

FOOD SYSTEMS IN SOUTHERN AFRICA

Drivers of change and opportunities for influence

A Synopsis by the WFP Regional Bureau for Southern Africa and the Southern Africa Food Lab



The following 'driving forces' have been highlighted in a recent WFP Southern Africa futures forecasting exercise as being among the most important drivers of change in southern African food systems.

Among the most frequently cited forces are rapid urbanisation and consequent shifts in lifestyles and food demand, an increasingly standardised diet, a worsening health burden of malnutrition particularly non-communicable diseases, a rapid shift in the labour force from farming to non-farm jobs, and climate change.

INTRODUCTION

This briefing investigates the 'driving forces' or 'trends' shaping southern African food systems. The analysis is intended to raise awareness of the potential to shape future outcomes in this complex multi-faceted and interrelated systems and argues that the World Food Programme (WFP) can play a major role as a direct stakeholder and enabler of partnerships in the region.

Based on this analysis, plausible scenarios for Southern African food systems will be constructed to enable WFP to assess how the organisation might influence these scenarios over the coming decade. The foresight gained from a scenario process helps to inform necessary action. In particular, the scenarios help in identifying leverage points based on WFP's key mandate.

The analysis of 'driving forces' helps determine certain elements of Southern Africa's future that are difficult to predict with complete certainty. Understanding what these are is important because it increases the sense of urgency to act; an appropriate response can decrease the impact of these uncertain development trajectories. A reflection of southern African food systems over past few decades reveals that the way these systems have unfolded has been highly non-linear, with random, unpredictable events affecting it. Looking ahead, this uncertainty seems more acute.

As outlined below, the various 'driving forces' in these food systems are co-dependent (across space, time and sectors) and create fertile ground for a large combination of potential shocks and stressors, places they could happen and pathways they could propagate through to create a high impact. As WFP, the challenge and opportunity is to make sense of this uncertainty in a systematic way so as to adapt to challenges and to act sooner rather than later.



DEMOGRAPHIC CHANGES

The key issue is that urbanisation will likely be a “megatrend” affecting southern African food systems for the next 25 years. Along with population growth and a decrease of the rural population, urbanisation is already and will be impacting the development of the Southern African region in a number of ways.

While there is relatively high certainty about the upward trajectory of both population growth and urbanisation, there remains a question around how strong these rates of growth will be. Projections about how the total population will develop depend on several factors and is bound to uncertainties. There is considerable range in the level of projected increase, depending particularly on changes in total fertility rate.

In 2019, the estimated population of southern African countries was 360,3 million. The largest population share in the region in 2018 was in the Democratic Republic of Congo (DRC) (26.6%) followed by South Africa (16.7%) and Tanzania (15.7%). In the region, overall, there has been a downward trend in mortality, particularly infant and child mortality. The combination of high fertility (3.8 children per woman) and declining mortality has been largely responsible for the rapidly increasing population of the region.

Urbanisation, however, is the most certain element in demographic projections. Sub-Saharan Africa is the latest and most rapidly urbanising region worldwide. In southern Africa, urbanisation rates are highest compared to rest of Africa with more than 60% of the population living in cities while it is also the most populous sub-region. Increases in urbanisation are being driven by population growth in urban areas, the reclassification of rural areas as urban as population density increases.



As the urban population is increasing and with it the urban demand for food, rural areas must undergo a transformation to offer more efficiently and sustainably greater amounts of food to meet urban demands. The growing demand for food is likely to drive an expansion of agricultural land, which would have negative feedback for the environment such as deforestation, soil degradation and might increase climate change. In addition, urban sprawls further diminish agricultural land.

“Anyone who believes in indefinite growth on a finite planet is either mad, or an economist.”

~ David Attenborough

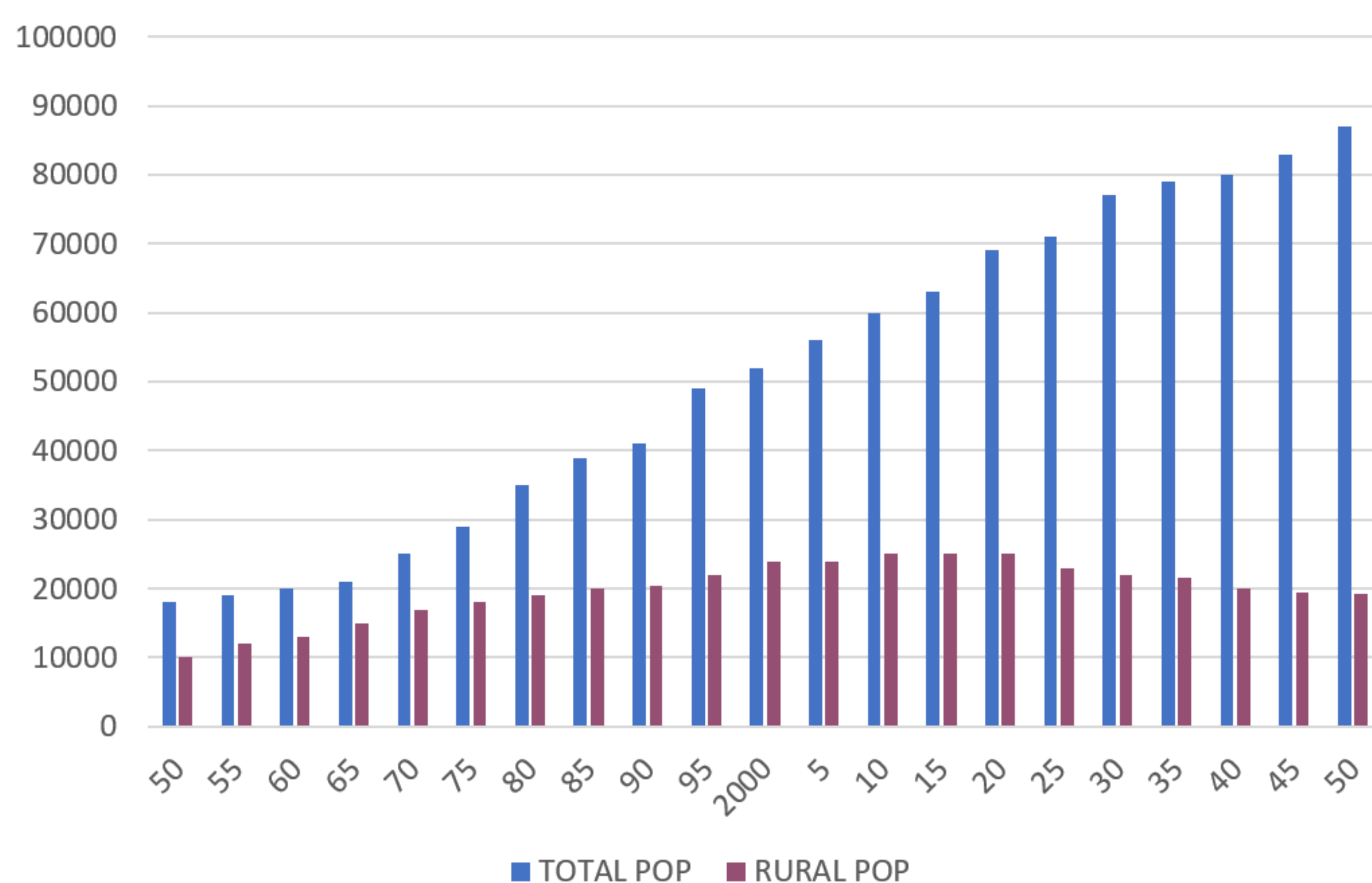
The future of southern Africa will be shaped by the dense clusters of big cities. These are becoming the engine of the continent with significant implications for future energy needs, safety and security, governance and public services. According to the World Bank, this is the single most important transformation that the African continent will undergo this century, with projections showing that more than half of Africa's population will live in its cities.

This phenomenon will challenge societies in southern Africa with issues such as the distribution of people and resources, overcrowding, infrastructure, congestion, pollution and crime among others. Although growth rates are predicted to fall between 1-5% for most southern African cities between 2018 and 2030, these rates are still substantial and regional cities will experience a higher growth rate than other regions in the world. In the next 30 years, urban dwellers will outweigh rural residents for the first time in Africa and cities in the region are expected to experience higher growth rates.

Urbanisation affects all aspects of the food system (production, processing and manufacturing, distribution, markets, consumption and food waste) and can lead to food insecurity, micronutrient deficiencies, overweight and obesity. As the relative share of the rural population declines together with growing urbanisation, this also affects climate change, changing land use patterns, the shift from agricultural to non-agricultural jobs and the related dependency on food markets and prices.

As southern African is projected to have the strongest urbanisation trend on the continent, this makes it a decisive factor for WFP. Important questions arise about the role of WFP in all aspects of these rapidly changing urban food systems and their significant inter-linkages with rural production of food.

FIG 1: POPULATION (THOUSAND PERSONS)



The estimated population in 2050 is forecasted to be 80 million people. The contrast between the purple and the blue bars of the graph show that population growth will exclusively take place in urban areas. As the purple bars indicate, rural populations will not only stagnate, but start decreasing at the beginning of the 2020s. By 2050, the rural population is expected to fall under 20 million people. This means that the vast majority (>3/4) of the total population will live in urban areas in 2050 due to rural-urban migration and population increases in urban areas.

Source Lipper L and Benton TG. 2020. Mega-trends in the Southern African Region.

OPPORTUNITIES FOR LEVERAGE

As food production is low in urban areas, an increase in demand for rural producers may increase. Urbanisation and the rapid increase of secondary and tertiary towns increases proximity of urban markets for rural farmers to offer their products.

With higher incomes and urbanisation, new opportunities for food producers and processors emerge as demand for processed foods increases. This creates entrepreneurial opportunities, investments and expansion of already existing capacities. Depending on the degree of mechanisation, more labour will be needed to process food.

Processing and manufacturing are dominantly located in urban peripheries, highlighting the importance of functional distribution networks to deliver food from production to processing capabilities. Agri-food value chains can be adapted accordingly in a sustainable manner.

Domestic processing and manufacturing stands in competition with imported processed foods. Imported food might be cheaper if domestically produced food cannot keep up with the increased demand and prices for domestic food increase. This would have negative feedback for production capacities and reduce their competitiveness, including employment opportunities of the domestic work force.





DIETARY CHOICES

Demographic changes, particularly urbanisation, has an important impact on dietary choices, especially when coupled with economic growth and rising incomes - although these choices might also shift as a result of cultural changes.

The nutrition transition is bringing about increases in overweight and obesity with related non-communicable diseases (NCDs). Diabetes, cardiovascular disease, metabolic disorders, hypertension, coronary heart disease, various cancers and osteoarthritis represent a high burden for healthcare systems and result in lower productivity, incomes and premature death.

Urbanisation is associated with important shifts in dietary patterns. These shifts are driven by the transition to off-farm employment and income growth and the availability of a range of food products not available to rural populations.

The change of consumption and dietary patterns is not favourable in urban areas particularly as urban food environments shape the access and availability of food. Urban areas often have limited availability of affordable and fresh food, pushing people to buy cheaper processed foods and staples. Further, as people no longer grow food themselves due to a lack of productive resources, time and space, they resort to accessing processed foods. Income disparities impact the kind of food consumed: increases in income associated with increased consumption of refined food.



Many factors influence consumers dietary behaviours, from the personal dimension (knowledge, skills, dietary preferences, culture and time for food preparation) to the economic and political (cost and availability of food). When individuals migrate, they bring their food cultures with them and adapt to the new environment, in an urban environment. The urban environment shapes the access and availability of food.

“To eat is a necessity, but to eat intelligently is an art.”

- Francois de la Rochefoucauld

Food prices in African cities are higher than in comparable cities in low- and middle-income countries in Asia and Latin America. The first graph shows a comparison of price of a selection of food items across comparable urban areas. It is evident that fresh vegetables and fruit, as well as fresh animal products such as dairy and eggs, are expensive. In comparison, staple food and cereals are more affordable. These prices affect food consumption patterns, especially of poor and vulnerable populations.

The second graph indicates the impact of food prices as a share in budgets, independent of income. Urban populations spend a large share of their budget on food. This is particularly so for the poorest quintiles. This means that food-price volatility will likely disproportionately impact the urban poor, who already spend 60%–80% of their income on food. The high share of income spent for food diminishes the spending on other essential needs such as housing, housing utilities and transportation.

URBAN POPULATIONS SPEND A LARGE SHARE OF THEIR BUDGET ON FOOD

FIG 2: TYPES OF FOOD

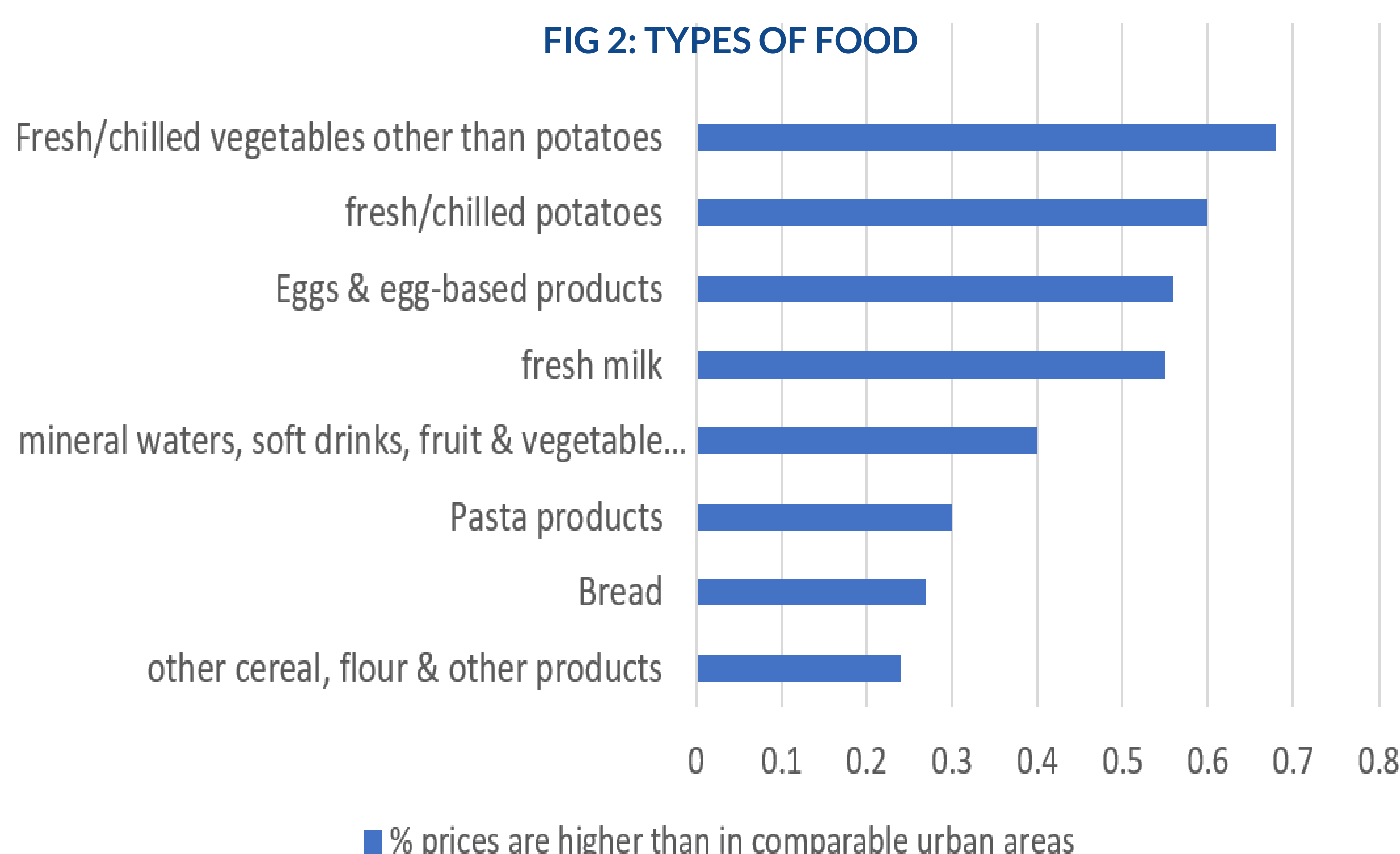
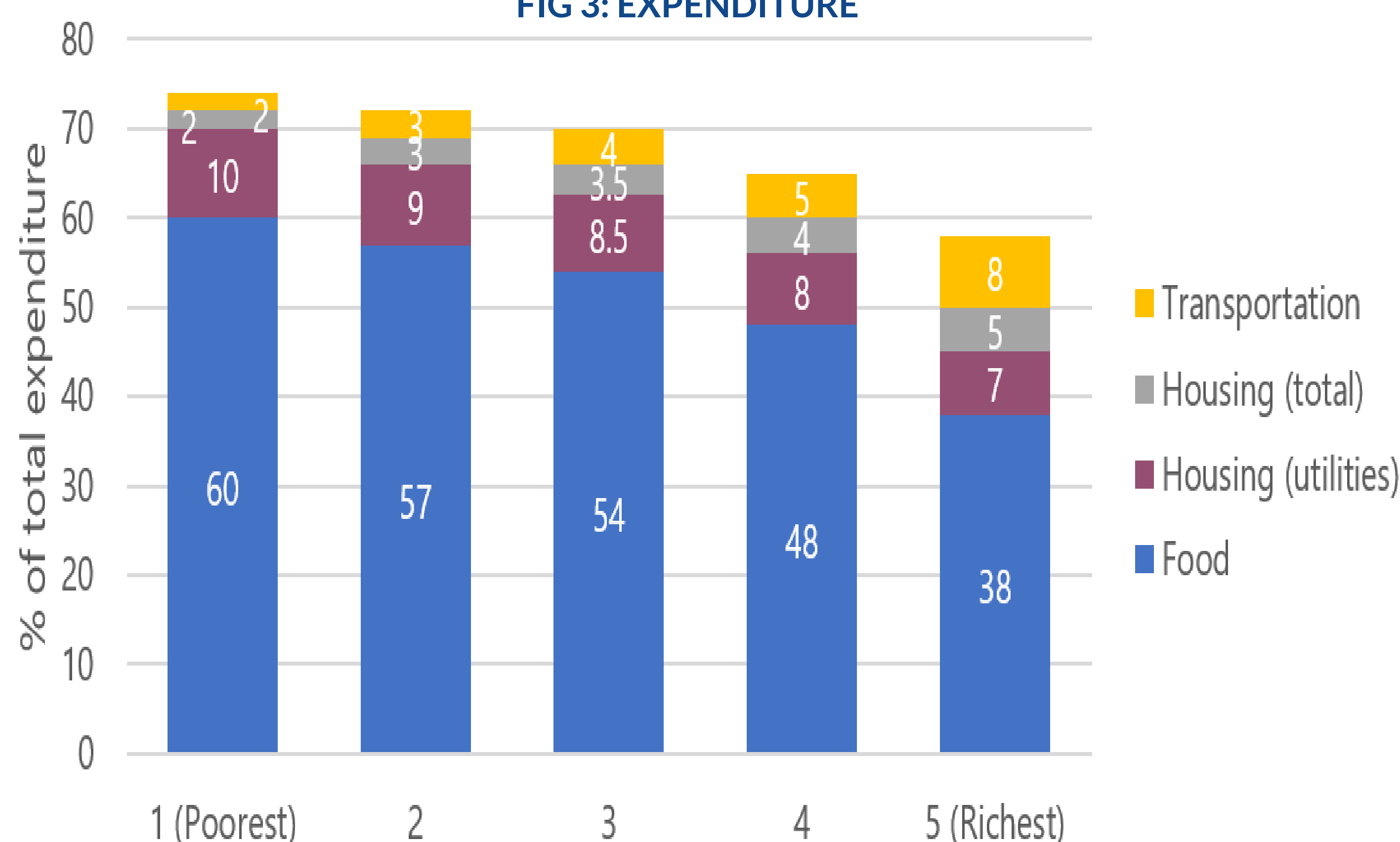


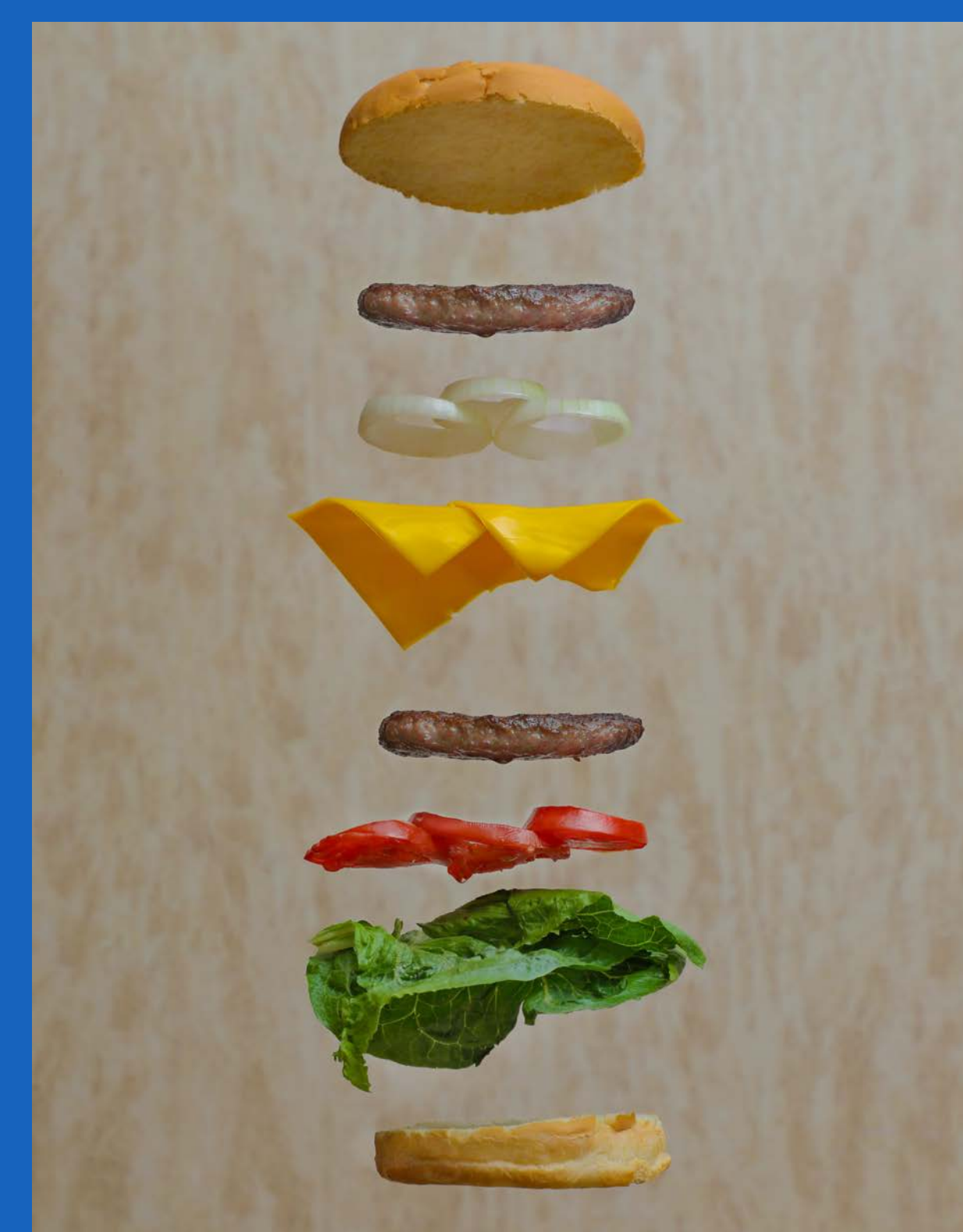
FIG 3: EXPENDITURE



Market dependency has a huge impact on the livelihood of people as food prices often increase faster than the rate of inflation and are subject to volatility with a direct impact on the food consumption or urban households

Fig 2: Nakumar et al 2016
Fig 3: Lozano-Gracia and Young 2014

African consumers have purchased increasing amounts of processed food over the past 50 years. The opportunity cost of time of women and men has increased as more of them work outside the home, driving them to buy processed food and food prepared away from home to save arduous home-processing and preparation labor. In the past several decades, this trend has accelerated with a surge on the supply side of the processing sector and small and medium enterprises (SMEs) and large private companies making massive aggregate investments. Packaged, industrialized, ultra-processed foods and sugar-sweetened beverages (SSBs) are a growing proportion of the processed food consumed.





MALNUTRITION

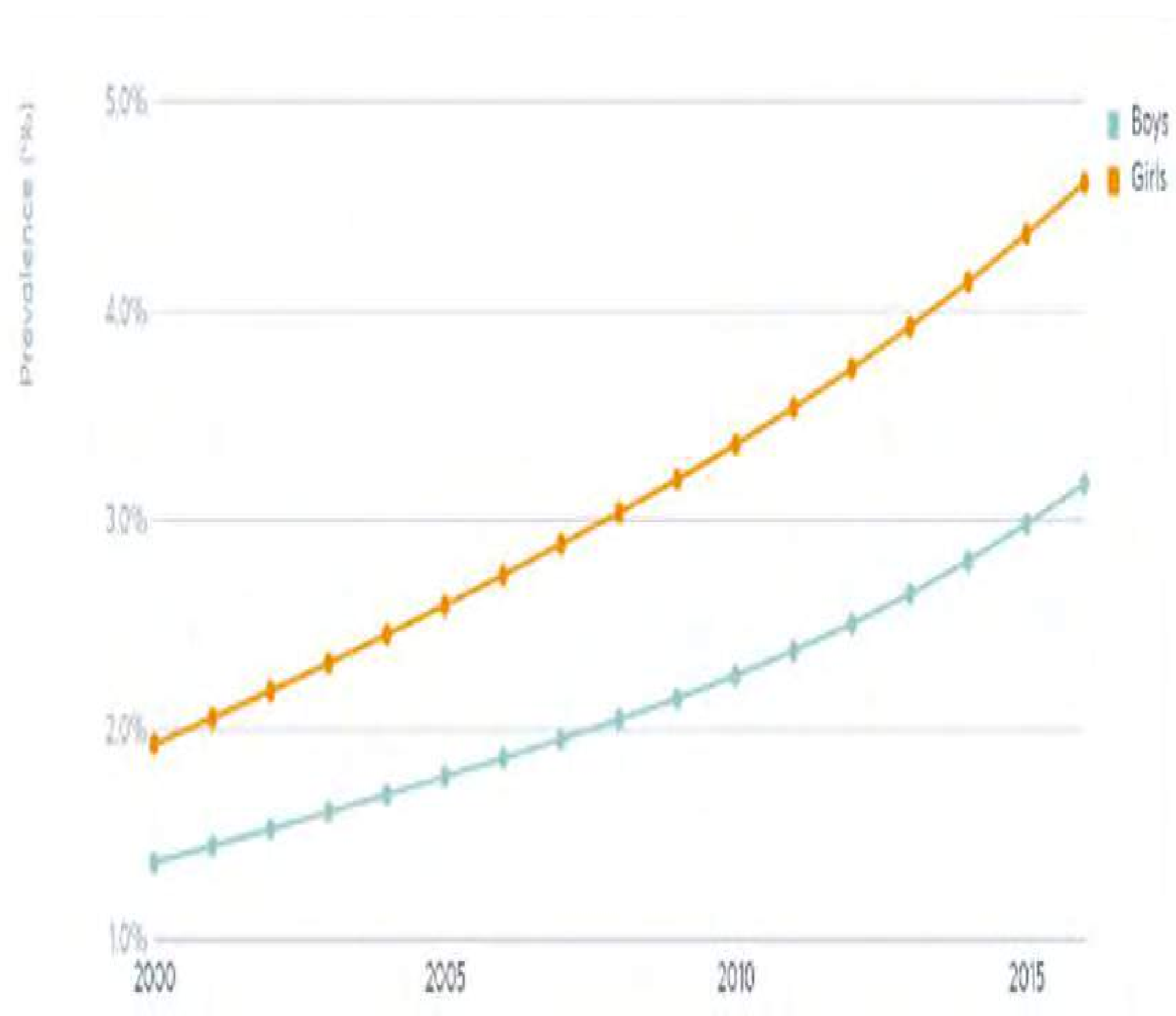
Malnutrition in all its forms - undernutrition, micronutrient deficiencies, increasing overweight and obesity are fuelling the rise of non-communicable disease (NCDs) – is both a significant outcome of the dynamics of Southern African food systems and a challenge affecting their future trajectory. This multiple burden is a major threat facing the region's development trajectory, as the current and future generations are deprived of reaching their full human development potential.

As argued above, urbanisation and related dietary transitions are clearly major drivers of poor-quality diets, increasingly leading to compromised human health and nutritional status. Indeed, the emerging trend of overweight and obesity across SSA and all demographics is a major public health issue.

There is a strong link between food systems and obesity particularly as food systems influence people's dietary patterns and nutritional outcomes. Further, non-communicable diseases such as diabetes are also on the rise. This has been exacerbated by micronutrient deficiencies.

Fig 4: Obesity in children and adults

Obesity in children aged 5-18 years, 2000 - 2015



Obesity in adults aged 18 years and over, 2000 - 2015

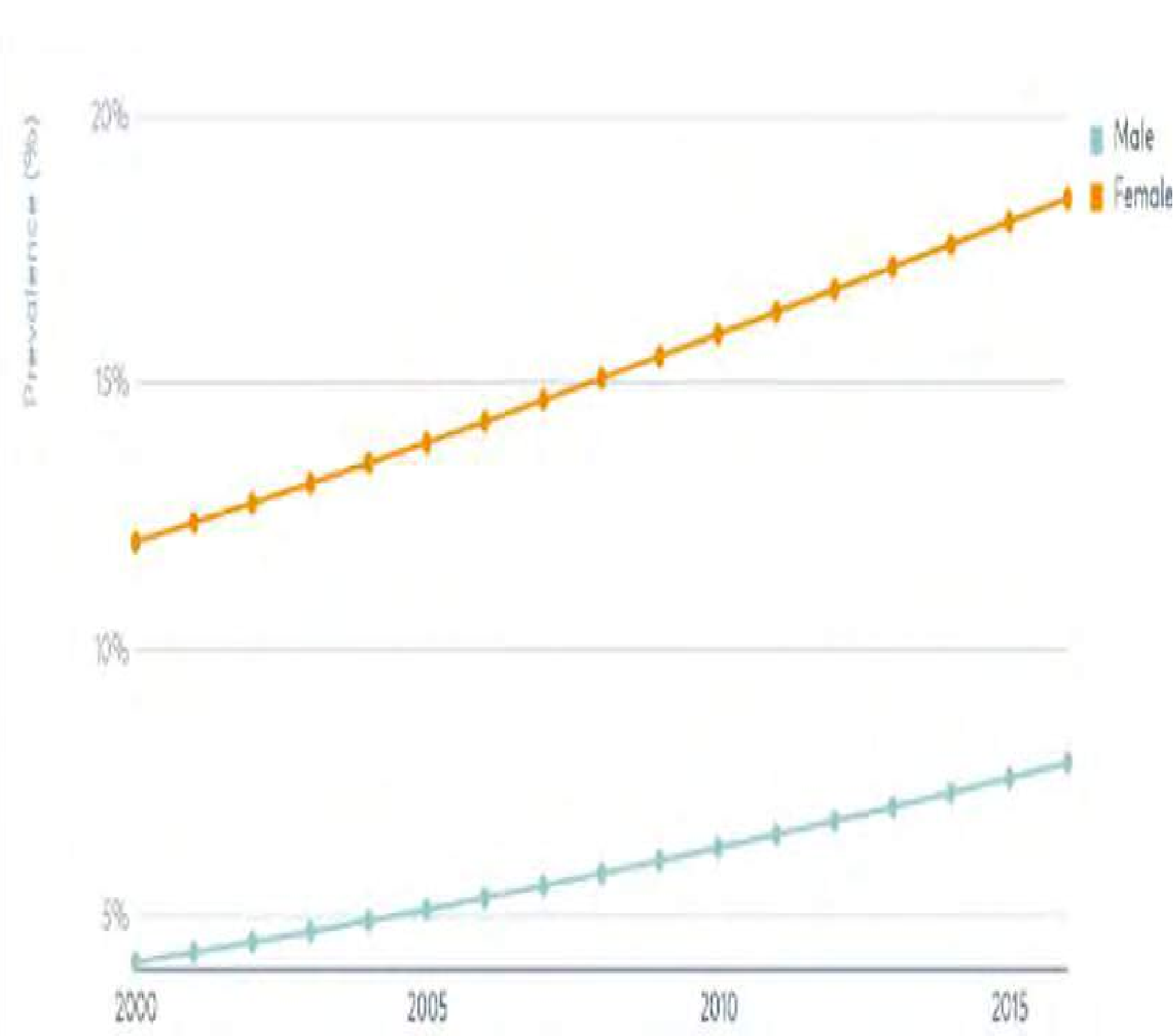


Fig 4 : Global Nutrition Report (GNR), 2018

Regional opportunity: Food systems are well placed to influence food production and the consumption patterns of nutritious foods. Applying a nutrition lens to food systems should include a consistent focus on nutritional outcomes and indicators.

Stunting (chronic malnutrition) remains a major concern in the region with 11 of the 16 countries constituting the Southern Africa Development Community (SADC) having stunting rates above 30%, which is classified as very high according to WHO cut-off points. A key trend is that although the stunting prevalence (%) is decreasing, when looking at absolute numbers, it is clear that more children under-5 in SSA are stunted and this is projected to increase.

FIG 5: STUNTING PREVALENCE IN URBAN AND RURAL AREAS (CHILDREN 0--23 MONTHS)

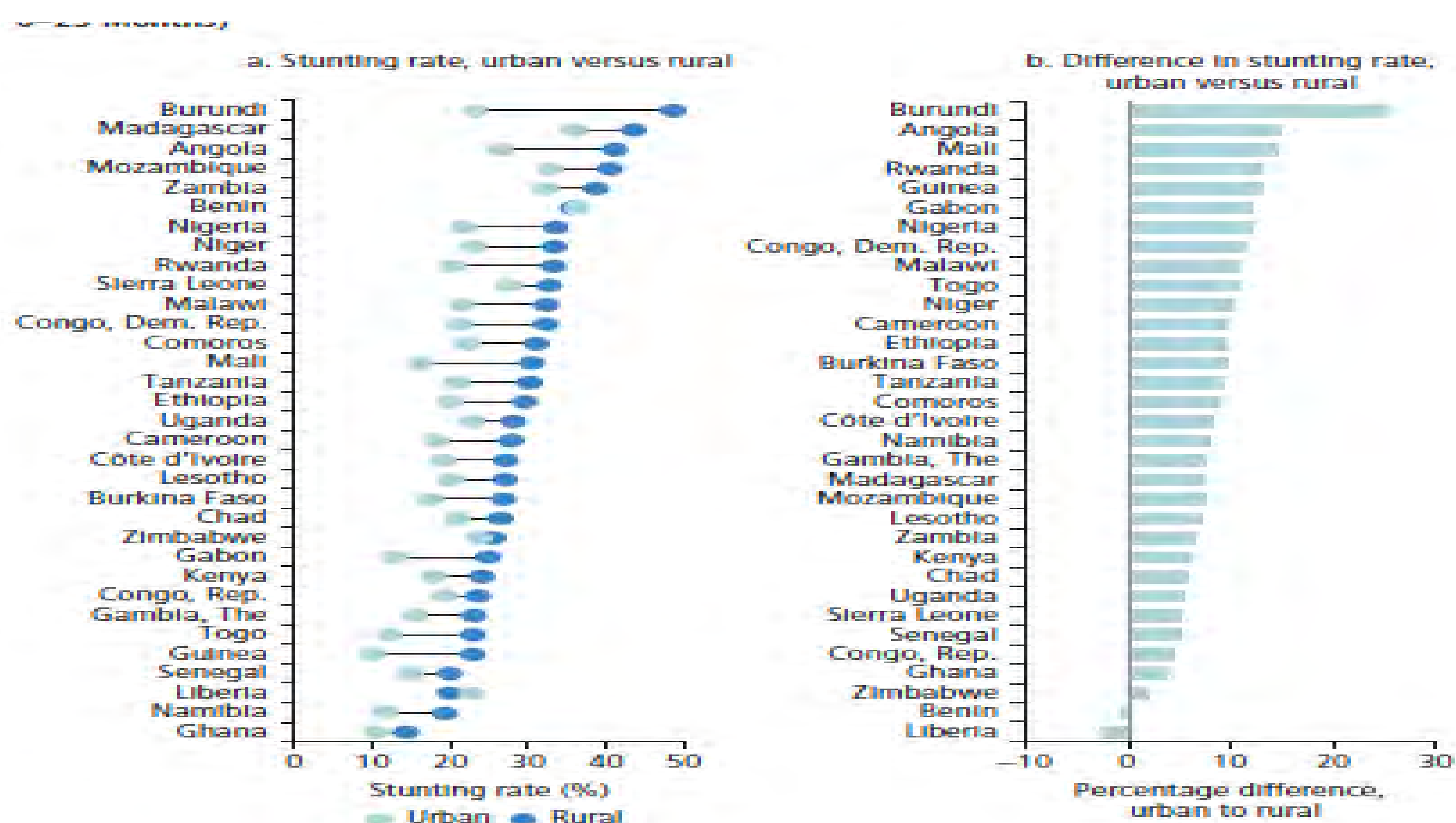


Fig 5 : World Bank 2019

The affordability of nutritious foods is a key factor as demonstrated in the figure below. As argued above, diets are arguably the centre of the entire food system. The choices individuals make determine which products are produced and in what quantities. Household diets have shifted radically over the last 60 years; foods are no longer restricted to seasonal harvests, new cuisines have spread across the world, and there has been a rise in processed foods. This has impacted on health and the health of the planet and, globally, more people are now obese than underweight. Consumers in southern Africa have purchased increasing amounts of processed food over the past 50 years. In the past several decades, this trend has accelerated with a surge on the supply side of the processing sector and small and medium enterprises (SMEs) and large private companies making large aggregate investments. Packaged, industrialized, ultra-processed foods and sugar-sweetened beverages are a growing proportion of the processed food consumed.

FIG 6: COST & AFFORDABILITY OF 3 DIETS

Country	COST & AFFORDABILITY OF ENERGY SUFFICIENT DIET			COST & AFFORDABILITY OF NUTRIENT ADEQUATE DIET			COST & AFFORDABILITY OF HEALTHY DIET		
	Cost (USD)	% food expenditure	% population cannot afford	Cost (USD)	% food expenditure	% population cannot afford	Cost (USD)	% food expenditure	% population cannot afford
Angola	0.97	21.9	35.4	3.22	72.3	82.5	4.87	109.4	92.2
Botswana	0.51	3.8	0.8	2.04	15.5	33.1	4.33	32.8	64.5
Congo (RoC)	0.96	43.7	27.9	2.53	114.8	70.1	3.4	154.7	80.8
DRC	0.41	26.7	14.7	1.57	100.7	18.3	3.26	209.6	95.1
Lesotho	0.61	23.6	6.2	2.13	82.5	47.6	4.11	159.6	76.2
Madagascar	0.48	26.4	22.8	2.37	129.1	91.4	3.46	188.3	96.3
Malawi	0.28	21.9	1.3	1.33	102.2	70.5	2.85	219.1	93.7
Mozambique	0.38	24.4	7.9	1.79	113.8	73.8	4.18	266.4	92.7
Namibia	1.01	30.3	9.8	1.72	51.8	22.9	3.47	104.4	49.2
South Africa	1.26	29.3	18.6	3.39	78.6	54.4	4.35	100.7	62
Eswatini	0.93	15.3	14.6	2.15	35.3	50.3	3.68	60.3	69.7
Tanzania	0.58	21.7	5.6	1.73	64.9	65.5	2.77	104.1	85
Zambia	0.61	35.8	28.8	2.17	127.8	73.2	3.38	199.5	84.1
Zimbabwe	0.73	32.4	5.1	2.14	94.7	57.7	3.8	168.2	80

Fig 6: WFP internal analysis 2021 based on WB and UNICEF data



MEETING FOOD DEMAND

Food production is mainly situated in rural areas as urban food production is limited in the region. The agricultural landscape in SSA is dominated by smallholder farmers, contributing to up to 90% of food production in some African countries. It is questionable if domestic food production can keep pace with the growing demands from an urban population. It is important to recognise that smallholders face several barriers to increased productivity and profitability including finance, education, training, and infrastructure.

Indeed, as the urban population increases in southern Africa, along with the urban demand for food, rural areas will need to undergo a transformation to offer greater amounts of food both more efficiently and sustainably to meet demand. This implies the strengthening of small-scale agricultural production and linking producers to urban markets. This is necessary if the current small-scale agricultural production is to expand production and feed the growing urban populations in the region.

In addition, more feed for livestock needs to be produced to meet the urban demand for meat and dairy products. Urban demand leads to increased specialization and adaptation. These factors will have to be addressed if local food systems are able to compete with cheap imports and create dynamic and entrepreneurial opportunities to create livelihoods. Education and training is needed to make production more efficient and sustainable, as small-scale production could be more environmentally friendly and sustainable than big food producers.

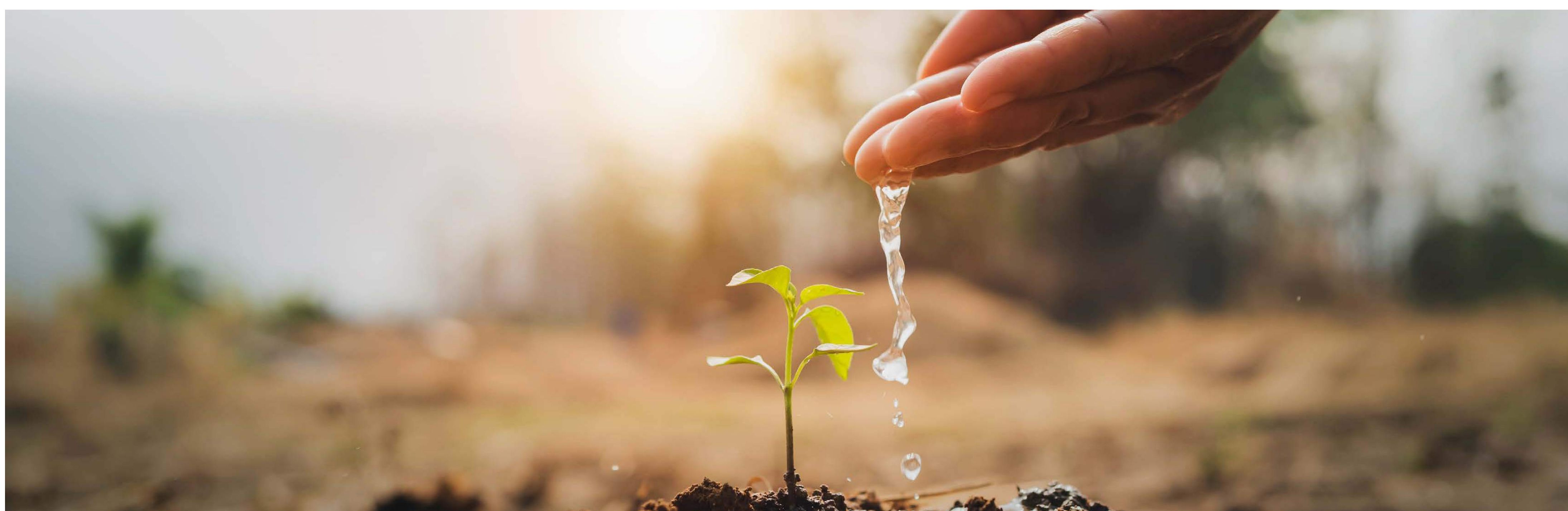


Land-use and agricultural management cover a wide field of themes and activities including land reform and tenure, farm size, farm type, production for subsistence or markets, and access to capital. How all these aspects will determine the shape of the food system in the future.

About a third of all food produced is lost in the food supply chain



Fig 7: BIG FACTS CGIAR



SUSTAINABLE FOOD SYSTEMS: LAND, WATER & SOIL

The growing demand for food is likely to drive an expansion of agricultural land, which would have negative feedback for the environment including increased rates of deforestation and soil degradation while further contributing to climate change. The scarcity of arable agricultural land and other resources has the potential to intersect with conflict particularly in a context of growing economic and social inequality.

In terms of water stress and water scarcity, SSA countries are predicted to become far more water stressed in the next 25-50 years. The main drivers of this are population growth and climate change. Approximately 230 million Africans (16% of the projected population) will be living in water scarce areas, including South Africa, Malawi and Kenya. Another 460 million people (32% of the projected population) will live in water stressed areas, including in Mozambique, Zimbabwe, Lesotho, Eswatini, Uganda and Tanzania.

Malawi and Zimbabwe have high water stress levels of 10 -25%, while Eswatini, Mauritius and South Africa have even higher water stress levels of 25-70% due to physical scarcity.

In terms of disease transmission, limited access to safe water has led to high levels of water-related diseases, including cholera, diarrhoea and bilharzia. These diseases reduce energy and productivity and lead to nutritional losses, adding to the causes of food insecurity and household poverty. Water scarcity is increasing gender disparities within communities as the burden of fetching water generally falls upon women and school children, especially girls, affecting their successful rate of attendance.

Land and soil degradation is affecting the viability and suitability of production across the agricultural sector and can lead to food insecurity.



To address a need for more agricultural land and its negative impact, sustainable farming methods and technology are needed to intensify production to generate better returns even from small land allocations. It is likely that subsistence farming will decline. Sustainable land management is crucial to achieving food security as it counteracts the degradation of scarce land and water resources. This requires sustainable farming methods and technology needed for intensification.

Regional opportunity: to contribute through ensuring water use in agriculture is more efficient, productive, equitable and environmentally friendly. This involves producing more food with less water, building resilience of farming communities to cope with floods, droughts and the ever-changing climate, and applying clean water technologies that protect the environment. These include the promotion of rainwater harvesting and soil water conservation as well as intercropping, particularly by smallholder farmers. Encourage the use of improved varieties with high water use efficiency and improved agronomic practices that contribute to increased water productivity.



INCOME & INEQUALITY

Economic growth is always uncertain, especially in the long term, but in southern Africa there is the added dimension of the need for inclusive growth.

Southern Africa has historically high inequality levels exemplified in historical land imbalances. As such, inequality has a distinct spatial dimension. As a result, it is primarily rural areas that have been “left behind” with higher levels of malnutrition and hunger, labour market exclusion to an increasing rural-urban migration with the urban informal sector an insufficient buffer for poor households. In some countries, there is an increasing reliance on cash transfers as opposed to smallholder production, which is becoming more pointed with climate change and market integration challenges undermining the food security of smallholder producers.

The underlying drivers of inequality in human capabilities include: unequal participation in political and economic life; unequal access to economic, financial and natural resources; lack of human security and rights; and inequitable outcomes and opportunities for women and men

These scarcity and resource issues have the potential to intersect with conflict, particularly as inequality in income, land and access to services drive discontent and social instability.

Economic, social and political inequalities can harm economic growth if they result in accumulation of discontent among some population groups to a sufficiently high level as to break social cohesion.

Inequality hinders social cohesion and trust. It can generate conditions that can trigger the outbreak or recurrence of conflict and violence.

Ten of the 19 most unequal countries in the world are from Africa and 7 of those are within the Southern Africa region



In Sub-Saharan Africa, loss of human potential due to inequality is 33 per cent.

Ten of the 19 most unequal countries in the world are from Africa

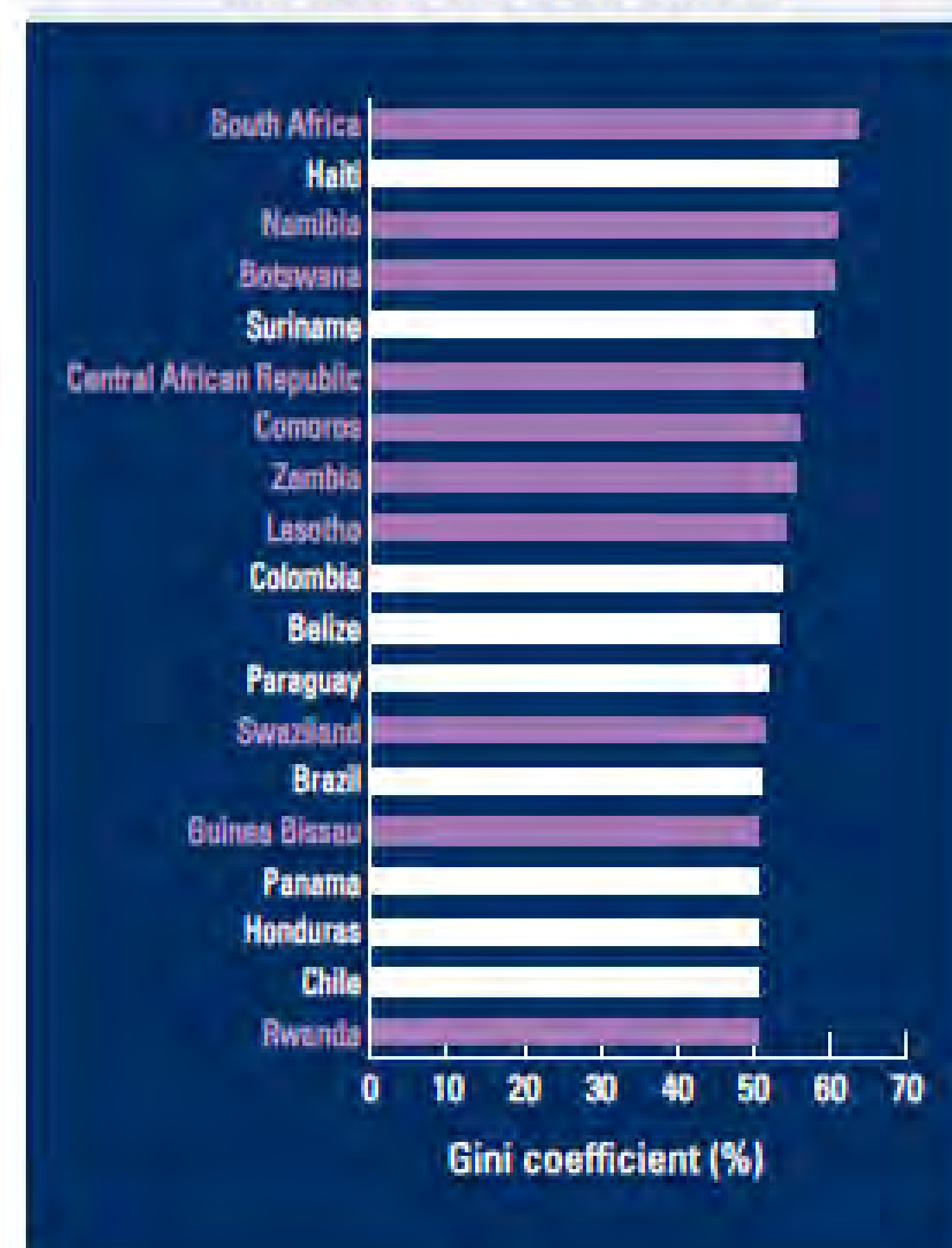
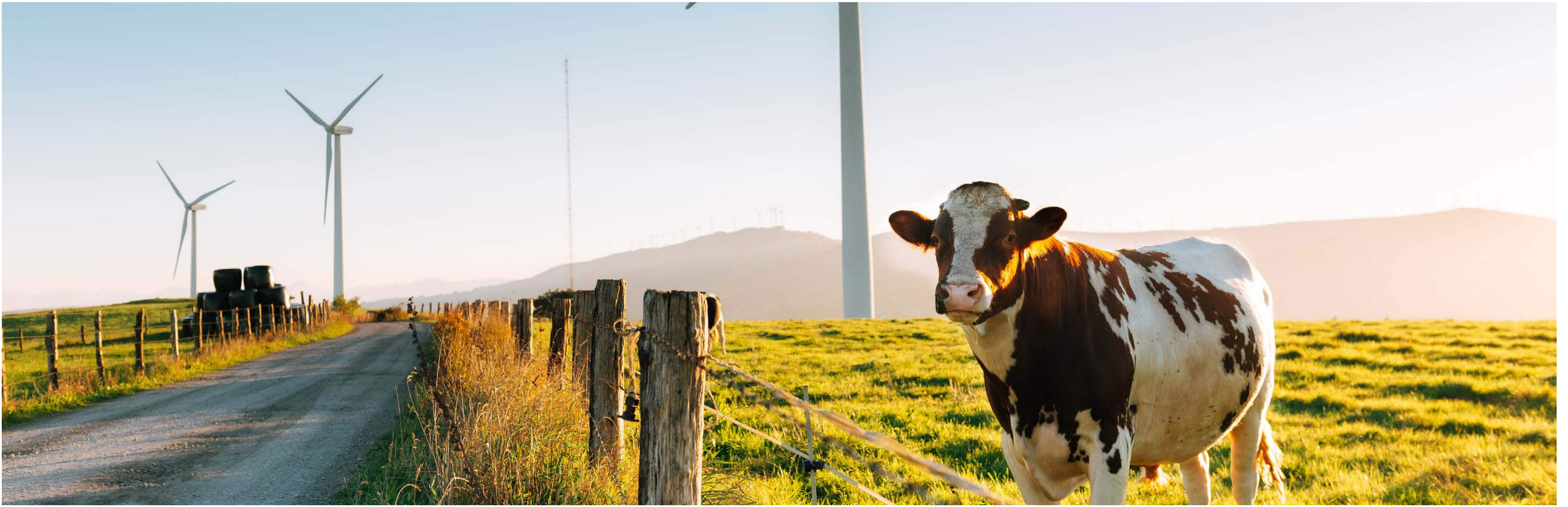


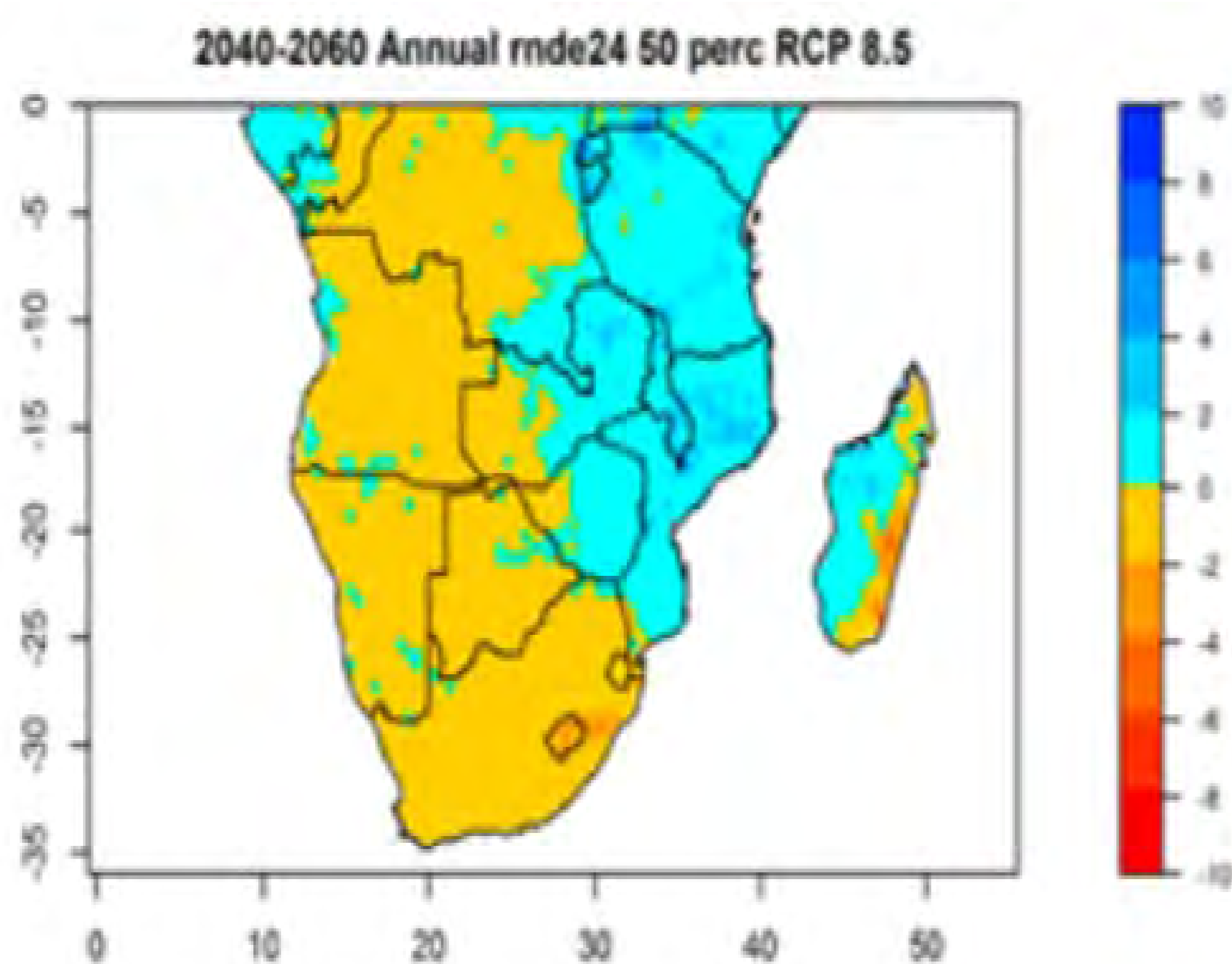
Fig 10: UNDP 2017



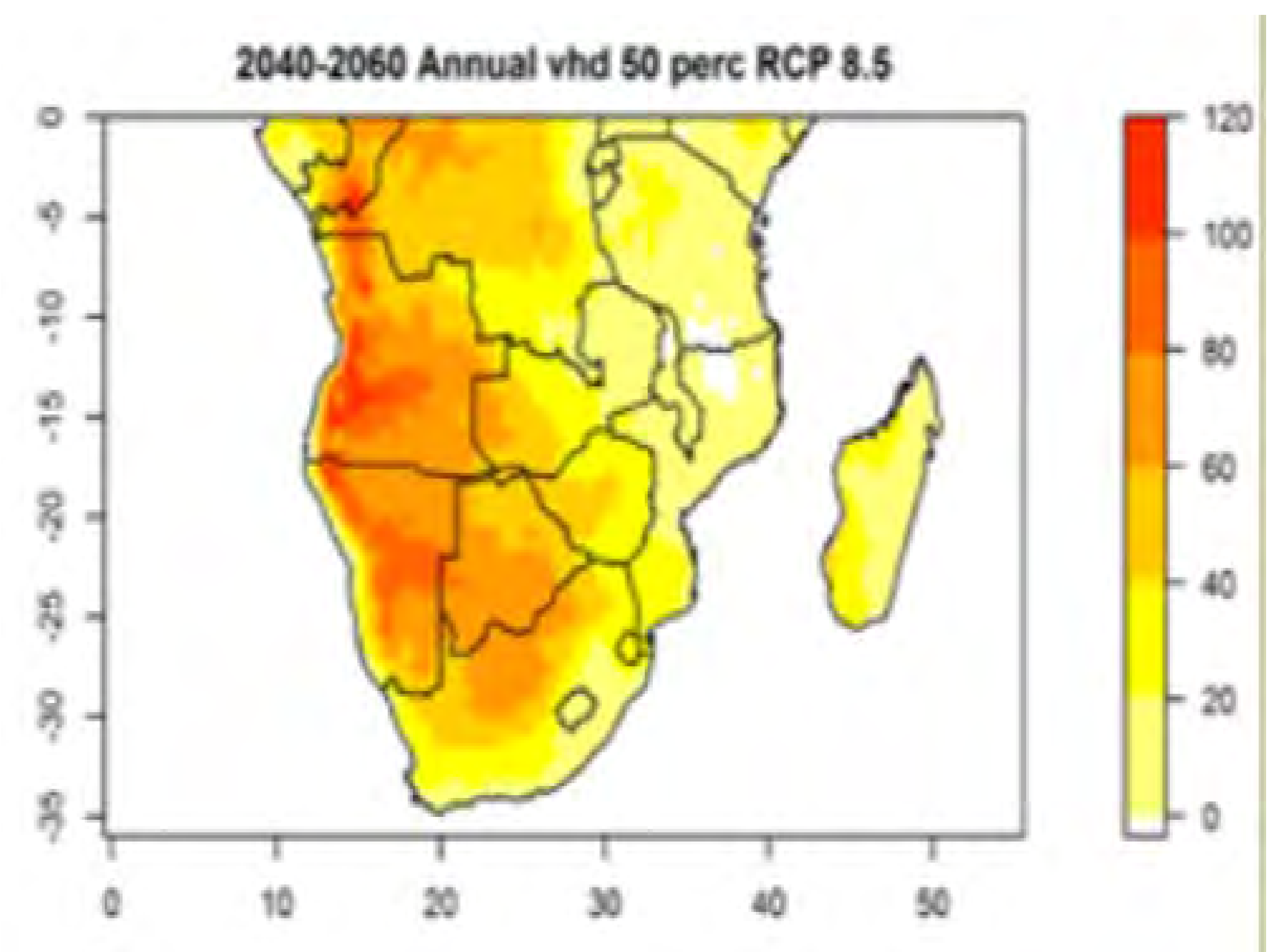
CLIMATE CHANGE IMPACTS

Discussions and research about climate change, food, and agriculture have focused largely on changes to production practices within existing systems, rather than broader system transformation. By articulating a food systems perspective, a starting point is provided to broaden understanding beyond the individual components of food systems.

There is much uncertainty related to climate change, especially about the increased variability in rainfall, heat units and even plant nutrition. Climate change will manifest in changes in water availability both in absolute terms and in terms of distribution over the year. From a management perspective, the key question is whether southern Africa will succeed in the implementation of adequate socio-ecological climate change adaptation strategies.



Projected change in the number extreme rainfall days (20 mm of rain falling within 24 hours) over Southern Africa for the time periods 2040-2060, relative to 1970-2005.

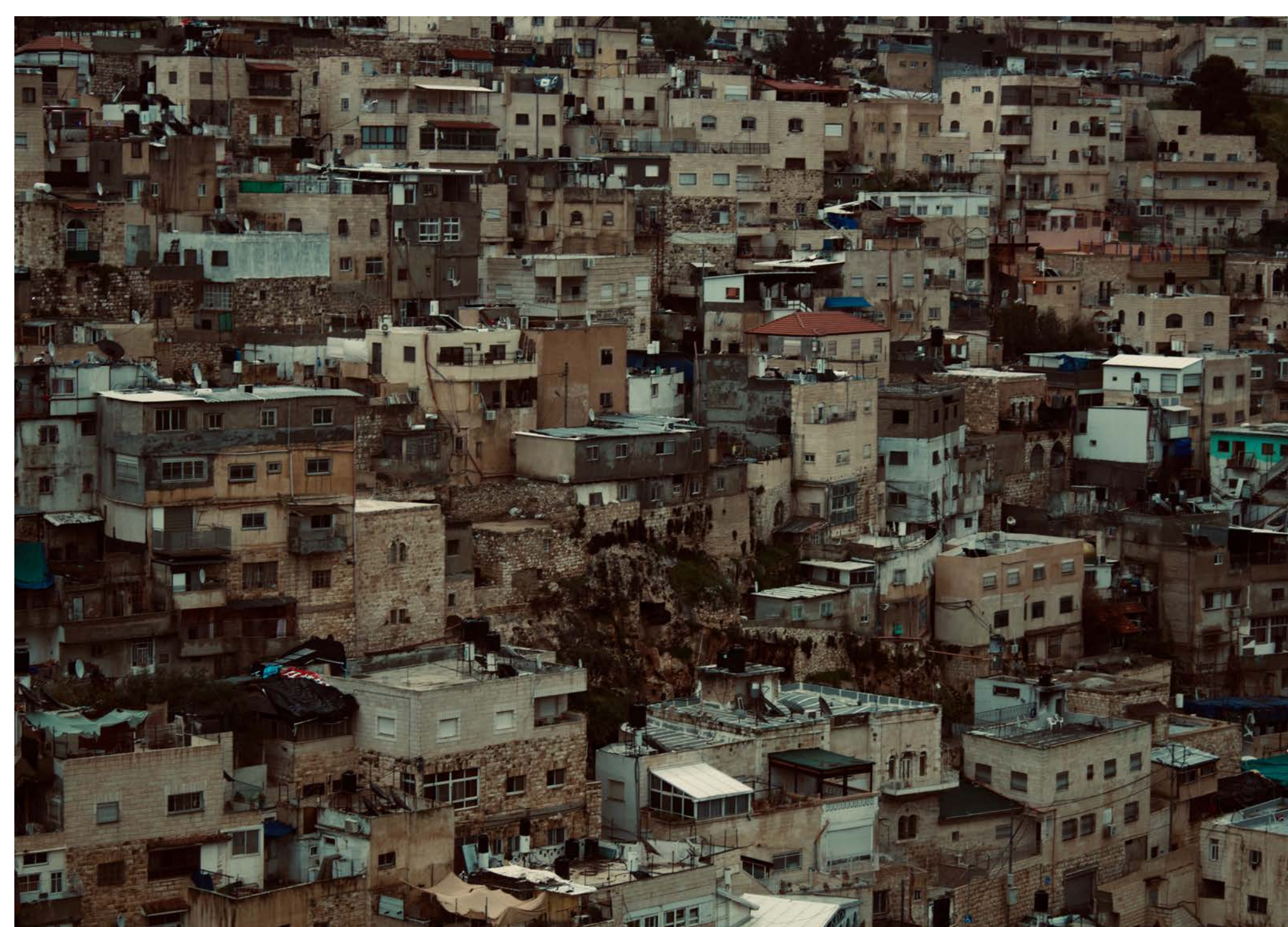
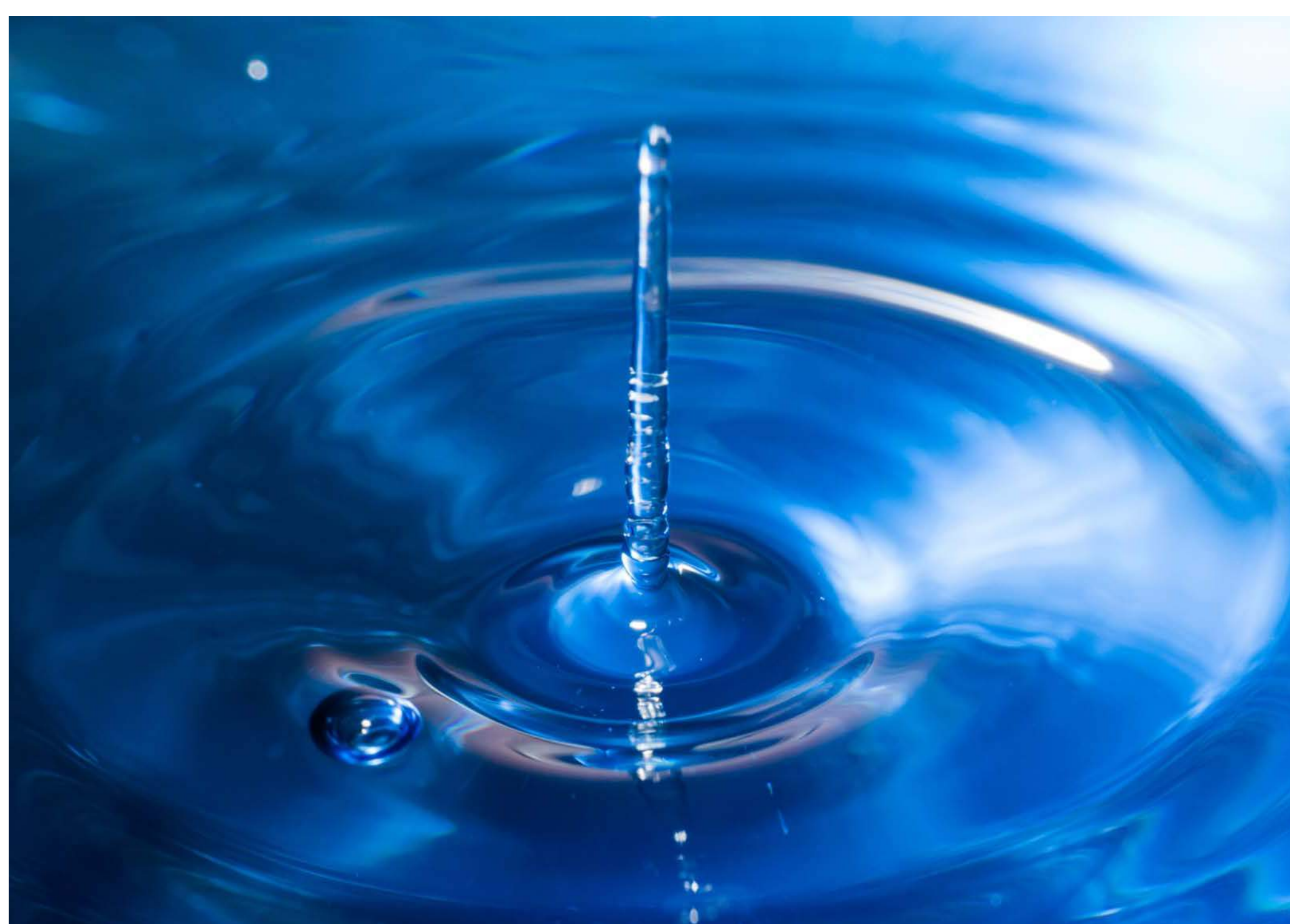


Projected change in the number hot days (above 35°C) over Southern Africa for the time period 2040-2060, relative to 1970-2005.

Fig 9: Climate Systems Analysis Group, Department of Environmental & Geographical Science, University of Cape Town

"We are the first generation to feel the sting of climate change, and we are the last generation that can do something about it."

-Jay Inslee



IMPLICATIONS FOR FOOD SECURITY & NUTRITION

A number of evolving 'driving forces' will shape the future of the Southern African food system including but not limited to climate change and environmental degradation, social and economic development, demographic shifts and urbanisation, and the growing emphasis on sustainable food systems and shifting dietary patterns. Decision makers within WFP and partner organisations should account for the uncertainty surrounding the future trajectory of these trends and their likely impact on food systems and their food security outcomes in policy development and decision making approaches.

As an example of a possible scenario for food systems within the region requiring comprehensive and coordinated responses by food and nutrition security actors is below:

By 2040, southern Africa will be characterised by the availability of cheaper stable food in cities that are home to 65% of the population. This food is acquired through intensive agriculture, at scale, which has exacerbated competition for the natural basis of the food system driving out smaller actors. Urban areas will enjoy more stable prices and increased availability of a handful of crops that underpins an increasingly standardised diet, rich in calories but lacking in nutrition. This has contributed to malnutrition increasing in all its forms due to the rise in prevalence of overweight and obesity, which has overtaken the prevalence of stunting. The environmental and health impacts of these dominant characteristics have set the main agenda for food system practitioners in 2040.

By positioning ourselves within this scenario, we can consider how regional actors work can strengthen regional food systems, making them more resilient and recalibrating them to address all future challenges. This requires a systemic, holistic approach that builds on shared value creation through seeking leverage points and key partnerships to ensure systemic issues are engaged.