per annum – which accounts for 4.4 percent of the budget. (Eswatini, Ministry of Agriculture, 2018).

Inadequate infrastructure

Eswatini has well-developed main tarmac road links to South Africa and Mozambique, (via

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Namaacha), which ease the transport of exports, especially to the seaport in Mozambique. **Poor roads in rural areas, however, continue to impede services in these areas (Eswatini Vulnerability Assessment Committee, 2016)**. Poor infrastructure also makes it difficult to access markets and services, such as agriculture, education, health, technology and communication, and contributes to higher prices and post-harvest losses (pests and diseases) and food and nutrient losses (FAO, ECA and AUC, 2020). Poor infrastructure in rural areas also limits the availability of a variety of nutritious food produced elsewhere, resulting in food consumption remaining dominated by maize.

High poverty and unemployment rates

High levels of poverty and unemployment limit the capacity of the population to afford diverse, nutritious food and to access adequate water, sanitation and hygiene (WASH) facilities, contributing to food security and nutrition challenges.

Sizeable segments of the Swazi population – especially the rural population, women and young people – face serious challenges in attaining formal employment. Even in economic sectors with high productivity, such as manufacturing and textiles, there has not been a significant increase in output and jobs.

The lack of adequate job opportunities is one of the leading developmental challenges facing Eswatini, and a major contributor to the substantial proportion of the population living below the national poverty line (World Bank, 2020d).

The 2020 unemployment rate in Eswatini was estimated at approximately 23.4 percent, up from 22.72 percent in 2016 and is substantially higher (at 46.2 percent) among young people (KNOEMA, 2021) for the same year.

Government is the largest formal employer and its wage bill is fiscally unsustainable. Large numbers of workers from rural Eswatini used to take jobs as migrant labourers at the mines in South Africa (Eswatini Vulnerability Assessment Committee, 2017), but retrenchments at some mines, and the closure of major manufacturing companies in urban areas, led to increased joblessness. To make up for the employment shortfall, the country's informal sector, in self-employment, has grown rapidly. Meanwhile, the country remains dependent on remittance flows, mainly from South Africa (World Bank, 2020c).

The high levels of poverty and the lack of employment limit household resources to procure a variety of nutritious foods and also undermine access to clean water and basic toilets, and use of good hygiene practices essential for human health. Water and sanitation-related diseases are among the leading causes of death for children under five years of age, but additionally, poor sanitation has an impact on nutrient intake and absorption, contributing to a high incidence of undernutrition, micronutrient deficiency and mortality (Eswatini Vulnerability Assessment Committee, 2019). This has a direct impact on food security, nutrition and health status – with a future impact being a decrease in human capital.

In Eswatini, only 69 percent of the population has access to basic water services and only 58 percent has access to sanitary services (11 percent open defecation). Approximately 24 percent of Eswatini households practice handwashing (UNICEF, n.d.). In rural areas, approximately 40 percent of the people have access to water, which is well below the average of 58 percent of the general population (Barton, n.d.).

Lack of nutrition knowledge and policies

Lack of knowledge about good nutritional practices, and difficulties in reaching health facilities to ensure prenatal and postnatal care, contribute to poor maternal health in Eswatini, according to community discussions cited in the Zero Hunger Strategic Review (Eswatini, Ministry of Economic Planning and


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Development, 2018). The findings of the review indicated that the participants had only a basic understanding of the causes of stunting and lacked knowledge on nutrition practices and health. Even though the country has policies, legislative and programmatic measures in place to reduce malnutrition and hunger, some policies have remained in draft form, while others need to be reviewed and updated.

This lack of knowledge of the need for varied and nutritious diets extends into patterns of adult consumption. In 2017/2018, the majority (92 percent) of the adult population in Eswatini ate less than the recommended five servings of fruit and/or vegetables per day. On average, the adult population consumes one serving of fruit every second day and approximately 1.5 servings of vegetables per day five times a week (Eswatini, Ministry of Economic Planning and Development, 2018). Consumption of these in sufficient quantities remains key to the prevention and control of chronic non-communicable diseases such as diabetes and heart disease.

Increasing urbanization and changing family structure

Urbanization in Eswatini has had a notable impact on consumption habits in recent years. The tendency among urban consumers to shy away from traditional, nutritious and varied foods to more highly processed convenience foods, high in sugar and fat, has implications for public health and the transformation of food systems. Changes in family structure, including women working, have also contributed to changes in dietary patterns by reducing the time available to produce nutritious, varied, but labour-intensive meals from scratch.

While approximately three-quarters of the population lives in rural areas, the **urban population is growing at a rate of 2.5 percent per year** (Eswatini, Ministry of Economic Planning and Development, 2019b). Men and women are increasingly working outside the home and engaging in off-farm activities. Their changes in lifestyle give them increased access to convenience meals, imported and processed food from supermarkets, and meals prepared away from home (Stakeholder workshop KII). Recent decades have marked a move **away from traditional foods**, such as small grains (sorghum and millets), cassava and tubers, to maize meal and imported rice and processed foods, such as pasta, and products, such as sugary drinks.

This shift in consumption has major implications for public health, particularly in non-

communicable diseases, such as diabetes, as well as obesity and overweight, as mentioned above.

Impacts

Poor health outcomes, and higher rates of food and nutrition insecurity lead to reduced human capital and an increasing burden on the health-care system, which will be tested in managing diseases resulting from the triple burden of malnutrition.

Over and above the incalculable human impact, there are substantial blows to the economy of Eswatini too, which could also have repercussions for socioeconomic stability.

The Cost of Hunger study in Africa (WFP and African Union, 2013) showed that stunted children had a higher school repetition rate, at 18.9 percent, than well-nourished children, at 14 percent. This resulted in 5 550 repeats of school grades, at a cost of SZL 6.0 million (about USD 400 000). Overall, stunting is estimated to have cost Eswatini SZL 251 million (about USD 16 million) in lost economic productivity (UNICEF, 2017) and it will continue to have major impacts in the future in terms of increased mortality, reduced human capital and productivity.

Proposed systemic levers:

Better food security and nutrition remains a priority in improving the lives of many segments of the Eswatini population. This is particularly urgent among rural households on customary land that lack access to resources and development, and for unemployed and marginalized communities in urban peripheries.

From a **policy perspective, multisectoral cooperation** among various governmental institutions is required to improve and strengthen the food security and nutrition situation in Eswatini and it should be accompanied by effective implementation to ensure delivery. This difficult task may be achieved through improved cooperation of all stakeholders, including the ministries of agriculture, health, education and other relevant actors, in addition to the private sector (such as supermarket chains), development partners and farmers' organizations. An entry point would be formulation of **national dietary guidelines**, which would increase the ability of practitioners to provide context-specific advice on healthy diets and lifestyles.

An additional step could include promotion of production and use of indigenous foods and consumption of protein-rich livestock products and fish. It would also be combined with efforts to demonstrate appropriate technologies for the preparation of diversified, nutritious food that is affordable to the rural population as well. Incorporating nutrition and health awareness of foods and diets into school curricula could help to educate young people and consumers, in general.

Improved extension services and training and campaigns could have a substantial impact, given that many households have inadequate knowledge of good agricultural and nutritional

practices. Training of professionals, community health workers, farmers' groups, women and heads of households could help to share knowledge of production techniques and the need to consume micronutrient-rich foods. Similarly, a micronutrient supplementation and fortification programme could help to overcome the gaps and ensure better nutrition. Policies could be implemented to display nutritional information on food labels and menus; other measures could include policies to reduce the use of sugar and other unhealthy, processed foods.

Key systemic levers are the following:

1. Support a strategic and policy focus and strengthen institutions (including budgets), investments in diversification and sustainable agricultural production practices and technologies, to support rural communities – especially those on customary land – to improve their food security and nutrition situation, combined with concerted multisectoral efforts and investments to address issues related to land tenure, health and infrastructure, among others.

2. Dietary guidelines and efforts to raise health and nutrition awareness among consumers, including discouraging high consumption of sugar and salt through appropriate public education and regulatory measures, such as taxes, product labelling, and strong nutrition education components.

Some potential barriers to implementation of the levers are low government budgets for infrastructure, such as transport and access roads; political instability and conflicts; lack of finance and system inefficiency with regard to the allocation of scarce resources; and territorial biases.

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Key Sustainability Question 2: Why are domestic value chains in Eswatini underdeveloped, lacking in diversity and unable to generate sustainable livelihoods?

Value-chain development and the commercialization of smallholder agriculture are important elements of the strategy of Eswatini to increase economic growth in rural areas and improve income generation, livelihoods, and food security and nutrition outcomes. Current dynamics, however, suggest that the development of integrated value chains that could add value to agricultural products is still in an early phase – except for sugar and beef. Other value chains are characterized by low production and productivity, high post-harvest losses and inadequate product quality and safety. Agrifood systems are also held back by limited access to financial services, insufficient functional markets and degradation of natural resources, resulting in declining yields and continued dependence on imports, which combine to limit economic growth in rural areas.

Despite being relatively well-endowed with land and water resources, and a climate that is generally favourable for the production of crops and livestock, the Eswatini value chains remain largely underdeveloped. **The county is not self-sufficient in food production** and is historically a net importer of food (see section 2).

Low crop productivity in Eswatini, particularly in the subsistence sector, is attributed to several causes, including, among them, low usage of inputs (fertilizers and improved seeds), inadequate use of technology or mechanization, erratic and low rainfall with frequent droughts, degraded soils, pests and diseases. Factors contributing to low livestock productivity are minimal usage of inputs, high stocking rates and uncontrolled mating, extensive grazing and poor stock management (Eswatini, Ministry of Agriculture, 2015).

The poor outcomes from crop and livestock production make farming relatively unattractive for young people, of whom only 29 percent participate in agriculture (World Bank, 2020b).

While there may, in principle, be opportunities to add value to agrifood products, very few value-adding initiatives are being implemented in the sector – such as agroprocessing or packaging – and significant quantities of key commodities remain unprocessed.

Value chain development and diversifying agricultural production has the potential to increase the availability, affordability and accessibility of diverse and nutritious food. As a major contribution to the agricultural sector, it can help improve food security and nutrition. This is also a prime rationale for the country's strategy to increase economic growth in an equitable manner and diversify smallholder agriculture, increase incomes and resilience (Eswatini, Ministry of Economic Planning, 2018).

In the rainfed farming systems, however, **maize still accounts for more than four-fifths of the crop area**; very limited area is taken for the production of groundnuts, legumes, root crops (mainly sweet potato) and sorghum (Eswatini, Ministry of Agriculture, 2015).

Figure 4.4 shows the drivers and constraints that result in underdeveloped value chains in Eswatini and impede improvements that could support sustainable livelihood prospects for rural communities.


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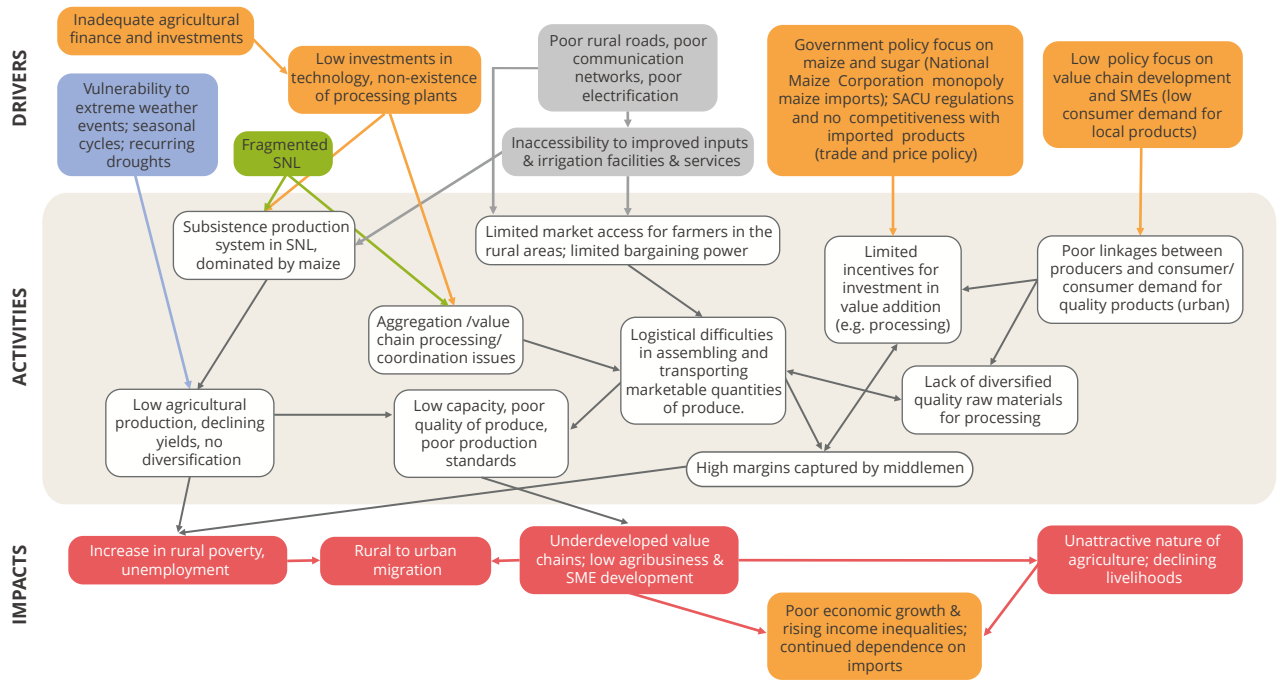
Figure 4.4: Drivers and constraints on domestic value chains in Eswatini



Source: Authors, 2022.

Drivers

Climate change/environmental drivers

Eswatini faces many challenges in its effort to achieve sustainable food systems, including the substantial impact from climate change, which can result in falling production and greater proliferation of pests (see Figure 4.4). Weather shocks, **such as violent storms, seasonal flooding and persistent drought** are already regular occurrences (World Bank, 2021b; 2021c). (see also KSQs 3 and 4). Rainfall exhibits high inter-annual variability associated with the El Niño climate pattern and sea temperature variations in the Indian Ocean, leading to both drought and floods. The Highveld areas, located at a greater altitude, are seldom uncomfortably hot while the Lowveld may record temperatures above 40 C in summer – which could increase further, with climate projections suggesting a significantly warmer country by the 2050s. These changes in the weather pattern have an adverse effect on vulnerable agricultural systems. Higher temperatures eventually reduce yields of desirable crops, while encouraging weed and pest proliferation; changes in precipitation patterns increase the likelihood of short-run crop failures and long-run production declines (Nelson *et al.*, 2009; FAO, 2015). Such pressures add to the difficulties posed by the focus on maize and sugar cane production. Low production and the deteriorating quality of crops also are counter to efforts to develop value chains, given that they limit the scale of operations that could add value, as well as the quality of the final products, given low-grade raw materials.

Inadequate agricultural investment and finance

Access to finance is a challenge for smallholder farmers, women and young people, small traders and processors in developing viable operations and agribusinesses that can benefit fully from value chains. Lack of financial support across domestic value chains holds back investment in technology, irrigation and machinery by the various actors in the chain. The four commercial banking chains face **high costs and risks in serving rural micro, small and medium-sized enterprises, smallholders and particularly the poorest strata of the population**. Swazi Bank, for example, was created in 1973 to provide services to people inadequately served by the commercial banks. It has, however, struggled with non-performing loans and as a result, has diversified into commercial housing, car loans, insurance and corporate finance. Agricultural financing now accounts for only approximately a quarter of the loan portfolio of this government-owned bank, subsequently renamed Eswatini Bank, of which 95 percent of the agriculture-related loans are to the sugar industry. **The bank has largely discontinued financing of rainfed agriculture due to the risk of drought, among other issues** (Eswatini Ministry of Agriculture, 2018).

As mentioned above, land tenure issues prevent small farmers from using **their SNL land as collateral** in raising loans, which impedes production and diversification by preventing them from acquiring technology, irrigation and improved inputs.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The only operational microfinance institution with an explicit mandate to serve informal, grass-roots enterprises in rural areas is the Inhlanyelo Fund, but a new microfinance institution is surfacing, promoted by the Swazi Conference of Churches (Eswatini, Ministry of Agriculture, 2018).

Land fragmentation, uncontrolled human settlement

Farmers on customary (SNL) land in particular suffer from small production scales and continued fragmentation of landholdings, which lead to high production costs and logistical difficulties in assembling, aggregating and transporting marketable quantities of produce. On these lands, fragmentation into ever-smaller plots is often the result of encroachment by **sprawling human settlements. This results in the land becoming unviable** for entrepreneurship (ibid).

On the other hand, there is a sizeable amount of unused or underused arable land, including large areas held by the Government as idle farms. Most of the farms owned by private owners are lying idle and may be held for speculation as land prices rise significantly. The current legislative framework for land procurement and accompanying bureaucracy also limits the commercialization of land. An added difficulty is that land issues fall under the responsibility of different ministries, making it difficult to reach consensus, when decisions are necessary (Eswatini, Ministry of Economic Planning and Development, 2019b); Network of Excellence on Land Governance in Africa, 2019).

Inadequate infrastructure

Eswatini has a poorly developed rural infrastructure, including roads, communication and electricity networks, product storage and processing plants.

Rural roads in Eswatini are often in a **poor state and not regularly maintained**, especially in rural areas. The poor rural network limits inputs (Eswatini, Ministry of Agriculture, 2018), increases transport costs, isolates farmers and severely hampers food distribution from major production areas to consumer markets and connections between smaller producers and local markets or urban centres. This results in increased waste and losses, reducing producers' incomes and leading to higher prices for

consumers. Such transport problems also are a major hurdle to aggregation and achieving economies of scale, which would make value-addition activities viable. These poor conditions also hamper already limited extension services.

Rural electrification is another important factor that would support value chains and improve incomes. Unreliable power distribution exacerbates food losses and waste in cases in which stable refrigeration and cold storage could reduce spoilage and maintain food quality. This lack of power discourages the establishment of processing plants in rural areas, which would offer prospects for farmers to improve the value of their products and their incomes. According to the World Bank (n.d.c), more than three-quarters of firms in Eswatini experienced electrical outages in 2016.

While trade statistics show that the country has a sizeable market for processed agricultural products, most of these are imported from South Africa farmers. Accordingly, other potential actors in the value chain are missing out **on the income they could be generating from agroprocessing, marketing and other related activities** (Eswatini, Ministry of Agriculture, 2018).

Moreover, **food losses average 30 percent** for all food produce combined and rises to 50 percent for some products. These losses and wastage are a reflection of the lack of facilities for pre- and post-harvest management of food, including storage and processing (Eswatini, Ministry of Economic Planning and Development, 2018).

Wastage and losses also result from farmers not being able to cope with cheaper imports. As a member of SACU, **Eswatini has limited scope to put in place protection measures against tough competition,** even though some farmers find it difficult to compete in the domestic market for many items. While there are

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potentially large urban markets in reasonable proximity (Johannesburg/Pretoria and Maputo), supplying those markets requires high standards of quality and reliability, which SNL farmers struggle to achieve. Processing and storage facilities are generally not available to small farmers to preserve and add value to products that would otherwise spoil, and therefore, result in substantial losses upstream in the poorly developed value chains for farmers who have difficulty accessing buyers and markets in a timely way (Eswatini, Ministry of Agriculture, 2018).

The country's digital infrastructure is relatively underdeveloped, mainly because of the lack of competition and private investment. By the end of 2018, the 3G network covered 56.2 percent of the population and 4G approximately 24.9 percent. Poor network cover limits Internet access; in 2016, only about 28.7 percent of the population used the Internet. (World Bank, 2020a).

Government policies on value chains and business development

Policies focused on maize and sugar cane production may have discouraged alternative crops and diversification strategies and limited opportunities and investments for developing domestic value chains. But the Government recognizes that the development of food systems – including value addition and diversification – are important for economic growth and job-creation through supporting small and medium enterprises (Eswatini, Ministry of Economic Planning and Development, 2019b).

Central to most domestic value chains are the smallholder farmers, but there is little official encouragement or incentive to expand their focus beyond household consumption or short, informal agrifood value chains that supply their local community. In the absence of financing to set up small and medium enterprises, such as processing operations, policies are needed to reduce the risks or potentially increase the rewards for farmers and other rural actors to engage in such activities for them to be considered a viable prospect for people with very limited means.

Impacts

Underdeveloped domestic value chains, lack of job opportunities and poor rural livelihoods, among others factors, that contribute **to the migration of young people from rural to urban area in search of employment and better prospects** (IFAD, 2019). Underdeveloped value chains and low production volumes would ensure that Eswatini remains dependent on **high food imports, again affecting rural** opportunities and undermining investment in the national food system. Future impacts could include increased social and political tensions, and rising food insecurity and poverty.

Proposed systemic levers

Developing and promoting inclusive and sustainable value chains would increase producers' access to markets, which would improve livelihoods and create jobs by supporting processors and other actors more widely in food systems. Further integrating value chains would, therefore, be a key lever that could contribute to job creation through value addition in various food system segments – as well as offering employment opportunities, particularly for young people. Easing constraints on production, processing and marketing would help farmers to deliver the necessary quantities of goods of sufficient quality without jeopardizing household food security. It would also increase their bargaining power in the value chain and help to improve the profitability and attractiveness of farming.

More specifically, the first key lever would involve (i) fostering (capacity development) of agricultural associations and cooperatives to increase their capabilities and capacities to aggregate produce from subsistence and small-scale farmers who grow crops or keep livestock (including business development); and (ii) supporting farmers to increase production sustainably in volume

and quality though exploring opportunities for good agricultural practices, crop and livestock diversification, and climate-smart adaptation (see also KSQ 3), while encouraging links and support between value-chain actors.

A second lever would be the development of appropriate public and private services in support of inclusive value chains. The aim here would be to enhance value chain development by improving access to rural finance and appropriate financial products, upgrading infrastructure (markets, electricity, digitalization, rural roads) and improving transport services for all actors in the value chains. Better infrastructure and road connections would improve market access, which is crucial to increasing the availability and distribution of locally produced food to be more competitive against imports.

In summary, strengthening value-addition activities in specific value chains and across food systems would promote a more diversified range of livelihoods for rural people. Fostering entrepreneurial capabilities and capacities, business support and private sector partnerships are crucial – as well as targeted approaches to ensure women and young people have better prospects in the rural areas. To achieve this, institutional issues must be addressed, human capacities must be improved, multisectoral approaches must be taken and the development and implementation of adequate policies are needed.

Some barriers to implementing this lever relate to insufficient allocation of government resources at the national, regional and local levels – especially in the customary SNL. They also include the relatively weak institutional framework and inadequate enabling (policy) environment to promote agricultural value chains with a focus on the poor.

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Key Sustainability Question 3: What are the reasons for territorial and socioeconomic differences/gender inequities across food systems in Eswatini?

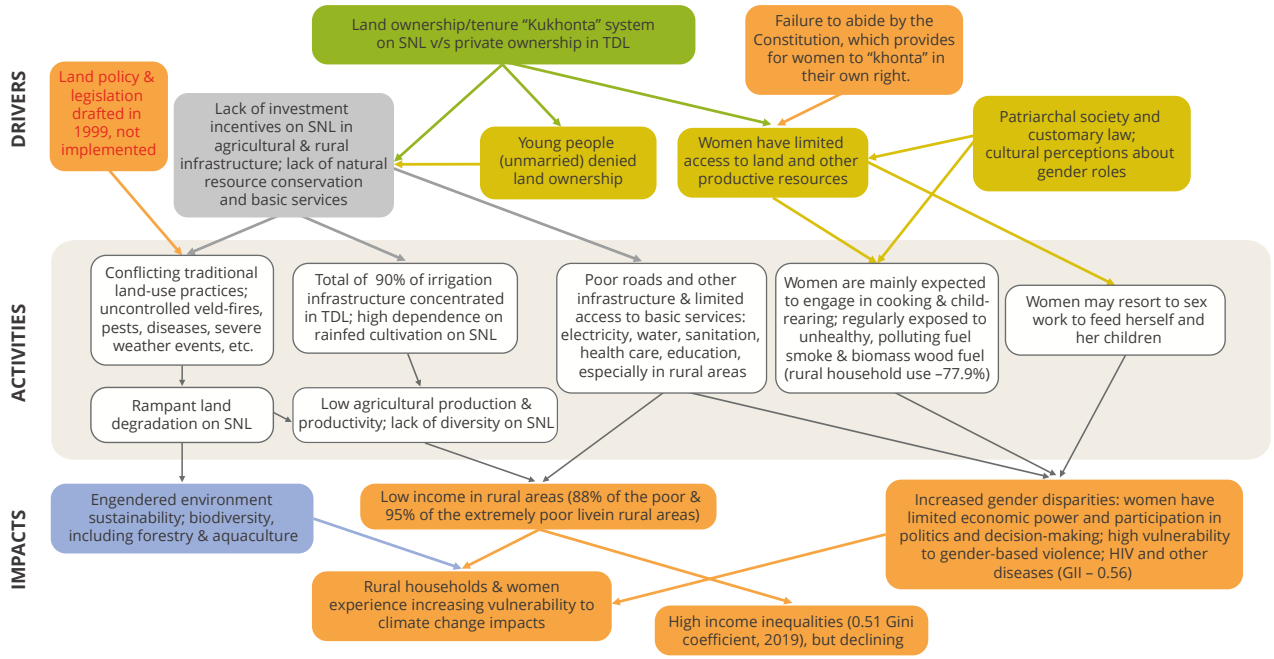
Food systems in Eswatini are characterized by socioeconomic, spatial and geographical inequalities. Disparities, unsurprisingly, appear to be wider between areas with access to resources and infrastructure, and those without, given that the development model favours export-oriented investment in TDLs, rather than in smallholder production on customary (SNL) lands. Moreover, women have unequal access to assets, especially land, fewer rights and limited protection against gender-based violence. This environment, along with governance issues, reduces opportunities and incentives for socioeconomic development – and food systems transformation.

Eswatini ranks 144th out of 189 **countries on the 2017 Human Development Index and 141th out of 160 countries on the gender inequality index, with a rating score of 0.569**. Poverty is multidimensional, with overlapping deprivation in education, health, and access to basic public services. It is substantially worse in rural areas. World Bank figures showed that in 2017 the national poverty rate was 58.9 percent, which is relatively high for a lower-middle-income country (World Bank, 2020c).

Poverty and inequality are a legacy of colonial-era policies, which preserved Swazi culture to some extent but divided land, employment, and governance between the modern and traditional realms. These policies contributed to unequal access to assets, markets, services, opportunities and rights. High inequality of opportunity means people's circumstances at birth, such as their gender, birth location, or parental backgrounds, significantly determine the economic opportunities open to them.

The urban-rural poverty divide has widened, and dysfunctionality and poor performance of the food system exacerbates the poverty situation (World Bank, 2020c). More than 90 percent of poor people live in rural areas, suggesting that subsistence agriculture is still associated with higher poverty. Rural poverty also tends to be deeper and more severe. In 2017, the rural poverty rate was more than 70 percent, compared to less than 20 percent in urban areas, and the poorest areas are rural regions without any sizeable towns: Lubombo and Shiselweni (Eswatini, Ministry of Economic Planning and Development, 2019a).

Figure 4.5: A schematic representation of the key drivers and impacts concerning territorial differences and gender inequities across the food system in Eswatini



Source: Authors, 2022.

Key drivers

Several interrelated drivers are at play here and reflect some of the difficulties common to many of the questions about food systems transformation in Eswatini. As in the previous key sustainability question, the lack of adequate infrastructure, particularly roads and electricity, presents major problems for farmers and for efforts to develop worthwhile value chains, with implications for household incomes, access to markets, food losses and waste. Difficulties for women resulting from land tenure systems and sociocultural norms are very significant in entrenching gender inequalities. And deficits in implementing land policies and reforms are major factors in holding back not only women's advancement, but also regional development.

Land policy and tenure

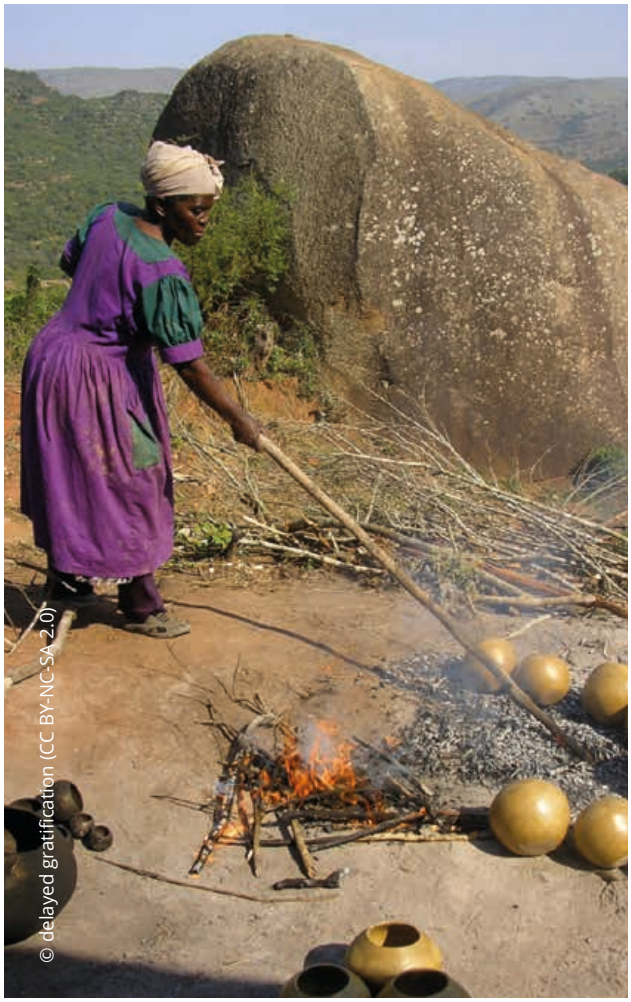
The major reference document for the Eswatini land issues is the Constitution (Swaziland, 2005). Tenure over SNL is not defined by legislation, but rather according to traditional arrangements, through the King and community chiefs. Given the rising population, there is substantial and growing pressure on SNL land available for cropping and grazing, forcing households to produce crops on increasingly fragile and potentially fragmented lands, raising the potential for increasing tension.

A land policy drafted in 1999 was intended to address issues such as improving gender equity in land allocation and protection of property rights; the use of SNL as collateral for loans, and the introduction of an efficient, effective and comprehensive system of land administration.

The policy was, however, never formally endorsed, so land tenure and land reform has remained among the most controversial national policy issues (IFAD, undated).

A national land policy was again developed in December 2009 to recognize the severity of the economic, social and environmental pressures on land resources. It sought to maximize sustainable benefits to the entire society, but was not implemented.

Due to the lack of an explicit land policy, the Constitution and traditional arrangements play such key roles in decisions and approaches to land in Eswatini.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People allocated SNL exercise usufruct rights (i.e. the right to use and benefit from a piece of land while the ownership of which belongs to another person or entity) and have no power to alienate the land to others through monetary channels. As mentioned earlier, these limitations prevent farmers from raising loans to finance inputs and services to improve their land and increase production. TDL, on the other hand, can be sold, purchased, leased, mortgaged or used as collateral, and owners enjoy private property rights which are protected by the Constitution and other laws.

Cultural – gender inequity

Gender is a prominent dimension of inequality in Eswatini and reflects different socioeconomic biases facing women (Schwidrowski *et al.*, 2021). Women have unequal access to assets, especially land, and lower participation in markets, especially labour markets.

While the Government recognizes gender inequality as an impediment to sustainable national development and the constitution enshrines women's rights, women are still not protected because of the cultural norms that marginalize them in society (Mwanengureni, 2021).

Eswatini is a patriarchal society in which, traditionally, inheritance is according to gender, and then by seniority in age. According to Swazi culture, only married men are allowed to have access to customary SNL through the "kukhonta" system or through inheritance. Women acquire land through a male child and in many parts of the country, there is still lack of compliance with the 2005 Constitution, which provides for women to "khonta" and acquire SNL in their own right.

Women married by civil registry could not, until recently, engage in a contract or buy property in their names, and could not register joint estates with their husbands, yet TDL and private ownership offers security of tenure or ability to

extract maximum economic value from the land – which is lacking in SNL.

More female-headed households (63 percent) are poor and lack productive assets, compared to their male counterparts (52 percent), and women residing in rural areas, particularly in the Shiselweni region, face substantially higher unemployment rates.

Women, young girls and adolescents suffer discrimination and violence due to cultural and religious norms. Girls are particularly vulnerable to domestic servitude and commercial sexual exploitation. One in three females experiences some form of sexual abuse before they reach 18 years of age and 48 percent of women are reported to experience sexual violence in some form during their lifetime (UNFPA, 2020).

Women are also expected to be submissive to men in all decisions and are responsible for the cooking and child-rearing. (Mwanengureni, 2021).

Infrastructure and basic services

The problems associated with inadequate infrastructure, particularly roads and electricity access, have been well documented above, so they will not be explored in more detail here. Other infrastructure difficulties that merit discussion are limited irrigation, poor access to clean drinking water and telecommunications access.

Irrigated agriculture is by far the largest user of the country's water resources. Water is the key factor of production in the sugar subsector. Approximately 90 percent of the established irrigation structures are located on TDL; farming on customary land remains dependent on erratic rainfall and is vulnerable to drought. Accordingly, small-scale farmers are particularly vulnerable to weather shocks and the vagaries of climate change for their rainfed crops. Access to safe drinking water is also poor, resulting in implications for public health. Regarding telecommunications, digital infrastructure is relatively underdeveloped, mainly because of


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the lack of competition and private investment in networks. By the end of 2018, the 3G network covered 56.2 percent of the population and 4G approximately 24.9 percent. Poor network coverage limits Internet access; in 2016, only about 28.7 percent of the population used the Internet. (World Bank, 2020a). Improved communications and information access could offer worthwhile gains to those who otherwise have difficulty in gauging market needs and price movements, and accessing extension service information and further education.

Impacts

The deeply entrenched inequality of opportunities across gender, social and spatial dimensions is preventing Eswatini from achieving its twin goals of poverty reduction and sustainable, shared prosperity.

Moreover, spatial and geographical inequalities in the food systems are growing, Disparities between rural and urban areas, and between areas with access to resources and infrastructure and those without are increasing. This holds back livelihoods and perpetuates a cycle of poverty.


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The country's gender disparities have direct social, health and economic implications, worsening the position of women and potentially affecting household food security.

High levels of inequality will also manifest high inequality of opportunity. The Gini index – a measure of the inequality in a distribution, based on consumption per adult (or adult equivalent) – was a high 51 in 2017 (World Bank, 2020a).

Key systemic levers

Levers intended to address the complex socioeconomic, spatial and geographical inequalities in Eswatini should be aligned with the need to improve functionalities at the governance level that otherwise constrain the transformation of food systems. They also need to leverage the food systems for inclusive development by improving prospects for rural inhabitants, particularly women and young people. The following two levers are suggested:

1. Enhance governance, for example through strengthening existing technical and regulatory capacity and ensuring that effective legal and policy frameworks are in place. This could be combined with enhanced public and private investments in SNLs to improve food systems delivery, infrastructure and basic services, such as health care and education, to reduce territorial and socioeconomic disparities for the benefit of rural communities.

2. Ensure equal opportunity for women and reduce inequalities by promoting, implementing and enforcing appropriate legislation, policies and actions, including social protection and access to land resources. Capacity development through, for example, gender-responsive campaigns may contribute towards encouraging women's participation and equality. Raising awareness at national and community level about gender inequalities would be another aspect of this lever.

Barriers to implementation of these levers could result from insufficient political commitment and accountability or policy focus and coordination between actors, lack of a budget for necessary investment, limited access to information and training and the low level of primary education for people living in rural areas.

Key Sustainability Question 4: How do the food systems contribute to natural resource distress (water and land) and make Eswatini increasingly vulnerable to climate change impacts?

The food systems of Eswatini contribute to land degradation and depletion of renewable and non-renewable natural resources. Soils are being degraded by erosion and salinization, water resources are being depleted, and forests are being depleted through deforestation and encroachment by uncontrolled settlements. These dynamics directly threaten such productive resources, increase food insecurity and poverty, and affect the quality of life of the population. Moreover, they jeopardize the future sustainability of the country's food systems, which may further increase its vulnerability to climate change events and further challenge socioeconomic stability.

In Eswatini, approximately a quarter of each of the terrestrial ecosystems has been lost to another land use. A total of 4 280 km^2 of biodiversity-rich ecosystems has been converted to industrial timber plantations, sugar cane plantations and urban areas. Aquatic ecosystems, in particular, are under threat from agricultural development, as wetlands are drained for development or are harmed by changes within their catchment area (Convention on Biological Diversity, undated).

Between 2000 and 2010, a total of 465 290 ha of land was degraded in Swaziland, which makes up 27 percent of the country (Dlamini, 2018). Land resources continue to be degraded resulting from unsustainable use, uncontrolled fires, fuelwood use, pests, diseases, overgrazing, unsustainable use of water resources, severe weather events and land-use changes due to human settlement and development (see drivers below). The disappearance of forests is a critical environmental problem, as they play a major role in supporting ecosystems, preserving soil fertility and acting as carbon dioxide sinks. In addition, its negative effect on food production and land degradation also jeopardizes environmental sustainability and biodiversity, including forestry and aquaculture (Ibid.; Eswatini, Ministry of Agriculture, 2018).

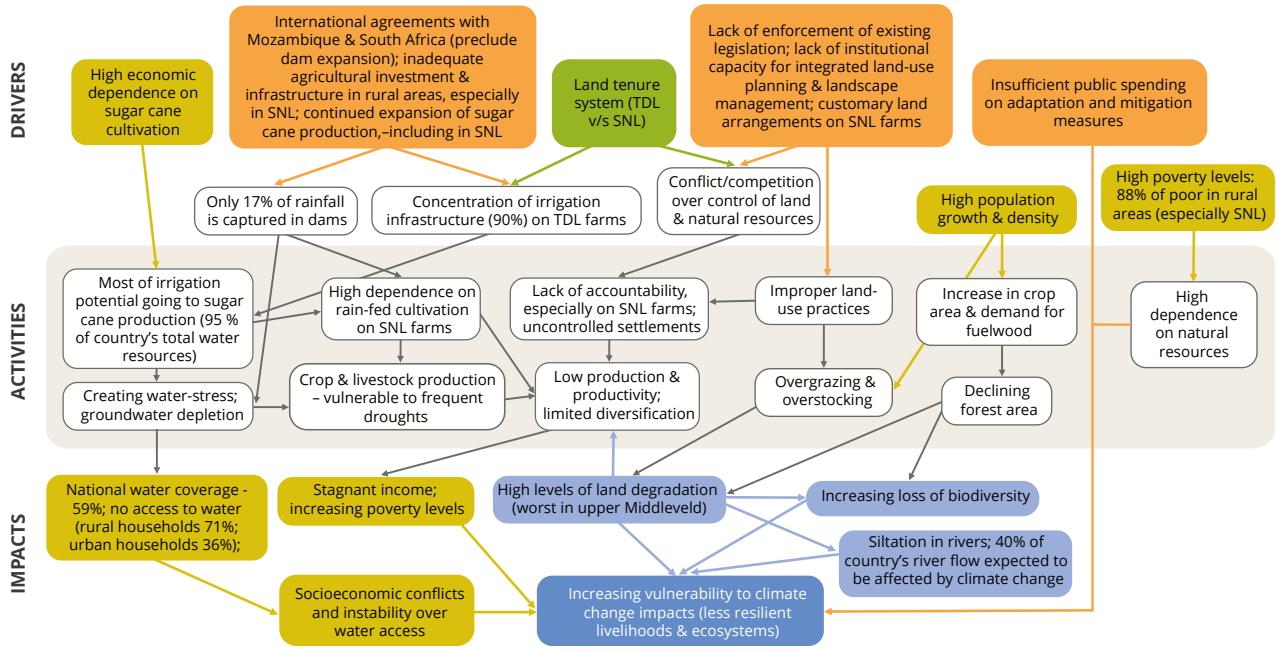
Crops on SNL are overwhelmingly rainfed. Only in very rare cases, they are watered through irrigation. Rainfall is monomodal with large inter- and intra- annual variations, making storage essential for efficient use of water resources. Rainfall averages approximately 800 mm per annum overall and ranges between 500 mm in the dry Lowveld to more than 1 500 mm in the wet Middleveld and Highveld. Currently, only about 17 percent of rainfall is captured in the major dams, and **international agreements with Mozambique and South Africa** preclude enlargement of the existing dams or creation of new ones on the five main river systems. Some 96 percent of surface water resources are used for irrigation – mainly for sugar cane – but there is growing competition from domestic, industrial and hydropower uses. There are also a number of water quality issues, including water-borne diseases, agrochemical contamination, turbidity, salinization, microbial pollution and organic pollution (Eswatini, Ministry of Agriculture, 2015).

The notable increase in the frequency and intensity of extreme weather-related and climate-induced events observed in recent decades poses a significant challenge to food systems in Eswatini. **Rainfall patterns are changing such that the summer or rainfall season sets in later than expected**. More specifically, apart from changes in total or mean summer rainfall, certain intra-seasonal characteristics of seasonal rainfall, such as onset, duration, frequencies of dry spells and rainfall intensity as well as the delay of rainfall onset has changed around the country. Available rainfall records from 1970 to 2010 indicate an increase in **inter-annual rainfall variability** in the post-1970 periods, with an increase in average dry-spell length. Precipitation projections for

Eswatini are highly variable and a high degree of uncertainty in rainfall projections. However, a**vailable projections suggest increased aridity and a higher occurrence in the number and frequency of dry spells over the summer season – October to February. Eswatini is at high risk of suffering from natural hazards, which are expected to primarily affect the agricultural sector, through seasonal flooding and periods of drought.** Late rains are dramatic for rainfed agriculture, which characterizes the food systems on SNL lands. Weather-related disasters can be detrimental to crop growth, livestock health, fisheries and aquaculture production, and can seriously compromise forests, water reserves and other ecosystems (World Bank, 2021d). More concretely, climate change and its associated impacts are expected to diminish the country's river flow by 40 percent, further limiting access to water, increasing levels of land degradation – especially in the upper Middleveld (where 50 percent of the land and 80 percent of communal

rangelands are seriously eroded) – ultimately increasing poverty levels. As the country's river basins are transboundary, this is expected to result in socioeconomic conflicts and instability over water access. Hence, due to a combination of political, geographic, and social factors, Eswatini is recognized as being highly vulnerable to climate change impacts, ranked 137 out of 181 countries in the 2020 ND-GAIN Index (Notre Dame Global Adaptation Index) (World Bank, 2021d).

Figure 4.6: How the food system contributes to natural resource distress (water and land) and makes Eswatini increasingly vulnerable to climate change impacts



Source: Authors, 2022.

Key drivers

High economic dependence on thirsty sugar

In Eswatini, freshwater use is totally dominated by irrigation, as its withdrawal for agriculture is 96.6 percent (FAO, 2015) – mainly for sugar cane. Production has increased more than a hundredfold (124 times) from 1956 (5 600 tonnes) to 2015/16 (695 408 tonnes), (Eswatini Sugar Association, 2021) using water-inefficient and high-energy-consuming sprinkler irrigation systems. Sugar cane production is still growing, and spreading, by drawing in smallholder farmers on SNL.

Producing and milling sugar cane is the largest industrial sector in Eswatini, generating approximately USD 400 million in revenue in 2017 (Anderson, 2018). That amounts to approximately two-thirds of the value of agricultural production, up to one-quarter of GDP (Mhlanga-Ndlovu and Nhamo, 2017), and one-third of export earnings (UNCTAD, 2020) (see section 2).

Accordingly, the country has high economic dependence on sugar-cane production as a foreign exchange earner.

The proportion of communal land used for sugar cane cultivation by smallholders (on less than 50 ha each) increased from 11 percent in 2005 to 22 percent in 2015), amounting to 21 percent of sugar-cane production and second only to miller-owned estates, whch contribute the largest share, at 49 percent (Nkambule, 2017).

Policy and the pursuit of production

The Government and other actors, such as the Eswatini Sugar Association have pursued the inclusion of SNL farmers in sugar cane production, as this may be economically beneficial for them and for the Eswatini economy. However, there are also economic uncertainties, such as trends in world market prices and issues related to the environment. Linking small farmers to sugar cane may result in **more water withdrawals**, for example, which could eventually lead to environmental degradation. Available evidence indicates that damage to resources increases by a factor of almost 20 when water depletion is accounted for – yet water depletion is usually not accounted for in damage assessments (Pradeleix *et al*., 2014).

The focus on sugar may also divert producers from growing and diversifying food crops, which would increase the country's dependency on food imports and, in turn, make the food systems even less resilient and more vulnerable to weather and climate shocks.

During the food systems workshop, however, the sugar industry was cited as an example, and research is ongoing on issues such as the allocation of land for diversified crops to support self-sufficiency, and for sugar production on smallholder farms to generate income.

As discussed above, the land tenure insecurity in SNL gives little incentive for investment in the customary areas, where the agricultural sector is generally rainfed crop production, while TDL land

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accounts for an estimated 90 percent of available irrigation infrastructure.

In addition, **conflicts and competition over land-use and control of land and natural resources** resulting from a lack of accountability and continuous emergence of uncontrolled settlements on communal SNL farms challenge the sustainability of the natural resources and contribute towards making livelihoods more vulnerable to climate change. In addition to the ever-increasing poverty, particularly in the rural areas, population growth also contributes to the rapid degradation of the country's biodiversity, in a vicious cycle of declining availability. Illegal and uncontrolled hunting has resulted in the extermination of most of the wild vertebrates, especially on customary land. Other consequences are overgrazing and overstocking of land, limited diversification and low crop production and productivity (see KSQs 1 and 2).

Potential Impacts

The impacts of climate change – more specifically drought – are extensive, but usually include damage to crops and falls in crop yields, livestock losses, increased fire hazards, **reduced freshwater availability (leading to water scarcity)** and damage to biodiversity, including wildlife and fish habitats.

Natural resource degradation has varied economic and social consequences, including reduced income for the agricultural sector and the wider economy, higher food prices and unemployment, which may, in turn, contribute towards instability and conflicts (including over water resources). It also has implications for health, such as malnutrition, deteriorating water quality, agrochemical contamination, salinization, microbial pollution and organic pollution.

Proposed systemic levers

The main leverage points to deal with overexploitation and the depletion of natural resources are aligned with the need to establish a natural resource (land and water) management system based on intersectoral policies and strategies. It is necessary to generate evidence-based information to better engage the various actors in the natural resource management chain.

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The following two levers are therefore suggested:

1. Review, approve and implement the hierarchy of land-**related draft policies in Eswatini that would contribute towards creating an inclusive, enabling environment that supports sustainable agricultural practices** and food systems and strengthened **natural resource governance** mechanisms. This would facilitate the implementation and enforcement of regulatory instruments dealing with overexploitation of natural resources, including an improved water policy.

2. Review and **enforce existing land- and environment-related legislation** to formalize and systematize customary land administration and ultimately enhance institutional capacity for integrated land-use planning and landscape management. Additionally, drought planning, including preparedness **(e.g. data forecasting systems and knowledge depository on water permits)** and risk-mitigation measures, would help to reduce the impacts and enhance human well-being and security during and after a drought. To prepare for a drought, reducing the risks and mitigating the impacts are paramount, given the high incidence of land degradation and human poverty and malnutrition in Eswatini. In this context, **strengthening and widening the participation of the public and private sectors and other institutions** (e.g. universities) and **women, and the empowerment of local communities** in land-use planning and land-restoration management would be important to enhance sustainable use of natural resources.[5] Non-governmental organizations, universities and the Eswatini Ministry of Agriculture – leveraging partnerships between the public and private sectors – could help in getting authorities at decentralized levels and local communities involved, which could improve the management of natural resources. These entities would also assist in educating farmers in production and conservation technologies.

Some barriers to implementing these levers relate to the existence of inadequate transparency of allocation of water supplies, bureaucracy, lack of institutional capacity and knowledge, and provision of water permits and limited incentives for increased public and private investments.

[5] An example is the Smallholder Market-led Project (SMLP-CSARL), supported by IFAD and the Global Environmental Facility , which recently received the Biodiversity Award at the Eswatini 2020 Temvelo Climate Awards (IFAD, 2021).

Transition to sustainable food systems

The country's agricultural potential is constrained by its natural resource base, particularly land and water. While Eswatini has significant scope to transform its food systems, it faces various challenges to ensure food security and better nutrition, improved livelihoods and employment opportunities for people living in rural as well as in urban areas.

The prevalence of HIV, climate change (with increasing droughts) and environmental degradation, as examples, will continue to spur significant and rising demands on the food systems in Eswatini. Improving access to land and water, livestock management, investing in basic (rural) infrastructure, coordinating coherent policies and approaches, and taking steps to reconcile the interests of the various actors, especially those on SNL and TDL, would all contribute to improving the sustainability of the food systems.

Inclusive transformation also requires increased and sustained empowerment of women and young people, and the broadening of access to technologies, finance and innovations, such as digitalization and updated information systems.

Other elements and actors in food subsystems, such as transforming supply chains, food environments and consumer behaviour, could additionally help in addressing the impacts of climate change and urbanization, as well as in achieving healthy diets, income growth and wealth distribution. **Investments in basic infrastructure, such as roads, safe water supplies, electricity, irrigation and water harvesting, are also necessary**, especially on customary land, as are improved access to health services and education.

Stakeholders in the food systems consultation process also **identified the potential of public-private investments in food supply chains as an important lever** for which innovative financial mechanisms would be required.

The vast scope of food systems offers various entry points for sustainable transformation, Among them are **improving and diversifying smallholder production and productivity** through sustainable practices, **strengthening value chains and micro, small and medium enterprises**, and enhancing policy processes, and multisectoral cooperation and good governance.

In practical terms, transformation would require close collaboration between stakeholders in rural and urban areas, in the fields of agriculture, health, education, the environment, and related industries. **The desired impact also requires involvement at various levels – from ministries and line departments, community chiefs, rural communities (including women and young people), university researchers and private-sector players, and non-governmental organizations, in addition to primary producers and consumers.**

The findings of this assessment serve as a first step in thinking about the transition and necessary for sustainable food systems transformation. Further research will help to better detail the challenges and their impact on food system sustainability and refine the levers and necessary actions for the desired impact. Institutional innovations could help to ensure that the voices of all stakeholders, especially in the most vulnerable sections of society, are reflected in the activities and plans.

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